A lifeline, not a luxury

Accelerating 4G access in Sub-Saharan Africa

vodafone vodacom Safaricom

In partnership with

Caribou Digital

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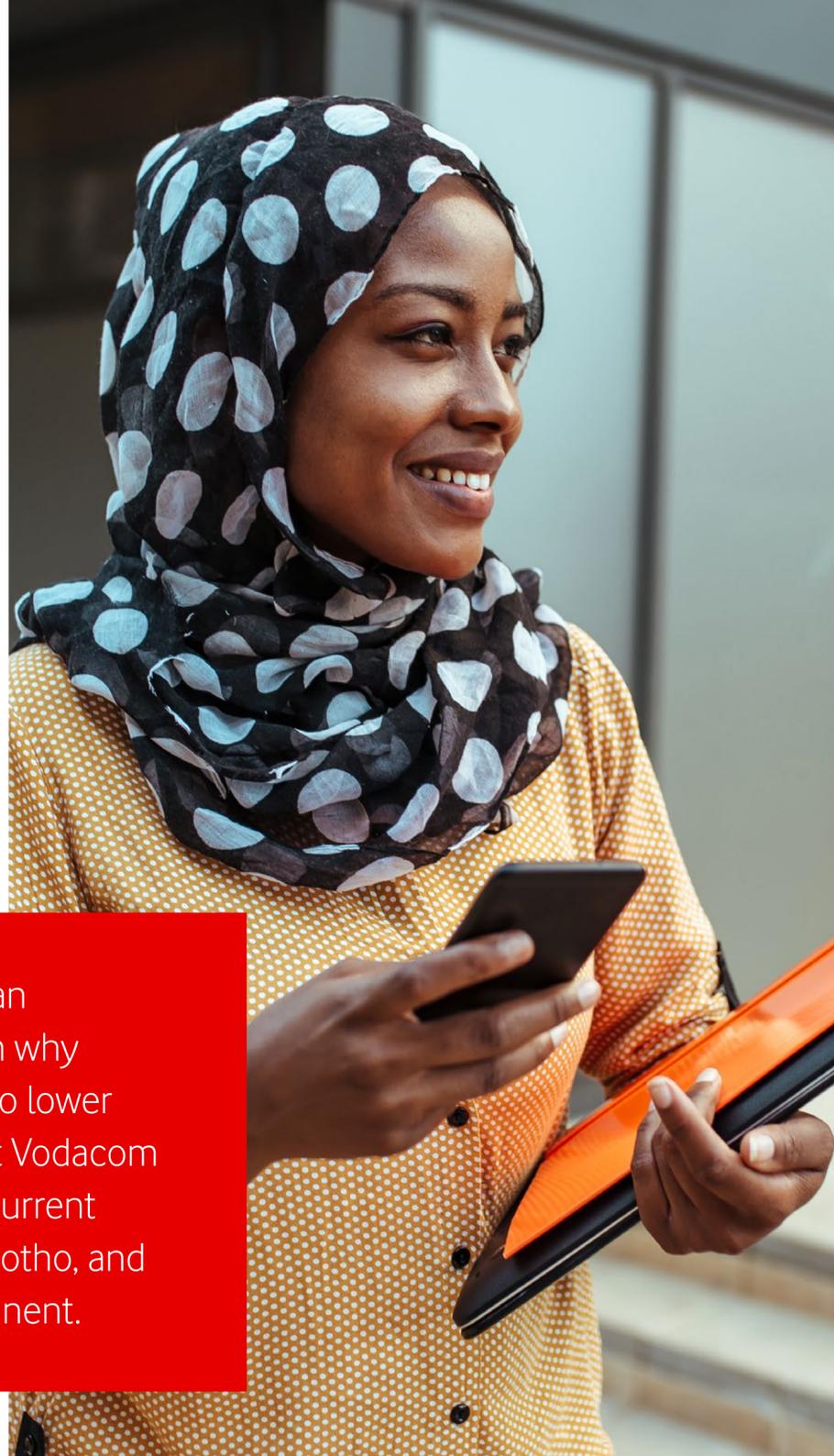# Inclusive digital access unlocks economic potential

By Shameel Joosub, CEO Vodacom Group

We know that connecting everyone on the continent to digital services is one of the greatest challenges of our time. To achieve our objective to connect all communities, regardless of socio-economic status, the Vodacom Group, Vodafone and Safaricom commissioned this research report entitled: "A lifeline, not a luxury: accelerating 4G for sub-Saharan Africa" as part of our Africa.connected research series. The research, which is the second report of six, seeks to identify the most prominent barriers to digital access across sub-Saharan Africa and put forward remedies to enhance digital inclusion. Key to this is how we address the experience of those accessing the internet — not as a luxury, but as a lifeline.

We are seeking to map out recommendations for how multi-stakeholder partnerships can unlock a digitally inclusive future in Africa. These recommendations cover pragmatic solutions for the widespread roll-out of high-speed 4G internet connectivity, with the aim of achieving not only far-reaching 4G coverage but of enabling universal 4G usage, too. To action this usage goal, stakeholders must address the affordability of 4G devices and connectivity, while building skills, offering financing, and supporting digital start-ups to drive 4G demand. These actions will encourage user migration to 4G from older technologies, enabling operators to re-farm 2G / 3G spectrum. Driving higher 4G usage, as our research shows, will contribute significantly to unlocking broader economic growth across Africa.

The economic value of increased 4G roll-out cannot be ignored. Findings from the International Finance Corporation suggest that expanding 4G penetration across Africa by just 10% could boost GDP per capita by 2.5%. However, underpinning this paper's call to shift focus from coverage to usage is this finding from the Tony Blair Institute: only 10% of the African population living in a 4G-covered area is using 4G. This means that meeting the need for better connectivity goes beyond infrastructure.

There are many barriers hampering the migration to 4G, one being unaffordable 4G-enabled devices. While mobile is the primary form of access to digital services in Africa, many are still using 2G-enabled phones, with the consumer base growing rapidly. Vodacom's pledge to democratise internet access for over 500 million people across our markets is one we are tackling by focusing on accessibility of devices, including smart feature phones. First, it's about bringing down the price-point barrier of the device itself: launching cheaper internet-enabled phones and using our power as a global business to negotiate better rates for customers. Second, is to make handset financing available for the many citizens who wouldn't have device access if they needed to pay for the entire cost upfront. Third, we need to leverage partnerships across the entire ecosystem; working with stakeholders in the private and public sectors — not only in the telecommunications industry — to help us source affordable devices and assist with the subsidisation of those devices to make it possible for more citizens to access the internet.

Addressing the need for affordable devices has been an important part of our business journey and the reason why the Vodacom Group launched a programme in 2014 to lower smartphone prices across Africa. Sales of the low-cost Vodacom Smart Kicka have contributed towards achieving the current 60% smartphone penetration rate in South Africa, Lesotho, and Mozambique; the highest rate across the African continent.

Offering various solutions to reduce connectivity costs will remain critical to achieving our shared end goal. In addition to our zero-rated e-School platform, Vodacom has also zero-rated thousands of essential services websites and significantly reduced data prices. The successful uptake of our zero-rated ConnectU platform highlights a need to mitigate connectivity cost barriers to essential-services access. Since its May launch, the Jobseekers campaign on ConnectU has attracted over 400 000 customers. Our research shows that accessing job opportunities online can reduce the time it takes for the user to get a job by seven months when compared to those using offline alternatives.

In terms of access, the benefits of fostering widespread 4G connectivity and usage in Africa are apparent. Once you've helped place a smartphone in a person's hand, what you're doing is opening a world of opportunity that the internet brings, with access to mobile money platforms like M-Pesa or the VodaPay super app. Opportunities include enabling small business owners to market their products and services beyond their geographical borders; promoting financial inclusion by enabling users to invest and transfer money quickly and efficiently; democratising access to education through virtual classrooms, and more.

Internet access is transformational: it empowers citizens to meaningfully contribute to economies, and shape sustainable economic futures. How we go about effectively achieving democratised 4G access is the crucial question this paper tackles. The responsibility for enabling inclusive connectivity, and having this experience streamlined through 4G, lies with us all: the call for partnerships across the private and public sectors is of critical importance if we are to build sustainable, productive societies. 4G connectivity is the gateway to making this happen.

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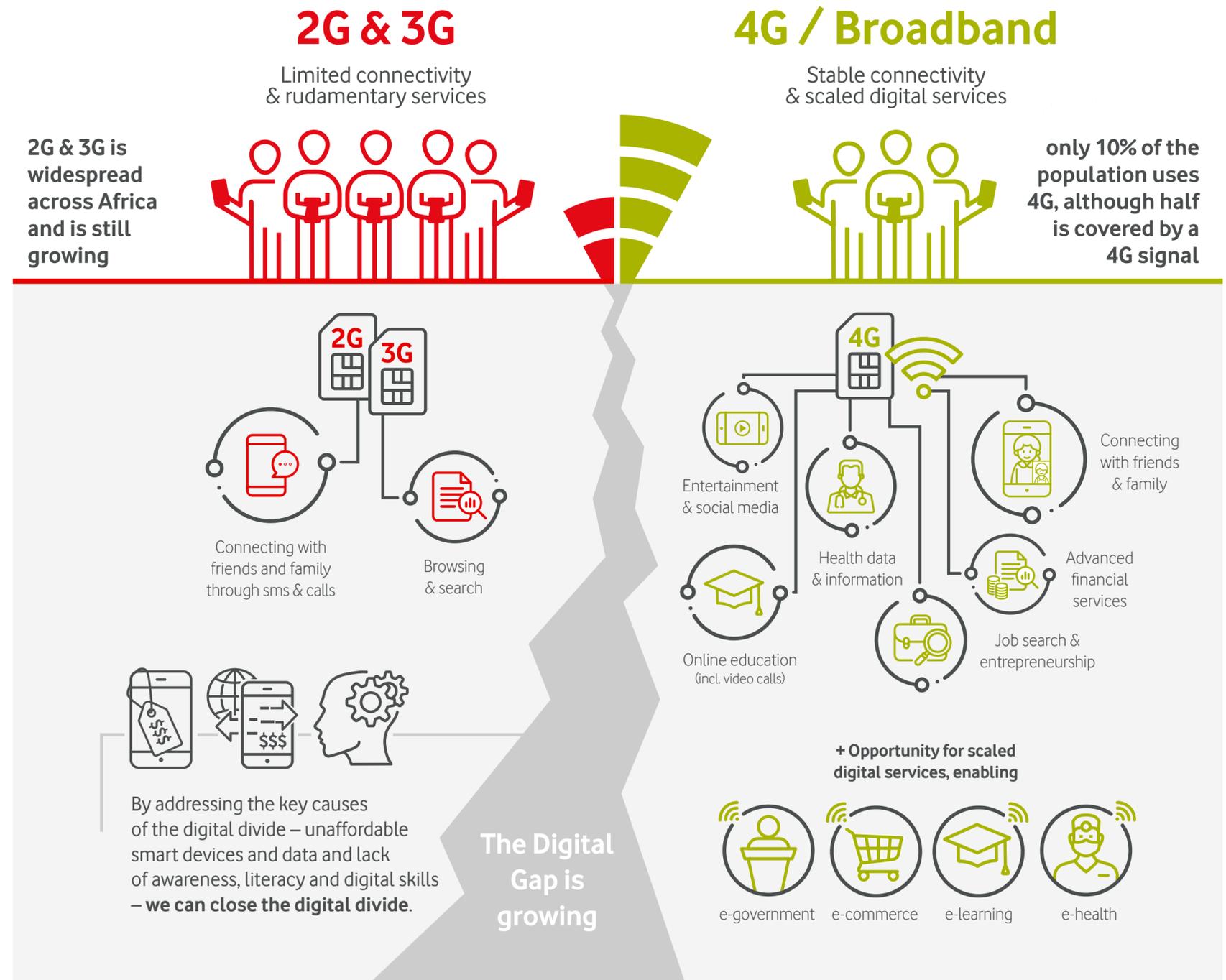
Executive summary

The COVID-19 pandemic has shown how vital mobile internet use is.
It has also revealed a digital divide across Africa. This divide goes beyond being connected or unconnected. It divides those who are connected to rudimentary services through 2G from those who have access to the breadth of the internet offered by 4G. It divides those who have the digital skills to use broadband from those who do not. It divides those who can consistently afford connectivity from those who must use work-arounds to get online. During the pandemic an affordable smartphone with a fast, low-cost connection was no longer a luxury. It was a lifeline, essential for everything from accessing health data to following school classes, from finding a job to paying bills — not to mention connecting with friends and family.

4G coverage reduces poverty

4.3%
for extreme poverty

2.6%
for moderate poverty
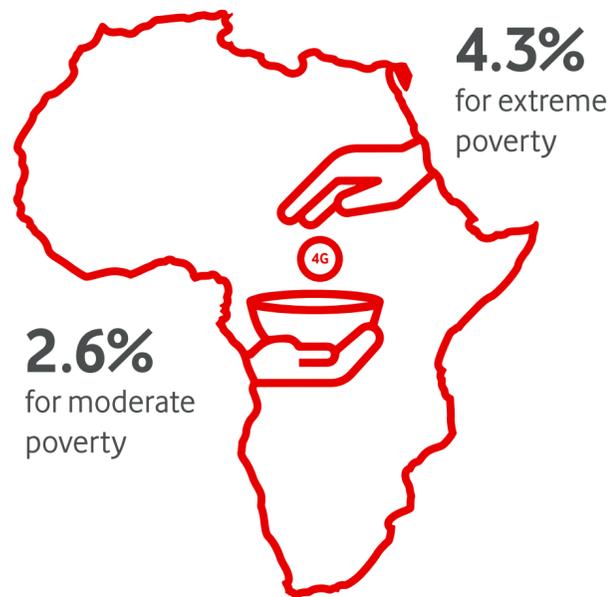
For as long as the digital divide exists, Africa will struggle to offer scaled digital services like e-learning, e-government, e-commerce, or e-health. All of these rely on fast, video-capable, interactive and stable 4G or broadband connections. But while 2G and 3G is widespread across Africa, 4G usage lags behind. The benefits of 4G are clear. **A World Bank study has found that 4G coverage can cut poverty by up to 4.3 percentage points.**[1] The International Finance Corporation (IFC) estimates that a 10% boost to mobile broadband penetration in Africa could lift GDP per capita by 2.5%.[2]

2G & 3G
Limited connectivity & rudamentary services

2G & 3G is widespread across Africa and is still growing

Connecting with friends and family through sms & calls

Browsing & search

By addressing the key causes of the digital divide — unaffordable smart devices and data and lack of awareness, literacy and digital skills — **we can close the digital divide.**

The Digital Gap is growing

4G / Broadband
Stable connectivity & scaled digital services

only 10% of the population uses 4G, although half is covered by a 4G signal

Entertainment & social media

Health data & information

Connecting with friends & family

Online education (incl. video calls)

Advanced financial services

Job search & entrepreneurship

+ Opportunity for scaled digital services, enabling

e-government

e-commerce

e-learning

e-health

Executive summary

Boosting 4G adoption will create a virtuous circle. Increased 4G adoption will create more demand for digital services, driving better quality and improving digital skills of users, which will ultimately drive economic benefits and improve affordability of connectivity and devices. Building 4G infrastructure is important but it is not enough to spark this growth. Other supply and demand factors must be addressed to make smartphones more accessible across partnership-based Africa. We have four key recommendations to build this virtuous circle and bring 4G to everyone in Africa:

Based on current trends, an additional 300 million people in Africa will come online by 2025. However, they will not benefit fully from new digital services unless stakeholders work together to make high-speed internet through 4G a reality. We need pragmatic and practical solutions to meet Africa's digital targets. This paper sets out recommendations to unlock a more digital African future.

+300m people online by 2025

1 https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf

1.
Make 4G enabled devices more accessible

2.
Invest in the demand for 4G services

3.
Provide targeted financing to lower connectivity costs for vulnerable groups

4.
Boost 4G adoption by refarming 2G spectrum

4

Executive summary | 4G usage across Africa | State of play | Economic and social benefits | COVID-19 and 4G | Reaching universal 4G usage | 1. Improve accessibility | 2. Invest in demand | 3. Lower connectivity costs | 4. Boost 4G adoption | How to unlock more benefits

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4G usage across Africa

The state of play

Many in Africa only access the internet through mobile phones. In recent years, telecommunication networks across the continent have evolved rapidly from older technology (2G and 3G) to newer 4G, which offers broadband connectivity. In sub-Saharan Africa, 3G coverage reached 75% in 2019, compared to 63% in 2017. 4G doubled to nearly 50%. According to the Global System for Mobile Communications Association (GSMA), 2019 marked the first year where there were more mobile broadband connections (in this case, defined as 3G and 4G) than 2G in sub-Saharan Africa.[2]

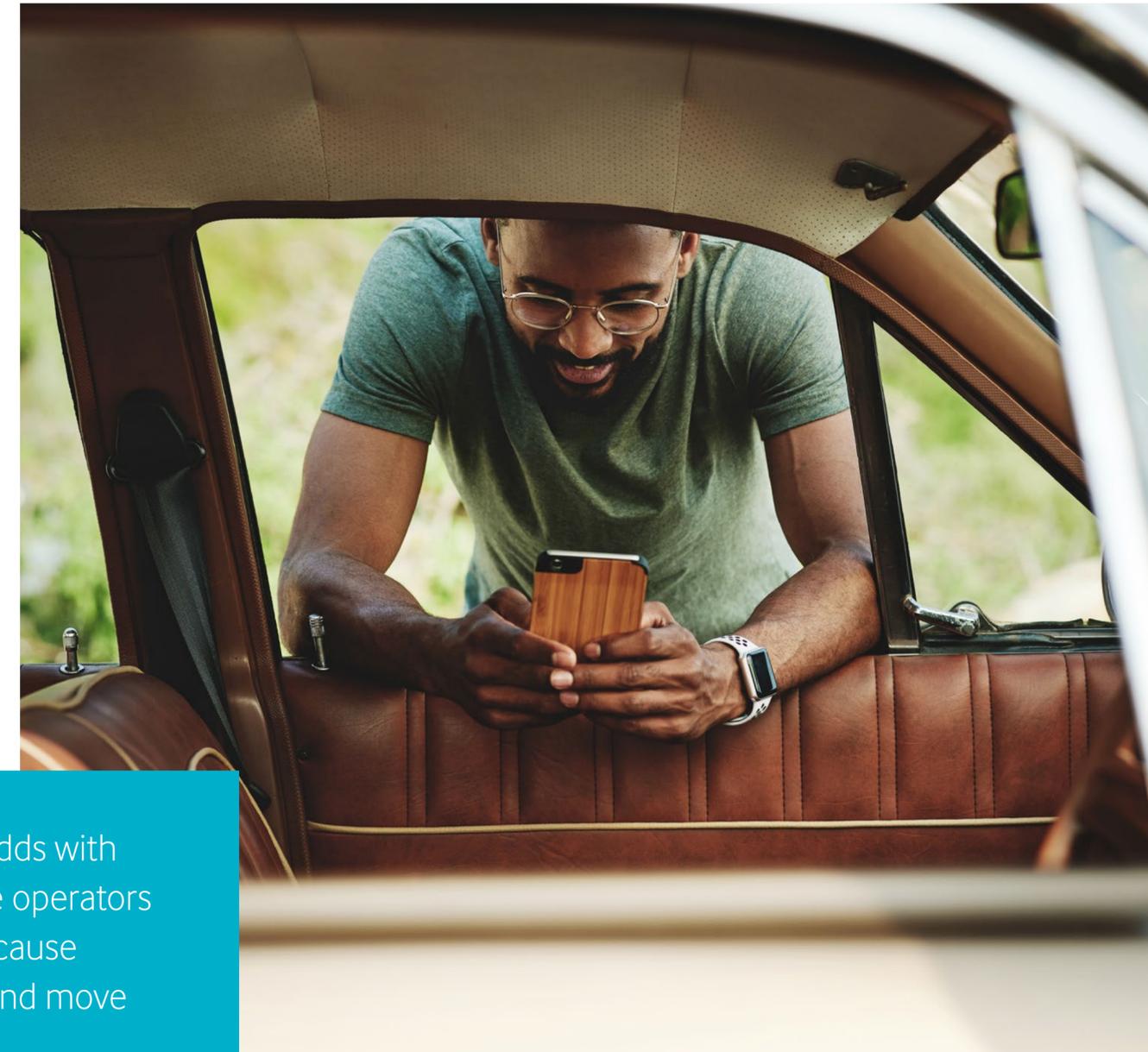However, across Africa, many still use 2G-enabled phones and millions of new 2G users are being added every year.

There are many barriers hampering the migration from 2G to 4G, including a lack of awareness, digital skills, unaffordable devices, and data costs.

These challenges contribute to the already existing digital divide: between those using old and inferior technology and those with access to newer and superior technology.

Mobile network operators across the continent continue to make significant investments in 4G coverage, but too often the infrastructure is not fully utilised.[3] Expanding coverage to underserved areas does not guarantee access; according to the Tony Blair Institute, **in sub-Saharan Africa, only 10% of the population is using 4G, although half is covered by a 4G signal.[4]**

Continued growth in 2G in Africa is at odds with other more developed countries, where operators are able to shut down 2G networks (because people are no longer reliant on them) and move users to 4G and 5G networks.

5

Executive summary | **4G usage across Africa** | State of play | Economic and social benefits | COVID-19 and 4G | **Reaching universal 4G usage** | 1. Improve accessibility | 2. Invest in demand | 3. Lower connectivity costs | 4. Boost 4G adoption | **How to unlock more benefits**

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Why 4G offers so much more than 3G and 2G

4G improves on 3G and 2G in terms of higher speeds of data access, lower response time in sending and receiving data, greater functionality, and better security.[5] This opens up users to the breadth of opportunities offered by the internet. For example, a student in Kenya would not be able to access learning content in video form with 2G. The ongoing COVID-19 pandemic forced millions of students out of physical classrooms and into virtual spaces. In many parts of Africa, a student could fall further behind if not provided with both faster connections and affordable devices to support their e-learning journeys.
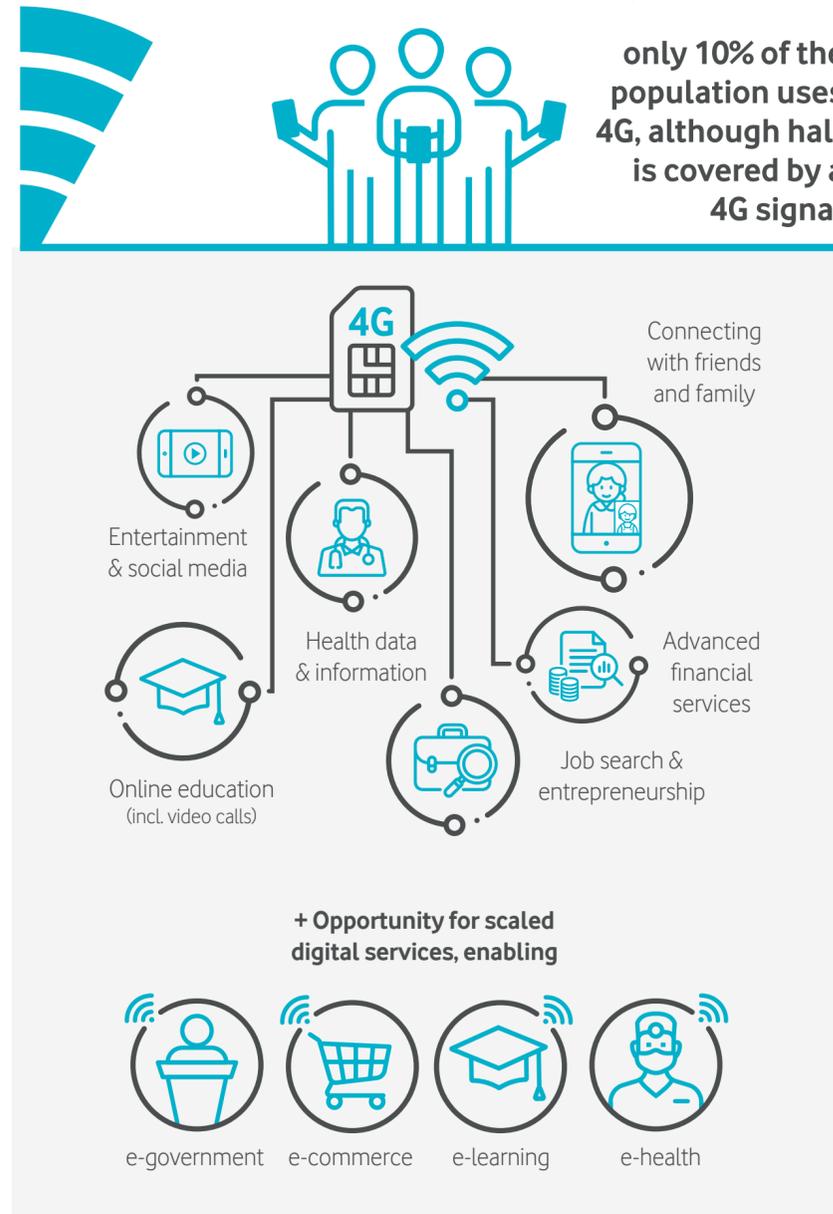
Education is just one example; as services move online, vast numbers of 2G and 3G users could be behind. Fast and clear video, which only 4G can support, is particularly important, as it allows users to access video-based services. The power of connecting with friends and family cannot be underestimated either. Not only is it essential for mental health and a sense of community, but research shows that this is how people best learn digital skills[6]

5G, which promises speeds up to 100 times faster than 4G, has been launched in a few African countries, including Lesotho, Kenya, and South Africa. However, it does not appear viable for mass market needs in the short term, as 5G device cost remains high.[7] Therefore, moving beyond 2G and 3G to 4G is a meaningful and achievable target.

4G / Broadband

Stable connectivity & scaled digital services

only 10% of the population uses 4G, although half is covered by a 4G signal

4G

Connecting with friends and family

Entertainment & social media

Health data & information

Advanced financial services

Online education (incl. video calls)

Job search & entrepreneurship

+ Opportunity for scaled digital services, enabling

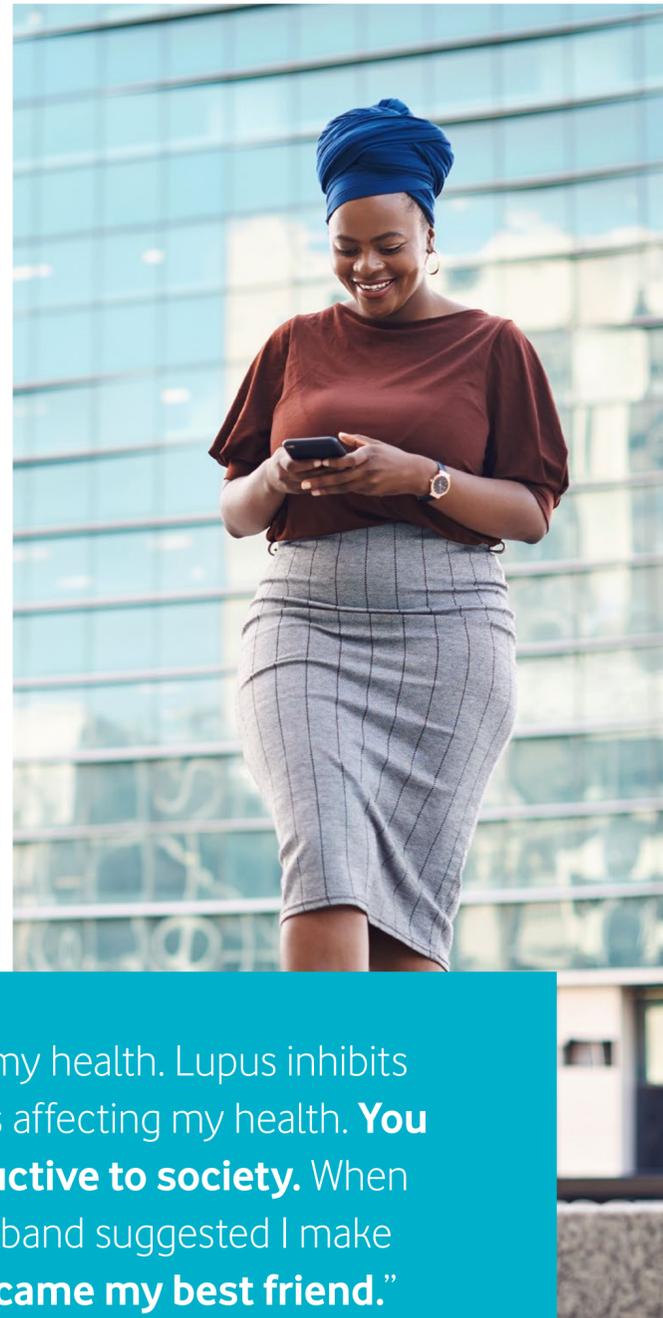e-government   e-commerce   e-learning   e-health

2G and 4G usage in Ghana

Even where 4G coverage is available, many users continue to access basic services through 2G only (e.g., via SMS). A study of 1000 smartphone devices (across all networks) in Ghana in 2020 found that 2G and 3G usage was still much higher than 4G, while in rural areas 2G was used at a rate two times higher than in urban areas.

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The economic and social benefits of 4G

4G improves quality of life both economically and socially. A study by the ITU (International Telecommunication Union) found that **expanding mobile broadband penetration in Africa by 10% would increase GDP per capita by 2.5%.**[9]

Another study conducted by the World Bank in Nigeria compared household surveys on living standards between 2010 and 2016 against data from mobile operators on the deployment of broadband (3G and 4G) coverage. The study found that 3G and 4G had the potential to reduce poverty among households and also propel economic prosperity through increased labour force participation.[10] The study also calculated that **4G coverage cut the proportion of households below the poverty line by about 4.3 percentage points for extreme poverty and 2.6 percentage points for moderate poverty** (one year after gaining 3G or 4G coverage).

"The reason I became an online entrepreneur is because of my health. Lupus inhibits a lot of my movement but the more I sat idle the more it was affecting my health. **You need to have a sense of being productive, and be productive to society.** When I was at home, friends would visit and bring cake and my husband suggested I make cakes. I had to look at so many tutorials online. **YouTube became my best friend.**"

- Dorcas Mutheu Mallei

4G empowers women

Social commerce (entrepreneurship through social media) is steadily rising across the continent and is providing increasing opportunities for women. Dorcas, who lives in Nairobi, has lupus, an autoimmune disease.[11] She began selling cakes through social commerce (selling on WhatsApp, Instagram, and Facebook). The Internet provided Dorcas with inspiration and through YouTube tutorials she improved her skills so to build a successful business. However, when COVID-19 hit, demand for cakes fell as gatherings decreased. With her cake business suffering, she pivoted to selling shoes online and sold out of her stock within one week of trading. Dorcas believes that without an internet connection and a mobile phone it would have been impossible for her to build any of her businesses.

The IFC says that the number of online shoppers grew annually by 18% between 2014 and 2020 across Africa, against a global average of 12%. It estimates the value of the sector across Africa at US$84 billion by 2030 due to the demand for online shopping (catalysed by the COVID-19 pandemic). For many women like Dorcas, social commerce affords them flexibility and the opportunity to overcome barriers and participate in the labour force.[12] Yet women also proportionately experience higher barriers to connectivity compared to men.[13]

As governments and the private sector look to bridge the digital divide, special measures must be put in place to ensure that women are not digitally excluded. These could range from creating digital services specifically for women, to closer cooperation between Ministries of Digitalisation and Ministries for Women or Social Affairs to ensure gender considerations are mainstreamed into any digital inclusion policies.

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How COVID-19 made the case for 4G

A digital divide existed in Africa long before the COVID-19 pandemic.[14] However, as businesses, courts of law, educational institutions, hospitals and medical centres, financial institutions, places of worship, and so many other lifelines closed their physical buildings during the pandemic, it became clear that having a fast internet connection was becoming a necessity.

As more and more services moved online, governments, the African Union and the World Bank set agendas to prioritise and accelerate digital transformation across Africa.[18] These digital transformation strategies envision accessible, affordable, and secure mobile broadband access across demographics, gender, and geography by 2030.

During the first 2020 lockdown period Vodacom reported a 40% traffic increase on mobile networks

40%

250%

and a 250% traffic increase on fixed networks, across its sub-Saharan Africa markets.[15]

More and more people access health services and information online, with many relying on communication channels such as WhatsApp.

Mobile money providers have also added more features to minimise in-person interactions.[16]

Small businesses have transitioned to social commerce and e-commerce.[17]

The pandemic showed that those who can access good connectivity will continue to work, conduct business, learn, and socialise online. The pandemic gave a glimpse of what this broadening digital divide would look like. Students without access will find it hard to catch up with their more digitally connected peers. Small businesses unable to take advantage of digital tools will suffer without access to digital markets. For unemployed people, access to online gig platforms could provide new work opportunities—but only if they can get online with a better connection and device.

Unfortunately, COVID-19 has further exacerbated the price gap between advanced and basic mobile devices, also increasing the complexity of the digital divide issue in Africa. Costs for 4G devices have skyrocketed as the demand for electronic components rapidly rose. Logistics issues caused by the pandemic (scarcity of flights and rising logistics costs) also contributed to the rising costs of 4G devices, making those products less accessible for the mass market in Africa.

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Reaching universal 4G usage in Africa

Multilevel-partner interventions are needed on both the supply and demand side to achieve digital inclusion and enable the economic and social gains that 4G connectivity brings. Only by addressing both sides of the market, and with the participation of all stakeholders, can we create a virtuous circle that makes 4G more accessible.

This report offers four key partnership-led recommendations to make this virtuous circle a reality and make 4G more accessible across the African continent.

Recommendations:

1. Make 4G enabled devices more accessible

2. Invest in the demand for 4G services

3. Provide targeted financing to lower connectivity costs for vulnerable groups

4. Boost 4G adoption by refarming 2G spectrum

Broader adoption = increased affordability
As 4G becomes dominant, the volume effect of network usage will reduce the cost of access and devices

Increased 4G adoption
Affordable devices and refarmed 2G spectrum increase 4G adoption

Moving from 2G to 4G improves digital economies

Increased economic benefit
Increased usage helps drive broader economic benefits from digital commerce, education etc.

Increased usage of services
Faster data access accelerates the creation and adoption of better digital services in the public and private sector

Skills development
Broader exposure to services enables digital skills development to encourage usage

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Governments, Mobile Network Operators (MNOs) (mobile network operators), and all actors of the value chain (including device manufacturers, IPR owners, and supranational entities) need to work together to lower 4G-enabled smartphone prices.

# 1. Make 4G enabled devices more accessible

Lower device costs

Lowering the cost of devices is key to increasing access to smartphones. The Alliance for Affordable Internet estimates that a smartphone priced at US$62 could cost almost 63% of the average monthly income across Africa, while a similarly priced smartphone costs only around 12% of the average monthly income in the Americas[19]:

At the same time, 2G phones bought from Chinese factories at around US$5-8 are resold in Africa for US$15–25. In South Africa alone, Vodafone internal data estimates that six million 2G devices are sold every year, and about 14 million customers are still using 2G phones.

Adding new users on 4G or above allows new users to instantly access the breadth of the internet, compared to the basic services offered by 2G. If users become reliant on 2G, this also makes refarming (reallocating spectrum) difficult. This in turn makes 2G networks more congested and 4G underused.

However for users to move to 4G, devices need to become more affordable. By optimizing all value chain aspects, we estimate we can move smartphone costs down to about US$40-42.[20] This is clearly very far from sufficient to bridge the gap against the average US$5-8 2G phones that most people can currently afford without additional policy measures.

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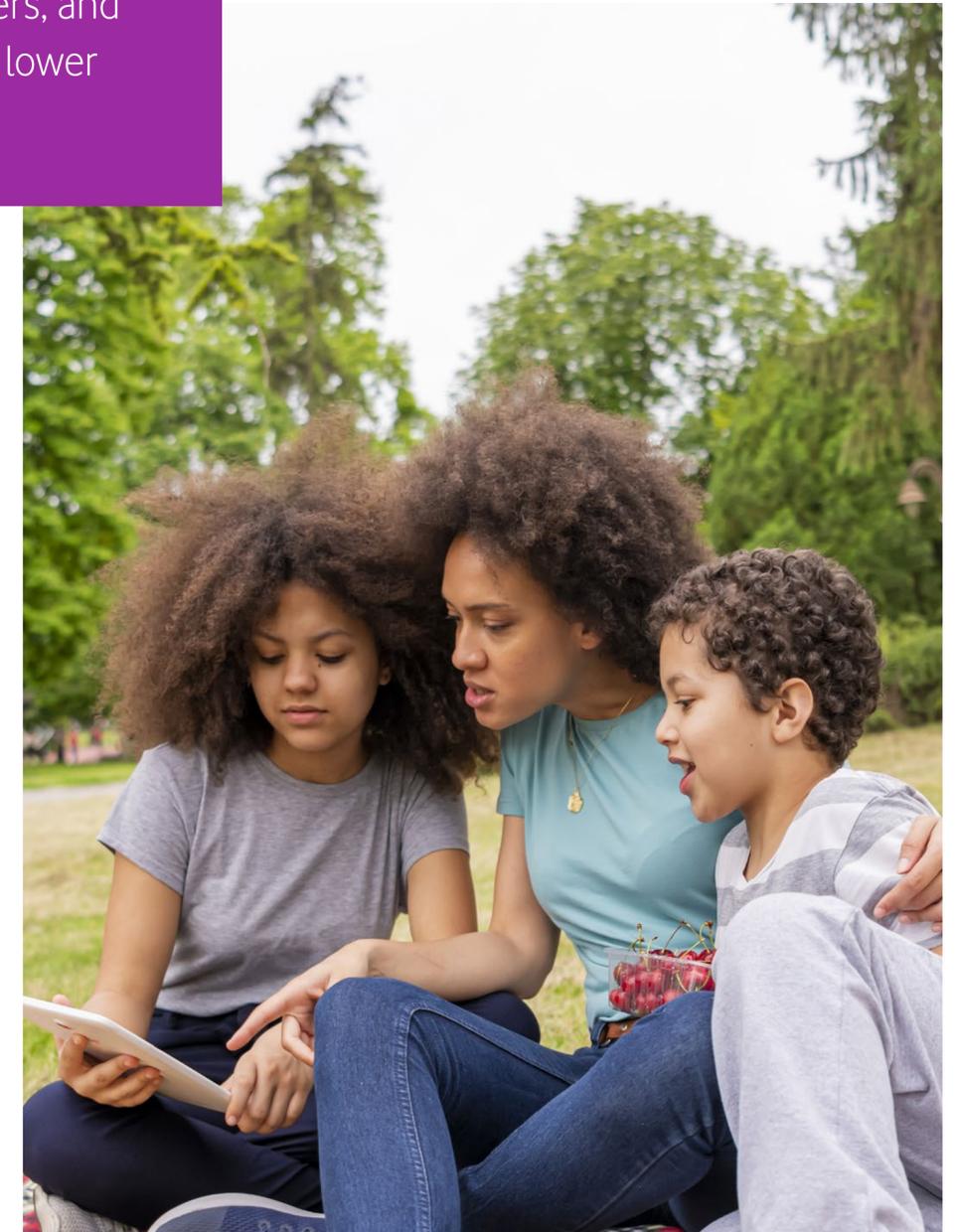
Affordable devices in Southern Africa with Vodacom

In 2014, Vodafone Group and Vodacom launched a programme to lower smartphone prices across Africa:

- Vodafone and Vodacom created new affordable entry smartphones and tablets.

- Device manufacturers, chipset and component suppliers, and over the top (OTT) service providers supported the initiative with contributions and marketing resources.

- Several centres of excellence were established to bring the smartphones and tablets into the market. Among them were design and specification centres in Johannesburg and Dusseldorf, commercial negotiation hubs in Luxembourg and Johannesburg, and scouting, sourcing, and production management in Hong Kong.
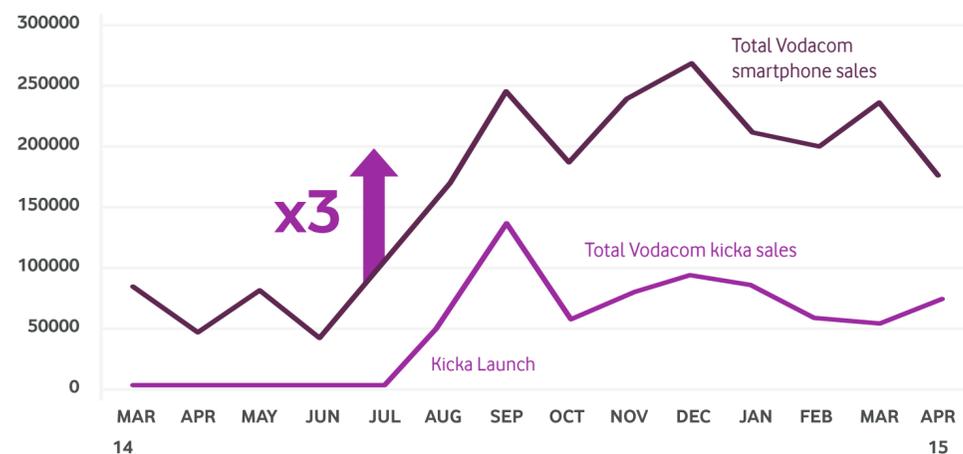
Source: Interview with Davide Tacchino, Terminals Managing Executive, Vodacom

Exclusive to Vodacom

e-school — **Free access** to Vodacom e-school

Just4You — Get more of what you love with offers tailor-made **Just4You**

50% BONUS Every time you recharge. — **Get 50%** back in Extra Airtime every time you recharge

NXT LVL — Cop a daily bundle **500MB for R12** + 50MB for a friend

Terms and conditions per offer apply. NXT LVL is exclusively available to under 25 year olds. For more info visit vodacom.co.za

- Vodacom Kicka[21] was launched in South Africa, Lesotho and Mozambique, tripling smartphones sales and driving digital inclusion.

- A few years after the launch, the entry cost point for 3G smartphones fell from over US$40 to under US$25.

- Vodacom also added subsidies and network lock, as well as content (including educational content) and data for free.

- The positioning of the product drove the industry, competitors, and manufacturers to more appealing and convenient price points. This virtuous circle increased customer choices and accelerated smartphone penetration.

- Vodacom Kicka has become a successful brand in the market, and is seen as a high-quality entry-level product.

- New Kicka family products were introduced, and more than 10 million Vodacom-branded device units have been sold in emerging markets so far. Vodacom Kicka sales were fundamental in driving 60% smartphone penetration in South Africa, Lesotho, and Mozambique, the highest across the African continent.

Partnering with Google to launch device financing in Kenya

The importance of investing in affordability and the impact of access to the internet for all By 2050, it is projected that half of Africa's population will be under 25 years old.

This youthful population and the rise of the digital economy in Africa is opening opportunities for e-commerce, driving financial inclusion and tackling inequality. Safaricom has committed to enable a digital lifestyle by expanding mobile and broadband connectivity. The population of both Kenya and the wider African continent need to be empowered to drive the digital revolution.

Additionally, the COVID-19 pandemic drove several services online, highlighting the advantages gained by those with internet-enabled devices compared to those without. Vendors have been able to increase their customer bases by leveraging online marketplaces. According to the recent "Kenya's Digital Economy" report by consulting firm Dalberg, 13% of Kenyans use ecommerce to buy or sell products and services online.

Handset affordability ranks as the top barrier to access to mobile internet, followed by literacy levels, digital skills and limited perception of the relevance of mobile internet. Over the years, Safaricom has made proactive attempts to lower these barriers.
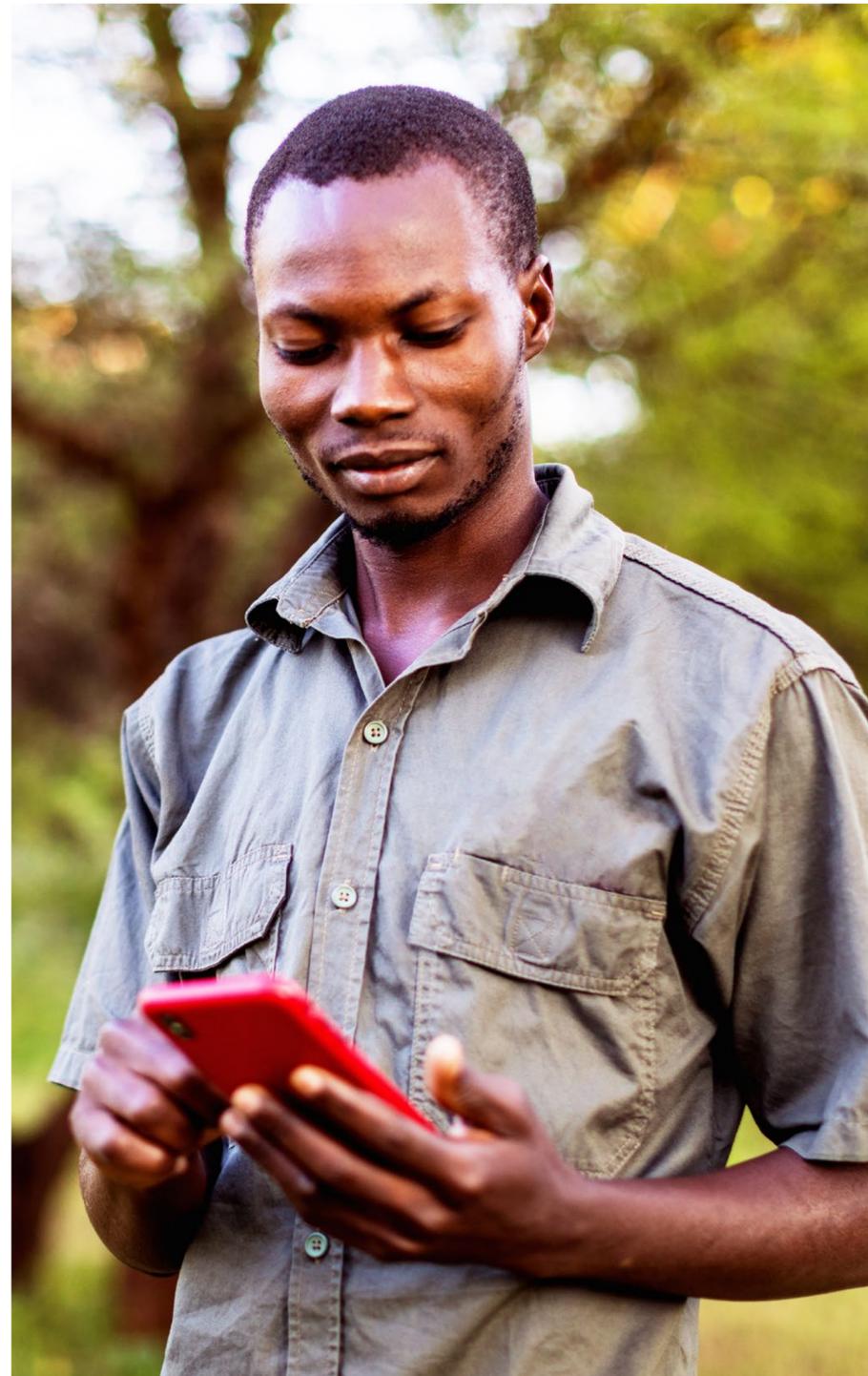
Through a partnership with Google, Safaricom launched the Maisha Ni Digital initiative in 2017, where an array of entry-level smartphone devices were subsidised to an average cost of about US$35. This made a substantial difference to affordability, to affordability. Under this initiative, **Safaricom have sold over 1.7m Neon 3G and 4G devices to date.**

Despite this progress, there is still a barrier to accessing smartphones because of the high upfront cost. The COVID-19 pandemic added economic pressure and strained the consumer spending power which made it even more difficult to access a smartphone. To address this, last year in partnership with Google, Safaricom launched a device financing initiative called Lipa Mdogo Mdogo (Pay Little by Little). Lipa Mdogo Mdogo offers a flexible payment plan with an 85% reduction in the upfront cost (a customer pays 500Kshs upfront) and an affordable daily fee of 20Kshs. So far, 330,000 4G devices have connected through the Lipa Mdogo Mdgogo initiative.

Safaricom's aim for this initiative

Device financing is a key focus area for Safaricom as it drives easier access to smartphones and inclusivity.

Safaricom aims to grow the number of 4G devices sold through Lipa Mdogo Mdogo to one million devices - by the end of our financial year in March 2022. Safaricom seeks to ensure that **twenty million** Kenyans have access to a 4G Smartphone by 2025.

Source: Notes from 2021 Google for Africa Interview recording with Safaricom CEO, Peter Ndegwa

Introduce fair taxation

Several African governments tax smartphones, which can increase the price of devices for citizens, further undermining inclusion in the digital society.

In South Africa, smartphone imports are taxed as luxury goods and face a 10% import tax and a 15% Value-Added Tax (as well as a customs clearance fee).[23] In other countries, such as Ethiopia and DRC, duties and taxes can reach up to 50% of a smartphone's final cost. [24]

Some African countries have proposed the exemption of VAT on smartphones, tablets, and modems. This came into force in Tanzania as of June 2021. While tax reductions or removals might cause a short-term drop in tax revenue, this can be compensated for by long-term gains in additional economic growth as more people use the internet.[25]
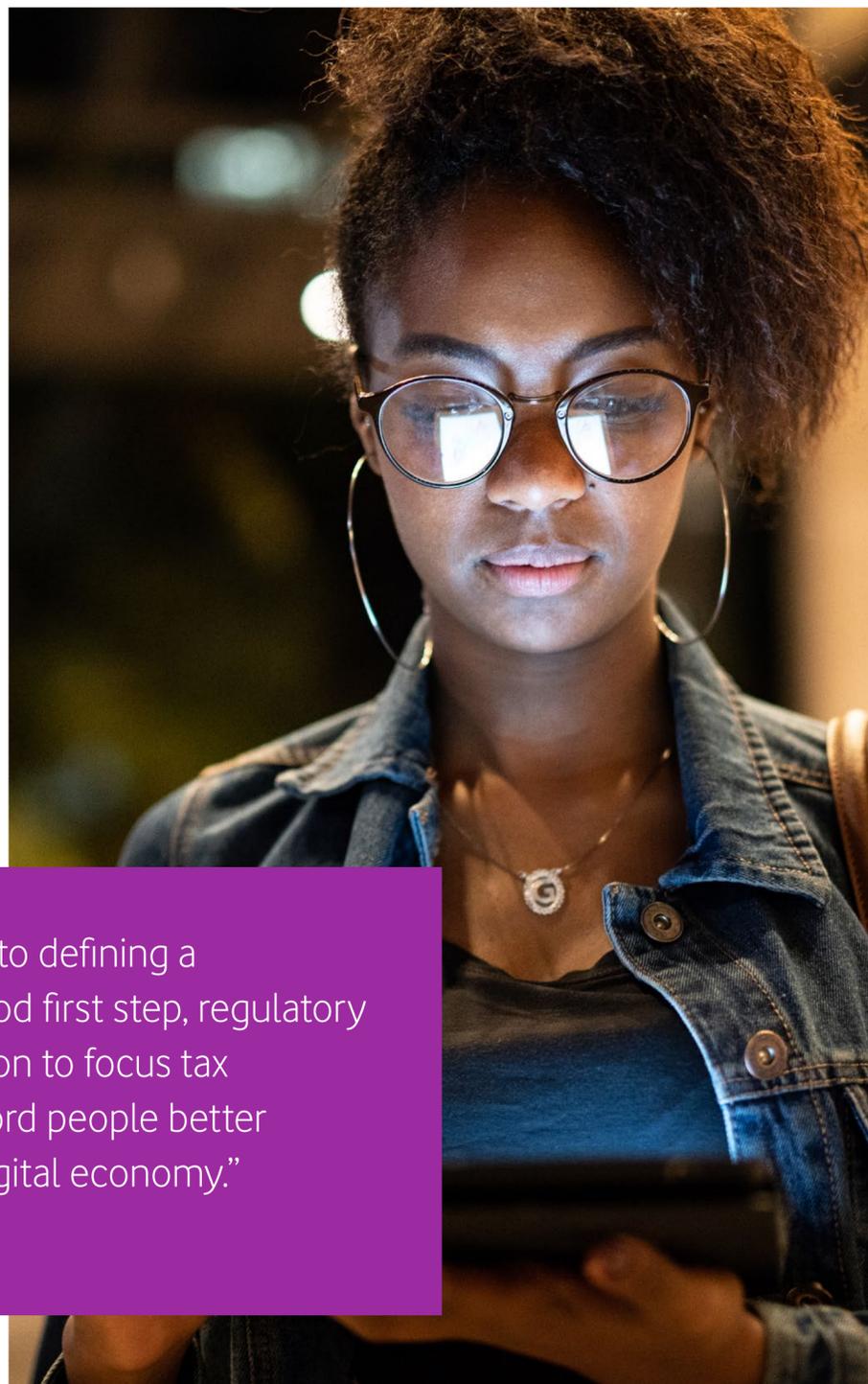
"There is still a regulatory vacuum when it comes to defining a "smartphone." While reducing device costs is a good first step, regulatory instruments should consider adjusting the definition to focus tax reductions or removals on 4G devices, as they afford people better opportunities to participate meaningfully in the digital economy."

- Rosalyn Mndolwa Mworia, Vodacom, Tanzania

A two-pronged strategy for VAT regulation and device financing in Tanzania

"It's a 20% discount right off the bat."

Policy makers and regulators play a critical role in efforts to close the digital divide. In July 2021, in response to industry requests, the government of Tanzania removed the Value-Added Tax (VAT) on smartphones, tablets, and modems to boost the economy. Dr Mwigulu Nchembathe, the Minister of Finance and Planning, confirmed this would help the country achieve its target of increasing the number of internet users to 80% of the population, up from the current 46%. The decision was reached after discussions between the industry—the Tanzania Mobile Network Operators Association—and the government. To make 4G devices even more affordable and readily available, the Tanzanian government plans to establish a local mobile phone manufacturing plant through a public private partnership.

While VAT removal is important, device financing makes 4G-enabled devices even more accessible. Vodacom's device financing, introduced in 2020 in Tanzania, enables mid- and low-income earners to buy a smartphone through small, manageable mobile money payments spread over a long period. As stated by Rosalynn Mndolwa Mworia of Vodacom Tanzania: "you are basically giving those that are not liquid that space to pay slowly."

Source: Interview with Rosalynn Mndolwa Mworia, Vodacom Tanzania
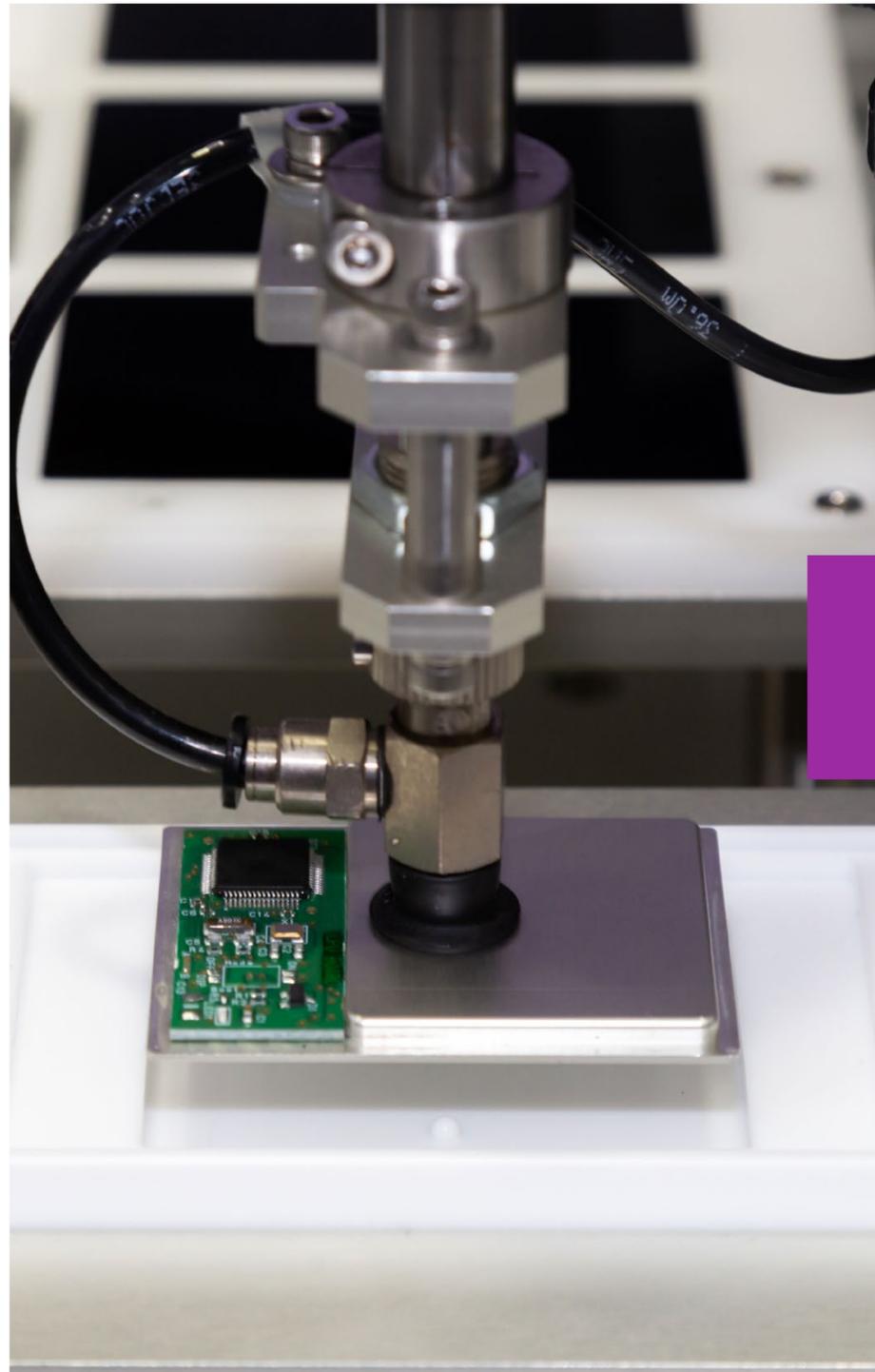
Investing in local smartphone manufacturing and currency availability

Many African countries are facing issues in procuring 4G devices from abroad due to low foreign currency availability. This limits the ability to import affordable devices; thus, smartphone sales are limited. This also hinders countries' ability to produce smartphones locally, as manufacturers struggle to import components. Multilaterals such as the World Bank and IFC could support African governments in local supply and production of 4G devices, making foreign currency available for importing partly finished devices or components to allow local production.

Another way to increase availability of 4G devices is by encouraging local manufacturing.

There are some examples of local production on the continent. The Mara Group, in partnership with governments in South Africa and Rwanda, has recently invested in manufacturing capacity to create a truly African smartphone. Transsion Holdings is running one of the biggest handset factories in Africa, located in Addis Ababa. However, the majority of smartphones on the continent are still provided directly from Southeast Asian factories.

Local production is a missed opportunity. On-shoring production in Africa would not only spur the economic benefits of better 4G adoption but also to realise the extra economic benefit to local economies in job creation and manufacturing skills development. The Brookings Institution's research on manufacturing in Africa shows the strong correlation between GDP growth and manufacturing investment,[26] supporting the case for multi-stakeholder policies to invest in manufacturing industries more broadly. With some help and support, governments can unlock the dual economic benefit local device manufacturing brings, by working with private sector actors to invest in local device factories.term drop in tax revenue, this can be compensated for by long-term gains in additional economic growth as more people use the internet.[25]

In countries where local production is not feasible, foreign currency availability dedicated to digitalising the country and increasing the import and diffusion of 4G devices could help.

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2. Invest in the demand for 4G services

In addition to addressing supply-side issues, it is essential that governments, civil society and the private sector also invest in the demand for 4G services across Africa, thereby building the market for 4G. This means investing in digital skills required to use 4G services and smartphones, as well as investing in the digital ecosystem of start-ups and SMEs that creates content and services for African populations.

Strengthening basic digital skills

Consumers must be equipped with knowledge and skills to be able to use smartphones.
Basic skills to survive through digital transformation include navigating a smartphone, accessing relevant content, using mobile money, and understanding privacy and security. Training should be provided so users can optimise the use of their devices as well as gain confidence.
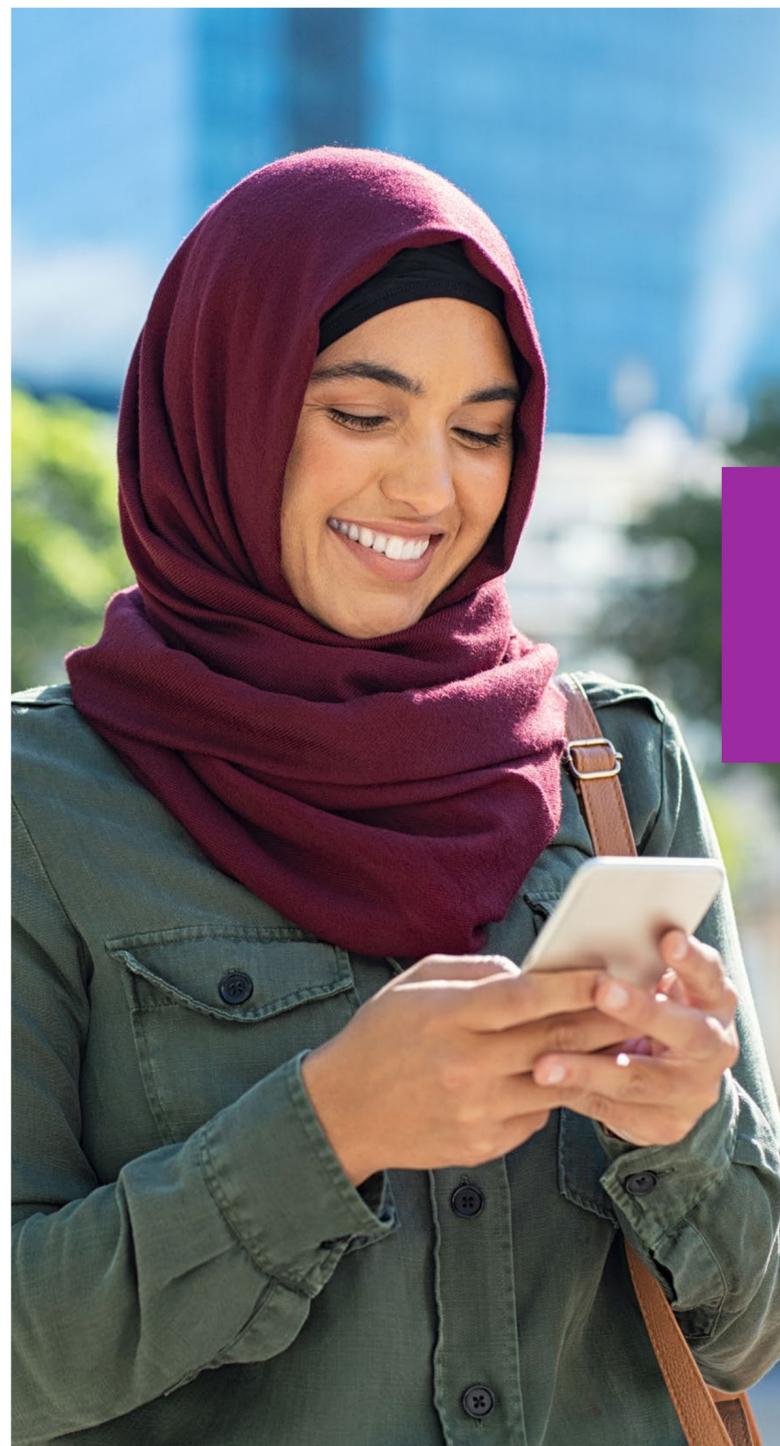
Case study

GSMA's Mobile Internet Skills Training Toolkit: Improving digital literacy through targeted data usage training

"I thought you could only go to the cybercafé for internet; I didn't know you could get it on a smartphone."

- Customer in Musanze, Rwanda

In 2016, GSMA developed a guide for training people in basic mobile skills. The Mobile Internet Skills Training Toolkit targets people with little or no mobile internet skills and contains bite-sized content on commonly used internet services including WhatsApp, Facebook, Google, YouTube, and Wikipedia. Mobile network operators, including MTN and Tigo Rwanda, have used the toolkit to train customers, leading to increased data usage showing how important digital skills are to bridging the digital divide.

Tigo Rwanda piloted the program in 2017, using 300 agents to train over 80,000 customers in 11 of Rwanda's 30 districts. An evaluation showed that after the training there was increased data usage among Tigo customers. At least 77% of the trained customers increased their data usage in the period after their sales agents introduced the training.

Sources: Mobile Internet Skills Training Toolkit: Tigo Rwanda pilot evaluation; MTN: Drive industry-leading connectivity operations

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Equip the young workforce with digital skills

Some 375 million young Africans are expected to enter the labour market by 2030.[33] They need skills to help them thrive in the digital economy. Digital platforms (freelancing platforms, ride-hailing apps, e-commerce platforms, etc.) can absorb a substantial number of these new job seekers. But without a combination of the right skill set, appropriate device, and affordable internet, many could miss out and remain unemployed.

New data from Coursera, a global learning platform, shows that, of 2.4 million Coursera learners in Africa, 66% are learning via mobile. Partnership to invest in computer programming and software engineering skills in sub-Saharan Africa will help close the gap between the continent and the rest of the world and create more job opportunities, but this is impossible without the availability of affordable, adequate devices for users.[32]

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Increase financing and support for digital start-ups

Financial support for start-ups will spur innovation and allow Africans to create locally relevant content. Boston Consulting Group reports that while there is exponential growth of start-ups on the continent, they struggle to remain sustainable in the face of challenging infrastructure, scarce capital and digital talent, and low consumer demand.[34]
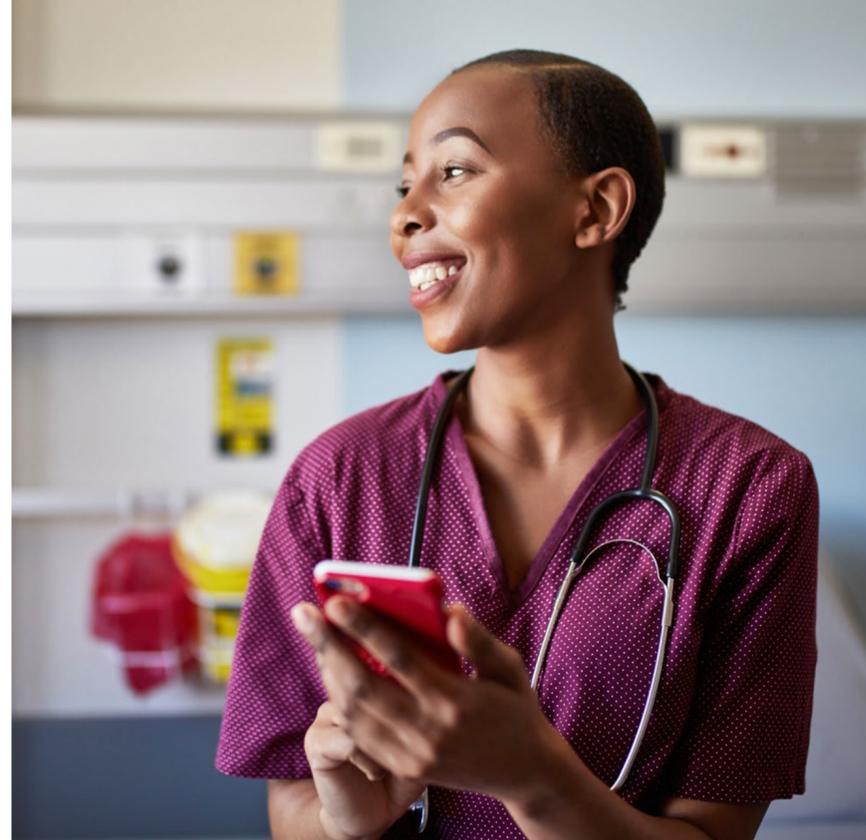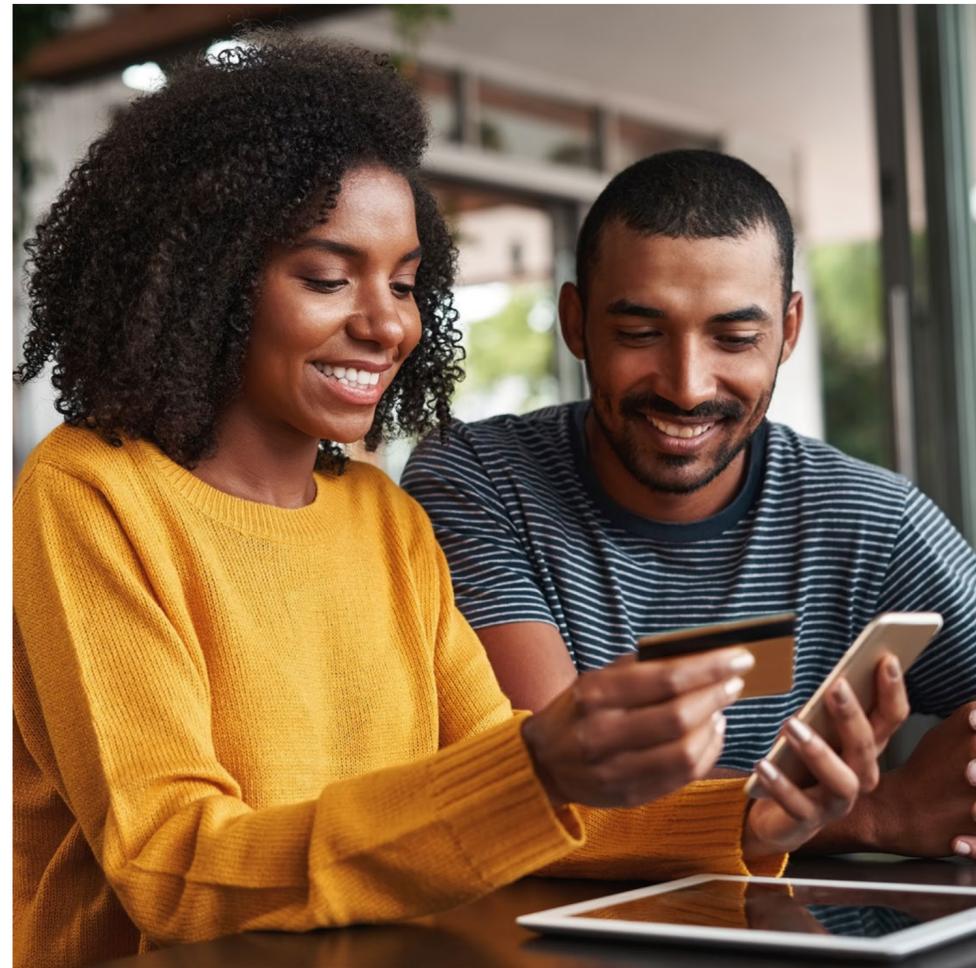
The continent is home to more than 300 homegrown digital platforms that act as digital marketplaces, connecting businesses to customers, job seekers to work, the unbanked to financial services, and citizens to government services. [35] Such platforms need greater support, especially as they can also act as leaders for other start-ups.

Speeding up the 4G rollout will increase the number of users for such homegrown, relevant services, and improve incomes for creators and businesses. 4G connectivity will open up opportunities for those with innovative ideas, so that products can be designed by 4G users for 4G users. This will incentivise the youth of Africa to shift from consuming to producing content.[37]

Homegrown digital platforms in Africa[36]

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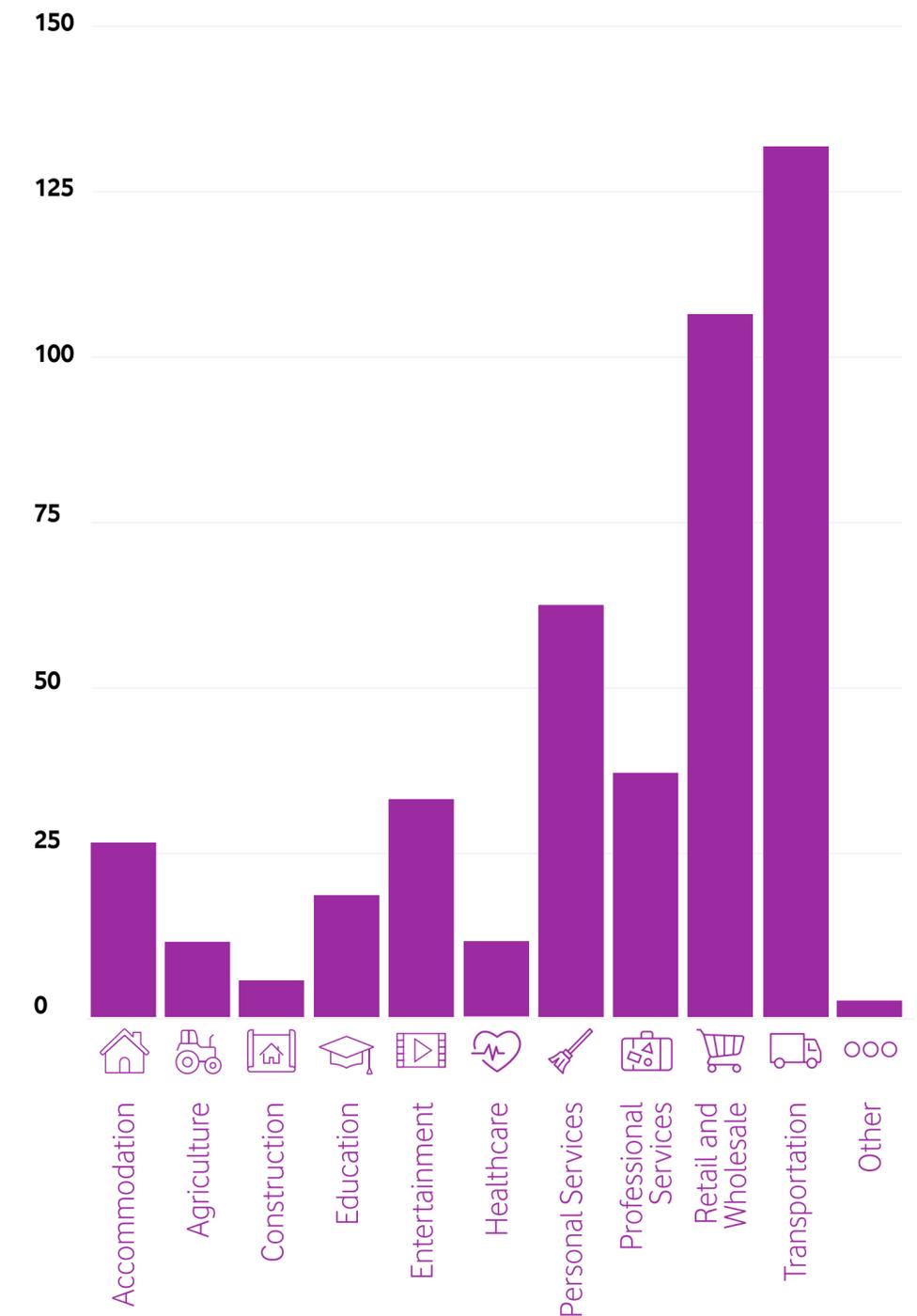
3. Provide targeted financing to lower connectivity costs for vulnerable groups

> Although 4G subscriptions are growing, it is largely those who are richer, male, educated, and living in urban areas who enjoy unmetered access.[39] A large gender gap and a rural-urban divide in mobile internet use persist in sub-Saharan Africa, standing at 37% and 60% respectively.[40]
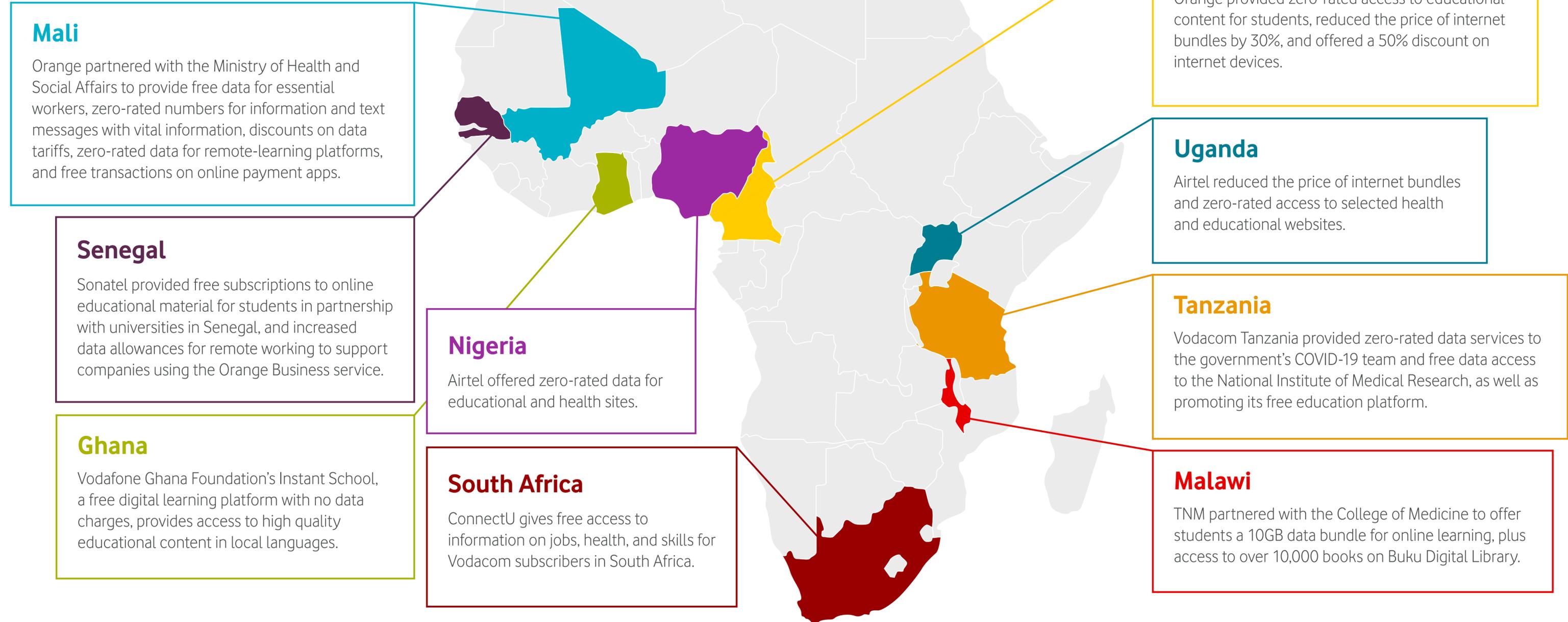
Others who may be left behind include those who face access and affordability barriers due to disability or age, as well as refugees, migrants, or IDPs (internally displaced persons).

When data is unaffordable, consumers will either lack consistent access, rely on others for access, or on public wifi. Public wifi adds a data security risk when sending sensitive data over unprotected networks. Further, public wifi entails greater risk for women who may already be uncomfortable in public spaces due to potential harassment or theft of devices and belongings.[41]

Recognising the intense need for data precipitated by the COVID-19 pandemic, the Alliance for Affordable Internet (A4AI)[42] revised its affordable internet target from "1 for 2" (1GB of data for 2% of average monthly income) to "5 for 2" in July 2021. The 5 for 2 target aims for 5GB of data for 2% of average monthly income by 2026.[43]

This new target takes into account the increasing cost of exclusion,[44] and how the importance of affordable and meaningful connectivity[45] has intensified over the period of the pandemic. However, the 5 for 2 target is still problematic in places where poverty and inequality mean that citizens may regularly earn well below the calculated average annual income. In South Africa, for example, 60% of the population earns well below the average, and women earn 30–50% less than their male counterparts.[46] This is why partnership between governments and operators to provide financing, tariffs or zero-rating for groups that are most at risk of digital exclusion through unaffordability is a more practical solution than lowering the cost for everyone.

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Targeted financing and offers can help reduce the cost of data for those who most need it, as showcased by various operators on the continent during the pandemic.

Mali

Orange partnered with the Ministry of Health and Social Affairs to provide free data for essential workers, zero-rated numbers for information and text messages with vital information, discounts on data tariffs, zero-rated data for remote-learning platforms, and free transactions on online payment apps.

Senegal

Sonatel provided free subscriptions to online educational material for students in partnership with universities in Senegal, and increased data allowances for remote working to support companies using the Orange Business service.

Ghana

Vodafone Ghana Foundation's Instant School, a free digital learning platform with no data charges, provides access to high quality educational content in local languages.

Nigeria

Airtel offered zero-rated data for educational and health sites.

South Africa

ConnectU gives free access to information on jobs, health, and skills for Vodacom subscribers in South Africa.

Cameroon

Orange provided zero-rated access to educational content for students, reduced the price of internet bundles by 30%, and offered a 50% discount on internet devices.

Uganda

Airtel reduced the price of internet bundles and zero-rated access to selected health and educational websites.

Tanzania

Vodacom Tanzania provided zero-rated data services to the government's COVID-19 team and free data access to the National Institute of Medical Research, as well as promoting its free education platform.

Malawi

TNM partnered with the College of Medicine to offer students a 10GB data bundle for online learning, plus access to over 10,000 books on Buku Digital Library.

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ConnectU: Free access to information on jobs, health, and skills for Vodacom subscribers in South Africa

Vodacom recognises the need for access to crucial information for those who need it to improve their lives but cannot afford data. In South Africa, the mobile operator offers a wide range of zero-rated online resources on health, education and upskilling, entertainment, and online job opportunities. They also provide access to cheaper voice and data offers in underserved communities for their subscribers through a platform called ConnectU. Since its launch in April 2020, the site has received over 15.5 million unique visitors and averages five million subscribers a month, all seeking different services.

- Job seekers can search for work opportunities, while those who want to polish their skills or acquire new ones have access to over 700 free online courses offered in partnership with Udemy, a popular global learning platform. ConnectU's job portal has enabled 3.1 million people to access seven different job search websites for free, with over a third of users being in the lowest income bracket. Vodafone internal data shows that accessing online job boards on ConnectU can reduce the time it takes to get a job by seven months compared to offline alternatives.
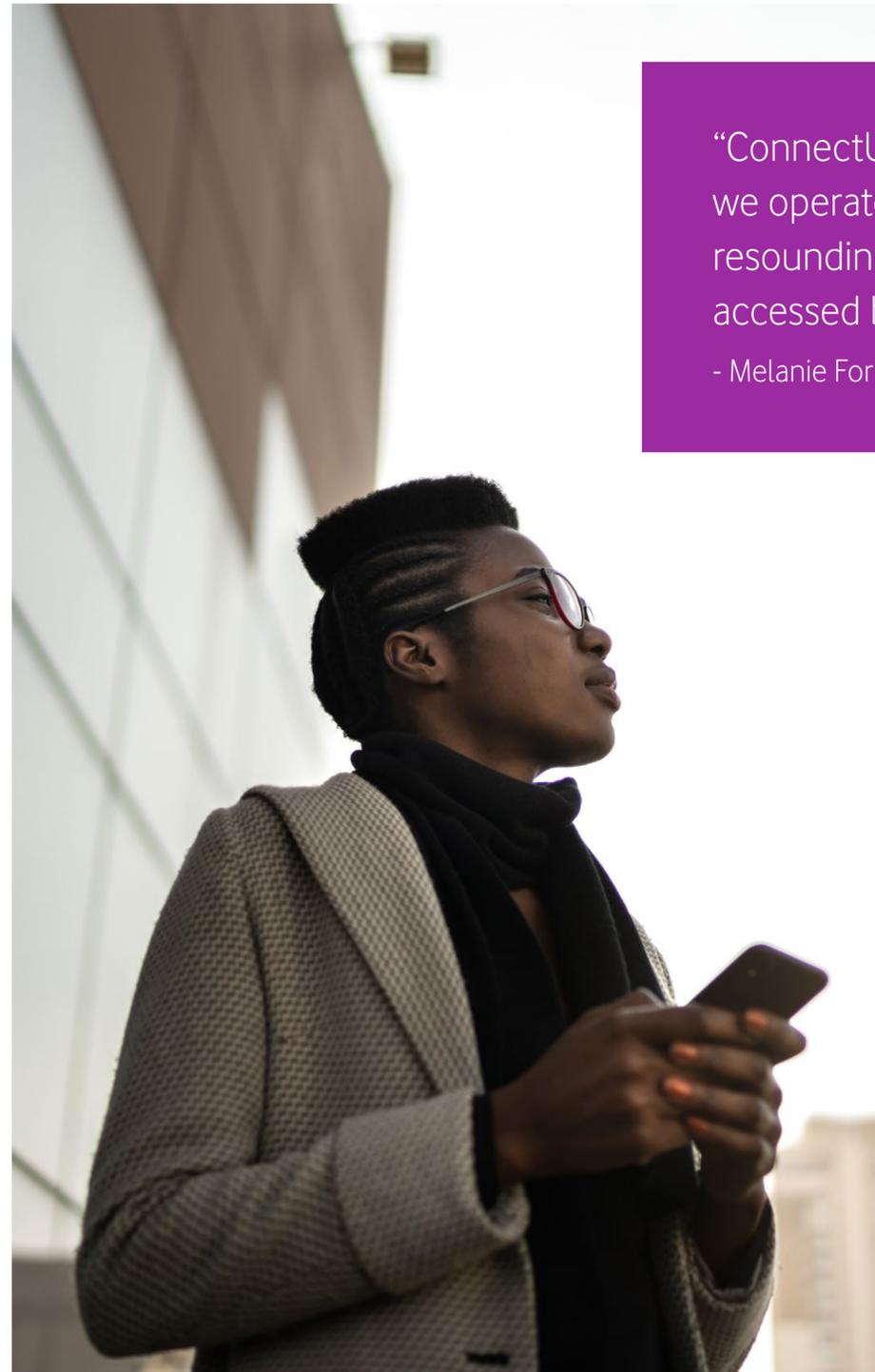
"ConnectU is our social compact to drive meaningful change in the society we operate in. In May 2021 we launched our Jobseekers campaign to resounding success, with around 180,000 unique visits to the Jobs page accessed by over 400,000 customers during the campaign."

- Melanie Forbes, Managing Executive Consumer Marketing & Insights, Vodacom

- Under the health section, parents and caregivers have access to resources on how to take care of themselves, their newborns, or children. Additional health-related content, such as articles, videos, and tutorials, is available through a mobile-optimised website. Mum & Baby is available in English, Zulu, Sesotho, Xhosa, and Afrikaans. The service has helped over 1.8 million parents and caregivers to take positive actions to improve their children's health since its launch in 2017.

- The Vodacom e-School solution allows learners to access curriculum-aligned content and enables educators to access learning materials on their smartphones with no data charges. There are currently over one million users on the platform.

- The Safety and Security section within the platform allows customers to claim two free SMSs that can be used in an emergency and free location triangulation service through a partnership with What3Words.* In addition, it offers free calls to the Gender Based Violence Call Centre and access to information from its website.

vodacom

Source: GSMA
*What3words is a geocode system designed to identify any location.
Source: ConnectU Team, Vodacom
https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/09/GSMA_MobileEconomy2020_SSA_Eng.pdf

The high cost of 4G devices is hindering the refarming of 2G spectrum

In 2021, South Africa is seeking to refarm 2G to 4G networks for more efficient use of spectrum. The last major spectrum modernisation was in 2001, when 2100 MHz was awarded for 3G. There are ethical and legal concerns about 2G network sunsets, largely because many South Africans cannot afford 4G-enabled devices; switching off 2G would simply disconnect millions who depend on it, as they cannot afford 4G smartphones.

At the start of the COVID-19 pandemic, the Government of South Africa passed disaster management regulations to limit the pandemic and its impact. These included zero-rating access to health, social relief, and education online content. However, this provision does not assist those users who only have access to 2G-based devices. Even the online vaccine registration programme in South Africa had to be enabled through SMS and USSD (which may limit the registration experience) alongside the online option to accommodate those who still rely on 2G devices.

Beyond learning and working online, many South Africans are also getting entertained and worshipping online. Due to the strict limit on public gatherings and funerals, as per the disaster management regulations, virtual memorials have become a norm. Unfortunately, those who do not have access to 4G devices are also excluded from participating in virtual memorials for their loved ones.

> "If the decision to switch from 2G to 4G was just a technical one, there is no question that operators and regulators would immediately switch off the 2G spectrum. 2G has no long-term benefit for the good of South Africa compared to 4G."
>
> - Thabiso Thukani, Managing Executive, Public Affairs, Vodacom South Africa

One principle cuts across all policy interventions to accelerate 4G in South Africa: rebalance supply and demand. This includes:

- Refarming from 2G to 4G (this will only happen if more people have access to 4G-enabled handsets).

- Reducing 4G-enabled smartphone prices —street prices can be around US$10 for a 2G phone, while a 4G-enabled phone costs around US$50, and a basic smartphone is around US$100.

- Incentivise innovation around 4G device design (while recognising intellectual property rights and laws are necessary).

4. Boost 4G adoption by refarming 2G spectrum

Refarming is the process of repurposing of frequency bands that have historically been allocated for 2G mobile services (using GSM technology) for new generation mobile technologies, including both 3G and 4G. Refarming 2G to 4G[48] would enable more users to benefit from 4G services.

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"We are supposed to be in a digital economy and fourth Industrial Revolution. The future of work and education is definitely online. Manufacturing is moving to digital platforms. Without access to 4G, and later 5G, the youth of South Africa will be condemned to a life without prospects."

- Thabiso Thukani, Managing Executive, Public Affairs, Vodacom South Africa

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How to unlock a 4G Africa

Our best route to closing the 4G usage gap is through action-oriented, partnerships that will shift users from 2G to 4G.
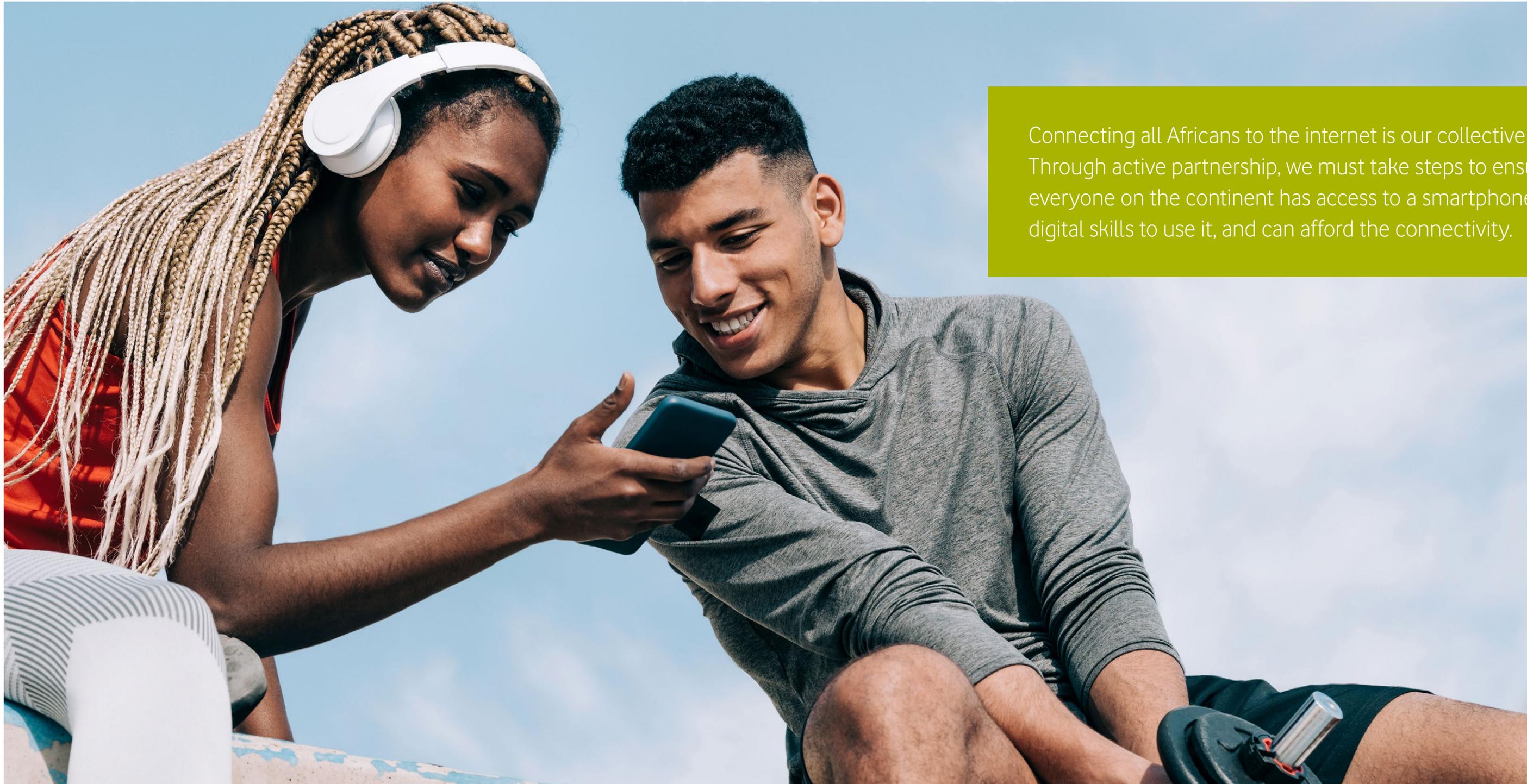
Make 4G devices more accessible

Cutting device prices as a supply-side initiative will drive adoption of 4G where network coverage is currently underused. All stakeholders from manufacturers to governments to International Financial Institutions should be involved and cooperate in work on the device cost and supply side. Governments can help with fairer device taxation, which in some countries is more than 50% of the cost of devices. A wider access to foreign currency capital facilitated by supranational entities can allow governments to improve the sourcing of 4G devices and components from abroad and to develop local assembly and production. This will improve 4G device availability while also creating jobs and growing local manufacturing industries. Additionally, MNOs can introduce device financing options to make device payments easier and reduce the cost of connectivity. The main device manufacturers could help produce more affordable top-brand phones for Africa, which will drive 4G adoption. OTT service providers, such as Google and Facebook, and supranational entities could support operator subsidy and financing schemes, as they will also benefit from increased markets.

Invest in the demand for 4G services

Building skills and increasing financing and support for digital start-ups will inevitably grow demand for 4G services. Governments, the technology sector and education providers must come together to ensure that digital skills training can be accessed at all points in life. Likewise, partnership between governments and financial institutions is required to ensure that start-ups and SMEs can grow into African digital champions that will drive consumer demand for digital services.

Initiatives to reduce connectivity costs for vulnerable groups

Governments, operators and digital service providers can work together to provide targeted packages and offers to ensure connectivity is affordable for vulnerable groups and the poorest in society.

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Connecting all Africans to the internet is our collective challenge. Through active partnership, we must take steps to ensure everyone on the continent has access to a smartphone, the digital skills to use it, and can afford the connectivity.

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