



Mobile taxation in Kenya

Accelerating digital
development

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GSMA

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Executive summary

Mobile telephone services are playing an increasingly important role in supporting economic growth and social inclusion globally. Growth in mobile penetration can enhance digital connectivity by expanding internet and broadband access, which in turn facilitates the reduction of barriers to trade, commerce, communication, service delivery, and human development. These benefits can be delivered by, for example, expansion in financial inclusion via the use of mobile money, digitally enabled local entrepreneurship, innovative digital health and education delivery systems and growing numbers of e-government initiatives.

A conducive regulatory environment provides the support the mobile industry needs to thrive and maximise the opportunities available to consumers, business and governments. The tax framework is an important element of this, and there is a need to achieve the right balance between tax revenue maximisation, and incentivising investment and economic growth.

The GSMA¹ has commissioned EY to undertake a study of mobile taxation in Kenya. The objectives of the study are to review the current mobile taxation framework in Kenya and to identify potential areas for reform to improve the overall business environment, and to support the delivery of Kenya's connectivity objectives (including universal broadband coverage). The study takes a holistic approach, as it considers both the economic and social impacts of the mobile sector on Kenya's economy as well as its fiscal contribution to the Government.



The mobile sector makes a significant economic and social contribution

Mobile operators in Kenya make a significant and valuable contribution to the economy and to society. Total mobile sector revenues were \$2.6 billion in 2018 (KES 264 billion),² generating \$1.3 billion (KES 133 billion) of direct economic value. This economic value constitutes over 1.5% of Kenya's gross domestic product (GDP).

Mobile money specifically generated a 0.5% annual increase in total factor productivity (TFP) for the Kenyan economy during the period 2006-2013.³ Mobile money, during this period, was therefore responsible for 14% of TFP growth and 3.4% of per capita real income growth.⁴

However, 48% of the population of Kenya remains unconnected to mobile networks, and this represents an opportunity for further development of the mobile sector, such that these people can also enjoy the economic and social benefits of mobile connectivity.



Mobile technology can play an important role in Kenya's digital strategy

Kenya has ambitious objectives for connectivity, and for the transition to a digital economy, set out in its Digital Economy Blueprint.⁵ Achieving these objectives will require continuing improvements in its regulatory and taxation framework for the mobile industry.



The tax contribution of the mobile sector is high compared to other countries in Sub-Saharan Africa (SSA); this could limit the growth potential of the mobile sector in Kenya

In 2018, the total tax contribution of the mobile sector was estimated at \$954 million (KES 97 billion), representing 37% of total market revenue. This was above the average in SSA (26%) and any other reviewed region, including Europe (21%) and Latin America (18%).

Further, the Kenyan mobile sector makes a large contribution in taxes and fees relative to its economic footprint; while mobile market revenue accounted for 3% of Kenya's GDP,⁶ the sector's tax and fee payments accounted for around 6.5% of government total tax revenue.⁷ The tax contribution of the mobile sector is therefore 2.2 times its size in the economy. Mobile consumers bear 57% of the total sector tax burden. This is mainly due to the accumulation of excise duties on mobile services and mobile money, which together represent almost a third of the total tax payments (32%). This significantly exceeds the SSA average of 20%.

Additionally, while mobile operators in other African countries (including Burundi, Ethiopia, Ghana, Madagascar, Niger, Rwanda, Tanzania, and Uganda) can deduct the cost of telecommunication and spectrum licence fees, Kenyan operators do not have this tax deduction. Furthermore, the cascade of regulatory fees, including county deployment fees, also increases the tax contribution of mobile operators. By improving these aspects of the tax system, Kenya could improve the affordability of mobile services and make the tax system more conducive to investment. This would contribute to achieving the objectives set by Kenya in these areas.



Improvement in the affordability of mobile services is required to promote faster development of the market and increase mobile connectivity in Kenya; further investment is required to ensure full 4G coverage

The expansion of mobile broadband enabled (3G and 4G) technologies will be vital for increasing access to online services and supporting the growth of the digital economy. This will require continued significant investment in mobile networks to allow for ongoing expansion on 4G network coverage, and in the quality of mobile broadband services, particularly in the context of growing demand for mobile data services.

Such expansion would be a key enabler in delivering Kenya Vision 2030⁸ flagship projects and its Big 4 Agenda. However, one barrier to achieving these objectives will be low affordability of mobile services, particularly for the low-income population. Improving the affordability of mobile ownership in Kenya would be directly supportive of Kenya Vision 2030, and the National Broadband Strategy,⁹ which aim to transform Kenya into a knowledge-based economy.

1 The GSMA, <https://www.gsma.com/subsaharanafrica/>

2 GSMA Intelligence database.

3 World Economic Forum, 2015. How mobile money is driving economic growth, <https://www.weforum.org/agenda/2015/09/how-mobile-money-is-driving-economic-growth/>

4 World Economic Forum, 2015. How mobile money is driving economic growth.

5 Republic of Kenya, 2019. Powering Kenya's Transformation: The Digital Economy Blueprint, <https://ca.go.ke/wp-content/uploads/2019/05/Kenyas-Digital-Economy-Blueprint.pdf>.

6 Kenya's GDP was \$87,906 million in 2018. Source: Oxford Economics.

7 Kenya National Bureau of Statistic, 2019. Statistical Abstract, accessed 06/12/2019, <https://www.knbs.or.ke/?wpdmpromo=statistical-abstract-2019>.

8 Kenya Vision 2030, <https://vision2030.go.ke/towards-2030/>.

9 National Broadband Strategy 2018-2023, <https://ca.go.ke/wp-content/uploads/2019/05/Kenya-National-Broadband-Strategy-2018-2023.pdf>.



Improving the business environment and maintaining a stable tax system will be necessary to transition to a digital economy

The Digital Economy Blueprint notes the importance of attaining universal broadband coverage as a cornerstone of Kenya’s journey towards a digital economy. According to the World Bank,¹⁰ this goal will require \$4.1 billion of investment. Encouraging this investment will require a supportive environment; this could include a reduction in barriers such as the non-deductibility of telecommunication and spectrum licence fees, and a simplification of geographically disparate county deployment fees.

However, the size of the usage gap¹¹ in Kenya (64%) suggests that the universal broadband must be achieved in conjunction with increasing take-up of mobile internet services. Affordability remains a key barrier to connectivity in Kenya, and is hampered by excise taxes, which increase the cost of using mobile services.

Governments have to balance the often-competing objectives of domestic revenue mobilisation and digital development. In particular, careful consideration should be given to the wider and long-term economic and social benefits of digital inclusion, versus a short-term focus on the ICT sector for domestic revenue mobilisation. An uncertain tax environment could have detrimental impacts, not only on the sector but on tax revenues and the wider economy in the medium-term.

To illustrate this, this report analyses the potential detrimental effects of a hypothetical increase of the excise duty on mobile services from 15% to 18%. The purpose of this is to demonstrate the potential effects should there be such an increase; the analysis is not based on planned or enacted policy.

Table 1 below shows the impact that such a tax increase would be expected to have on growth in penetration, 3G and 4G connections, GDP and taxation revenue in the medium term:

Table 1

Summary of adverse socio-economic impacts of an increase in excise duty on mobile services, by 2025

Source: EY analysis

Indicator	Annual adverse impact of increasing excise duty on mobile services from 15% to 18% by 2025
Tax Revenue	-\$24m
Wider Investment	-\$59m
New unique Subscribers	-950,000
Sector Revenue	-\$83m
GDP	-\$268m

¹⁰ World Bank, 2019. Connecting Africa Through Broadband: A strategy for doubling connectivity by 2021 and reaching universal access by 2030, https://www.broadbandcommission.org/Documents/working-groups/DigitalMoonshotforAfrica_Report.pdf.

¹¹ The usage gap is the difference between mobile broadband network coverage and unique mobile broadband penetration.

The mobile sector plays a key role in Kenya's economic and social development

KES 133bn (\$1.3bn)

direct economic contribution of the mobile sector in 2018

KES 97bn (\$954m)

tax contribution; or 6.5% of Kenya total tax revenue (2018)

Mobile delivers social impacts:



Connected agriculture



Improved financial inclusion



Connected health services



Access to educational content

The mobile sector faces opportunities and challenges



48% of Kenyans are still unconnected



A 1GB basket costs 6% of the average monthly income; this is higher than the 2% UN 2025 target

Kenya's targets for a transition to a digital economy will require mobilisation from all stakeholders

The business environment should be improved to mobilise the KES 415bn (\$4.1 billion) required to achieve universal broadband coverage.

Options to improve business environment:



Maintain a stable tax system



Simplify county deployment fees



Allow tax deduction of telecommunication and spectrum license fees

1. The impact of the mobile sector on the economy and social progress in Kenya

1.1 Socio-economic contribution of the mobile sector to the economy

1.1.1 Mobile contribution to economic growth

- **Mobile operators contributed \$1.3 billion (KES 133 billion) in direct value added to the economy in 2018**

The mobile industry in Kenya is playing an increasingly important role in supporting economic growth and social inclusion. Total mobile sector revenues were \$2.6 billion (KES 264 billion) in 2018,^{12, 13} equivalent to approximately 3.0% of Kenyan Gross Domestic Product (GDP).¹⁴ Mobile operators contributed more than \$1.3 billion (KES 133 billion)¹⁵ of direct economic value¹⁶ to Kenya in 2018 (approximately 1.5% of GDP).¹⁷

However, the benefits to the economy go beyond this direct impact: the mobile operators support a much wider mobile ecosystem, including mobile applications and mobile content developers, mobile infrastructure providers, mobile distribution and retail companies and mobile device manufacturers. For example, firms in Kenya use mobile digital platforms to offer commercial products and services such as e-commerce (e.g. Amazon, Alibaba, Jumia), search engines (e.g. Jumia), content platforms (e.g. Mdundo, irokotv, Waabeh) and ride-sharing applications (e.g. Mondo Ride, SafeBoda, Little Cab).¹⁸

This in-turn supports the development of the digital economy, as well as creating further economic

activity in Kenya through development of, and spend down, supply chains (indirect effects), and by generating employee income which in turn leads to increased consumer spending (induced effects).

- **Mobile connectivity promotes productivity improvements in the economy**

The effects of mobile connectivity on an economy are largely delivered through its positive impact on productivity. Several studies have shown a strong relationship between mobile penetration and productivity; these show that a 10% increase in mobile penetration increases productivity by between 1.0% and 1.3% on average.¹⁹

In addition, it has been found that the economic impact of mobile broadband is often higher for less developed countries with lower penetration levels due to increasing returns to scale (i.e. high penetration levels are needed to drive impact).²⁰ Further, a recent econometric analysis by the International Telecommunication Union (ITU) across 34 countries in Africa found that a 10% increase in mobile broadband penetration led to an increase in GDP of 2.5%,²¹ while an improvement of 1% in the World Bank's ICT Index, was found to have increased total factor productivity in Kenya by 0.42%.²²

• Mobile money drives 3.4% of Kenya's real income growth

Since the launch of mobile money in 2007, Kenya has experienced a rapid uptake in mobile money accounts.²³ The use of mobile money can help increase financial inclusion by reducing the cost of banking and transaction burdens, thus leading to a reduction of the 'unbanked' population.²⁴ Further, by increasing the availability of trade credit, mobile money can also support firms to increase production via increased investment, which can drive economic growth.²⁵ For example, it has been shown that mobile money generated 0.5% total factor productivity (TFP) growth for the Kenyan economy on an annualised basis during the period 2006-2013.²⁶ This implies that mobile money in Kenya was responsible for 14% of the TFP growth and 3.4% of the per capita real income growth over the same period.²⁷

• Mobile money person-to-government (P2G) payments strengthen government revenue

The Government is committed to implementing digital services and adopting technology to provide faster and more efficient services to the Kenyan people, including facilitating electronic payments to help the country move towards a 'cash-light' economy.²⁸ Following the launch of eCitizen, which is both an online portal and a mobile application (app), citizens and businesses have been able to pay for more than 300 government services digitally.²⁹ Reportedly, over 90% of all digital payments are made through mobile money.

Digitising P2G payments has allowed the Government to broaden the tax base, increase transparency and traceability of transactions, and improve financial planning by understanding how each service contributes to the budget.^{30,31} The migration to the eCitizen platform has supported an increase in tax revenues. For example, the Kenyan National Transparency Transport Safety Authority doubled its revenue collection, from an average of \$1.1 million in July 2015 to \$2 million per month in October 2016. In addition, the Nairobi City Council County reported a revenue increase of 30% between 2014 and 2016 attributed to the digitisation of P2G payments.

The digitisation of P2G payments also brought cost savings. Moreover, it has been estimated that by 2016, the Government of Kenya had made savings of \$290 million by reducing compliance costs over a four-year period.³² From a citizens' perspective, the digitisation of P2G payments can reduce up to 75% of their costs (e.g. travel costs or transaction fees) and bring further convenience. It has also brought increased voluntary compliance; citizens appreciate the convenience and benefits of mobile money P2G payments, which can reduce up to 75% of their costs (e.g. travel costs or transaction fees).³³

Establishing an enabling environment for the mobile industry also positively impacts the digitisation of government services. This enhances the convenience of end-users, increasing usage of government services, and in turn, government revenue.

12 GSMA Intelligence database.

13 References to dollars throughout the report are to USD.

14 Kenya's GDP was US\$ 87,905.7 million in 2018; Oxford Economics database.

15 GSMA Intelligence.

16 Direct economic value is measured in terms of Gross Value Added (GVA).

17 Kenya's GDP was US\$ 78,757.4 million in 2017; Oxford Economics database.

18 Republic of Kenya, 2019. Powering Kenya's Transformation: The Digital Economy Blueprint.

19 ITU, 2012. The Impact of Broadband on the Economy: Research to Date and Policy Issues, https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf.

20 ITU, 2018. Economic contribution of broadband, digitization and ICT regulation, Regulation, https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-EF.BDR-2018-PDF-E.pdf.

21 ITU, 2019. Economic contribution of broadband, digitization and ICT regulation: Econometric modelling for Africa, https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-EF.BDT_AFR-2019-PDF-E.pdf.

22 Nondo, C., 2018. Is there a relationship between information and communication technologies infrastructure, electricity consumption and total factor productivity?

23 GSMA, 2019. Improving financial inclusion through data for smallholder farmers in Kenya, <https://www.gsma.com/mobilefordevelopment/resources/improving-financial-inclusion-through-data-for-smallholder-farmers-in-kenya/>.

24 Donovan, K., 2012. Mobile money for financial inclusion. Information and Communications for development, 61(1), 61-73; Aron, J., and Muellbauer, J., 2019. The Economics of Mobile Money: harnessing the transformative power of technology to benefit the global poor.

25 World Economic Forum, 2015. How mobile money is driving economic growth, <https://www.weforum.org/agenda/2015/09/how-mobile-money-is-driving-economic-growth/>.

26 Ibid.

27 Ibid.

28 Republic of Kenya, Powering Kenya's Transformation: The Digital Economy Blueprint, 2019; and GSMA, 2017. Person-to-government (P2G) payment digitisation: Lessons from Kenya, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/09/P2G_Report_Final.pdf.

29 Ibid.

30 GSMA, 2017. Person-to-government (P2G) payment digitisation: Lessons from Kenya.

31 Government Digital Payments Department, 2017. eCitizen Overview Presentation to BFA, as cited in GSMA, 2017. Person-to-government (P2G) payment digitisation: Lessons from Kenya.

32 GSMA, 2017. Person-to-government (P2G) payment digitisation: Lessons from Kenya, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/09/P2G_Report_Final.pdf.

33 Ibid.

1.1.2 Role of mobile in Kenya’s digital strategy and contribution to Sustainable Development Goals

Kenya’s digital strategy is set out in its Digital Economy Blueprint.³⁴ The Blueprint states that a digital economy will be premised on the provision of universal broadband access that will drive digitally-enabled services for a digital people and economy. The mobile sector has a key role to play in providing this universal access.

To achieve the objectives set out in the digital strategy, Kenya should continue to improve its regulatory and taxation framework to support the development of the mobile sector and hence achieve its connectivity objectives and facilitate a swift transition to a digital economy.

Kenya Vision 2030 sets out Kenya’s long-term development strategy, while the ‘Big 4’ Agenda – implemented through the medium-term financial plan – sets economic development objectives for 2018-2022.³⁵ The ‘Big 4’ Agenda aims to not only support economic growth, but also create higher value-add employment, raise the living standards of every Kenyan citizen, end inequality and lift more Kenyans out of poverty.³⁶ The mobile sector is a key enabler of achieving the ambitious plans in the Big 4 Agenda. It can play a key role in supporting the delivery of these objectives by increasing connectivity and supporting productivity.

The Government’s ‘Big 4’ initiatives

1

Increasing the manufacturing share of GDP from 9.2% to 15% and agro processing to at least 50% of total agricultural output

2

Providing affordable housing by building 500,000 affordable houses across the country

3

Enhancing Food and Nutrition Security (FNS) through construction of large-scale multi-purpose and smaller dams for irrigation projects, construction of food storage facilities and implementation of high-impact nutritional interventions and other FNS initiatives

4

Achieving 100% Universal Health Coverage

The mobile sector supports global sustainable development by adopting practices that contribute to the delivery of the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations (UN).³⁷ The GSMA measures the impact on the SDGs of the mobile sector across countries and has found that countries with high levels of mobile connectivity have made the most progress in meeting their SDG commitments.^{38, 39}

The mobile sector was one of the first to embrace SDGs in Kenya. Case studies exemplifying the sector's contribution to the SDGs are summarised throughout the rest of this subsection.

Case Study

7 AFFORDABLE AND CLEAN ENERGY



Pay-as-you-go solar – innovative mobile provision of sustainable energy SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

The mobile sector has unlocked new and innovative models to access energy, particularly pay-as-you-go (PAYG) solar companies.⁴⁰ The PAYG model has unlocked a large segment of the off-grid solar market, enabling low-income consumers to access energy services while also indirectly supporting education, income-generating activities and entrepreneurship. Recent research found that by extending business opening hours, these PAYG solar systems helped households to generate more income and created more work.⁴¹

In Kenya, the PAYG solar-home-system M-Kopa has sold over 750,000 off-grid solar systems, providing 3 million individuals with clean, safe lighting solutions. 80% of its customer base can be considered low-income, earning \$2-3 per day per household member.⁴² Other companies include solar-home-system providers such as Mobisol/ENGIE, BBOXX, but also mini-grid providers such as Powerhive.

PAYG is proving particularly transformative because it allows service providers to leverage customer payment histories to qualify customers for services or add-on products, such as cooking stoves, refrigerators and smartphones.

This PAYG model is being replicated in other sectors, such as water, sanitation and clean cooking, generating positive impacts on other SDGs, such as good health (SDG 3) and clean water and sanitation (SDG 6).

34 Republic of Kenya, Powering Kenya's Transformation: The Digital Economy Blueprint, 2019.

35 Kenya Vision 2030, <https://vision2030.go.ke/towards-2030/>.

36 Ibid.

37 UN Sustainable Development Goals <https://www.un.org/development/desa/disabilities/envision2030.html>.

38 GSMA, 2018. Mobile Industry Impact Report: Sustainable Development Goals, <https://www.gsmaintelligence.com/research/?file=ecf0a523bfb1c9841147a335cac9f6a7&download>.

39 This holds if income is controlled for; the relationship between SDG progress and mobile connectivity is not just explained by a country's level of income. This is consistent with academic and empirical evidence.

40 GSMA, 2019. Mobile for Development Utilities Annual Report. <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/03/Mobile-for-3940-Development-Utilities-Annual-Report-2019-Intelligent-Utilities-for-All.pdf>.

41 GOGLA, 2019. Powering opportunity in East Africa. <https://www.gogla.org/resources/powering-opportunity-in-east-africa-proving-off-grid-solar-is-a-power-tool-for-change>.

42 M-KOPA, 2019. Impact report. <http://www.m-kopa.com/wp-content/uploads/2019/09/M-KOPA-IMPACT-REPORT-2019.pdf>.

Case Study
2 ZERO HUNGER

Connecting agribusinesses through mobile
SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

The mobile sector increases productivity of agribusinesses through access to mobile-enabled service platforms (e.g. mobile money) and facilitates access to financial services for smallholder farmers. Communities connected to mobile services have access to emergency broadcast systems enabling them to mitigate the risk of environmental threats. They can also access agri-education services, allowing them to improve their agricultural practices.

In Kenya, mobile-based digital solutions are delivering benefits to smallholder farmers, crop buyers and agribusinesses. These benefits include:

- Improving communication within the value chain;
- Formalising the agricultural value chain; and
- Building payment histories to help expand access to credit and insurance for small farmers.

They can be grouped into three categories:

1
Last-Mile Digitisation Tools

e.g. Virtual City's AgriManagr; DigiFarm for Enterprise: Mobile-based enterprise solutions that enable digital transactions (e.g. procurement payments, digital receipts etc.); streamline communication between smallholder farmers and agribusinesses; and enable track-and-trace solutions, allowing for full visibility of the entire value chain and better farm management.

2
Market Linkage Tools

e.g. Twiga Foods; Tulaa; Masoko: Tools that formalise agricultural value chains by allowing crop producers and buyers to connect through a mobile-based online platform. They include both direct-to-consumer e-commerce services as well as wholesale market places.

3
Direct-To-Farmer Hubs

e.g. DigiFarm for Consumer: A centralised, online, mobile-based 'one-stop shop' that allows buyers to place orders for crops directly from farmers and, at the same time, enables suppliers to offer agricultural products and services to farmers. For example, farmers can access a range of services such as the ability to buy inputs at discounted prices, receive farming advice or access loans that are disbursed and paid via mobile money.



1.2 Market analysis

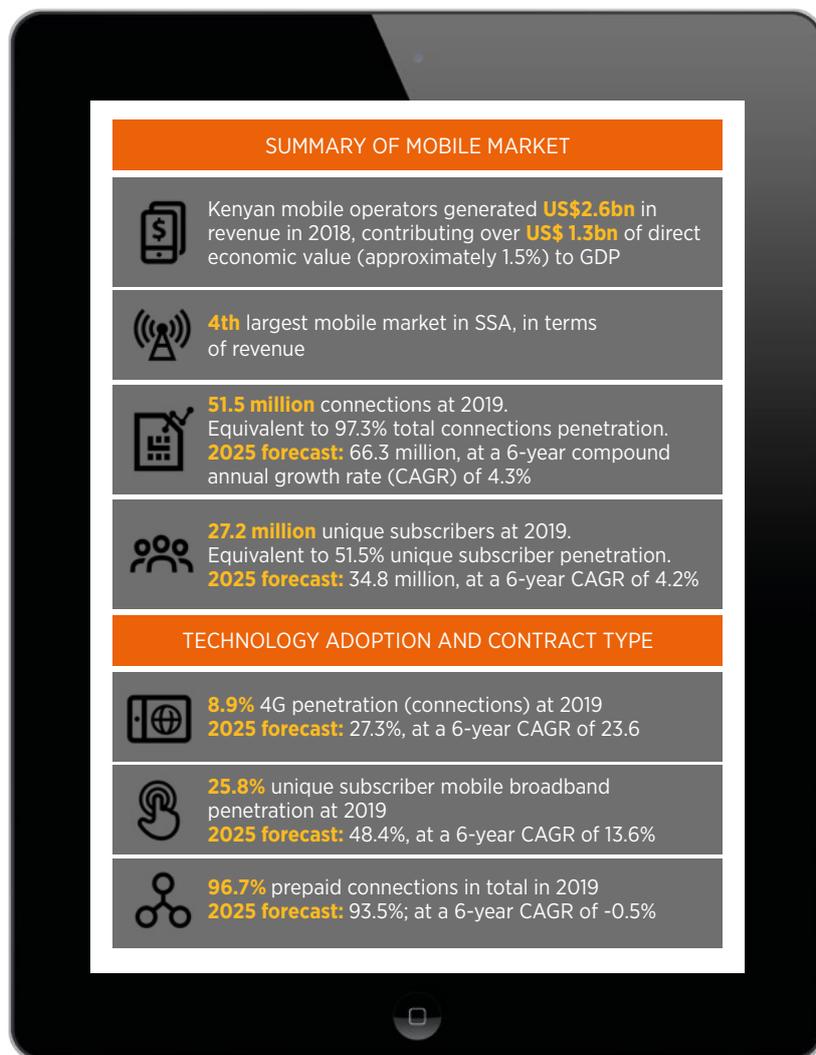
1.2.1 Market overview

The mobile market in Kenya has expanded rapidly over the past decade, with unique subscriber penetration increasing from 29.9% in 2009 to 51.5% in 2019.⁴³ However, as demonstrated in Figure 1, which provides an overview of the Kenyan mobile market, there is significant potential to further develop the sector (e.g. in particular, by increasing the number of unique subscribers and the penetration of mobile broadband).

Figure 1

Kenyan mobile market in figures⁴⁴

Source: GSMA Intelligence database, EY analysis



43 Source: GSMA Intelligence database. Numbers in Figure 1 and throughout the report for years from 2019 onwards relate to Q3 unless otherwise stated, as the latest non-forecast data available is as at Q3 2019.

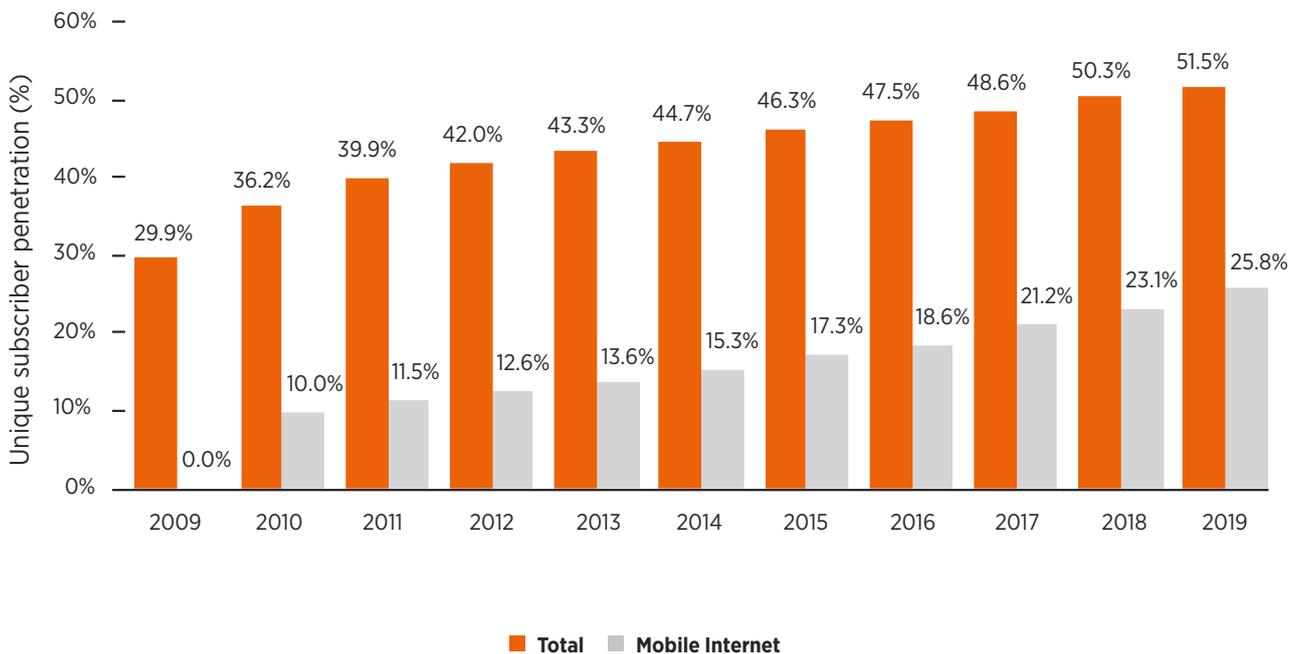
44 CAGR is the mean annual growth rate for the period.

As shown in Figure 2, unique subscriber penetration has increased from 29.9% in 2009 to 51.5% in 2019. However, the rate of increase in the number of unique subscribers has slowed down from a five-year CAGR of 8.3% in 2009-2014 to 2.9% in 2014-2019. Currently, only half of unique subscribers have access to mobile broadband, with unique subscriber mobile internet penetration standing at 25.8% in 2019.

Figure 2

Unique subscriber penetration (%)

Source: GSMA Intelligence database



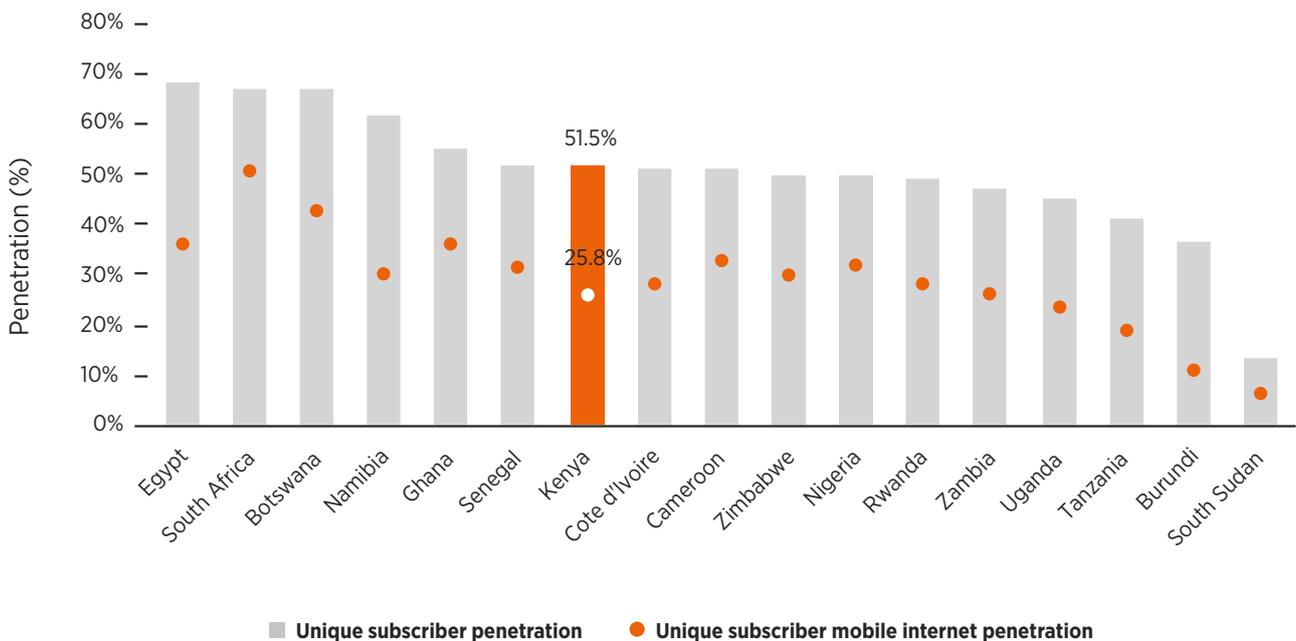


As shown in Figure 3, unique subscriber penetration in Kenya is relatively low compared to many regional peers. Kenya ranks 7th out of 16 in 2019 for unique subscriber penetration, and 12th out of 16 for mobile internet unique subscriber penetration.

Figure 3

Mobile penetration (unique subscribers – all and with mobile internet) in selected comparator countries, 2019⁴⁵

Source: GSMA Intelligence database



45 Data points presented for Q4 for comparator countries

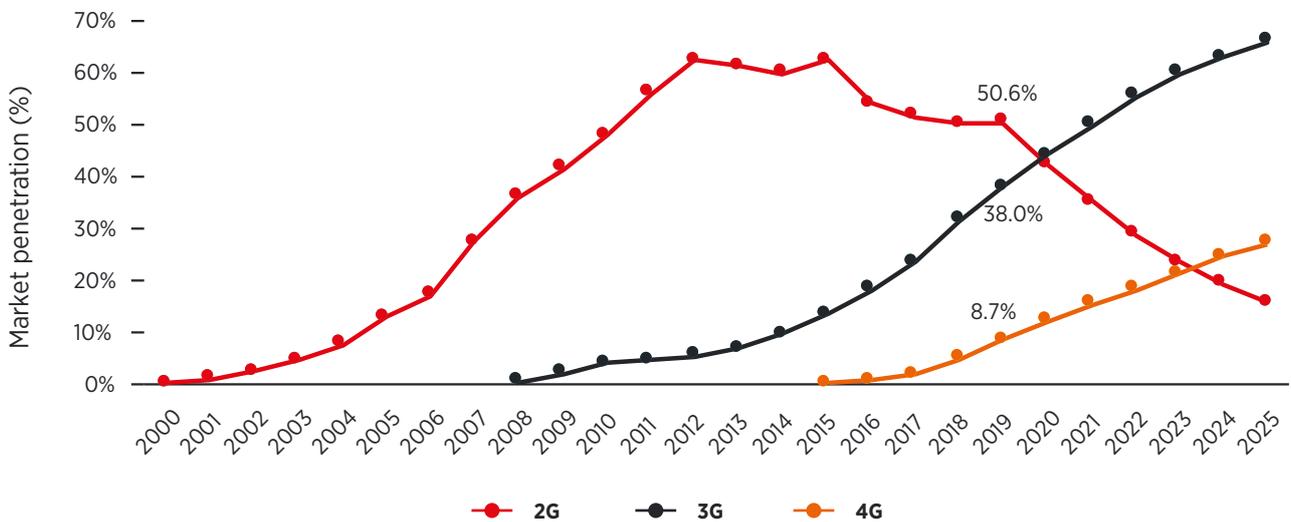


As shown in Figure 4, 2G is still the dominant technology in the Kenyan market, with a penetration rate (total connections) of 50.6% in 2019. However, market penetration is expanding quickly for 3G services, with 3G penetration expected to overtake 2G in 2020. Market penetration for 4G services is growing at a slower rate, with 4G penetration expected to overtake that of 2G only in 2024.

Figure 4

Market penetration rate (total connections), by technology

Source: GSMA Intelligence database



The expansion of mobile broadband enabled (3G and 4G) technologies will be vital for increasing access to online services and supporting the growth of the digital economy. Such expansion would be a key enabler in delivering Kenya Vision 2030 flagship projects and the Big 4 Agenda. Broadband connectivity will be critical in enabling the societal and economic benefits of the digital economy. In this context, a supportive regulatory and tax policy environment will enable Kenyan customers to embrace mobile services and mobile broadband, and hence deliver on the Government's agenda.

1.2.2 Closing the mobile broadband usage gap and improving connectivity

As shown in Figure 5, investment by the mobile industry has increased the number of people living within the footprint of a mobile broadband network by more than 21 percentage points over a four-year period. This has reduced the ‘coverage gap’⁴⁶ from 33% to 12% in 2018, which is significantly lower than the average for SSA (30%). Additionally, the number of people who are connected to the internet has increased by 50% over four years, bringing the proportion of those connected at 24% in 2018.⁴⁷

Despite this progress, the usage gap — defined as the difference between mobile broadband network coverage and unique mobile broadband penetration (or the percentage of the population covered by mobile broadband networks but not using mobile internet) — stood at 64% in 2018. This was considerably higher than the Sub-Saharan average of 46% and represented a 13-percentage point increase from 2014.

Kenya’s low rate of mobile internet adoption is primarily driven by affordability issues. Taxation — in particular, excise duty — plays a key part of the lack of affordability of mobile broadband; excise duties are levied at a headline rate of 15% of the value of mobile services. Reducing the level of excise duties paid by consumers would increase affordability and could thereby reduce the usage gap.

Other barriers to mobile internet adoption include perceived lack of relevance, low level of digital skills, and safety and security concerns. Mobile operators are addressing these challenges by supporting digital literacy programmes, working with adjacent suppliers to provide affordable smartphones, and with the app-developer community to encourage the development of relevant content in local languages.⁴⁸ In turn, this could further reduce the usage gap, improve connectivity and drive financial inclusion.

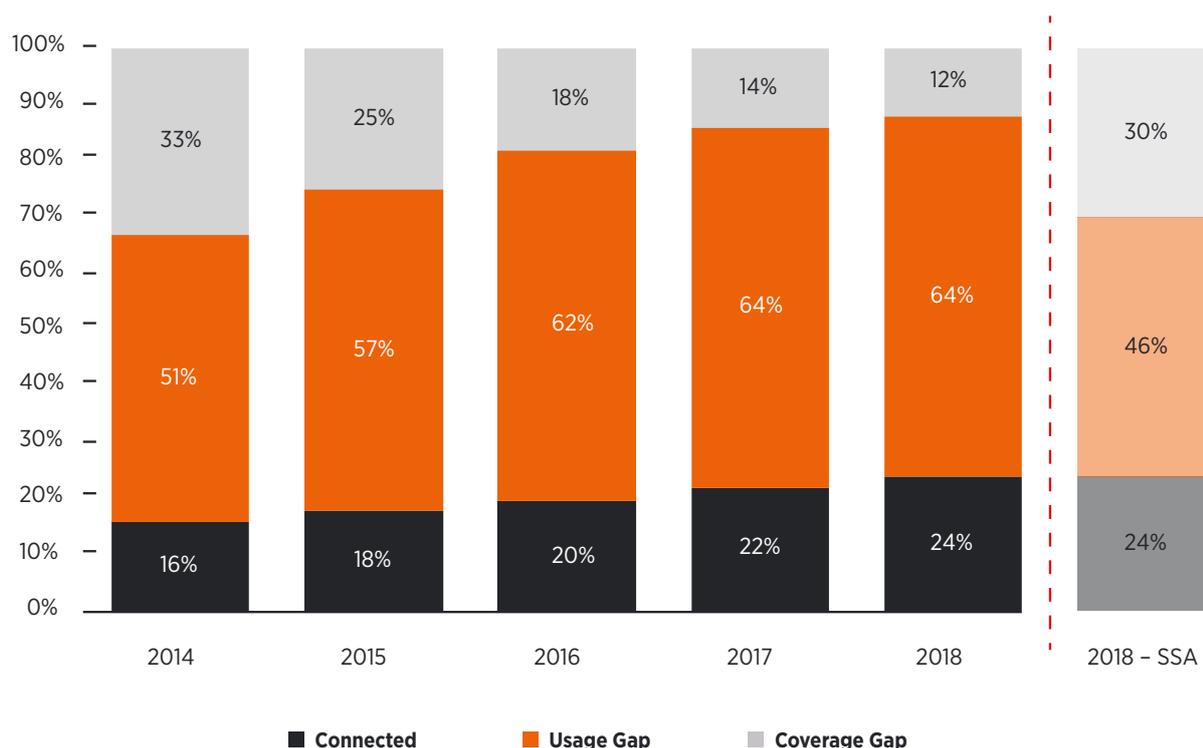


Investment by the mobile industry has increased the number of people living within the footprint of a mobile broadband network.

Figure 5

Usage and Coverage Gap, Kenya

Source: GSMA Intelligence database



A lack of affordability has been found to be the top barrier to mobile ownership across most low- and middle-income countries.⁴⁹ In Kenya, 56% and 45% of men and women respectively have cited affordability as the single most important barrier to mobile access and usage.⁵⁰

A basic measure of affordability of mobile services is the proportion of monthly income which is spent on mobile services and devices. To identify the affordability challenges associated with mobile services and devices, the GSMA estimates the total cost of mobile ownership (TCMO) for a range of countries, income groups and consumption baskets.⁵¹

46 Defined as the percentage of the population that lives in areas not covered by the mobile broadband network.

47 GSMA, 2019. The State of Mobile Internet Connectivity 2019. <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/GSMA-State-of-Mobile-Internet-Connectivity-Report-2019.pdf>.

48 GSMA, 2019. The State of Mobile Internet Connectivity 2019.

49 GSMA, 2019. Connected Women – The Mobile Gender Gap Report 2019. <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/03/GSMA-Connected-Women-The-Mobile-Gender-Gap-Report-2019.pdf>.

50 Ibid.

51 TCMO consists of the cost of a handset, activation and usage costs. It is typically calculated as a cost per month, and assumes a life expectancy of a device of 36 months for medium- and low-income countries, and 24 months for high- and very high- income countries.

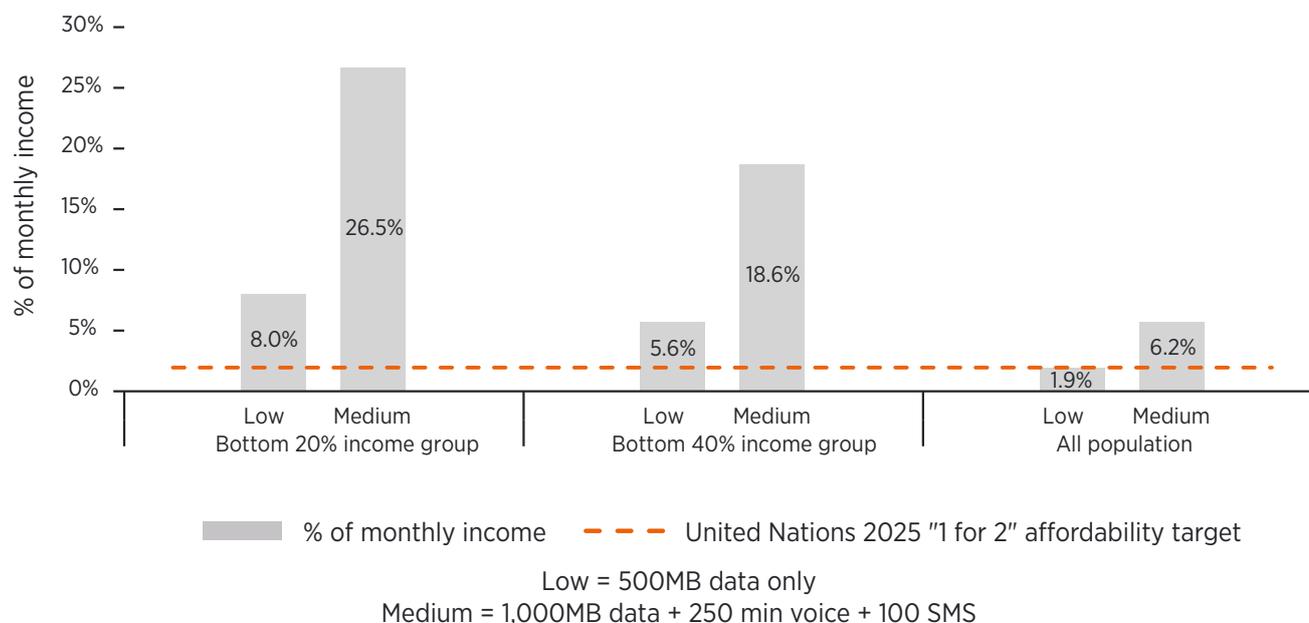
Figure 6 shows the TCMO as a proportion of monthly income for the two lowest income quintiles in Kenya, compared to the entire population. For a low consumption basket (500MB of data), the poorest 20% of the population in Kenya spend approximately 8.0% of their monthly income on mobile ownership, while a medium consumption basket (1GB of data + 250 min of voice + 100 SMS) would represent a significant affordability challenge, as they would need to spend approximately 26.5% of their monthly earnings.⁵²



Figure 6

TCMO as a proportion of monthly income in Kenya, 2018

Source: GSMA Intelligence database; Tarifica



Improving the affordability of mobile ownership in Kenya is directly supportive of Kenya Vision 2030⁵⁴ and the National Broadband Strategy,⁵⁴ which aim to transform Kenya into a knowledge-based economy. In addition, improving affordability ensures that the sector continues to play a catalytic role in enhancing productivity and lowering the cost of achieving the Government's 'Big 4' and other development initiatives.⁵⁵

At present, basic packages represent an affordability challenge for Kenya's lowest income group. More effort is needed to make mobile services more affordable to achieve the "1 for 2" UN target (1 GB of data costing less than 2% of monthly income) set for 2025.^{56, 57}

Kenya has a large young adult population, the majority of whom are unskilled or semi-skilled. This demographic is affected by high unemployment levels. Making mobile uptake more affordable to this large section of the population could greatly increase unique subscriber penetration, increasing productivity and supporting increased efficiency in the labour market. This could contribute to the growth of SMEs and innovation in Kenya, further expanding the economy and leading to a virtuous circle of growth.

As recently highlighted by an ITU report, a 10% drop in mobile broadband prices in Africa could boost adoption of mobile broadband by 3.1%.⁵⁸ As the market develops, it will be important that these affordability issues are addressed to ensure that a broad spectrum of the population have access to mobile data services.

54 Kenya Vision 2030.

54 National Broadband Strategy 2018-2023.

55 Third Medium Term Plan 2018-2022, <http://vision2030.go.ke/inc/uploads/2019/01/THIRD-MEDIUM-TERM-PLAN-2018-2022.pdf>.

56 The UN target of 2% is based on gross national income per capita, a measure of the average income of the total population. When considering specific income groups, therefore, it should be taken as a benchmark only. Lower income groups having a TCMO or tariff cost above 2% does not mean that mobile usage is unaffordable by the UN's measure.

57 Broadband Commission for Sustainable Development, 2018. 2025 Targets: "Connecting the Other Half", <https://broadbandcommission.org/Documents/publications/wef2018.pdf>.

58 ITU, 2019. Economic contribution of broadband, digitization and ICT regulation: Econometric modelling for Africa.

1.2.3 Investment environment and opportunities for development

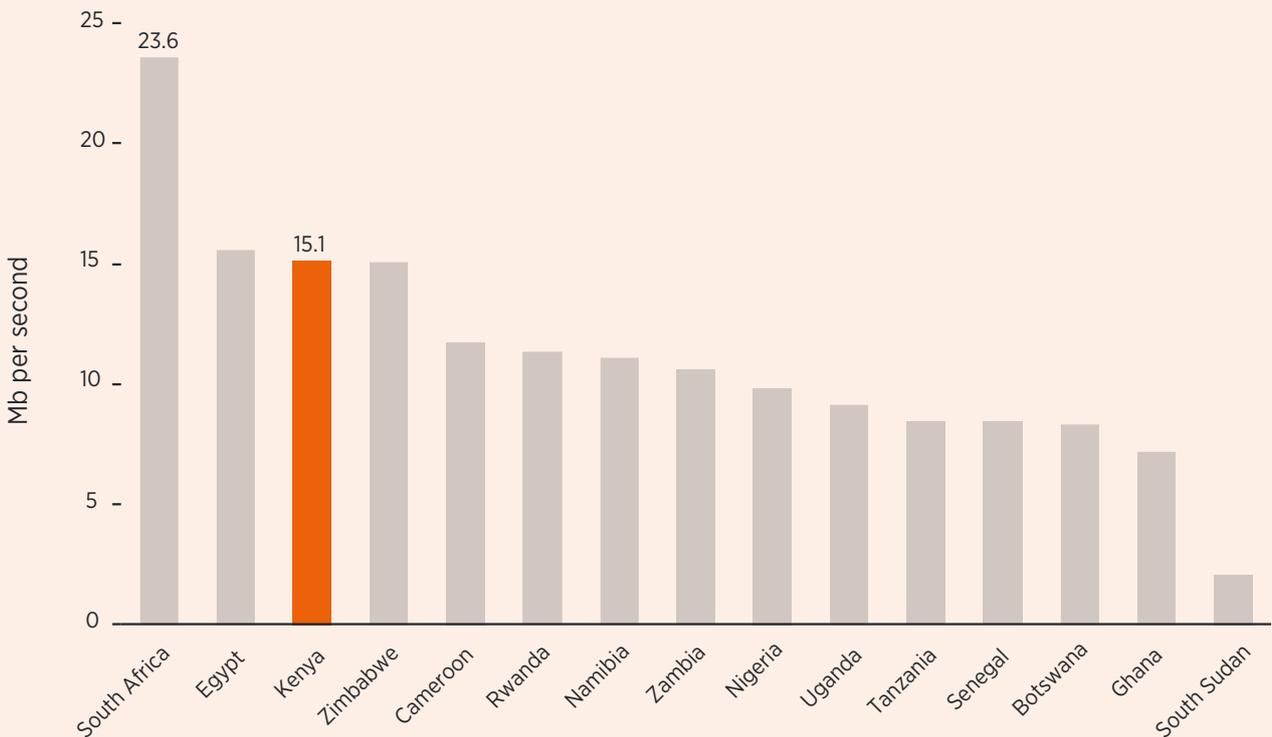
Network coverage for mobile broadband-enabled services in Kenya has expanded during the past decade, with 3G and 4G population coverage reaching 96% and 64% respectively by the end of 2019.⁵⁹

Analysis of Speedtest Intelligence® data from Ookla® (see Figure 7) demonstrates that, at 15.1Mb per second, the average download speed across all technologies in Kenya is fairly high by comparison to comparator countries, but significantly behind South Africa.

Figure 7

Download speed (Mb per second) – Kenya and selected comparator countries, 2018

Source: Speedtest Intelligence® data from Ookla®



Continued investment in mobile networks is required to make further progress in expanding 4G coverage and improving the quality of mobile broadband services in the journey towards universal broadband coverage. This would contribute to the Government’s objective of transitioning to a digital economy.

⁵⁹ GSMA Intelligence database.





2. Mobile sector taxation: current framework and improvement areas



As set out in Section 1, the mobile sector plays a key role in the Kenyan economy. In addition to its socio-economic impact, the mobile sector makes an important contribution to the public finances of Kenya through tax payments.

This section covers the tax regime applicable to the mobile sector and its contribution to the tax revenue of Kenya. It compares the Kenyan tax system against principles of tax policy design which have been consistently developed by international organisations such as the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), the United Nations (UN) and the World Bank.

2.1 Mobile sector taxation in Kenya

Kenya has a centralised tax system of income tax, value added tax (VAT), custom duties and excise duty. However, counties can also levy taxes on property, entertainment and any other tax authorised by parliament.⁶⁰ County taxes are not harmonised and consequently, the tax rates can vary. In the case of the mobile industry, counties impose some deployment fees, listed in Table 3 below.

2.1.1 Taxes on mobile consumers

Table 2 below outlines the different taxes on mobile whose incidence falls on consumers.

Table 2

Key taxes paid by mobile consumers, 2020

Source: EY 2019 Worldwide VAT, GST and Sales Tax Guide and Kenya's legislation

Value added tax (VAT)	16% on the value of mobile services (inclusive of excise taxes), handsets and SIM cards. Mobile money is exempt
Excise duties⁶¹	
• Mobile services	15% on the value of mobile services
• Mobile money	12% on transaction fees
Custom duties	
• Handsets	0%
• SIM cards	25% on Cost, Insurance and Freight (CIF) value
• Railway Development Levy (RDL)	2% on CIF value
• Import declaration fee	3.5% on CIF value
• Merchant superintendent shipping levy	Various rates

⁶⁰ Article 209, Constitution of Kenya.

⁶¹ In terms of excise taxation, the most recent adjustments occurred in the Finance Act 2018 which increased the excise tax on mobile services from 10 to 15%; and the excise tax on mobile money transfers from 10% to 12%. Source: EY Global Tax Alerts, <https://www.ey.com/gl/en/services/tax/international-tax/alert-kenya-enacts-finance-act-2018>.

2.1.2 Taxes and regulatory fees on mobile operators

Table 3 below outlines the different taxes paid by mobile operators

Table 3

Key taxes paid by mobile operators, 2020

Source: EY 2019 Worldwide Corporate Tax Guide, EY 2019 - 2020 Personal Tax and Immigration Guide and Kenya's legislation

Corporate income tax	30% on taxable income
Employment taxes	
<ul style="list-style-type: none"> • Personal income tax (withheld) 	30% (top rate) on monthly salary
<ul style="list-style-type: none"> • National Social Security Fund (NSSF) contribution <ul style="list-style-type: none"> • Employer's contribution • Employee's contribution (withheld) 	5% on monthly salary (to the maximum of KES 200) 5% on monthly salary (to the maximum of KES 200)
Custom duties	
<ul style="list-style-type: none"> • Base stations and network equipment 	0%
Regulatory fees	
<ul style="list-style-type: none"> • Universal service fund (USF) • Annual operating licence (AOL) • County deployment fees <ul style="list-style-type: none"> • Branding and Market Activities • Business Permits • Business Permits 	0.5% on annual gross revenue 0.4% on annual gross revenue Various rates Various rates Various rates
Spectrum licence fees	
<ul style="list-style-type: none"> • One-off • Annual 	Varies per auction Based on transmitters/ bandwidth/ coverage

Two of the most significant taxes paid by mobile operators are corporate income tax and spectrum licence fees. Kenya's corporate tax rate (30%) is above the average in Africa (27.1%).⁶² In terms of tax base, companies can deduct expenses incurred wholly and exclusively to generate income. Mobile operators have two capital allowances: 20% per annum wear and tear on telecommunication equipment and 5% per annum allowance on capital expenditure incurred in the purchase or acquisition of an irrevocable right to use a fibre optic cable. However, operators cannot deduct, either as a capital allowance or a revenue expenditure, the cost of spectrum licence fees despite the fact that these are a cost wholly and exclusively incurred in order to run the business and generate income.

62 OECD, 2019. Corporate Tax Statistics, <https://www.oecd.org/tax/tax-policy/corporate-tax-statistics-database-first-edition.pdf>.

2.2 Tax contribution of the mobile sector

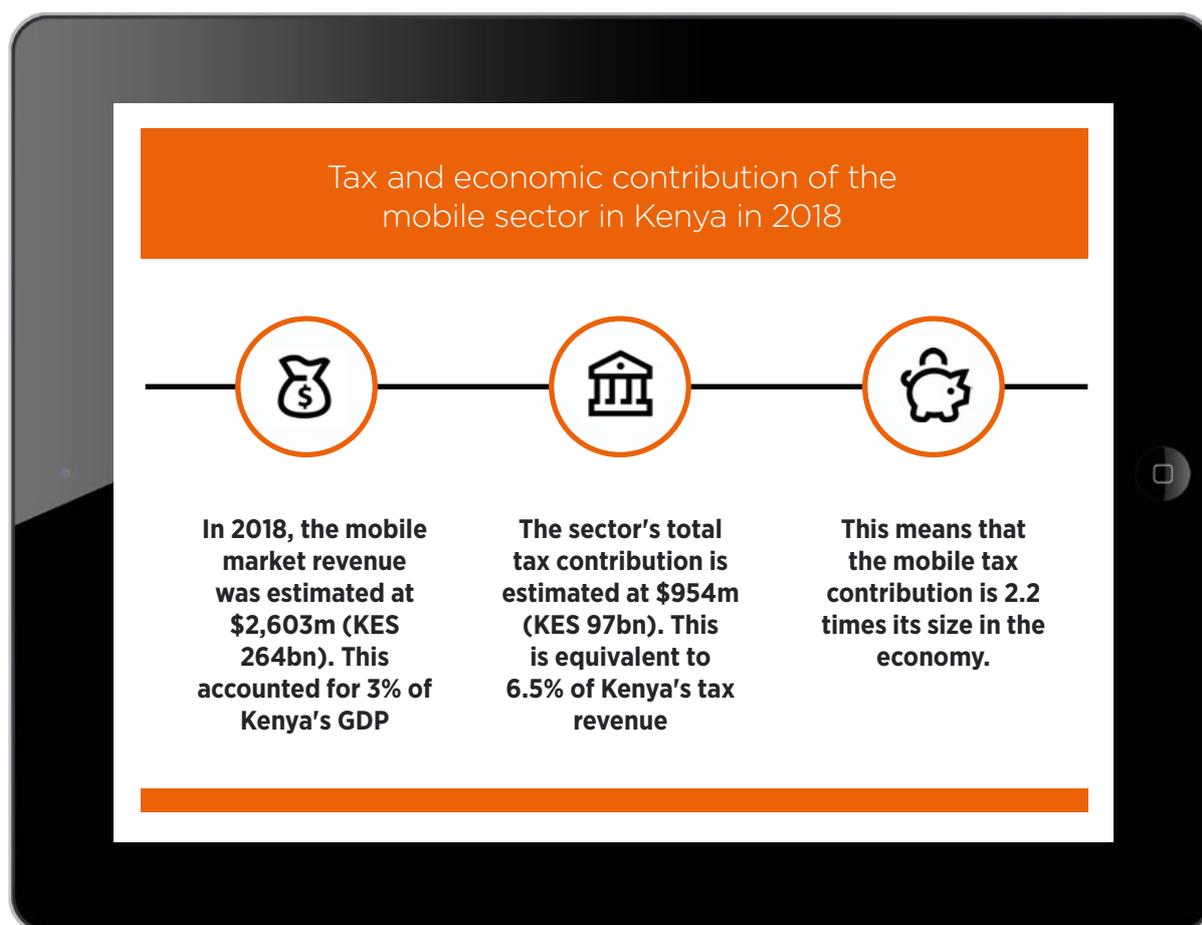
In 2018, the total tax contribution was estimated at \$954 million (KES 97 billion). This represents 37% of total market revenue.

The Kenyan mobile sector makes a large contribution in taxes and fees relative to its economic footprint. While mobile market revenue accounted for 3% of Kenya's GDP,⁶³ the sector's tax and fee payments accounted for around 6.5% of total government tax revenue.⁶⁴ This means that the mobile tax contribution is 2.2 times its size in the economy.

Figure 8

Tax and economic contribution of the Kenya mobile sector in 2018

Source: GSMA Intelligence database, EY analysis and operator's data



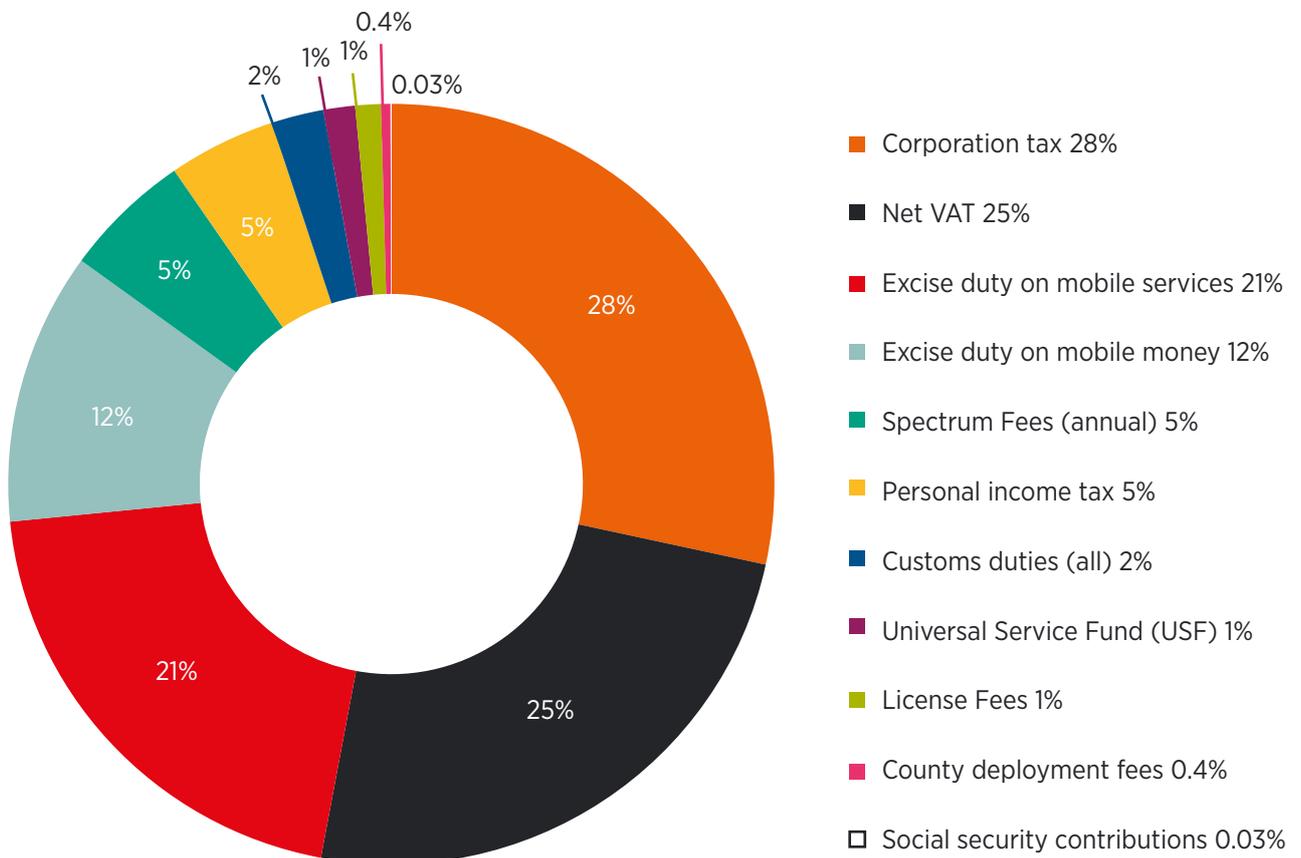
63 Kenya's GDP was of \$87,906 million in 2018. Source: Oxford Economics.

64 Kenya National Bureau of Statistic, 2019. Statistical Abstract, accessed 06/12/2019, <https://www.knbs.or.ke/?wpdmpro=statistical-abstract-2019>.

As shown in Figure 9, the largest source of tax revenue from the mobile sector comes from corporation tax (28% of the total tax payments). This is followed by VAT (25%) and excise duty on mobile services (21%).

Figure 9
Different taxes as a percentage of overall tax revenues in the mobile sector in Kenya in 2018

Source: GSMA Intelligence database, EY analysis and operator data

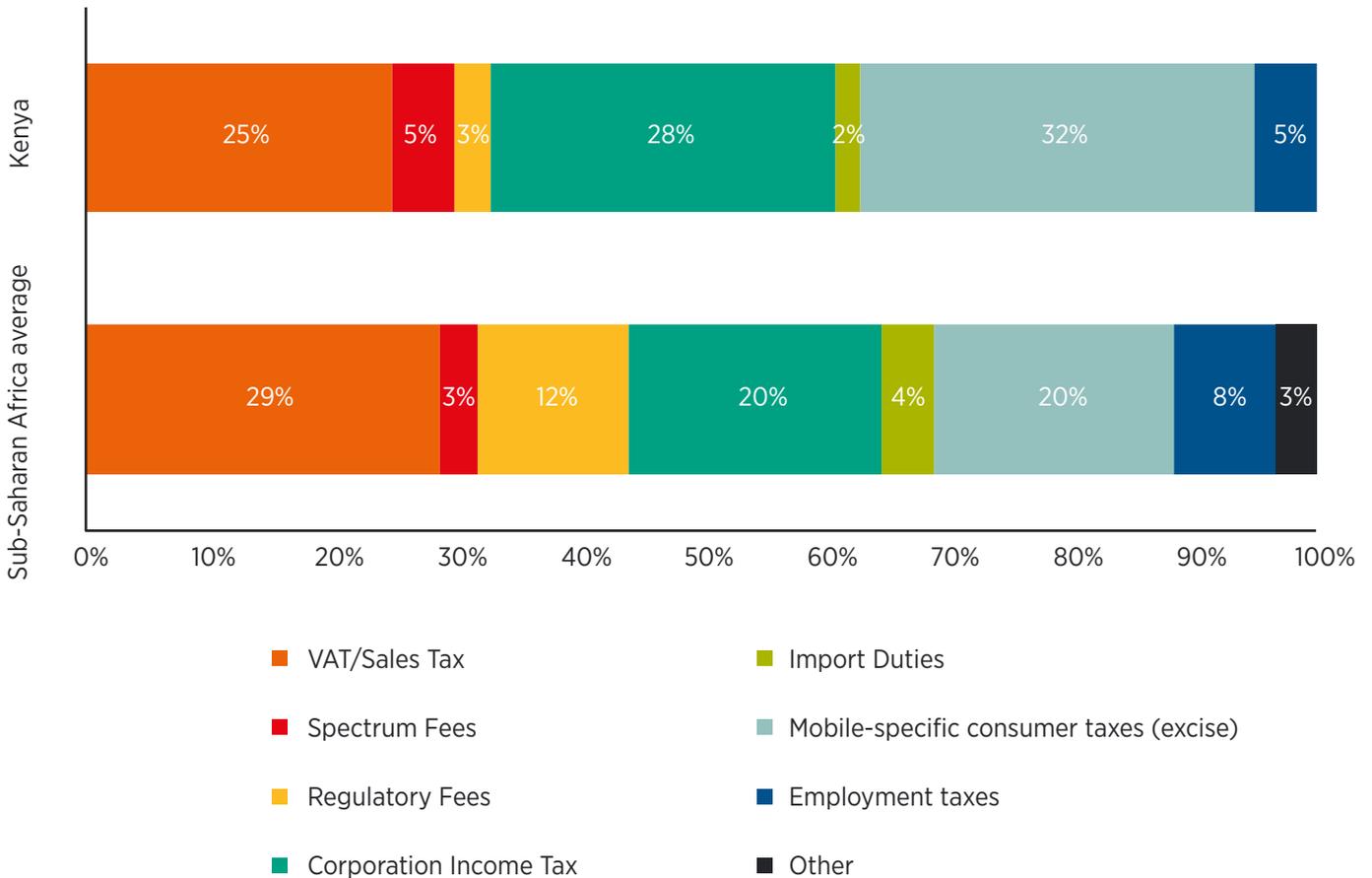


As Figure 10 shows, excise duties on mobile services and mobile money represent together almost a third of the total tax payments (32%). This significantly exceeds the SSA average (20%). Furthermore, corporation tax payments (28%) made by the mobile sector in Kenya are above the average level seen (20% of the total tax payments) in SSA. Spectrum fee payments in Kenya (5%) are also above the SSA average (3%).

Figure 10

Different taxes as a percentage of overall tax revenues in the mobile sector in Kenya and SSA⁶⁵

Source: GSMA Intelligence database, EY analysis and operator’s data



⁶⁵ Kenya (2018). The SSA average (2017) includes data from the following countries: Botswana, Burkina Faso, Cameroon, Chad, Congo, Côte d'Ivoire, DRC, Ghana, Guinea, Kenya, Lesotho, Madagascar, Mozambique, Niger, Nigeria, Swaziland, South Africa, Tanzania, Uganda and Zambia.

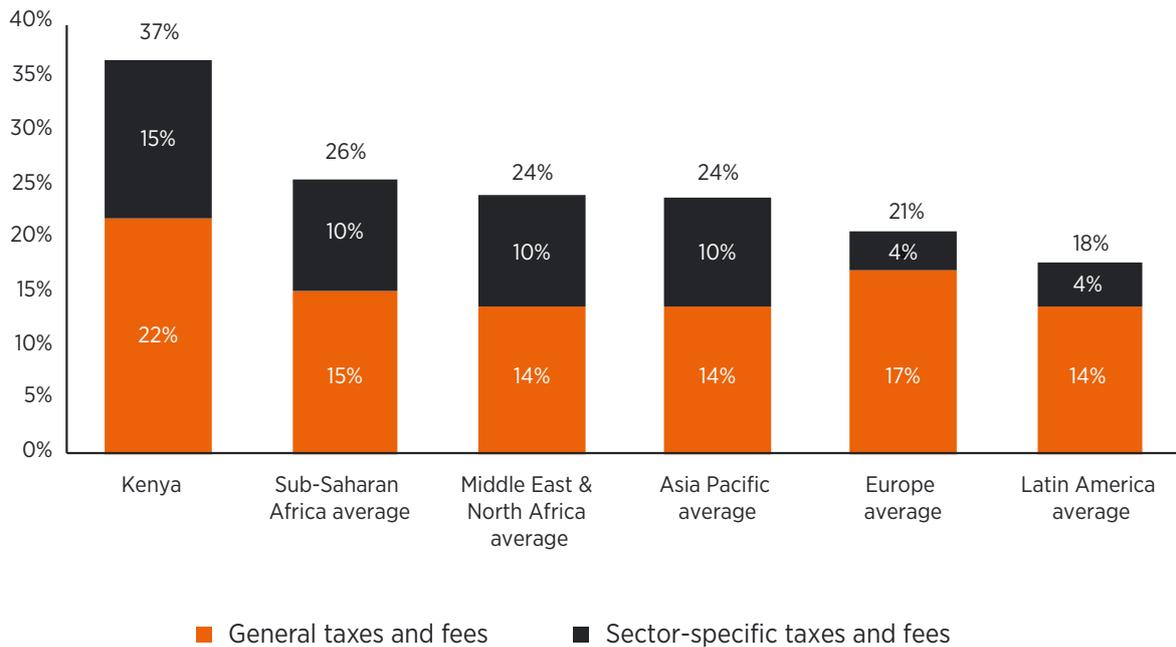
As shown in Figure 11, the mobile tax contribution of Kenya (37% of total market revenue) is the highest in the sample, including the SSA average (26%). Kenya’s mobile-specific taxes, which are equivalent to 15% of total mobile sector revenue, are also above the SSA average (10%) and any other region in the sample, including Europe (4%) and Latin America (4%). This is mainly driven by the excise duties on mobiles services and mobile money which together represent 80% of the mobile-specific burden.

General taxes are equivalent to 22% of total mobile sector revenue in Kenya. As shown in Figure 11, this is also above the SSA average (15%) and any other region in the sample.

Figure 11

General taxes and fees vs mobile sector-specific taxes and fees (as percentage of mobile sector revenue)⁶⁶

Source: GSMA Intelligence database, EY analysis and operator’s data



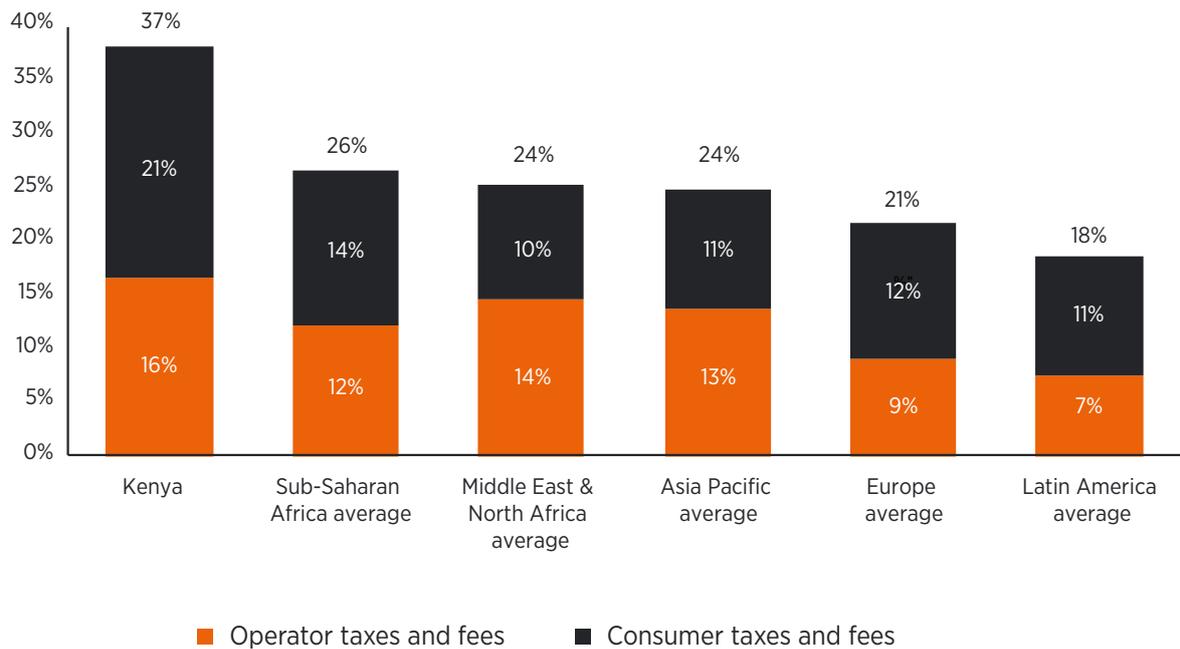
⁶⁶ Kenya (2018), Sub-Saharan Africa average (2017), Middle East & North Africa average (2017), Asia Pacific (APAC) average (2017), Europe average (2017), Latin America average (2017).

As shown in Figure 12, the mobile tax contribution of Kenyan mobile consumers (21% of total market revenue) is the highest in the sample, including the SSA average (14%). The tax contribution of mobile operators (16% of market revenue) also exceeds the average level seen in SSA (12%) and other regions including Europe (9%) and Latin America (7%).

Figure 12

Operator vs consumer taxes (as percentage of mobile sector revenue)⁶⁷

Source: GSMA Intelligence database, EY analysis and operator's data



⁶⁷ Kenya (2018), Sub-Saharan average (2017), Middle East & North Africa average (2017), Asia Pacific average (2017), Europe average (2017), Latin America average (2017).

2.3 An assessment of the mobile sector taxation in Kenya

Governments raise tax revenues to fund the provision of public goods and services. However, if the tax system is not designed properly, this can lead to unintended consequences for both the government and the taxpayers in terms of the incidence of the tax burden, distributional effects, efficiency and costs of collection.

To prevent such unintended consequences, it is advantageous to follow certain principles of tax policy design such as those which have been consistently developed by international organisations such as the IMF, the OECD, the UN and the World Bank.⁶⁸

Principles of taxation applying to the mobile sector

- **Taxes should not discourage investment.** A stable and transparent tax system in line with international standards is a strategy that would deliver sustained investment.⁶⁹
- **Taxation should be as broad-based as possible.** Broad-based taxes with single and low rates should be favoured over specific taxes. This should allow the maximisation of revenue with minimal distortions to the consumption and provision of mobile services.
- **Specific taxes should be limited and be based on a clear rationale of externalities.** Specific taxes should be narrowly targeting a few goods mainly on the grounds that their consumption entails negative externalities on society. Given positive externalities, mobile phones and services would not generally be included in a list of goods and services singled out for exceptionally harsh tax treatment.⁷⁰
- **The tax system should be equitable.** Mobile operators and consumers should be treated equally to others in equal circumstances (“horizontal equity”). In addition, the tax system should also preserve “vertical equity”⁷¹ by avoiding the imposition of regressive taxes which has a larger impact on consumers of mobile services in the lower income groups.⁷²
- **Taxes should not undermine the affordability of mobile services, as excessive taxation can increase the cost of handsets and mobile services.**⁷³ Furthermore, the tax collection should be allocated to improve mobile infrastructure, thereby increasing the coverage and digital inclusion, especially in rural zones.
- **Regulatory and spectrum fees should be set on a cost-recovery basis.** Since these fees could distort production and increase prices, regulatory and spectrum fees should not be excessive.⁷⁴
- **The tax system should be simple.** Tax rules should be clear and no more complex than necessary to achieve the policy aim, facilitating mobile businesses and consumers to make optimal decisions and respond to intended policy incentives.⁷⁵
- **Taxes should be easy to collect.** The collection of taxes should be as efficient as possible, i.e. low tax administration costs and minimisation of evasion and avoidance costs.⁷⁶



68 IMF, OECD, UN and World Bank, 2011. Supporting the Development of More Effective Tax Systems. A Report to the G-20 Development Working Group by the IMF, OECD, UN, and World Bank, <https://www.oecd.org/ctp/48993634.pdf>.

69 *ibid.*

70 ITU, 2013. Taxing Telecommunication/ICT services: an overview, <https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Taxation%20Study-final-en.pdf>.

71 *ibid.*

72 R.M. Bird and E.M Zolt, 2003. Introduction to Tax Policy Design and Development, <https://www.internationalbudget.org/wp-content/uploads/Introduction-to-Tax-Policy-Design-and-Development.pdf>.

73 V. Tanzi and H. Zee, 2001. Tax Policy for Developing Countries, <https://www.imf.org/external/pubs/ft/issues/issues27/>.

74 International Telecommunications Union (ITU), 2013. Taxing Telecommunication/ ICT Services: An Overview, <https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Publications/Taxation2%20E-BAT3.pdf>. World Bank, InfoDev, IFC and ITU, 2011. Telecommunications Regulation Handbook, <http://documents.worldbank.org/curated/en/527131468338984285/pdf/NonAsciiFileName0.pdf>. Directive 2002/20/EC Of The European Parliament and of The Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive), <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002L0020&from=EN>.

75 IMF, OECD, UN, and World Bank, 2016. Enhancing the Effectiveness of External Support in Building Tax Capacity in Developing Countries. Prepared for Submission to G20 Finance Ministers, <http://www.oecd.org/ctp/enhancing-the-effectiveness-of-external-support-in-building-tax-capacity-in-developing-countries.pdf>.

76 IMF, 2011. Revenue Mobilization in Developing Countries, <https://www.imf.org/external/np/pp/eng/2011/030811.pdf>.

An assessment of the current tax regime on mobile in Kenya against the principles identified in section above, identifies the following characteristics:

- **The current tax system has a high incidence on the mobile sector, limiting the positive externalities generated by the industry.**

As shown in section 2.2, the mobile tax contribution is high in Kenya at 37% of the total market revenue. Consumers pay 57% of this tax contribution, primarily because they are subject to excise duties on mobile services and mobile money. This high tax contribution can undermine the affordability of mobile services, thereby limiting the wider benefits of increased mobile connectivity, productivity, and digital inclusion across the whole economy. Kenya could follow the path of more advanced digital economies where there is a strong correlation between low taxes and improved connectivity levels.⁷⁷

- **Affordability remains an issue due to the excise duty on mobile services.**

Mobile consumers bear 57% of the total sector tax contribution. This is mainly due to the accumulation of excise duties on mobile services and mobile money, which together represent almost a third of the total tax payments (32%). This significantly exceeds the SSA average of 20%, as well as the average in other regions such as Europe (2%) and APAC (8%). Furthermore, the excise rate of 15% on mobile services is currently higher than in other SSA countries, including Madagascar, Malawi and Rwanda (10% in each country).

Finance Act 2018 increased the excise tax on mobile services from 10% to 15% and the excise on mobile money transfers from 10% to 12%. These recent increases have made the tax system appear less stable for the mobile sector. Further excise duty increases could have a negative impact on the affordability of mobile services, making them less accessible to the poorest, who are more sensitive to price increases.

In the case of the mobile money excise, additional increases could also have a negative impact on financial inclusion. This could encourage those making low value mobile transactions to move back

to cash transactions.⁷⁸ Available data suggest that, following the introduction of the excise duty on mobile money in 2013, the growth in mobile phone payments in Kenya dropped from an annual average increase of 1.2% in the period 2010-2012 to an annual average increase of 0.5% in the period 2013-2015.⁷⁹

- **There is scope to make the tax system more conducive to investment in the sector.**

As identified in section 2.2, the corporate tax burden on mobile operators (28%) is above the SSA average (20%). This can be explained, in part, by a high corporate tax rate (30%) which is above the average headline rate in Africa (27.1%). Additionally, while mobile operators in other African countries (including Burundi, Ethiopia, Ghana, Madagascar, Niger, Rwanda, Tanzania and Uganda) can deduct the cost of telecommunication and spectrum licence fees for corporate tax purposes, Kenyan operators do not have this tax deduction. This increases the costs of Kenyan mobile operators who already incur high levels of upfront and ongoing investments in network equipment and infrastructure.

Furthermore, the cascade of regulatory fees, including county deployment fees, also increases the investment costs of mobile operators. In addition, as these fees vary per county, the tax system becomes more complex, thereby increasing the compliance costs for operators.

In addition, as mentioned above, the mobile sector has been subject to recent excise duty increases. A more stable tax environment would increase the certainty needed to plan further investments in the sector. By improving these aspects of the tax system, the tax system could be made more conducive to investment in mobile networks. The investment is required to make further progress in expanding 4G coverage and improving the quality of mobile broadband services in the journey towards universal broadband coverage. This would contribute to achieve the objectives set by Kenya as part of its Digital Economy Blueprint.

• **There is further scope to reduce the complexity of the Kenyan tax system.**

Under the category measuring the ease of paying taxes, the World Bank Doing Business 2020 report ranks Kenya as the 94th out of 190 countries and as the 14th out of 48 countries in SSA.

The Kenyan tax system places a lower administrative burden on taxpayers in comparison to other SSA countries. As shown in Table 4 below, the time to prepare, file and pay taxes in Kenya (180 hours) is almost half time the average seen in the SSA region (280.6 hours). However, this is still above the average for OECD high income countries (158.8 hours).

This suggests that some small improvements could bring Kenya closer in the ease of paying taxes to those in OECD economies. Furthermore, a stable tax system and rates is vital to maintain Kenya as an attractive country for further investment.

Table 4

Kenya's tax index, 2020

Source: World Bank, Doing Business 2020⁸⁰

Indicator	Kenya	SSA	OECD high income	Overall best performer
Tax payments (number per year)	24	36.6	10.3	3 (2 economies)
Time (hours per year)	180	280.6	158.8	49 (3 economies)
Total tax and contribution (% of profit)	37.2	47.3	39.9	26.1 (33 economies)
Post filing index (0-100)	62	55.9	86.7	None in 2018/2019

The above assessment suggests that there is some opportunity for improvements to the Kenyan tax system, including a more balanced excise duty and corporation tax contribution. In the case of excise duty, further increases could put at risk both digital and financial inclusion. Allowing the deduction of telecommunication and spectrum licence fees in computing profits for corporate tax would incentivise further investment into the sector. Finally, the simplification of deployment fees and the stability of the tax system should improve the ease of paying taxes, and act as an incentive to future investment.

77 GSMA, 2019. Rethinking mobile taxation to improve connectivity, <https://www.gsmainelligence.com/research/?file=8f36cd1c58c0d619d9f165261a57f4a9&download>.

78 Africa Growth Initiative, 2019. Taxing mobile phone transactions in Africa Lessons from Kenya, Policy Brief, https://www.brookings.edu/wp-content/uploads/2019/08/Taxing_mobile_transactions_20190806.pdf.

79 *ibid*.

80 Doing Business presents quantitative indicators on business regulations and their enforcement that can be compared across 190 economies and over time. Source: World Bank, Doing Business 2020, <https://www.doingbusiness.org/en/doingbusiness>.



3. Establishing an enabling regulatory and tax environment in Kenya



This section assesses the investment and policy requirements to deliver the Government's digital economy objectives, focusing on the target of achieving universal broadband coverage by 2030. It is recognised that governments have to balance the often-competing objectives of domestic revenue mobilisation and digital development. However, the long-term benefits of digital growth should not be jeopardised by a short-term focus on the ICT sector for domestic revenue mobilisation. To illustrate these risks, this report quantifies the potential effects of a hypothetical increase of the excise duty on mobile services from 15% to 18%. The purpose of this is to demonstrate the potential detrimental impacts that could arise from such an increase; the analysis is not based on planned or enacted policy.

3.1 Incentivising investment to achieve universal broadband coverage

As highlighted in Section 1, the Digital Economy Blueprint notes the importance of broadband as a cornerstone of Kenya's journey towards a digital economy:

“A digital economy for Kenya will therefore be premised on ubiquitous provision of universal broadband access that will drive digitally-enabled services for a digital people and economy.”

Despite efforts to improve access to broadband, broadband penetration in Kenya stood at only 35% in 2018, well below the highest levels in Africa.⁸¹

In the period 2019-2030, more than \$4.1 billion of investment would be required for Kenya to achieve the SDG target of universal broadband coverage by 2030^{82, 83}

Significant investment by both the private and public sector is required to reach the goal of universal affordable and good quality broadband access by 2030.⁸⁴ As shown in Figure 13, the majority of this investment would be in mobile infrastructure, for example deployment of 4G and 5G base stations. Additional investment would also be required to enhance the uptake and user experience of the mobile internet in areas already covered by broadband networks. This includes investment in the development and implementation of policy and regulatory reforms aiming at increasing accessibility, affordability, awareness, safety and security; and in capacity building programs aiming at digital skills development.

⁸¹ Broadband penetration in this instance is defined as average download speed of 3 Mbps. World Bank, 2019. Connecting Africa Through Broadband: A strategy for doubling connectivity by 2021 and reaching universal access by 2030.

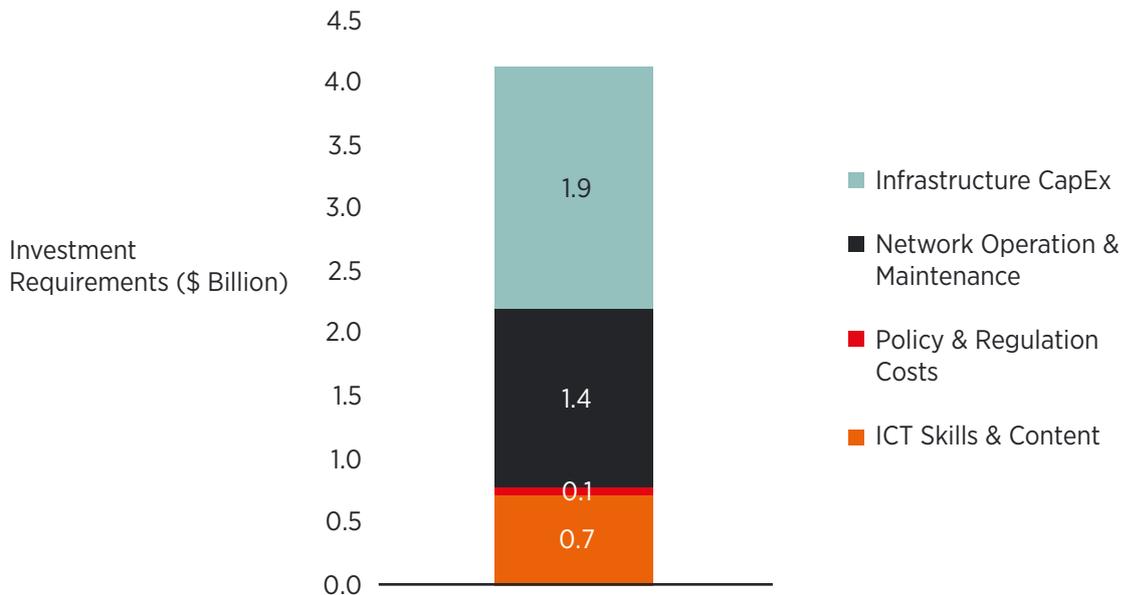
⁸² World Bank, 2019. Connecting Africa Through Broadband: A strategy for doubling connectivity by 2021 and reaching universal access by 2030.

⁸³ These investment requirements are high-level estimations and investment need for Kenya could be higher.

⁸⁴ Universal Broadband Access refers to mobile broadband penetration of 90% of the population aged 10 and over and in this instance is defined as average download speed of at least 10 Mbps.

Figure 13
Investment needed to achieve universal access to broadband connectivity in Kenya by 2030

Source: World Bank, EY analysis


The private sector will need to contribute at least \$2.7 billion of the required investment⁸⁵

Mobile operators in Kenya are expected to invest approximately \$2.7 billion of the required investment. This is around \$247 million annually for the period up to 2030. This includes investment to: (1) extend broadband access through network investment, including the deployment of 4G base stations and fibre (more than \$1.7 billion); and (2) roll out the next generation networks such as 5G, and enhance quality of services (more than \$0.9 billion). On top of this, mobile operators are also expected to invest in digital skills and local content development – in particular in vernacular language – as part of the efforts to increase connectivity and develop digital citizens.

Meeting these investment targets can be aided by ensuring that policies supportive of investment are in place, obstacles to network deployment are removed, and best practices on tax policy are promoted.

The business environment in Kenya can be improved to achieve universal broadband coverage by 2030

The Government’s commitment to the creation of a digital economy is evidenced by the ICT’s sector’s role as an enabler for achieving Vision 2030, and the adoption of the Digital Economy Blueprint. This provides the necessary policy and regulatory framework to support investment by the mobile industry. Adoption of e-government, and the subsequent establishment of broadband connectivity at government offices (including wide area networks and extensions to town and village centres) supports operators by reducing the costs of overall network infrastructure deployment.

Over the past decade, mobile network operators in Kenya have invested significantly to increase network coverage and capacity. Yet, while coverage and uptake has grown, an increasing tax contribution may act as a barrier to achieving universal broadband coverage by 2030.⁸⁶

The Income Tax Act (ITA) allows telecommunication companies to claim wear and tear allowances on telecommunication equipment as well as on acquisition of an indefeasible right of use of a fibre optic cable (tangible assets). However, the ITA does not provide a tax deduction, either as a capital allowance or a revenue expenditure, for telecommunication and spectrum licence fees (intangible assets), despite their significant cost:⁸⁷

- Mobile operators have paid over \$375 million in telecommunication and spectrum licence fees over a period of around 15 years;
- Each of the operators have been required to make a \$25 million payment in licence fees for deploying a wireless broadband LTE network (4G).

These costs are wholly and exclusively incurred by operators to run the business and generate income. Amending the ITA to provide a tax deduction for telecommunication and spectrum licence fees payable by the operators will provide a level playing field with other capital-intensive industries and incentivise the sector to contribute further to the agriculture and manufacturing industries — key sectors under the ‘Big 4’ Agenda, and the economy as a whole. In doing so, Kenya will better align with the practice in other jurisdictions, not only within the East African Community, but also in other African and Commonwealth countries.

In addition, operators in Kenya are currently faced with different levels of county-specific deployment fees.⁸⁸ Since each county is responsible for the set-up of these fees, significant variations are observed among counties. This brings complexity and constitutes a barrier to expanding coverage. Simplification of these fees — for example, through reduced bureaucracy, increased transparency and fewer categories — will reduce the discrepancies / inconsistencies in the cost of the build out of infrastructure among counties. This will help to ease infrastructure roll-out challenges, particularly in rural areas.

Ghana provides an example of taking measures to support deployment in rural areas. The Ghana Investment Fund for Electronic Communications (GIFEC) supports the deployment of mobile services in rural areas in two ways: by acquiring land for site coverage at no cost to the MNO, and by enabling various tax and duty exemptions of up to thirty per cent for imported equipment to encourage reinvestment and enhance coverage extensions.⁸⁹ Similar incentives could be implemented in Kenya to reduce the cost of deployment.

In summary, attaining universal broadband coverage and supporting the affordability of mobile services in Kenya through maintenance of low prices requires an environment conducive to investment. Universal broadband coverage would also be more likely if there were to be a reduction in barriers such as the non-deductibility of telecommunication and spectrum licence fees and a simplification of geographically disparate county deployment fees. Stability and certainty incentivise investment and enable more certainty in business cases, facilitating more rapid rollout.

However, the size of the usage gap in Kenya (64%) suggests that universal broadband must be achieved in conjunction with increasing take-up of mobile internet services. Affordability remains a key barrier to connectivity in Kenya, and is hampered by excise taxes, which increase the cost of using mobile services. In general, the Government taking steps to reduce mobile operator costs should feed through to lower prices and increase the use of infrastructure through higher take-up, creating a virtuous circle in the economy.

85 It has been assumed that the regional cost sharing distribution in the World Bank report applies for Kenya as well. The calculated investment level required from the private sector in Kenya is based on the assumption that the investment across different categories (e.g. ICT skills & Content, Policy and Regulation costs etc.) are comparable across countries. In reality, Kenya may require more investment in particular areas and less in others.

86 World Bank. 2019. Kenya Economic Update: Securing Future Growth - Policies to Support Kenya's Digital Transformation (English). Washington, D.C., World Bank Group, <http://documents.worldbank.org/curated/en/968481572468094731/Kenya-Economic-Update-Securing-Future-Growth-Policies-to-Support-Kenya-s-Digital-Transformation>.

87 Kenyan Mobile Network Operators, 2019. Budget Paper for Licenses.

88 Following the passage of a new constitution in 2010, the devolution has led to the creation of 47 counties.

89 GSMA, 2019. Vodafone and GIFEC Partner to Deliver Connectivity to Rural Communities, <https://www.gsma.com/newsroom/press-release/gsma-vodafone-and-gifec-partner-to-deliver-connectivity-to-rural-communities/>.



3.2 Adverse impacts of increasing mobile excise duties

Governments must balance the competing objectives of domestic revenue mobilisation and digital development. Careful consideration should be given to the wider and long-term economic and social benefits of digital inclusion, versus a short-term focus on the ICT sector for domestic revenue mobilisation. An uncertain tax environment could have detrimental impacts, not only on the sector but on tax revenues and the wider economy in the medium term.

To illustrate this point, this report analyses the potential quantitative impacts of a hypothetical increase in excise duties on mobile operations in Kenya.⁹⁰ The results indicate that such a policy change would have detrimental effects on both the mobile sector and general tax revenues.

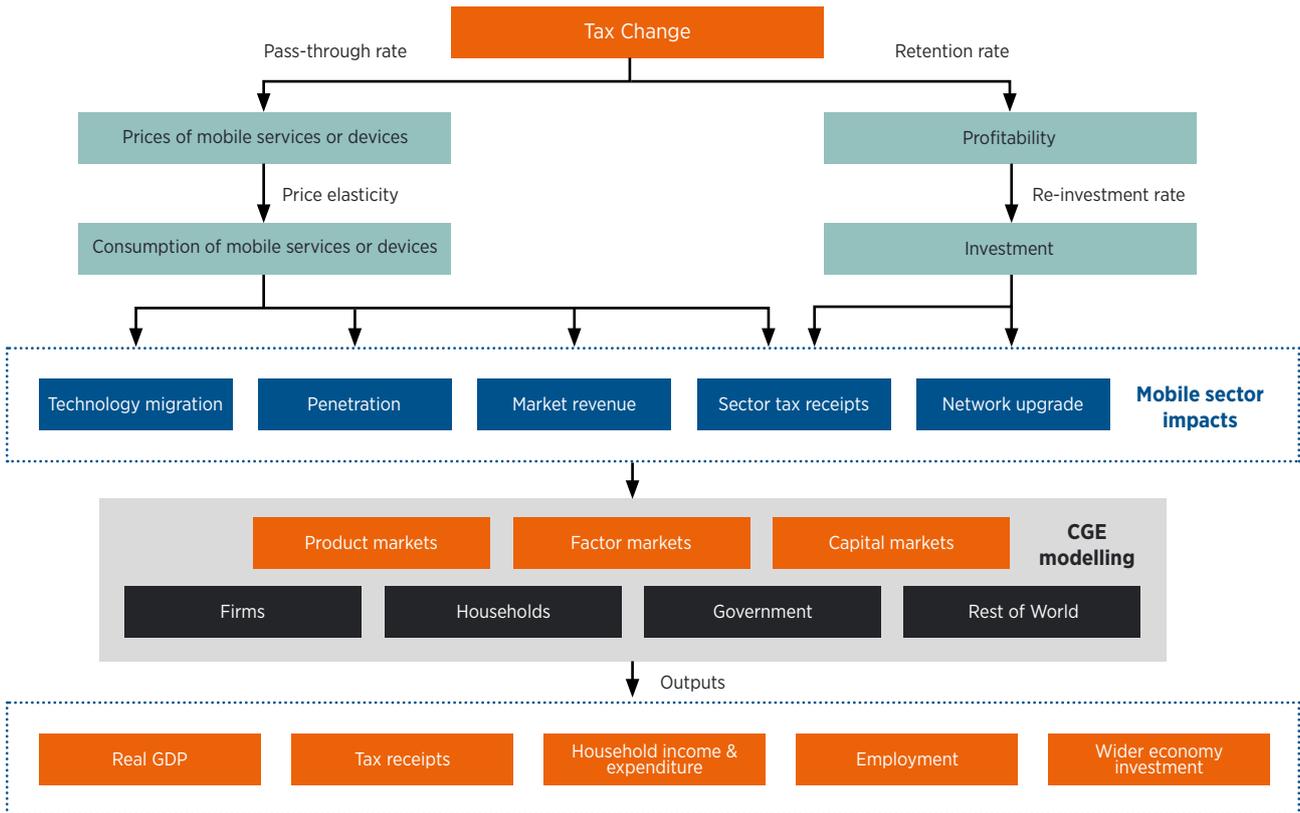
The analysis uses a two-stage modelling process that first estimates the impact on the Kenyan mobile sector, before modelling the impact on the wider Kenyan economy (through Computable General Equilibrium (CGE) modelling).⁹¹

A schematic of the modelling approach used in this study is shown in Figure 14 below.⁹² This illustrates how the approach captures the mechanism by which the tax change would be expected to impact the mobile sector and the wider economy. The increase in excise duty would lead to higher effective prices for consumers and lower profitability for operators, reducing consumption of mobile services and investment respectively. This would have several impacts on the mobile market, including reduced market revenue and slower penetration growth, as well as wider economy effects including reduced employment growth and reduced GDP growth.

Figure 14

Overview of the modelling approach

Source: EY analysis



This section outlines the potential impacts on the mobile sector and wider economy of a hypothetical increase of the excise duty on mobile services from 15% to 18%.⁹³

The resulting tax increase would be partially passed onto subscribers in the form of an increase in the effective price of services. The remainder of the tax increase would be met by a combination of reduced network investment and reduced retained profits.

90 This excludes mobile money operations.

91 CGE models reproduce the structure of the whole economy by mapping all existing economic transactions. They are based on the economic theory of general equilibrium; i.e. that supply and demand for goods, services and factors of production in the economy must be balanced. Economic relationships in CGE models are based on theory and empirical evidence from academic literature.

92 Please see Appendix A for more detail on the methodology approach used. A full description of the quantitative methodology can be found in the accompanying standalone methodology report.

93 The purpose of this is to demonstrate the potential effects should there be such an increase; the analysis is not based on planned or enacted policy.

Table 5 outlines the forecast impacts of the tax increase compared to the baseline scenario.

Table 5

Summary of modelled impacts

Source: EY analysis

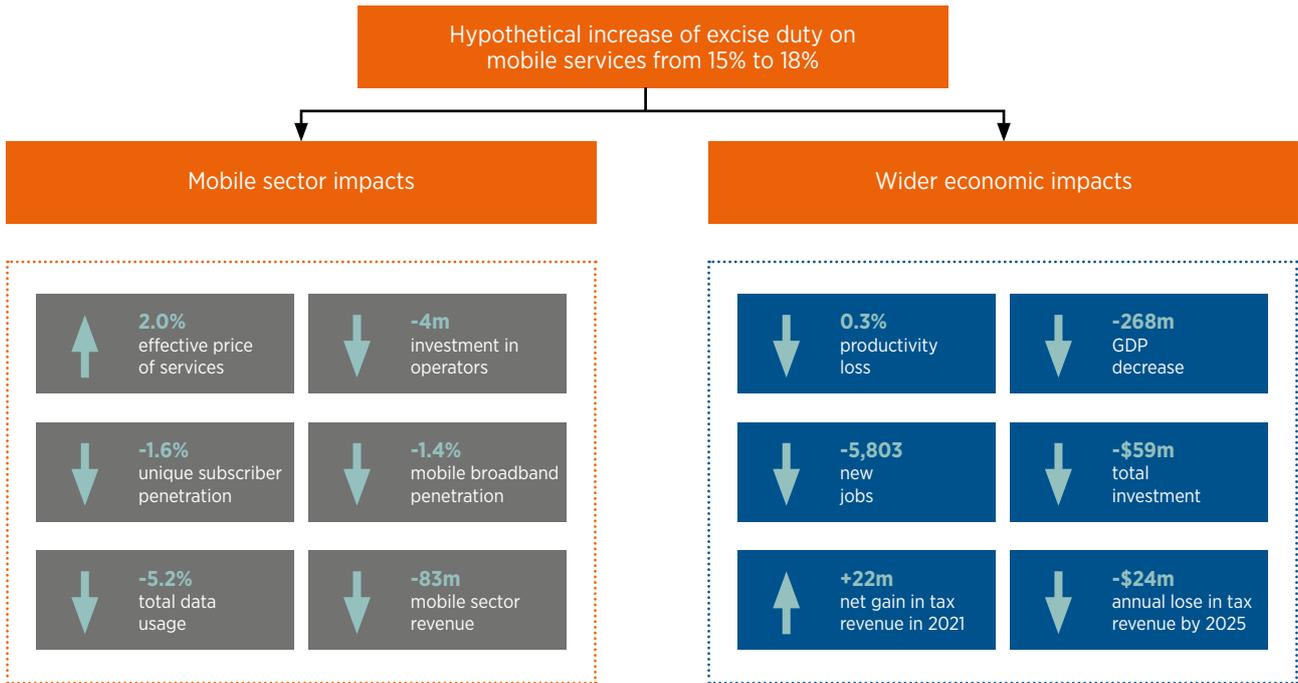
Tax revenue impact	After initially increasing by \$22 million in 2021, tax revenue will be approximately \$24 million lower per annum by 2025 compared with the baseline forecast, due to the contraction of the mobile sector and its negative impact in the wider economy.
Mobile market revenue	Total mobile sector revenue would be \$83 million lower compared with the baseline by 2025. This would be driven by lower revenues from the decreased number of connections, and lower overall usage, which offsets the increase in pricing from the tax reform.
Loss of additional investment by operators	There would be reduced investment of around \$4 million per annum by operators due to the increase in the effective tax rate. This amount could have enabled them to further expand their networks and support migration to 3G and 4G technologies by upgrading the existing network infrastructure.
Change in connections	There would be 950,000 fewer lower unique subscribers, and 1,812,000 fewer mobile connections by 2025. This is equivalent to a decrease of around -1.6 percentage points in unique subscriber penetration (-3.0 percentage points in total connections). Of this loss in connections, 93% would be prepay, and approximately 70% would be classified as low-income. The number of 2G, 3G and 4G connections would all decline, with 3G connections experiencing the most significant decline.
Usage	The increase in the price of mobile services would lead to a 5.2% decrease in total data usage compared to the baseline, while usage of voice and message services would decrease by -3.7% and -3.9% respectively.
Productivity loss	The decrease in unique subscriber penetration of 1.6 percentage points would lead to a 0.27% loss in productivity across the economy, leading in turn to further decreases in output, incomes and expenditure.
GDP decrease	Total GDP would decrease by \$268 million (-0.3%) by 2025 compared to the baseline, as the price and productivity effects lead to a chain reaction of contraction across the economy.
Employment decrease	As a result of the decreased economic activity in the economy, employment would decrease by approximately 5,803 jobs (-0.03%).
Wider investment in the economy	As a result of the increase in intermediate costs for businesses that use mobile services, less resources are made available for investment across the economy. By 2025, this would lead to an annual loss in investment of -\$59 million (-0.39%).
Negative impacts on other sectors	As a result of the decreased level of economic activity, all sectors within the economy will decrease their level of output. Output in the communications sector falls the most (-0.43%), with trade (-0.35%) and other services (-0.35%) seeing the other largest decreases.

The summary of the annual sector-specific and economic impacts of the excise increase against the “baseline” scenario⁹⁴ of no change in current levels of taxation is shown in Figure 15.

Figure 15

Annual impact of an increase in the excise duty of mobile services

Source: EY analysis



94 The baseline scenario reflects the current taxation on the mobile sector, and therefore includes the prevailing regulatory rates of taxation. Please see Appendix A for more detail on the modelling assumptions used in this study and see Appendix B for detailed estimated impacts.

Appendix A

Methodology

This Appendix sets out the key principles underpinning the methodology applied in this study to calculate the potential economic impacts of the tax policy change and assumptions specific to the modelling approach undertaken for Kenya. A full modelling methodology can be found in the accompanying standalone methodology report. This includes the technical details of the modelling methodology, as well as the economic theory underpinning it.

• Two-stage approach

A model of the Kenyan mobile sector, the 'telecoms market model' has been created to calculate changes in the mobile sector resulting from the excise tax increase. This includes the change in subscribers, usage, technology, revenues, profits, reinvestment and expanded capacity in the sector.

The wider economic impacts of the tax policy change is assessed via a CGE model, namely the standard version of the Global Trade Analysis Project (GTAP) model and its associated dataset.⁹⁵

• Price elasticity of demand

The impact of price changes on the consumption of mobile services are captured via estimates of the price elasticity of demand (PED), which measures the change in quantity demanded following a change in price.

To establish relevant price elasticities for Kenya, we have used a set of studies pertaining to low-income countries. Though Kenya is classified by the World Bank as a lower-middle-income economy, 2018 per capita GNI was \$1,710, towards the lower bound of the \$1,006 - \$3,955 lower-middle-income bracket. Thus, it has been assumed that the price elasticities of demand are likely to resemble that of a low-income economy.⁹⁶

The following price elasticities of demand have been assumed in this study:

- Usage elasticities: from -0.72 to -0.91 for voice and from -0.94 to -1.2 for data
- Ownership elasticities: from -0.77 to -0.97 for mobile services
- Technology migration elasticities: from -0.28 to -0.35 for data

• Total factor productivity

It has been assumed that a 1% increase in unique subscriber penetration leads to a 0.17% increase in total factor productivity (TFP).⁹⁷

95 Aguiar, A., Chepeliev, M., Corong, E., McDougall, R., and D. van der Mensbrugge, 2019. The GTAP Data Base: Version 10. *Journal of Global Economic Analysis*, 4(1), 1-27, <https://www.jgea.org/resources/jgea/ojs/index.php/jgea/article/view/77>.

96 World Bank, 2019. Country and Lending Groups, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

97 TFP is a measure for how efficiently an economy uses inputs during its production process.

• Effective pass-through rates

The effective pass-through rate is the percentage of the tax or fee change which is passed through to subscribers in the form of effective prices. Effective prices represent the value for money achieved by subscribers; effective price changes are therefore wider ranging than pure price changes. The effective price subscribers face can be said to increase if they receive a lower quality or quantity of service for the same price. Effective pass-through rates, therefore, do not imply a one-for-one increase in headline prices from higher taxation.

The level of pass-through has been based on the results of macroeconomic modelling in GTAP.⁹⁸ In the modelling, mobile operators are assumed to pass about 88% of the tax increase on to subscribers by increasing the effective prices of mobile services. It has been assumed that absent the tax increase, mobile operators would have been able to retain a share of the additional tax payment, which could have been channelled into increased investment, or retained as higher profits.

This pass-through rate reflects a change in effective prices that takes place over the medium- to long-run as the economy transitions to a new equilibrium state. It does not only capture the immediate price decisions of mobile operators, but also includes the reallocation of resources (due to changes in relative prices/costs), and the effects of improved productivity on average costs. Thus, the pass-through rate has been phased as per Table 6.

Table 6

Evolution of effective pass-through rates in Kenya⁹⁹

Source: GTAP, EY analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Pass-through rate	75.0%	81.6%	88.2%	88.2%	88.2%

⁹⁸ The level of pass-through in GTAP is driven by the underlying sectoral linkages and behavioural relationships in the Kenyan economy.

⁹⁹ GTAP, EY analysis.

- **Reinvestment by mobile operators**

In Kenya, the following assumptions related to reinvestment have been made:

- **Reinvestment rate:** In the modelling, it has been assumed that operators could have reinvested 60% of the portion of the tax increase that they retain (i.e. the proportion that is not passed onto subscribers). The remaining 40% would have been retained as increased profits and to cover increased operating costs of providing more mobile services. This assumption is based on a review of previous studies of the economic impacts of mobile taxation reforms.¹⁰⁰
- **Allocation of reinvestment:** In Kenya, 2G mobile services cover 96% of the population. 3G and 4G coverage is at 88% and 61% respectively at the end of 2019, suggesting that further investment is required to extend the network coverage. If operators were to become more constrained due to a tax increase, then it is assumed that they prioritise more densely populated areas and thus would be more likely to reduce their expansion of the 2G and 3G network in the more rural areas. It is nevertheless assumed that the majority of the reduced investment could result from reductions in other investments that would have targeted quality improvements.

- **Employment and labour mobility**

In Kenya, there is significant unemployment amongst the higher-skilled workforce.¹⁰¹ Therefore, the GTAP modelling approach allows for employment to decrease amongst higher-skilled labour in Kenya, specifically in the “Officials and Managers” category. This means that a decrease of demand in the economy leads to both a decrease in employment and a decrease in wages for higher-skilled workers.

Kenya’s labour market flexibility index score in the World Economic Forum’s Global Competitiveness Report indicated that there is significant flexibility in the labour market. The assumption of perfect labour mobility in GTAP was adjusted, with mobility set to 75%.

- **Mobile sector as a proportion of the telecommunications sector**

The proportion of the telecommunications sector comprised of the mobile sector in Kenya has been estimated at 41%.¹⁰²

- **Regional aggregation in GTAP**

Based on the analysis of the international trade data for Kenya, the following regions have been separated in the GTAP macro analysis: Kenya, China, India, the European Union, the Middle East and North Africa (MENA), the Rest of Sub-Saharan Africa (SSA), and the Rest of the World.¹⁰³

¹⁰⁰ See, for example, Gilchrist and Himmelberg, 1995. Evidence on the role of cash flow for investment; and Katz, 2012. Assessment of the economic impact of taxation on communications investment in the United States.

¹⁰¹ Unemployment by education level, ILOSTAT Labour Force Survey.

¹⁰² As the GTAP macro model has no mobile sector as a separate industry, the share of the mobile sub-sector has been calculated based on data from GTAP and GSMA Intelligence.

¹⁰³ Based on analysis of international trade data for Kenya.



Appendix B

Detailed modelling outputs



This Appendix sets out the detailed estimated mobile market and economic impacts of the tax policy change, compared to a baseline case of no tax reform.

- **Increase in excise duty on mobile services**

The implications of a hypothetical increase in excise duties for mobile operations (excluding mobile money) from 15% to 18% are modelled. The tax to be increased is ad valorem. The reform would take place from 2021. Table 7 and Figure 16 detail the modelled impacts.

Table 7**Annual impact of an increase of the excise tax on mobile services on selected variables¹⁰⁴**

Source: EY analysis

Mobile sector impacts	2021	2022	2023	2024	2025
Change in effective price of services ¹⁰⁵ vs baseline	1.36%	0.24%	0.19%	0.09%	0.09%
Cumulative price change vs baseline	1.36%	1.60%	1.79%	1.87%	1.96%
Incremental connections (total)	-0.45m	1.08m	-1.36m	-1.59m	-1.81m
Incremental unique subscribers (total)	-0.24m	-0.57m	-0.72m	-0.84m	-0.95m
Incremental connections (3G and 4G) ¹⁰⁶	-0.35m	-0.89m	-1.17m	-1.41m	-1.65m
<i>of which technology migration</i>	-0.10m	-0.25m	-0.31m	-0.36m	-0.40m
Incremental connections by low income subscribers	-0.31m	-0.74m	-0.94m	-1.10m	-1.26m
ARPU (total) vs baseline	0.7%	0.3%	0.3%	0.3%	0.4%
Change in mobile penetration (connections)	-0.8%	-1.9%	-2.4%	-2.7%	-3.0%
Change in mobile penetration (unique subscribers)	-0.4%	-1.0%	-1.3%	-1.4%	-1.6%
Change in mobile penetration (unique mobile broadband subscribers)	-0.3%	-0.8%	-1.1%	-1.3%	-1.4%
Data usage vs baseline	-1.7%	-3.7%	-4.4%	-4.9%	-5.2%
Data usage per connection vs baseline	-0.9%	-1.9%	-2.2%	-2.4%	-2.5%
Change in market revenue (total)	-\$2m	-\$49m	-\$63m	-\$74m	-\$83m
Change in market revenue (total) vs baseline	-0.1%	-1.6%	-1.9%	-2.2%	-2.4%
Change in investment	-\$7m	-\$5m	-\$4m	-\$4m	-\$4m
Static tax impact ¹⁰⁷	\$47m	\$48m	\$50m	\$51m	\$53m
Impact on mobile sector taxation	\$47m	\$30m	\$25m	\$23m	\$20m
Wider economic impacts^{108, 109}	2021	2022	2023	2024	2025
Full impact on communications sector taxation	\$22m	\$19m	\$18m	\$17m	\$17m
Receipts from all other sectors	-\$0m	-\$28m	-\$34m	-\$39m	-\$41m
Total tax receipts	\$22m	-\$9m	-\$16m	-\$22m	-\$24m
<i>Cumulative total receipts</i>	\$22m	\$13m	-\$3m	-\$25m	-\$48m
Real GDP	-\$6m	-\$180m	-\$222m	-\$255m	-\$268m (-0.30%)
Employment	Impact estimated for 2025 only				-5,803 (-0.03%)
Household income	Impact estimated for 2025 only				-\$285m (-0.33%)
Household expenditure	Impact estimated for 2025 only				-\$232m (-0.33%)
Investment	Impact estimated for 2025 only				-\$59m (-0.39%)

104 Some figures do not sum due to rounding.

105 The reported change in price refers to an effective price as opposed to a headline price.

106 The incremental number of 3G and 4G connections includes both newly joining 3G and 4G subscribers and those migrating from 2G to mobile broadband enabled technologies.

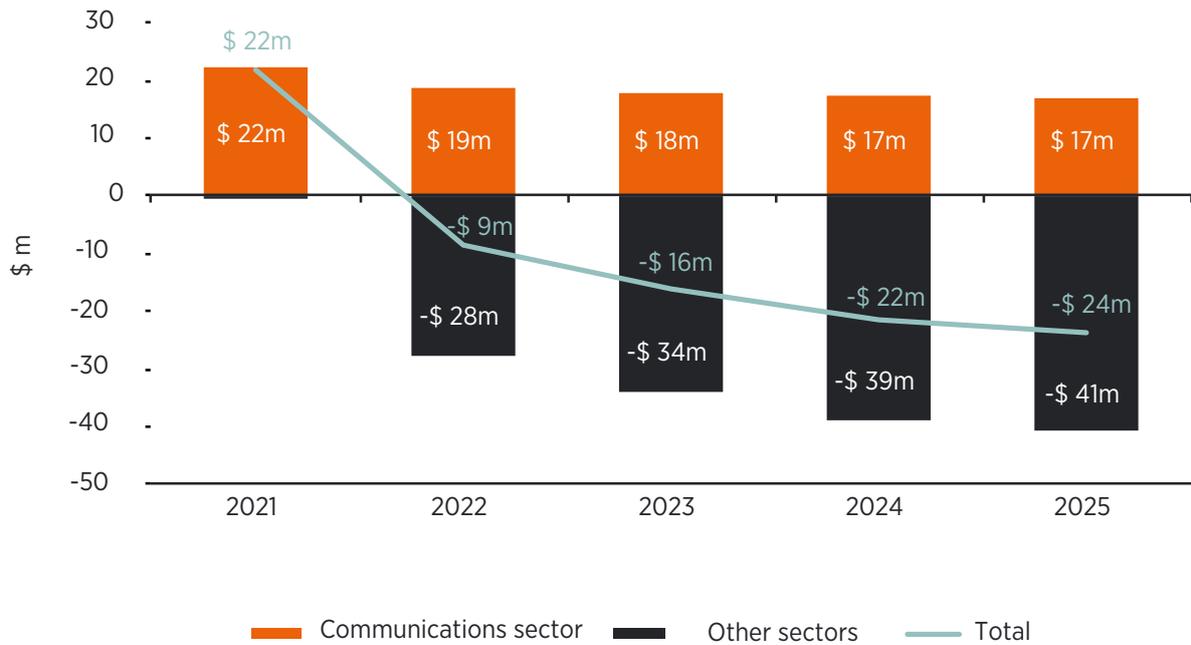
107 This is the initial direct benefit to the Exchequer, before behavioural change in the sector and the economy; overstates the true benefit.

108 For some of the variables included below, the impact has been calculated as at 2023.

109 The timing of macroeconomic impacts is based on the lagged manner in which the productivity benefits would occur.

Figure 16
Increase of excise tax on mobile services – annual impacts on tax receipts

Source: EY analysis





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