

Driving Digital Transformation in the DRC

Opportunities, policy reforms and the role of mobile



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A woman with dark hair and a warm smile is holding a small, rectangular flag of the Democratic Republic of the Congo. The flag features a blue field with a yellow star in the upper left corner and a red diagonal band with yellow borders. She is holding the flag with both hands, presenting it towards the camera. The background is a soft, out-of-focus grey.

1. Executive Summary

With its large population and endowment of natural resources, the Democratic Republic of the Congo (DRC) has huge potential for growth and development. However, the country also faces a wide range of economic and security challenges that will need to be addressed if it is to succeed in implementing its national development goals.

Digital technology plays a key role in overcoming these challenges and supporting national growth and development. The government of the DRC recognises this and it is reflected in the National Action Plan, the National Digital Plan Horizon 2025, and the recently approved World Bank Digital Transformation Project.¹

The digital economy in the DRC is already a significant part of the overall national economy. The telecoms industry is a significant component of national GDP and contributor to government revenues. However, the economic contribution of digitalisation could be much greater than just the telecoms sector. Digitalisation will improve productivity and support investment. It will improve the quality and coverage of public services and improve public revenue collection.

Examples from other African countries show the effect that such initiatives have had in key sectors such as agriculture and mining. When it comes to the public sector, many governments in Africa have embraced digital technologies as a means of enhancing public service delivery. Such digital technologies could have a major impact on the performance of the public sector in the DRC.

The telecommunications sector in the DRC is competitive and dynamic. Mobile Network Operators (MNOs) are investing in expanded coverage and improving digital services. However, despite this, mobile coverage is low by regional standards, reflecting the high cost of building and operating networks.

¹ The World Bank, 2024. DRC Digital Transformation Project, Implementation Status & Results Report.

MNOs face additional challenges dealing with the tax framework for the sector which is very complex, with numerous taxes being levied at multiple levels of government. This raises the overall tax burden and increases the cost of compliance and reporting. An improved tax and regulatory environment would reduce operators' costs, which would allow them to invest more into network coverage.

Device affordability is another major challenge for many Congolese, with smartphone penetration lower than other African countries. If the prices of devices and terminals could be reduced, it would increase broadband adoption.

Looking ahead, the main objectives for the telecommunications sector are to increase connectivity – expanding the coverage of mobile broadband networks, accelerating adoption of mobile and digital services and ensuring that digital technologies are adopted throughout the public and private sectors.

In order to achieve this, this report identifies the following policy recommendations:

- Increase affordability and inclusivity of internet access through a combination of lower excise duties, lower operator taxes and a simplification of the tax collection system.
- Furthering digital connectivity within and between communities: increasing the reach and accessibility of digital services. This includes reducing the cost of expanding and operating networks through expanding access to the electricity grid.
- Increase transparency and stability in the sector through improving policy and regulatory stability. This includes developing a clear policy and strategy for the sector to give guidance to stakeholders and improving transparency of regulations through consultation.
- Enabling and encouraging the use of the internet by increasing the provision of public services via digital channels and improving handset affordability through support for device subsidies and financing.

The impact of these recommendations would be significant. If they were all implemented, there would be an additional 9.7 million internet users by 2029 compared with the base case. The mobile broadband usage gap would be reduced by 8 percentage points and it is estimated that this would result in increased adoption of digital technologies across economic sectors, improving productivity and job creation, including adding up to CDF 2,100 billion in value-add from agriculture and CDF 6,500 billion from mining. It would also increase net tax revenue by up to CDF 3,000 billion.



2. Digital Economy Framework

A. INTRODUCTION

The African Union Agenda 2063 includes an aspiration to achieve an integrated, prosperous, and peaceful Africa, driven by its citizens and recognised as a global powerhouse. It recognises Information and Communications Technology (ICT) as a key enabler of the broader goal of African countries being better connected and more integrated.² Digitalisation has the potential to drive the economic transformation of the DRC in a way that supports its development objectives. The digitalisation of the economy supports both economic growth and socio-economic development.

The mobile sector – through the connectivity infrastructure and the provision of digital services – is the backbone of this digitalisation process. A growing digital sector is an essential prerequisite of a national digital transformation programme.³

The Government of the DRC recognises the importance of digital transformation in its National Action Plan and the National Digital Plan Horizon 2025 (PNN). The PNN defines objectives to develop the digital transformation of the country:

- (i) the establishment and modernization of infrastructure;
- (ii) the expansion of telecommunications coverage and access to digital technology;
- (iii) the securing of channels and access to digital content;
- (iv) the digital transformation of administrations and businesses;
- (v) the exploitation of financial technology platforms;
- (vi) the improvement of human capital;
- (vii) the production, promotion, hosting, and backup of national content;
- (viii) the monitoring and appropriation of technological advances in digital technology; and
- (ix) the promotion of digital technology through public policies.⁴

This Digital Economy report examines how the digital economy can support the DRC's national development objectives and explores the role of the telecommunications sector in supporting the objectives defined in the PNN. The report identifies key policy recommendations which, if adopted, would accelerate this process and support the government to deliver its national development strategy. These include improved coverage and quality of infrastructure and affordable access to digital services, better delivery of public services and enhanced job creation.

B. HOW DOES THE DIGITAL ECONOMY DRIVE DEVELOPMENT?

Digitalisation is bringing about technological change through adoption of digital technologies across economic activities in every country in Africa. Digital services, mostly using mobile telecoms networks, are becoming more widely available, and their usage is continuing to grow. As they do so, they are becoming more integrated into other sectors of the economy.

The mobile telecoms industry, and the digital sector more broadly, make a significant contribution to the economy and to public services in the DRC. Widespread investment in telecoms infrastructure and services and the adoption of digital technologies across the public and private sectors enables better interactions between individuals and a more efficient use of resources, thereby raising productivity and supporting innovation. This directly benefits users of digital technologies. It also benefits the government through increased tax revenues, improved productivity in the public sector and enhanced delivery of public services.

² See, for example: African Union Commission. 2015. Agenda 2063 The Africa We Want, Aspiration 2, para 25.

³ Throughout this study, the term digitalisation is used to denote the adoption of new technologies by consumers, businesses and governments across economic sectors. Digital transformation is the economic transformation resulting from such adoption. The digital economy encompasses the actors and exchanges taking place in the economy as a result of digitalisation.

⁴ Government of the DRC. 2019. Plan National du Numérique Horizon 2025. page 7.

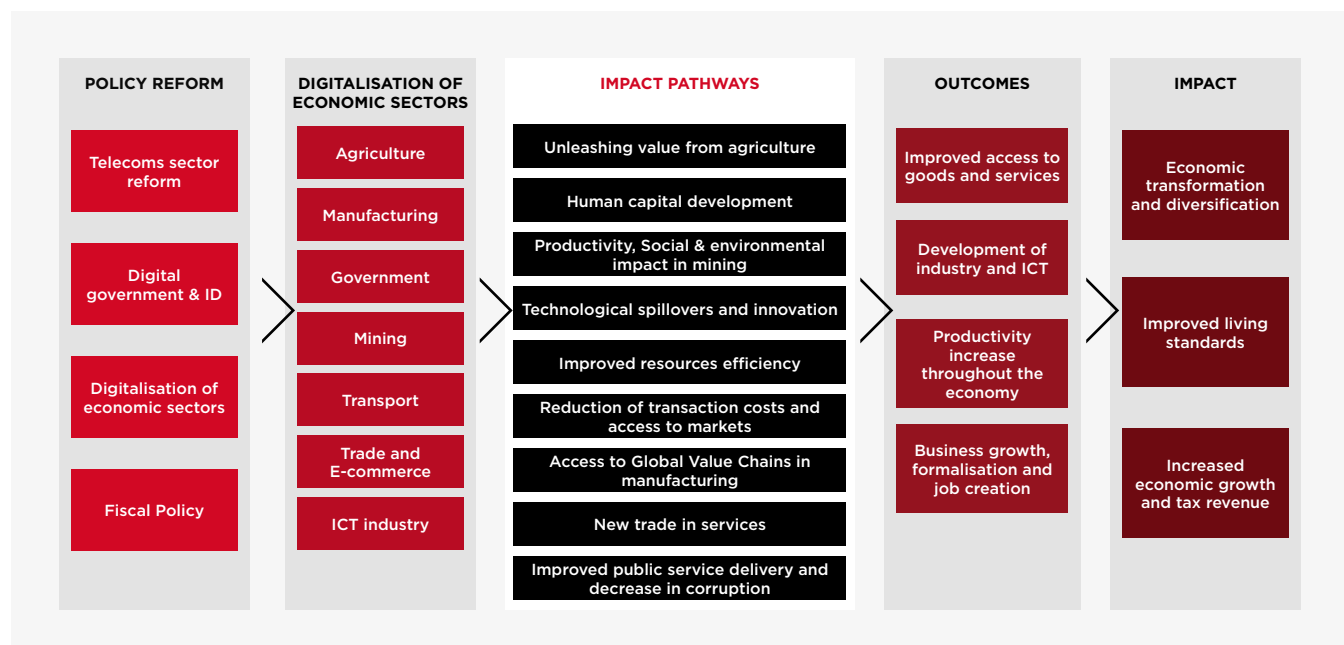
Most of the economic impact of mobile technology is therefore realised outside of the mobile sector itself, through the positive impact that it has on productivity in sectors such as agriculture, manufacturing and retail; and in public services such as government administration, education and healthcare.

In turn, the **adoption of digital technologies across economic sectors and public services can unlock important pathways for inclusive digital transformation**, for example through increasing value from agricultural resources, improving access to Global Value Chains (GVCs), enhancing education and healthcare provision, reducing transaction costs and improving efficiency, transparency and governance of government-to-business and government-to-citizen services. Access to emerging technologies such as AI, big data and cloud computing and to services such as mobile money drive increased digital and financial inclusion. These, in turn, support human development.

The drivers of digitalisation are not limited to mobile network technologies. Fixed telecoms networks also have an important role to play in delivering high-speed connectivity between towns and cities. They are essential in connecting datacentres and other critical nodes within the network. In some urban areas, fixed networks are also well-suited to delivering high-speed broadband to businesses and homes.

As digitalisation works through each sector of the economy, the resulting effects include improvements in productivity, job creation and formalisation of the economy. This leads to increased standards of living, higher economic growth and greater availability of public resources.

Figure 1: Digital Pathways to Economic Transformation



Source: Authors' synthesis based on literature, Government's strategy, discussion with stakeholders.

C. THE ROLE OF THE MOBILE TELECOMS SECTOR IN THE DIGITAL ECONOMY

The mobile telecoms sector provides the digital connectivity that forms the foundation for the digital transformation process. MNOs provide a technology platform for citizens to access information and communications services that enable many economic activities to be conducted digitally. This is particularly important in the delivery of public services. Digital technology helps to enhance transparency and reduce leakage in the system, which results in a more efficient use of public resources. Mobile money services also play an increasingly important role in economic development through enhancing financial inclusion, reducing transaction costs and providing citizens and small businesses with access to a range of financial services.

The mobile sector in the DRC continues to face major challenges. These include the threats to financial sustainability, service affordability and the pace of digital adoption. These challenges risk undermining future investment in mobile infrastructure and jeopardising the gains achieved from digital and financial inclusion. If these challenges are addressed, the sector can deliver a greater economic impact through increased access, adoption and usage of digital technologies.



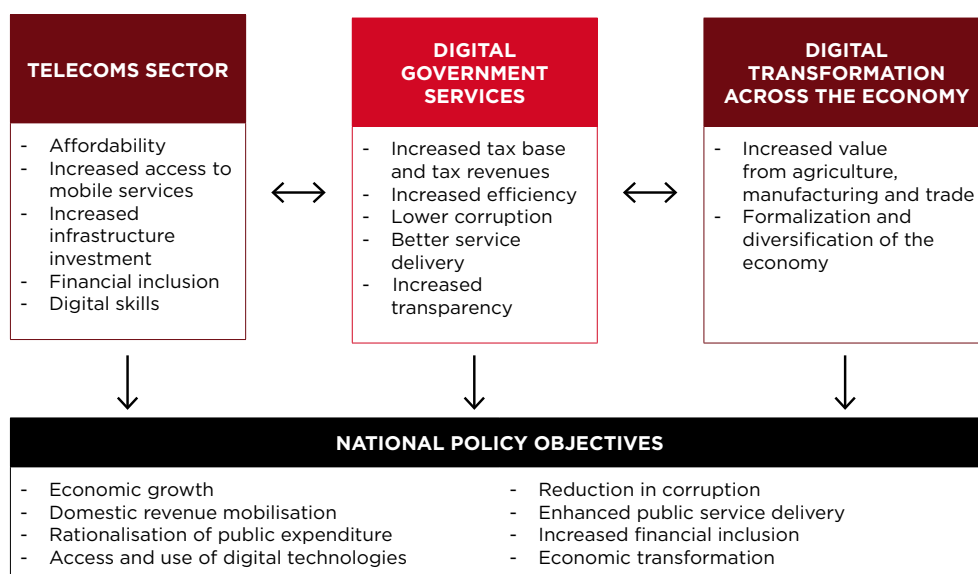
D. STUDY FOCUS

This study examines the role of digital technologies in supporting economic development in the DRC. The starting point is an analysis of how digital technologies can drive socio-economic development through enhanced productivity and job creation, as well as how they can be used to improve the way in which government functions.

It identifies opportunities and quantifies the economic value of adopting digital technologies across specific sectors of the economy. It explains how these can be unlocked through policy reforms, recognising the role that the mobile telecoms sector plays in supporting the process of digitalisation.

The potential quantitative impacts of digitalisation on each sector are based on these policy reform scenarios. Their impact on adoption and usage is modelled and these effects flow through to the other sectors of the economy. This is summarised in Figure 2 and more details are provided in Section 5 of the report.

Figure 2: Digital Economy links to policy



Source: Authors' synthesis

The sections that follow consider how digitalisation affects outcomes in some of the major sectors of the economy. It is organised as follows:

- Section 3 provides an overview of the economy of the DRC and summarises its development strategy.
- Section 4 focuses on the economic contribution of the ICT and digital sector to the economy now and in the future.
- Section 5 summarises the mobile market dynamics in the DRC and describes the impact of addressing some key policy challenges.
- Section 6 provides a summary of the policy recommendations.



3. The Economy of DRC



A. OVERVIEW OF THE ECONOMY OF THE DRC

The DRC is the 3rd largest country in Sub-Saharan Africa by population with over 110 million people,⁵ and is the largest country by surface area, at 234 million hectares.⁶ It is endowed with vast natural resources, including minerals, hydropower sources and fertile land. However, it has suffered a long history of conflict and instability and, today, an estimated 73.5% of Congolese people live on less than USD 2.15 a day.⁷

Table 1: DRC – Key Economic Indicators

Gross Domestic Product (GDP, CDF billion)	162,000
Gross Domestic Product (GDP, US\$ billion)	66
GDP growth (annual %)	8.6%
GNI per capita (Atlas method, current US\$)	630
Infant mortality rate (per 1,000)	45
School enrolment, primary (% gross)	120%
Life expectancy (years)	62
Population, of which % rural pop	112 million, 53%
Net ODA received (% of GNI)	5.2%*

Data for most recent year available (2023 or 2022 if marked with * and 2024 if marked with **)

Source: World Bank World Development Indicators, ARPTC

Economic growth in recent years has been strong. After peaking at 8.9% in 2022, real GDP growth in the DRC remained robust at 8.6% in 2023. This was mainly due to the mining sector that grew by 18.2%, contributing over 70% to overall growth of the country’s economy in 2023.⁸ However, growth in GDP slowed in 2024, with the economy expanding by 6.5% owing to the mining sector’s deceleration.⁹

The DRC is considered to have among the largest endowments of minerals on the continent, including significant reserves of cobalt and copper.¹⁰ Mining is therefore a major driver of the economy and source of tax revenues, with copper and cobalt accounting for more than 80% of exports.¹¹ This is a key source of wealth and economic development, but it also exposes the country to volatile global commodity prices and demand.

Given the significant size of the extractives sector, industry accounts for a much larger percentage of GDP than other countries in Sub-Saharan Africa. Industry accounts for 47% of total GDP, with services and agriculture contributing 34% and 17% respectively.

5 Information provided the Autorité de Régulation de Poste et de Télécommunication - RDC (ARPTC) for this report.

6 World Bank. World Development Indicators.

7 World Bank. 2025. DRC Country Overview.

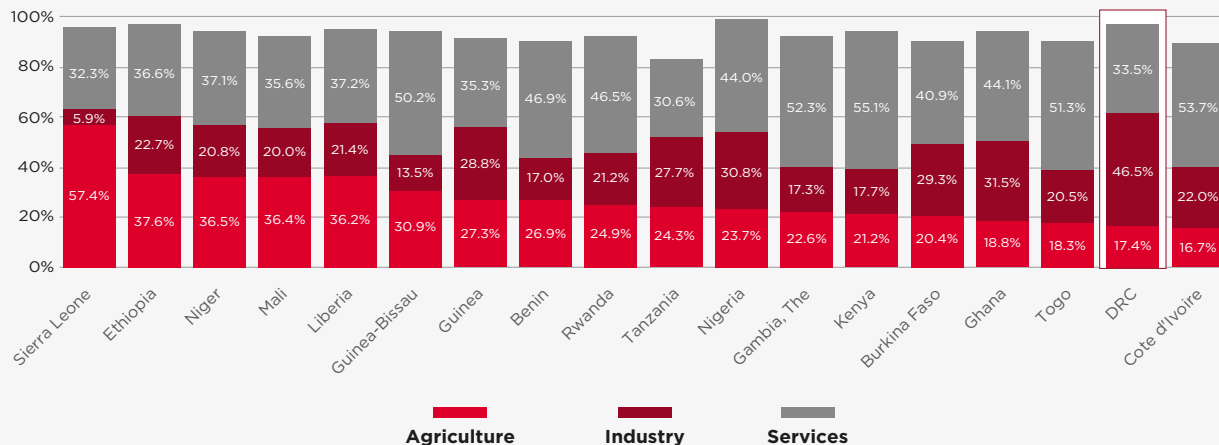
8 IMF. 2024. DRC Article IV Consultation.

9 World Bank. 2025. DRC Country Overview.

10 World Bank. 2024. DRC Macro Poverty Outlook.

11 Ibid.

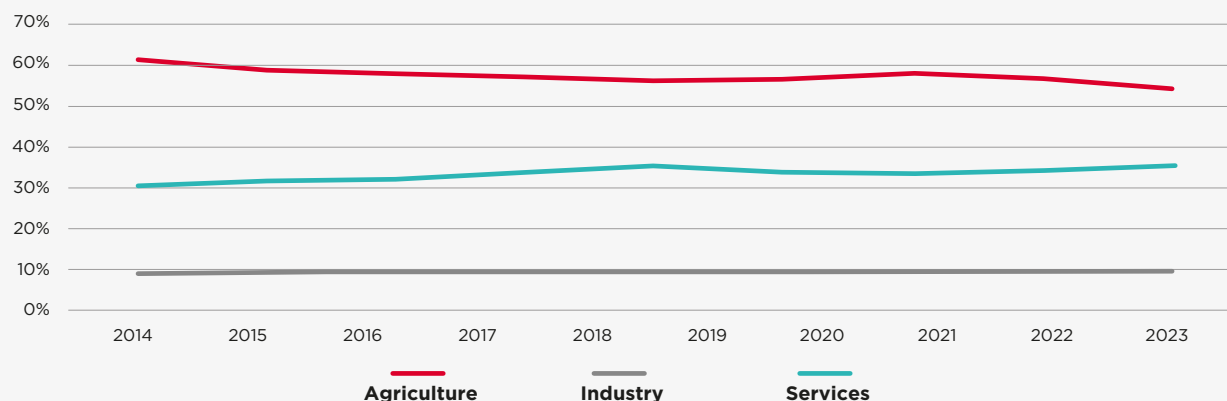
Figure 3: Composition of GDP by sector in the DRC and other countries in SSA, 2023



Source: World Development Indicators.

Despite accounting for only around one-third of GDP, agriculture remains the biggest employer with 55% of the working population engaged in the sector. Industry, on the other hand, employs 10% of the population.

Figure 4: Evolution of employed population by sector, %



Source: World Development Indicators.

The social, human and economic impact of conflict in the DRC is huge. The country has one of the largest UN peacekeeping missions in the world with an annual budget of around USD 1 billion. Despite these efforts, it is estimated that violence costs 7% of the country's GDP.^{12,13} Due to internal and neighbouring conflicts, DRC is home to many refugees and internally displaced people (IDPs). It is estimated that there are 5.2 million people internally displaced in the DRC, accounting for 12.1% of total IDPs globally.¹⁴

¹² World Bank. 2022. Country Partnership Framework.

¹³ Institute for Economics and Peace. 2021. Economic Value of Peace.

¹⁴ United Nations IOM. 2019. DRC Humanitarian Response Plan 2020.

B. DRC'S ECONOMIC STRATEGY

The DRC has been under IMF programmes since 1984 and has been subject to conditionalities in relation to fiscal and monetary sustainability. Outstanding IMF commitments amounted to approximately 2% of GDP in 2024. Government policy is heavily influenced by the conditionalities included in these programmes.¹⁵

There is potential to grow government revenues and reduce dependency on external assistance. This will be achieved through the development of new projects in the extractive sector and diversification of the economy through the growth of other sectors.¹⁶

The country continues to face significant economic, security, and climate-related challenges. With the planned withdrawal of UN forces from the DRC and ongoing conflict in the East, security spending is expected to increase.¹⁷

The government's recent economic strategy is articulated in the National Strategic Development Plan, 2019-2023 (PNSD 2019)¹⁸ and the National Strategic Development Plan 2024-28 (PNSD 2024).¹⁹ This national development strategy has identified the following priorities:

- Development of human capital, social and cultural development.
- Strengthening of good governance and the State authority, including security and improving business climate.
- Economic growth and diversification.
- Improvement of infrastructure and land, agriculture productivity, including new technologies and ICT.
- Climate protection and resilience.

¹⁵ IMF. 2025. Congo, Democratic Republic of: Transactions with the Fund from May 01, 1984 to August 31, 2025.

¹⁶ IMF. 2024. DRC Article IV Consultation.

¹⁷ IMF. 2024. DRC Article IV Consultation.

¹⁸ Government of the DRC. 2019. Plan National Stratégique de Développement 2019-2023.

¹⁹ Government of the DRC. 2024. Plan National Stratégique de Développement 2024-2028.



4. The Overall Economic Impact of the Mobile Sector

A. CURRENT CONTRIBUTION OF THE MOBILE SECTOR TO THE ECONOMY OF DRC

GDP is the sum of all of the economic value-added by activity that takes place within the geographical borders of the country. Individual companies each make a contribution to that total GDP according to how much value-added they generate in a year. It is estimated that the total GDP of the DRC was USD 66 billion in 2023.²⁰

The digital sector is comprises MNOs, fixed-line network operators and all of the other companies providing digital infrastructure and services. This includes any companies directly or indirectly involved in the production and supply of ICT-related products and services. It includes, for example, the mobile tower companies that build and manage sites on behalf of the MNOs. It also includes retailing of devices and other ICT-related goods. The ICT sector also usually includes other industry segments such as broadcasting, internet service providers and digital content creation. It is estimated that the mobile industry currently contributes approximately 8% of the DRC's total GDP.²¹

The overall contribution that the sector makes to the country's national GDP includes the direct value-added by companies as well as indirect value-added and wider productivity gains. The narrowest measure of the contribution of a company to the national economy is the direct value-added contribution that a company makes. This can also be considered as a measure of the amount of wealth that the company creates. This is the difference between the revenue that company generates in a year and the cost of direct inputs. However, the total contribution of the ICT sector to the economy is greater than indicated only by the direct contribution to GDP. For example, companies in the sector pay local suppliers who also contribute to the overall economy. Similarly, employees in ICT companies spend much of their incomes locally and this also contributes to the economy. This is the indirect economic impact of the sector. In the case of the ICT sector there is a further economic impact that arises from the use of productivity-enhancing digital technologies in other industries.

These indirect and productivity-enhancing impacts of the ICT sector are not reflected in the national accounts but can be estimated by applying multipliers derived from international research. It is estimated that the overall economic impact of the sector in 2023 was equivalent to CDF 13 trillion in value-add (almost USD 800 million) and CDF 2 trillion in taxes.²²

B. THE POTENTIAL ECONOMIC IMPACT OF FURTHER DIGITALISATION IN DRC

This section estimates the macroeconomic impacts of increased digitalisation in the DRC for each key sector of the economy, based on academic and policy research together with economic data on the country. These impacts reflect digital pathways to economic transformation and are mapped onto the government's strategic objectives.

More details on the methodology and evidence review are contained in the separate methodological document that accompanies this report.²³

²⁰ IMF, October 2024. World Economic Outlook.

²¹ Authors' calculations based on GSMA, 2024. The Mobile Economy Sub-Saharan Africa 2024.

²² Authors' calculations based on GSMA, 2024. The Mobile Economy Sub-Saharan Africa 2024.

²³ The economic impact modelling presented in this report is based on international benchmarks and research from a wide range of countries. Where possible, analysis from relevant country comparators have been used. More details are provided in the accompanying methodology report: GSMA, May 2024. Driving digital transformation of African economies: Evidence and methodology document.

Table 2: Mapping digitalisation to policy objectives and estimating the impact

Sector	Policy objectives	Outcomes of digitalisation	Impact relationship	Evidence rule ²⁴
Agriculture	Agricultural development and agricultural productivity, access to markets, increase and diversify production.	Precision agriculture, targeted information, better access to markets.	Access to technology by farmers → increased productivity, profits.	Access to technology and precision agriculture increase crop yields between 10.5% and 20%, and profits up to 23%.
Manufacturing and mining	Diversify and develop manufacturing, attract FDI, increase technology exports.	Expand manufacturing capabilities, diversify production, increase FDI and exports.	Adoption of new technologies by firms → increased productivity, GDP, exports.	Application of industrial Internet of Things (IoT) and Industry 4.0 increases value add between 15-25%.
Transport	Improve trade links, infrastructure for transport and logistics, strengthen competitiveness of ports.	Reduce transaction and logistics costs, border delays and tax leaks. Increases productivity and integration into GVCs.	Digital platforms and infrastructure → increased productivity, port capacity, GDP.	Transport upgrades increase incomes by 10%. Digitising ports reduces logistics costs by 15-25%. Digital customs increases revenue by 54% in 5 years.
Trade	Economic diversification, strengthen trade and exports.	Improves trade flows, growth of E-commerce and exports of ICT services and digitally delivered services.	Digital trade → increased integration in AfCFTA, E-commerce and service exports.	Potential to increase E-commerce value to 15% GDP and ICT exports value to 7% GDP.
MSMEs	Strengthening competitiveness and formalisation of MSMEs.	Improves profits of MSMEs. Facilitates business registration, access to finance, formal contracts.	Access to digital by MSMEs → increased incomes and formalisation.	Technology adoption is associated with labour productivity of 2-4% for small firms.
Government	Strengthen domestic revenue mobilisation, prevent corruption, improve services delivery.	Increases tax revenue and provides saving in public expenditure through better targeting, transparency and reduction of corruption.	Mobile money, person-to-government (P2G), and government-to-person (G2P) payment adoption → increased GDP, tax revenue, reduce leakage.	Mobile money adoption increases tax revenue by 7-17%—12% on average. Digital ID for social protection decreases leakage by 41-47%.

Note: For details and references see separate methodological document that accompanies this report²⁵

²⁴ Note that the period over which the impact is felt varies between studies. In some cases, impact is experienced in the short-term. For example, improvement of market pricing efficiency and reduction in geographical dispersion of prices often takes place quickly. Other mechanisms, such as the adoption of productivity-enhancing technologies, take longer to feed through into outcomes. In the modelling for this study, a period of 5 years has been used.

²⁵ GSMA. May 2024. Driving digital transformation of African economies: Evidence and methodology document.



Impact of digitalisation on the agricultural sector in DRC

Agriculture is a critical engine for growth and jobs in the DRC. It accounts for around 17% of GDP but it employs almost 55% of the country’s workforce.²⁶ Farm output has a direct impact on poverty and income levels, particularly in rural areas. Raising agricultural productivity would provide significant growth and development benefits for the country.

Productivity in the agricultural sector in DRC is low due to limited use of fertilizers and climate-resilient seeds, low irrigation efficiency and poor infrastructure and connectivity. There is huge potential in the country for increasing the volume and value of agricultural production through the use of more irrigation, fertilizers and modern agricultural technologies. There is also further potential for improvement of the agricultural sector through forest restoration and conservation, integrated landscape management to reduce disaster risks and addressing the immense deforestation pressures.

Digitalisation of agriculture has large potential to improve agricultural productivity This happens through improved access to information, more effective monitoring of crops, facilitating access to markets and improving the efficiency of the value chain. Recent progress in digital technologies applied to agriculture allows advice and support to be delivered to farmers more effectively.²⁷ Technology can connect farmers to markets much more effectively through new models of aggregation, logistics and supply-chain management.²⁸

Box 1: Digital agriculture ²⁹	
UN SDG Fund smallholder database and digital literacy	The UN SDG Fund programme is partnering with the Ministry of Agriculture and the private sector in the DRC to create a unified smallholder farmer database, supported by digital literacy training of 500,000 smallholder farmers and public awareness campaigns through low-cost mobile phone-based digital communications, prioritising women and youth.

26 World Bank. World Development Indicators.
27 Ndubuisi Ekekwe Harvard Business Review 2017.: How digital technology is changing farming in Africa. Retrieved from: <https://hbr.org/2017/05/how-digital-technology-is-changing-farming-in-africa>
28 Deichmann, U., Goyal, A. and Mishra, D. 2016. Will Digital Technologies Transform Agriculture in Developing Countries? Agricultural Economics, 47, 21-33.
29 UN Joint SDG Fund. June 2024. Digital Transformation: Democratic Republic of Congo.
Vodacom Group 2024. Annual Report FY24.
Information provided by DRC Agency of Digital Development for this report.

Moloni agritech platform - Vodacom & KADEA	Vodacom is piloting the Moloni agritech platform, which provides farmers with weather reports, sustainable farming advice, and a digital marketplace connecting agricultural value chain players. The platform is being developed in partnership with the Ministry of Agriculture and the Kinshasa Digital Academy (KADEA) and is being tested among 1,000 farmers across three regions.
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Increased digitalisation in the DRC will increase access and adoption of mobile technology by farmers, especially those that operate on a small-scale. The policies described in this report will increase agricultural productivity and will **add CDF 2,100 billion to agricultural value-add**, equivalent to 5.5% of the sector's total value-add by 2029. This will result in additional employment in agriculture of around 1.7 million people and around CDF 300 billion in additional tax revenues.

Table 3: Potential impacts of increased digitalisation of agriculture value-add in 2029

Digital value add (CDF billion)	2,100
% of sector GDP	5.5%
% of Total GDP	1.0%
Employment (thousands)	1,700
Tax revenue (CDF billion)	300

Constant 2023 CDF. See separate methodological document that accompanies this report.

Impact of digitalisation on the manufacturing and mining sectors in DRC

Adoption of new technologies by manufacturing firms allows countries to expand the manufacturing sector. Technologies based on the IoT can optimize manufacturing processes across a wide range of sectors. Implementing industry 4.0 technologies such as IoT, 3D printing, virtual reality, data and analytics, AI and machine learning, has been shown to achieve 30-50% reduction in machine downtime, 10-30% increase in throughput, 15-30% improvement in labour productivity, and 85% improvement in the accuracy of forecasting. The application of IoT in the manufacturing context alone could increase manufacturing productivity by 10-25% and value-add by 20%.³⁰

Digital technologies can be used throughout the production process to improve the productivity and safety of mines. Within the manufacturing sector, mining generates by far the biggest value for the DRC economy. The extractive sector in the DRC contributed 30% of GDP and 99% of goods exports in 2021.³¹ At one end of the production process, the application of advanced mapping and sensing technologies can improve the identification and evaluation of deposits. Digital technologies are applied throughout the extraction process and also further downstream in areas such as transport logistics, safety and health. In addition to the physical processes of mineral extraction, digital technologies can also be applied to monitor environmental impact within the mines and in surrounding areas.

There are many examples of practical applications of digital technologies in the mining industry that could have a positive impact on both business performance and human welfare. For example, IoT devices can be used within mines to improve safety through monitoring air quality and tracking structural stability. Outside of the mines themselves, such networks can be deployed to monitor environmental impact such as water and air quality.³² The benefits of digital technologies in mining operations have been seen globally and advancement in this area has begun to be built into explicit company goals. PWC's 2022 Global CEO survey reported that 49% of top executives at global mining and metals companies included automation and digitalization goals in their long-term strategies.³³

³⁰ Orange Business. Unearthing the Future: How digital is revolutionizing the mining industry. SAP. 2017.

McKinsey & Co. 2019. Decoding Digital Transformation in Construction.

McKinsey & Co. 2015. How digital innovation can improve mining productivity.

³¹ Government of the United Kingdom 2023. Overseas Business Risk for DRC.

³² Moshood Onifade, John Adetunji Adebisi, Amtenge Penda Shivute, & Bekir Genc. 2023. Challenges and applications of digital technology in the mineral industry. Resources Policy Volume 85, Part B.

³³ PWC Canada. 2022. Learn how miners can deliver sustained outcomes, and the digital transformation path in the mining industry.

As part of its Digital Acceleration Index research, BCG found that mining companies that successfully digitalised experienced significant gains in productivity and safety, and reductions in cost. Metal production increased in the range of 3-5%, asset lives increased by 8-10% while fuel costs reduced by 5-10%. Large improvements were seen in emissions, which reduced 15-30%; overhead costs, which reduced by c. 30%; and injuries, which reduced by 5-12%. Large improvements were also seen in procurement, contract costs, role filling and other areas.³⁴

One major benefit from digitalization comes from the ability to automate tasks, including those dangerous for people. Autonomous machines can be used to explore dangerous areas and their use can remove employees from dangerous working conditions, as well as handling more mundane tasks such as transportation.^{35,36} Major mining operators have been implementing autonomous machines in various contexts. For instance, BHP has implemented autonomous trucks across its various operations, as well as beginning to use autonomous drilling. Rio Tinto has also been implementing autonomous haul trucks, as well as the world's first fully-autonomous water trucks. Vale has begun using autonomous excavators and various other forms of autonomous equipment.³⁷

Another major use of digitalisation is for predictive maintenance. Mining equipment is expensive, and equipment downtime can be costly for operations. Predicting faults before they become severe can extend the life of assets as well as preventing costly equipment downtime. In one example of this, the international gold miner Barrick applies IoT-linked sensors and equipment across its mines to monitor its equipment. It stated that “A single early fault detection for one piece of equipment alone saved the company USD 600,000.”³⁸ Rio Tinto has also implemented similar systems in many of its mining operations.³⁹

In order for these technology applications to be effective in the DRC context, several elements need to be in place. There needs to be the required digital communications infrastructure to support the applications. In the case of external IoT networks, logistics applications, tracking, security and other applications, there needs to be high quality network coverage over an extensive area around the mining facilities. Earlier generations of IoT devices can operate on 2G networks but more sophisticated applications require broadband connectivity provided by 4G. For more advanced analytics capabilities within mining facilities, high-capacity networks and access to cloud computing infrastructure is required. This is heavily dependent on fibre-optic network infrastructure and cross-border access to cloud-service providers.

Box 2: Examples of digital business solutions	
Airtel enterprise	Airtel is providing a range of business solutions to customers. These include: secured and resilient access to high-speed internet (via fibre, microwave and satellite with Eutelsat's OneWeb); private wireless networks; server hosting solutions for critical data processing with Airtel Data Centers; real-time collaboration tools; track and trace solutions for trucks; and worker monitoring with Airtel IoT solutions. ⁴⁰
KoBold Metals	KoBold Metals are leveraging artificial intelligence and machine learning to analyse vast datasets, predicting the locations of untapped mineral deposits with greater accuracy. This approach not only enhances efficiency but also minimizes environmental impacts by reducing unnecessary drilling and land disturbance. ⁴¹

34 BCG. 2021. Racing Toward a Digital Future in Metals and Mining.

35 IDENTEC Solutions. December 2022. Mine Technology: Unlocking the Power for Increasing Miner Safety.

36 Moshood Onifade, John Adetunji Adebisi, Amtenge Penda Shivute, & Bekir Genc. 2023. Challenges and applications of digital technology in the mineral industry. Resources Policy Volume 85, Part B.

37 Zvarivadza, T., Onifade, M., Dayo-Olupona, O., Said, K. O., Githiria, J. M., Genc, B., & Celik, T. 2024. On the impact of Industrial Internet of Things (IIoT) - mining sector perspectives. International Journal of Mining, Reclamation and Environment, 38(10), 771-809.

38 Aveva. 2021. Barrick Gold: Turning data into gold.

39 Zvarivadza, T., Onifade, M., Dayo-Olupona, O., Said, K. O., Githiria, J. M., Genc, B., & Celik, T. 2024. On the impact of Industrial Internet of Things (IIoT) - mining sector perspectives. International Journal of Mining, Reclamation and Environment, 38(10), 771-809.

40 Airtel DRC. 2024. Communications related to DRC Mining Week 2024.

41 Mining Indaba. March 2025. Tech-Driven Mining: How Gates and Bezos Are Reshaping the DRC's Lithium Future.

Glencore Mutanda & Vodacom	Glencore Mutanda, a mining company, is using Vodacom's Umoja App, a digital workplace tool, that provides employees with real-time information, including health and safety updates, human resources and payroll details, training and employee feedback channels. 2,300 employees were connected through Umoja in FY2024. Vodacom also supports Glencore to improve network coverage across mining sites and in nearby towns. ⁴²
Orange Business	Orange Business provides a range of business services in the DRC. These include: • Connectivity Services: High-speed internet, mobile private networks, and cloud solutions to enhance business operations. • IoT and Machine-to-Machine (M2M): Solutions for industries like manufacturing and logistics, enabling real-time monitoring and automation. • Cybersecurity: Services to protect businesses from digital threats. • Mobile Money and Payment Solutions: Tools like bulk payment systems and secure cash collection services.⁴³
Africell Business	Africell Business offers a catalogue of innovative products, structured into several distinct offerings, specifically designed to meet the needs of businesses. It supports businesses in their digital transformation by providing reliable, high-performance tools tailored to their daily challenges. Its solutions include: • Mobile telephony services to facilitate communication between employees; • Postpaid lines, adapted to professional uses; • Access to mobile and high-speed fixed internet via microwave and fibre optic technologies; • Advanced ICT technologies for efficient and secure data management.⁴⁴
Mining maps	DRC Mining Maps is a digital mapping platform that presents data from the mining sector. ⁴⁵

The policies described in Section 5 of this report will lead to an increase in the level of digitalisation of the industrial sector. This will add CDF 6,500 billion in industry value-add, equivalent to 6.% of the sector's total value add by 2029. This will result in additional employment of about 300,000 people and CDF 1,000 billion in additional tax revenues from the increase in overall GDP.

Table 4: Potential impacts of increased digitalisation of industry in the DRC in 2029

Digital value-add (CDF billion)	6,500
% of sector GDP	6.5%
% of Total GDP	3.0%
Employment (thousands)	300
Tax revenue (CDF billion)	1,000

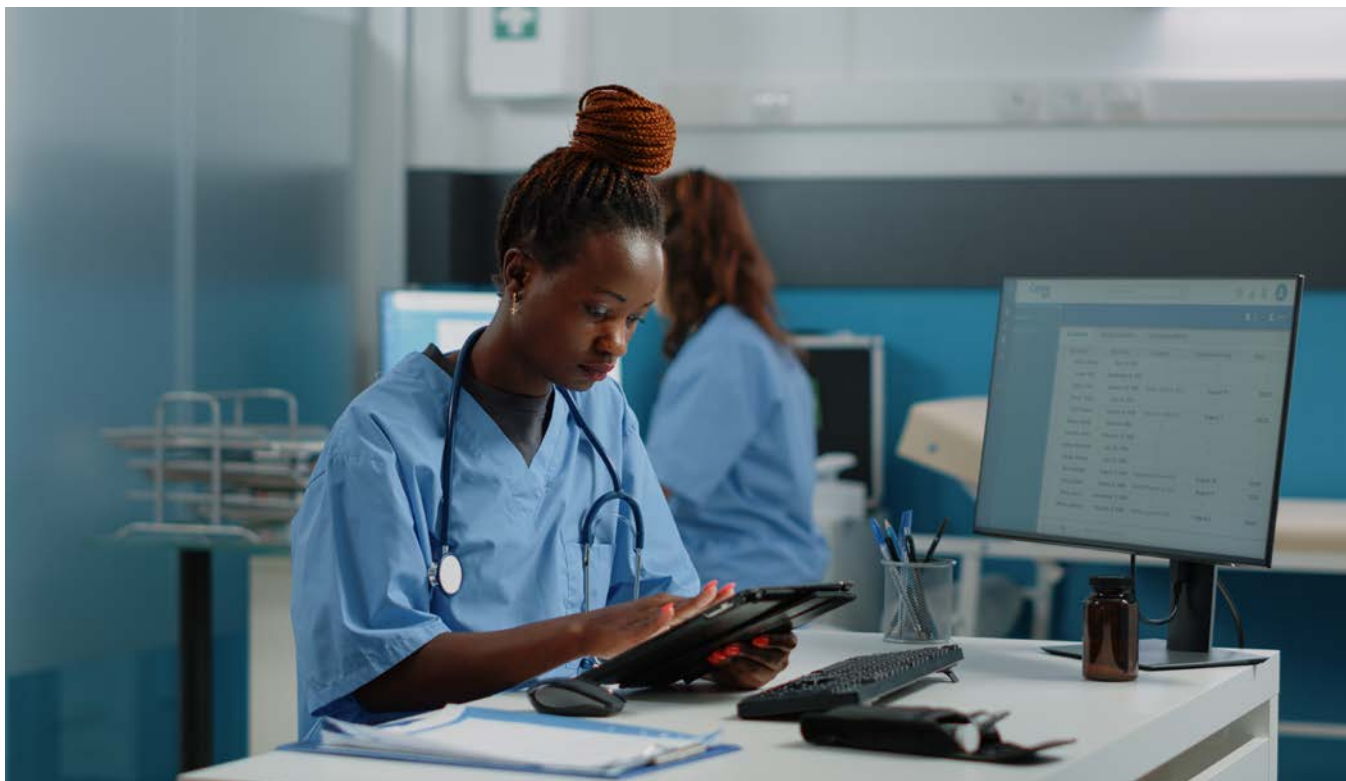
Constant 2023 CDF. See separate methodological document that accompanies this report

⁴² Vodacom Group. 2024. Annual report FY24.

⁴³ Orange Business DRC website.

⁴⁴ Information provided by Africell for this report

⁴⁵ Information provided by the DRC Agency of Digital Development for this report.



Impact of digitalisation on the services sector in DRC

In services, digital applications will significantly enhance the commercialization of new products, expand delivery services, reduce transport and logistics costs, improve efficiency and strengthen market linkages.⁴⁶ Digitalisation brings benefits through increased e-commerce, gains from trade in services that can be delivered digitally and the formalisation of small trading activities and MSMEs. It also facilitates integration in regional trade in services which will support the implementation of the African Continental Free Trade Area (AfCTA).

Digital applications in transport alone are likely to bring large benefits as transport and logistics are a major challenge in the DRC. The country is very large with limited access to port infrastructure. Given the importance of the extractive industry for the economy, the efficient functioning of land transportation is essential for national development. This will require sustained investment into road and rail infrastructure over many years. As this takes place, there is scope to increase the efficiency of the transport networks through the use of digital technologies which can be deployed to improve the tracking and monitoring of vehicles. This can reduce leakage, mitigate the impact of accidents, and improve the flow of goods along the networks and across borders.

The Government of the DRC is introducing digital platforms to address some of the challenges relating to transport and logistics in the country. These include:

- “OGEFREM” which provides transportation and logistics operators with online subscription, electronic submission of freight documents, secure payment via LOGIRAD integrated public finance management and payment system, and access to the schedules of ships and planes serving the DRC; and
- “GUICE”, an Integral Single Window for Foreign Trade, which provides an interactive platform for the foreign trade facilitation.⁴⁷

Digital businesses themselves are a key source of growth and development in the DRC. Digital and technology-focussed businesses have been a critical source of economic growth and development for many African countries, including the DRC. Clusters of digital businesses have formed and created a self-sustaining digital ecosystem of local entrepreneurs. The vast majority of these are

⁴⁶ Baldwin, R. 2016. The Great Convergence: Information Technology and the New Globalization. Harvard University Press.

⁴⁷ Information provided by the DRC Agency of Digital Development for this report.

private-sector led businesses targeting local opportunities to provide services to people living within the DRC. An essential component of this source of development is local availability of digital skills and entrepreneurs. Some of these are sourced from the Congolese diaspora overseas who have developed specialised experience while living abroad.⁴⁸ Other businesses have been developed by purely home-grown digital entrepreneurs based in the DRC.⁴⁹

The government is also supporting digital innovation and skills development. This is through a range of different programmes and initiatives. The digital transformation project agreed with the World Bank and the French Development Agency in 2024 includes a significant component focused on increasing digital skills and innovation in the country. The Agence Pour la Développement du Numérique (ADN) is also leading initiatives to support digital entrepreneurship in the country through programmes such as Challenge Startup Bassin du Congo.⁵⁰

The policies described in this report will increase the digitalisation of the services sector, speeding up supply chains and lowering transaction costs. It is estimated that this has the potential to add CDF 1,900 billion to value-add, equivalent to 2.6% of the sector’s total value-add by 2029. This would result in additional employment of around 500,000 people and CDF 300 billion in additional tax revenues generated by the sector.

Table 5: Potential impact of increased digitalisation of services in the DRC in 2029

Digital value add (CDF billion)	1,900
% of sector GDP	2.6%
% of Total GDP	0.9%
Employment (thousands)	500
Tax revenue (CDF billion)	300

Constant 2023 CDF, see separate methodological document that accompanies this report

Formalisation of businesses and raising business productivity

Encouraging the growth of digital businesses – particularly MSMEs – and supporting the formalisation of businesses are important policy objectives. Digital entrepreneurship provides new, high-productivity job opportunities for the DRC’s large youth population, while formalisation encourages greater tax payment and business growth.

Access to ICTs and digital services are essential for making this vision a reality. Digitalisation benefits SMEs through better access to information and markets, increased productivity and job creation. For formal firms, higher technology adoption is associated with labour productivity increase of up to 2%, reaching 4% for informal firms.⁵¹

Formalisation of businesses is an important first step on the path to them becoming taxpayers. Formalisation of a business does not, in itself, result in it becoming a taxpayer. Indeed, many informal firms already pay some types of tax. But formalisation is a necessary step in expanding the size of a country’s tax base. Once a company or individual is officially registered, it is easier for tax authorities to bring them into the tax net and enforce tax compliance. A World Bank study in Benin showed that 55% of informal firms paid some tax, with the average amount of tax paid equal to 9% of annual profits. 84% of formal firms, on the other hand, paid some taxes and paid, on average, 17% of profits.⁵²

There are significant barriers to companies switching from informal to formal status. Multiple steps are usually required to register a business with significant fees payable to the government. Once

48 See, for example: Dialogue Migration. February 2025. Positive impact of digital technology in DR Congo.
49 See, for example, KivuGreen (www.kivugreen.cd) and Malabar (www.malabar.cd).
50 ADN. May 2025. Cocorico! La startup de la RDC “GENESIS” Remporte la Finale du Challenge Startup Bassin du Congo.
51 Cirera, Xavier & Comin, Diego & Cruz, Marcio. 2022. Bridging the Technological Divide: Technology Adoption by Firms in Developing Countries. Also: Rajesh Bhattacharya. 2019. ICT solutions for the informal sector in developing economies: What can one expect? E J Info Sys Dev Countries. 85:e12075. Also: Mothobi, Gillwald, and Aguera. 2020. A Demand side view of Informality and Financial Inclusion. Research ICT Africa Policy Paper No.9, Series 5: After Access.
52 World Bank. 2016. Can Enhancing the Benefits of Formalization Induce Informal Firms to Become Formal? Experimental Evidence from Benin. Policy Research Working Paper 7900.

registered, a company is then more likely to be subject to other types of regulatory or licensing rules that raise the costs of doing business.⁵³

Increasing the rate of formalisation requires a broad and sustained effort by the government with both positive and negative financial incentives. Ideally, it should be as simple and as cheap as possible for companies to register as formal businesses so that the barriers to registering are reduced. This needs to be complemented by more efforts at compliance, in which companies are penalised for not complying with rules.

Digitalisation has an important role to play in the process of registration with the authorities. The time and financial cost of registering a business can be significantly reduced if the processes are digitalised. It also reduces the leakage and corruption that is often involved. Similarly with tax compliance, requirements to register and file taxes electronically can reduce costs and improve the quality of service. Evidence from East Africa indicates that policies aimed at financial inclusion, coupled with anti-corruption and governance programmes result in better fiscal outcomes and higher levels of domestic tax revenues.⁵⁴

There are many examples from around the world of developing countries using digital technology to enhance formalization of businesses and grow tax revenues. In Ghana, the e-Transform project resulted in significant improvements in the services provided to businesses. The length of time that it takes to register a business, for example, fell from 4 days to 2 as a result of the automation of the processes.⁵⁵ The government also established the Ghana.gov.gh website which is a single portal that provides access to a wide range of government services, including business registration and collection of fees owed to the government. It is an integrated service that handles payments and transfers, post-payment workflows and provides customer notification and feedback. Take-up following the launch of the platform was significant with the number of transactions increasing from 1.61 million in 2020 to 10.03 million in 2022. The value of payments made through the platform also increased from GHC 5 billion to GHC 63 billion over the same period.⁵⁶

The Government of the DRC is implementing similar digital platforms. These include, for example, the Ministry of Industry's E-KAZI platform which simplifies the creation of new businesses, including the completion of company registration and other government and regulatory requirements.⁵⁷

There are many ways in which the government of the DRC could increase the levels of adoption of productivity-enhancing digital technologies. On the supply-side, these include improving the availability and affordability of digital connectivity. To complement this, efforts are required to enhance the demand for digital services. Education and digital skills training, and strengthening of the regulatory frameworks around data protection, cybersecurity and customer protection all help foster demand for digital services. Supporting digital entrepreneurship is also important. Fostering local digital talent and enterprises creates demand for digital services through those businesses themselves. It also strengthens the locally-based digital ecosystem which further stimulates demand.

Box 3: Supporting MSME opportunities through digital⁵⁸

Kobo-Hub	Kobo-hub is a start-up accelerator hub based in Kinshasa, Lubumbashi and Goma providing training and mentoring in technology and other sectors.
Orange Digital Center	The Orange Digital Center is a hub dedicated to fostering digital skills and innovation. It offers free programs to the public, including a coding school, digital manufacturing workshops, and a startup accelerator called Orange Fab.
Vodacom Je Suis Cap	Vodacom, through its Je Suis Cap (I Am Capable) programme, has trained 1,450 women with disabilities as M-Pesa agents in five regions. These women are now running their own businesses and generating incomes to support their families.

53 International Labour Organisation. 2018. New technologies and the transition to formality: The trend towards e-formality.

54 Milly Chepkorir Chebochok and Nimonka Bayale. 2023. Effects of financial inclusion on tax revenue mobilization: Evidence from WAEMU countries. African Development Review.

55 World Bank. 2023. Restructuring Paper On A Proposed Project Restructuring Of E-Transform Ghana.

56 GSMA. 2023. Inclusive E-Government Services in Ghana: Enhancing Women's Access and Usage.

57 Information provided by the ADN for this report.

58 Kobo-hub website; Orange DRC website; Vodacom Group. 2024. Annual Report FY24.

Reforms to the business regulatory frameworks could particularly support the development of the digital ecosystem. This includes strengthening the digital business registration process, adopting a risk-based approach to business regulation and licensing, setting up regulatory sandboxes so that small businesses can get started with the minimal regulatory burden. Further reductions in the cost of interacting with the state will also encourage businesses to transition from informal to formal status and thereby engage in the process of raising output and productivity.

Impact of digital government in DRC

The government recognises the importance of digitalisation in its **Government Action Program and National Digital Plan Horizon 2025**.⁵⁹ However, progress in implementation of the Digital Plan Horizon 2025 has been slow and the DRC is being left behind by other countries in Africa and beyond. In the plan’s mid-term evaluation report, 28 out of 69 projects identified had commenced. 11 of these were closed and 17 were in the operationalisation phase. The report made the following recommendations to improve the implementation and achievement of the plan objectives:

- 1. Mobilise a budget for the realisation of studies of all projects not started, in order to meet the objectives.
- 2. Operationalise a permanent inter-institutional collaboration framework comprising the Prime Minister, the Ministries of Digital and Posts, Telecommunications and New Information and Communication Technologies as well as the Agency for the Digital Development in order to monitor and evaluate projects.
- 3. Use the Universal Service Fund to finance projects in rural and peri-urban areas to be associated with the development programme of the 145 territories.⁶⁰

The challenge facing the DRC in the implementation of e-government is illustrated by its EGD I 2024 ranking of 179 out of 192 UN Member States. The DRC is well behind some other African countries in these rankings. South Africa, for example, is in the top 50. Tunisia, Morocco and Egypt are in the top 100 and Ghana, Kenya, Botswana, Gabon, Ivory Coast are in the top 125 countries.⁶¹

The potential for digitalisation of public services can be seen through partnership projects between the government, the private sector and international organisations. These include projects in education, healthcare, public information, and natural disaster support. Case studies demonstrating examples of this are provided below in Boxes 4 to 7.

Box 4: Digital education case studies⁶²

Airtel	Airtel partners with UNICEF on the “Reinventing Education” programme in the DRC and other African countries (USD 57m investment over 5 years). This connects schools to the internet, provides free access to online educational content and trains teachers to enhance their digital teaching skills. In 2022, Airtel entered a partnership with the Ministry of Higher Education to provide Airtel Educ Solution, a single education platform for universities. Airtel has partnered with Schoolap, an educational platform that offers structured educational content for pre-primary, primary, secondary, and technical levels. This provides over 21,000 items of content to over 6,000 schools, 1.9 million students and 105,000 teachers across six provinces in the DRC.
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59 National Digital Plan Horizon 2019 – 2025.
60 Mid-Term Report – Evaluation of Digital Plan Horizon 2025.
61 United Nations Department of Economic and Social Affairs. 2024. E-Government Survey 2024: Accelerating Digital Transformation for Sustainable Development
62 Information provided by the DRC Agency of Digital Development for this report; Airtel information provided for this report; Orange DRC website; Airtel Africa. 2024. Sustainability Report 2024; Vodacom Group. 2024. Annual Report FY24.

Government education programmes and administration	The Ministry of National Education and New Citizenship's "Schoolap" and "Educ-App" provide digital school management applications, allowing schools to equip themselves for the digital transition in education. The Ministry of Higher and University Education's OptSolution is a digital platform that facilitates academic management, verifies the authenticity of diplomas and monitors payments in higher education in the DRC. The Ministry of Higher and University Education's distance learning platform "Je suis Tech" is an online learning place to develop skills in IT, technology and development.
Orange	The Orange Foundation has rolled out its digital school program. 17 digital schools are deployed in Kinshasa and Kongo Central for nearly 10,000 primary school students, with a further 10000 students accessing online to the applications developed for this program. The curriculum is available in French and the four national languages. Orange is working in partnership with AfricaTik to develop digital educational content adapted to the national curriculum and is available in four local languages. Orange is also participating in the construction of the Orange Villages. These consist of a health centre, a water point and a school where more than 1,000 primary school pupils have been educated.
Vodacom	The VodaEduc platform offers free maths, sciences, information technology, economics and finance educational content to learners and teachers. In FY2024, VodaEduc had 102,557 users and provided scholarships in nine regions. The Vodacom Digital Lab, in partnership with the KADEA, promotes sustainable digital connectivity and skills development across the country. In FY24, 2,753 students were trained online, with 412 receiving on-site training. Code Like a Girl is a social enterprise that provides girls and women with the confidence, tools, knowledge and support to enter and flourish in the coding industry and in STEM subjects. In FY24, 1,446 girls were trained. The Instant Network Schools programme was set up in 2013 by the Vodafone Foundation and the United Nations High Commissioner for Refugees (UNHCR) to give young refugees, host communities and their teachers access to digital learning content and the internet. In FY24, 29 DRC schools, 40,820 students, and 781 teachers participated.
Africell	Africell has launched a series of learning centres open to the public, offering free access to digital training courses in a variety of fields, ranging from basic technical skills to an introduction to artificial intelligence and cybersecurity. These centres aim to bridge the digital divide and promote technological inclusion, particularly among youth and vulnerable populations. As part of its commitment to education and innovation, Africell has also established the "Future Leaders" program in partnership with local universities. The program aims to identify, train, and support high-potential graduates by providing them with cutting-edge digital tools and key skills in leadership, entrepreneurship, and innovation. Through this initiative, Africell is actively contributing to the emergence of a new generation of African leaders, ready to meet the challenges of sustainable development, digital transformation, and economic competitiveness. The Future Leaders program is about to take a new step forward with its upcoming rollout at the London School of Economics (LSE).
Kinshasa Digital Academy	Kinshasa Digital Academy offers high-end specialist and digital marketing courses to students from Kinshasa or Goma.

Box 5: Digital healthcare case studies⁶³

Digital health system	In 2023, the Ministry of Health, Ministry of Digital Affairs, National Agency for Clinical Engineering and Digital Health, and the Digital Development Agency have worked together to develop an Enterprise Architecture approach for the implementation of the national digital health system.
DIAL	Digital Impact Alliance (DIAL) have worked with the government, the ANICiS (the public agency for advancing digital health), and mobile operators since 2000 on digital healthcare programmes, including: • Developing the ANICiS framework and capacity building; • Implementing and training for the mHero 2 way mobile phone communications system between government and health workers; and • Developing ANICiS data dashboard in collaboration with mobile operators.
Airtel malaria campaign	Airtel has collaborated with the National Malaria Control Program and Impact Santé Afrique on a campaign broadcasting 11 million free SMS messages over two months to raise awareness about malaria prevention.
Vodacom maternal healthcare	Mum & Baby supports expecting mothers through a zero-rated mobile health platform that provides mothers with regular information on maternal, neonatal and child health and nutrition. In FY24, there were 536,000 users, up from 195,000 in the year before.

Box 6: Digital public services case studies⁶⁴

Presidency office	ePresidency is the official digital platform of the Presidency of the DRC, designed to modernize communication, disseminate institutional information and support digital governance.
Digitalisation of taxation, duty, and levy payments and compliance	ISYS-REGIES is an application developed by the Central Bank of Congo in collaboration with the financial authorities for the monitoring of tax, duty and levy payments under the Directorate General of Taxes (DGI), the Directorate General of Customs and Excise (DGDA) and the Directorate General of Administrative, Judicial, State and Participations (DGRAD). The Electronic Tax Identification Number (e-NIF) application of the DGI aims to modernize the identification of taxpayers. SYCO-GD-VTA is a system for the collection and management of VAT data on transactions carried out by taxable persons by means of electronic tax devices. LOGIRAD is a digital platform of the DGRAD that centralizes, secures and optimizes the management of duties, taxes and fees to improve the transparency and efficiency of state revenues. The National Social Security Fund (CNSS) e-declaration allows employers to declare salaries and social security contributions online, manage their account and track the history of declarations.
Digitalisation of administration processes	Directorate General of Migration's eVisa DRC is a digital application set up to facilitate the application process for a courtesy entry visa in the Democratic Republic of Congo. The Ministry of Land Affairs has launched the e-Foncier and Cadastral Portal to digitize titles, secure properties and improve land transparency. The Ministry of Urban Planning and Housing has developed a Digital Single Window for the issuance of building permits, and for centralizing and simplifying administrative procedures. This system allows citizens to submit their applications online, reducing processing times and improving transparency.

⁶³ Impact Information provided by the ADN.

Impact Santé Afrique. 2024. Airtel invests in the fight against malaria.

DIAL website. Digital health case study DRC.

Vodacom Group. 2024. Annual Report FY24.

Digital Square. December 2023. Leveraging enterprise architecture to accelerate digital health transformation and UHC in the DRC

⁶⁴ Information provided by the ADN for this report.

UNDP. November 2023. DRC's path to smarter justice: a digital transformation journey.

Vodacom Group. 2024. Annual Report FY24.

Digitalisation to improve government efficiency and compliance	FinAlert is a platform of the Ministry of Finance that allows the public to denounce fraud, harassment and abuses related to the management of public finances, in order to strengthen transparency and good governance. FRAP is a digital platform that makes it possible to identify, control and make reliable the data on public administration agents in the DRC, in order to fight against fictitious agents and improve payroll management. The Integrated Public Procurement Management System (SIGMAP), was launched in 2022 to automate public procurement procedures, reduce processing times and ensure the traceability of files. This software aims to strengthen transparency in the management of public funds. The Government Actions Monitoring Information System (SISAG), is a digital platform that allows monitoring, documentation and evaluation of the government's actions in real time. It helps identify delays, supports departments in resolving problems, and strengthens transparency and performance in public management. The Ministry of Water Resources and Electricity's Nextcloud platform facilitates the exchange and centralized storage of information between the central and local departments of the Ministry, thus improving internal communication.
Digital payments of government services and utilities	Régipaye is an electronic payment platform dedicated to the payment of subscriptions for access to water. SNEL ET MOI is a digital application linked to smart meters, allowing subscribers to monitor and manage their electricity consumption.
Digital judiciary	The Superior Council of the Magistrate and the DRC Ministry of Justice have partnered with UNDP to co-create digital tools for judiciary activities across Kinshasa, Matadi, Lubumbashi, Goma, and Kananga. These include tools for: • Magistrates' career management (SIGM-Système d'Information de Gestion des Magistrates); • Courts and prosecutions operations (SIGAJ-Système d'Information de Gestion des Activités Judiciaires); and • Prison management (SIGE-Système d'Information de Gestion des Ecrous).
EYANO public information services	EYANO provides free on-demand access to public service information via interactive voice response, SMS and USSD, connecting people living in rural areas, especially women. Topics include financial education, agriculture, health and well-being, gender equality, water and sanitation, family planning, weather and human rights. In FY24, the programme had 2.4 million users.

Box 7: Examples of telecoms services supporting during natural disasters⁶⁵

Airtel – volcano eruption, 2021	Following the eruption of the Nyiragongo Volcano near Goma in May 2021, Airtel supported the affected population. This support included: • Providing emergency connectivity for rescue operations; • Collaborating with humanitarian organizations to provide essential resources and support to displaced individuals and families; and • Providing information over its platforms to share critical updates, safety information, and emergency contacts.
Vodacom – flooding, 2024	Heavy rains in 2023 and 2024 caused major flooding in 18 of DRC's 26 provinces. In January 2024, the government declared a hydrological and ecological catastrophe after the Congo River overflowed and flooded the capital, Kinshasa. Mudslides also occurred in the Kalehe territory, sweeping away large parts of the Bushushu and Nyamukubi villages. As well as ensuring that the mobile network experienced minimal interruptions, Vodacom Foundation provided support to affected communities, including 5 minutes of free calls, a toll-free emergency number, and free money transfers via M-Pesa to Kalehe.
Africell, 2024 tragedies	Following major adverse events in DRC, Africell has provided support and assistance to people affected. For example, following the fire at the Mwanga school in Kolwezi, the bomb explosion at the 8th CEPAC church, and the torrential rains that hit Kinshasa, Africell disseminated messages of support and implemented actions to assist affected families, including providing free call minutes and text messages, deploying personnel for emergency assistance, and donating equipment and food.

⁶⁵ Operator information provided for this report.

The government’s commitment to digitalisation – and building on the digital program and initiatives to date – is illustrated by the recently announced new Digital Transformation Program. This is backed by funding and support from the World Bank and the French Development Agency, which are providing USD 400 million and EUR 100 million, respectively (Box 8).

Box 8: Digital Transformation Program ⁶⁶

The program is to be implemented by the Ministry of Posts, Telecommunications and ICTs and Digital. It has a goal of benefitting over 30 million citizens and includes:

- Expanding digital access and inclusion - financing the development of enabling frameworks and providing financing to mobilize private sector investment in broadband network infrastructure and digital inclusion in areas that are currently unserved or underserved, as well as expanding government and higher education connectivity. 650 new communities will be covered by new access networks, and 1,000 public institutions will be provided with new or improved access to broadband.
- Introducing digital foundations for service delivery - supporting investments in cross-cutting digital building blocks and trust services needed to expand digital service provision across the DRC in a cost-effective and secure manner. This includes the establishment and operation of a government interoperability framework, a shared government data hosting solution, a National Computer Security Incident Response Team, and a unified digital platform for accessing government e-services.
- Increasing access to industry-relevant advanced digital skills & stimulating digital innovation - providing foundational support for developing an advanced digital skills base and the nascent local innovation system to enable the productive use of technology in both the public and private sectors. Over 3,000 youth will be trained in advanced digital skills as well as 1,000 teachers in secondary education with 10 innovation centres established.

Evidence indicates that successful implementation of digitalisation of government services, with integrated digital identity and digital payments, has significant economic benefits. This has been documented by research and analysis of the effects of digital transformation in the public sector. For example, studies have found that digitalizing government payments could save 0.8–1.1% of GDP.⁶⁷ Similarly, it has been shown that countries that have adopted digital P2G services experience a 1.2–1.3 percentage point boost in direct tax revenue as a share of GDP.⁶⁸

Further improvements in e-government from the recommended policies in this report has the potential to add CDF 1,300 billion in tax revenues, equivalent to 3.9% of tax revenue by 2029.

Table 6: Impacts of increased adoption of digital government on tax revenue in DRC in 2029

Digital government revenue increase (CDF billion)	1,300
% tax revenues	3.9%
% of GDP	0.6%

Constant 2023 CDF. See separate methodological document that accompanies this report.

⁶⁶ World Bank. June 2024. DRC Digital Transformation Program factsheet.

⁶⁷ Susan Lund, Olivia White, and Jason Lamb. IMF. 2017. The Value of Digitalizing Government Payments in Developing Economies, in Digital Revolutions in Public Finance.

⁶⁸ Abdoul-Akim Wandaogo, Fayçal Sawadogo and Jesse Lastunen. 2022. Does the adoption of peer-to-government mobile payments improve tax revenue mobilization in developing countries? UNU-WIDER Working Paper 2022/18.





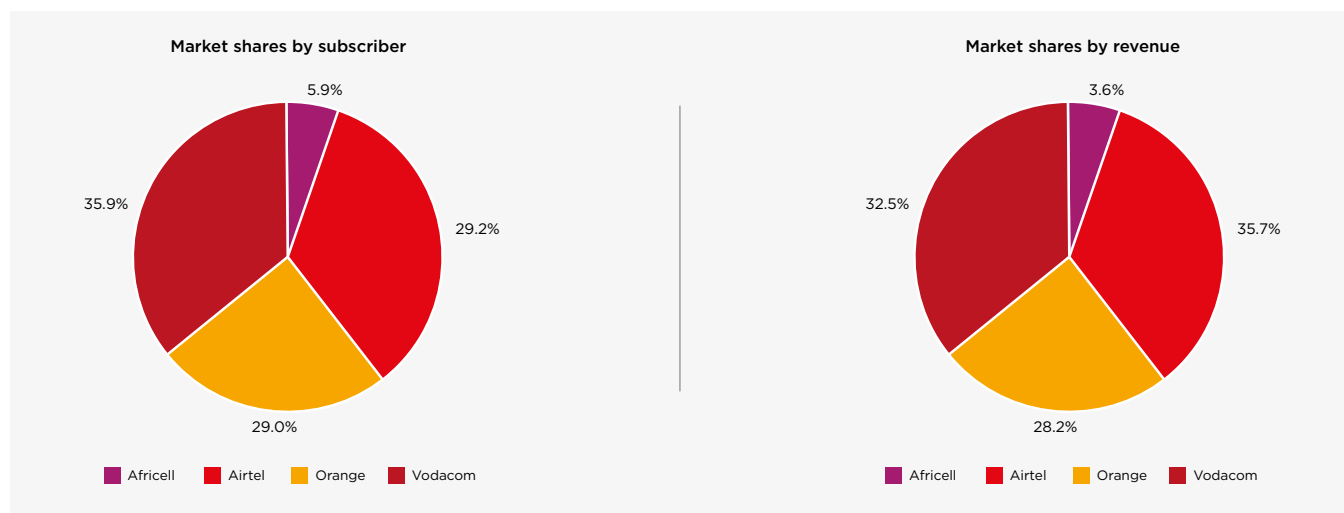
5. The Telecommunications Sector in DRC

A. SECTOR OVERVIEW

Market structure

The mobile sector in the DRC has four operators. Vodacom is the largest when measured by subscribers, with 36% market share. This is followed by Airtel (29%), Orange (29%) and Africell (6%). When measured by revenue, Airtel is the largest (36%), followed by Vodacom (32%), Orange (28%) and Africell (4%). There has been some evolution in these market shares over time. As recently as January 2023, Vodacom and Airtel had broadly equal revenue market shares. Following this, Airtel grew at the expense of Vodacom and has since maintained a lead of approximately 2-3 percentage points of revenue market share (Figure 5).

Figure 5: DRC mobile market shares, Q4 2024



Source: ARPTC.⁶⁹

Mobile penetration

The number of mobile subscriptions in the DRC has grown rapidly over a sustained period of time. The ICT regulatory authority, Autorité de Régulation de Poste et de Télécommunication - RDC (ARPTC), reports that there were 69.5 million mobile subscriptions by Q2 2025,⁷⁰ up from 56.2 million in Q4 2023.⁷¹

The mobile market in the DRC is very competitive with operators continually adjusting tariffs and launching promotions to attract new customers. This was recognised by the regulatory authority which reported that,

*"Competition has intensified among operators in the structuring of bundles and tariffs to attract customers. A moderate decline in subscriptions at Vodacom was observed between Q3-23 and Q4-23. Subscribers, constantly seeking more competitive mobile internet packages, turned to other operators such as Airtel and Africell, which saw their subscriber base increase significantly. Airtel, in particular, is recording double-digit growth. Vodacom's choice was not to follow the trend of price reduction, but rather to significantly increase the capacities offered without affecting the price."*⁷²

This competition between MNOs has driven growth in the number of mobile subscribers over a sustained period. However, this growth rate has been slower than many other countries in Sub-Saharan Africa and penetration in the DRC remains below the regional average (Figure 6).⁷³ This is, in part, because of relatively low levels of network coverage and service utilisation in the DRC compared

⁶⁹ ARPTC. 2025. Observatoire du marche de la telephonie mobile, Rapport du 4eme trimestre 2024, Figure 73.

⁷⁰ Information provided by ARPTC for this report.

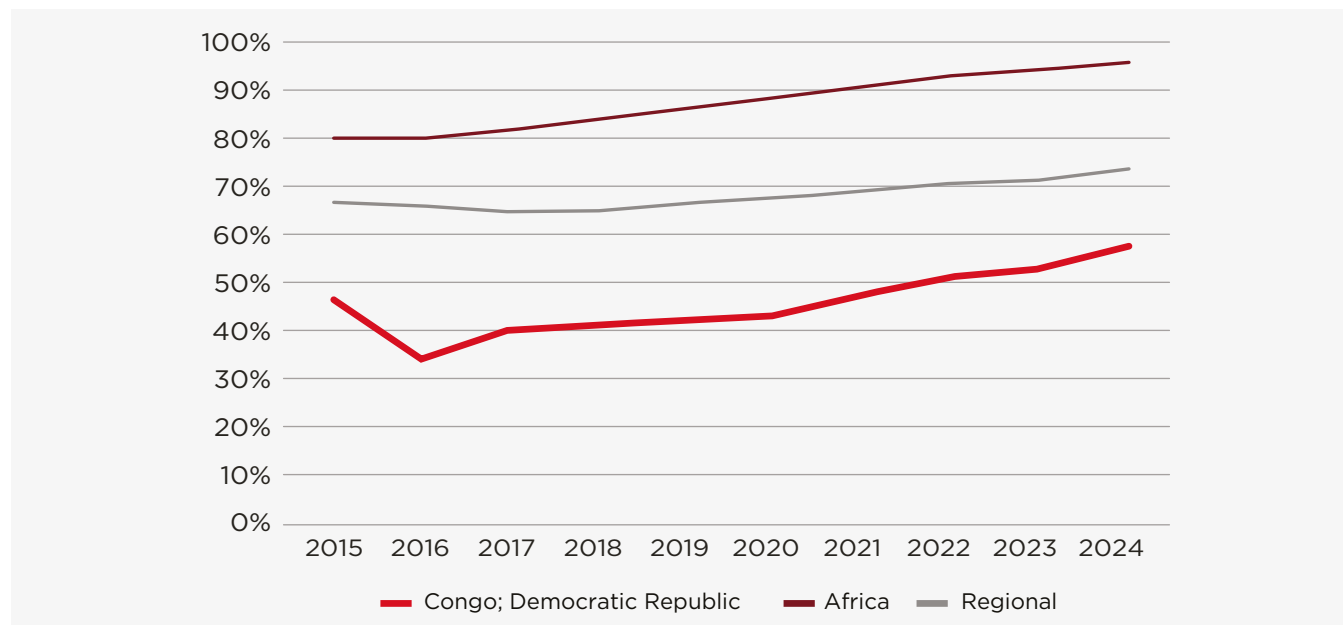
⁷¹ ARPTC. 2025. Observatoire du marche de la telephonie mobile, Rapport du 4eme trimestre 2024.

⁷² ARPTC. 2024. Observatoire du marche de fourniture des services internet, Rapport semestriel S2-2023, page 13.

⁷³ We note that the latest information provided by the ARPTC for this report shows that total mobile penetration reached 62% in Q2 2025.

to other African countries.

Figure 6: Mobile subscriber penetration

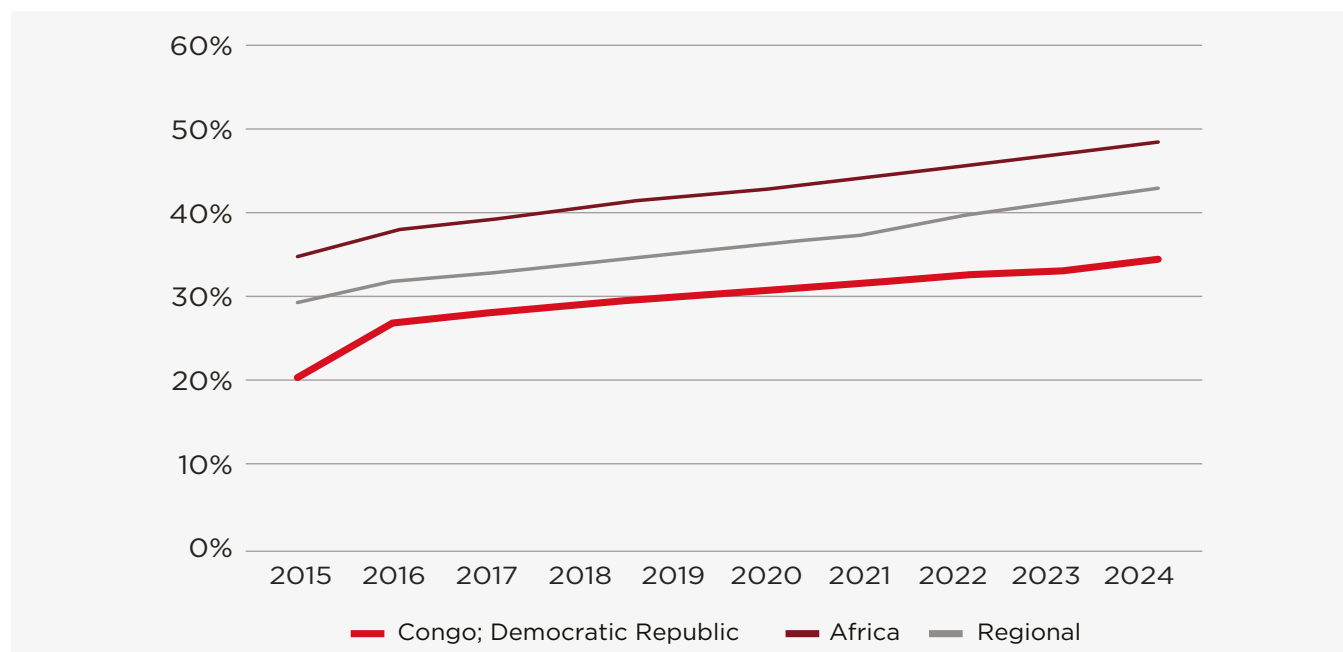


Source: GSMA Intelligence.⁷⁴

The GSMA undertakes analysis of the number of unique mobile subscribers across the region.

This is lower than the number of active SIM cards because many customers have multiple SIM cards. Estimating the number of unique users is important for policy because it is a measure of how many people have access to mobile services. However, it is difficult to estimate from MNO subscriber data alone. The GSMA uses a range of different techniques, including surveys and modelling, to estimate the number of unique mobile users using a consistent methodology that allows cross-country comparison. It estimates that approximately 37.0 million people in the DRC use mobile services, equivalent to about 1/3rd of the total population and 65% of the adult population.⁷⁵ This puts the DRC below the regional and Africa average for the percentage of population using mobile services (Figure 7).

Figure 7: Unique mobile subscriber penetration



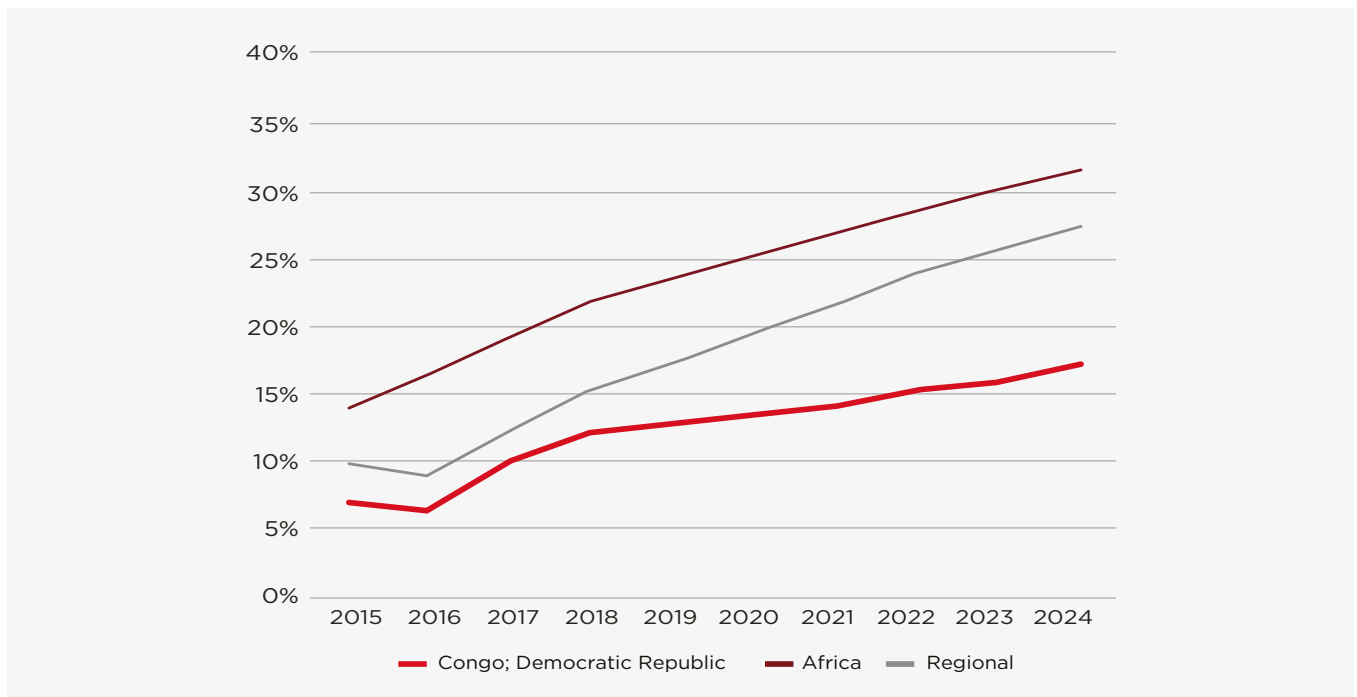
⁷⁴ Regional countries used as comparators in this report: Angola, Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea, Gabon.

⁷⁵ GSMA Intelligence.

Source: GSMA Intelligence.

Internet penetration in the DRC has grown since the launch of mobile broadband networks but remains low by regional standards. By the end of 2024, it is reported that there were 33 million mobile internet connections, giving a mobile internet penetration rate of just under 35%.⁷⁶ When accounting for multiple SIM usage and other factors, it is estimated that in 2024 the number of unique mobile internet users in the DRC was 18.1 million, or about 17% of the total population (Figure 8).⁷⁷ This means that approximately one-third of the adult population has access to the internet via mobile devices.

Figure 8: Mobile internet unique subscribers as % of population



Source: GSMA Intelligence.

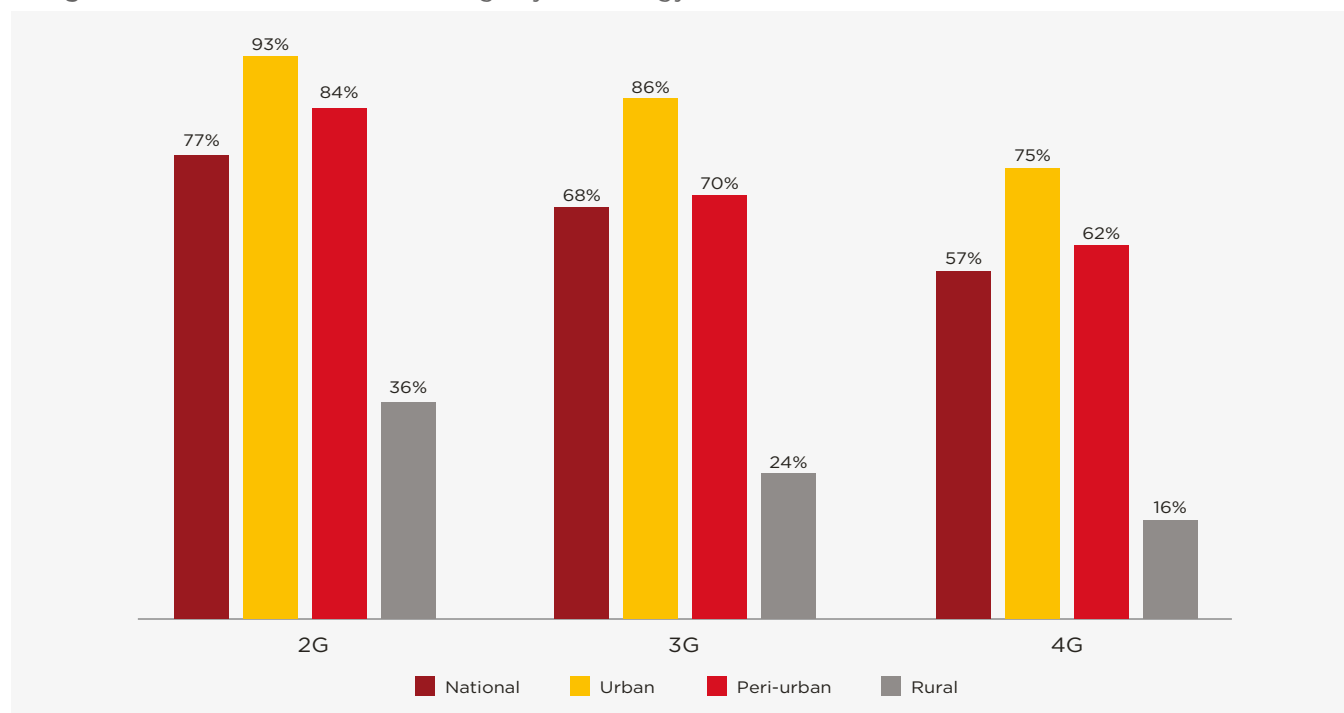
Mobile coverage and the internet usage gap

Mobile broadband coverage has increased steadily since 3G was launched in the DRC in 2011 and 3G networks currently reach 68% of the population. However, 3G coverage lags far behind the African average, which is approaching 95%, because of the high cost of installing and running infrastructure in remote locations. 4G coverage has been growing rapidly as operators have invested to improve and upgrade sites that had 2G or 3G technology. With 4G coverage now reaching 57%, up from just 42% in 2020, there is a potential for 4G to leapfrog 3G for future sites (Figure 9). Figure 10 shows the distribution of 2G, 3G and 4G sites in the DRC.

⁷⁶ ARPTC. 2025. Observatoire du marche de la telephonie mobile, Rapport du 4eme trimestre 2024, Table 1.

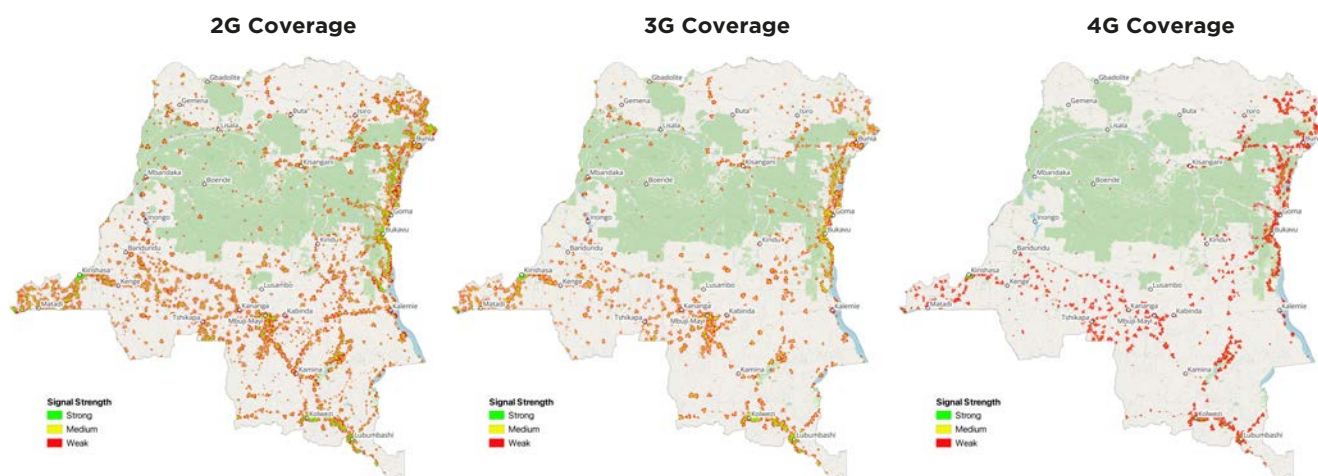
⁷⁷ GSMA Intelligence.

Figure 9: Broadband network coverage by technology



Source: GSMA Intelligence.

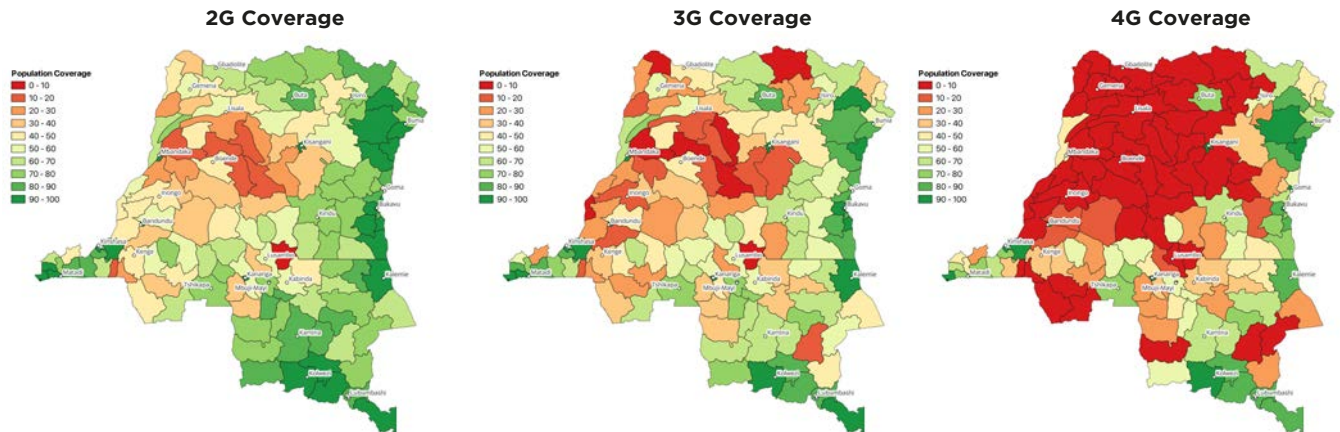
Figure 10: Site location by technology



Source: Analysis of operator site data by GSMA Intelligence and GoYo Analytics.

This distribution of sites means that a much greater proportion of the country's population is covered by 2G technology compared with 3G and 4G (Figure 11).

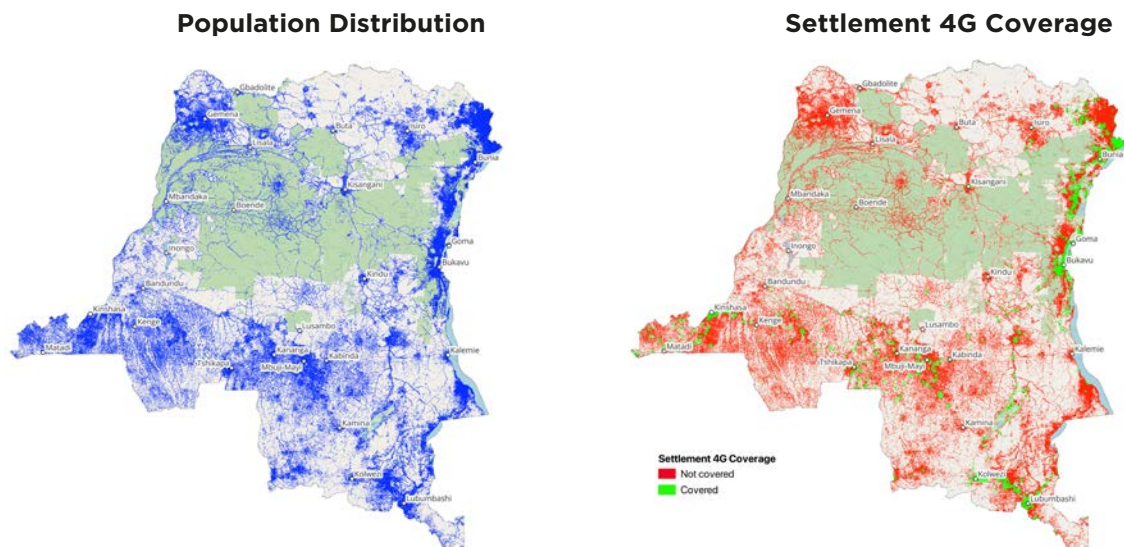
Figure 11: Population coverage by technology



Source: Analysis of operator site data and GHSL population data by GSMA Intelligence and GoYo Analytics.

4G coverage is particularly concentrated in areas of the country with high population density. This ensures that the greatest number of people benefit from the service and provides a return on investment to the mobile operators (Figure 12).

Figure 12: 4G coverage and population

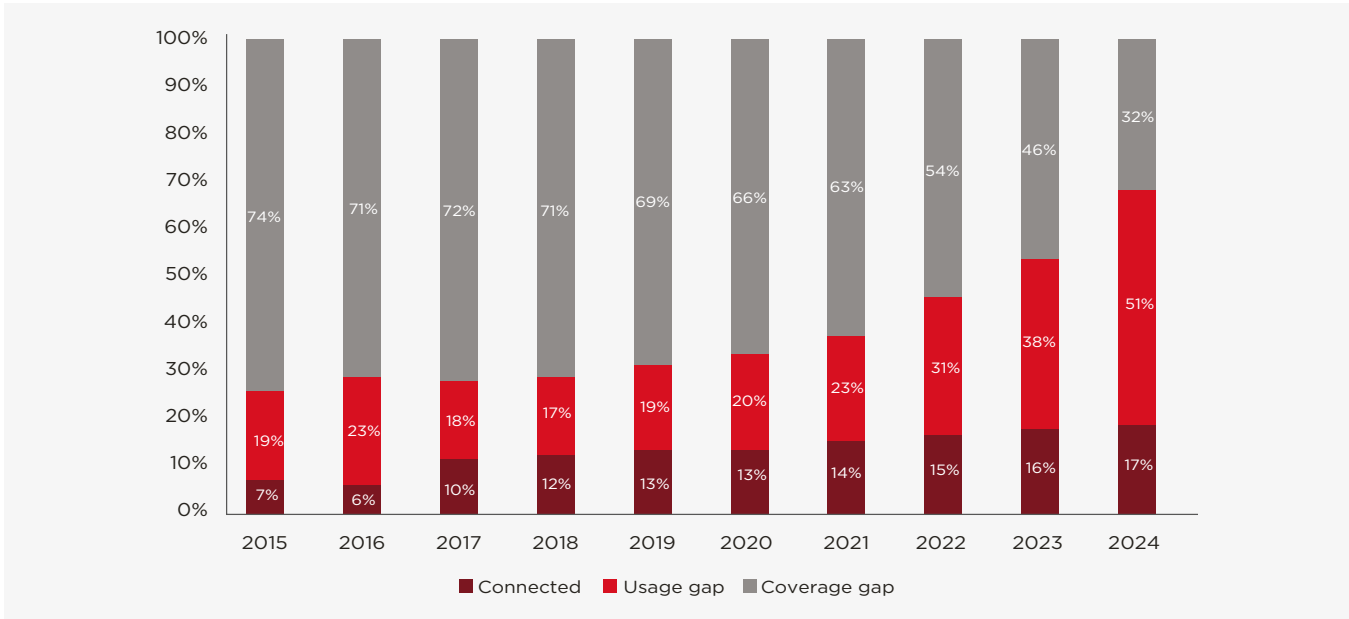


Note: A population settlement is marked as “covered” if it has at least 50% population coverage

Source: Analysis of operator site data and GHSL population data by GSMA Intelligence and GoYo Analytics.

The “usage gap” reflects the difference between the proportion of the population that lives within range of a mobile broadband network and the proportion that actually uses it. It is calculated by comparing the number of unique mobile broadband users (on 3G connections or higher) with the size of the population covered by the mobile broadband networks. The “coverage gap” is the proportion of the population who live beyond the range of the mobile broadband networks. The usage gap in the DRC is around 51%. This is smaller than in many other African countries but this is because of the relatively low levels of network coverage. The coverage gap is 32%, which is greater than many other countries in the region (Figure 13).

Figure 13: Evolution of mobile internet connectivity in the DRC



Source: GSMA Intelligence

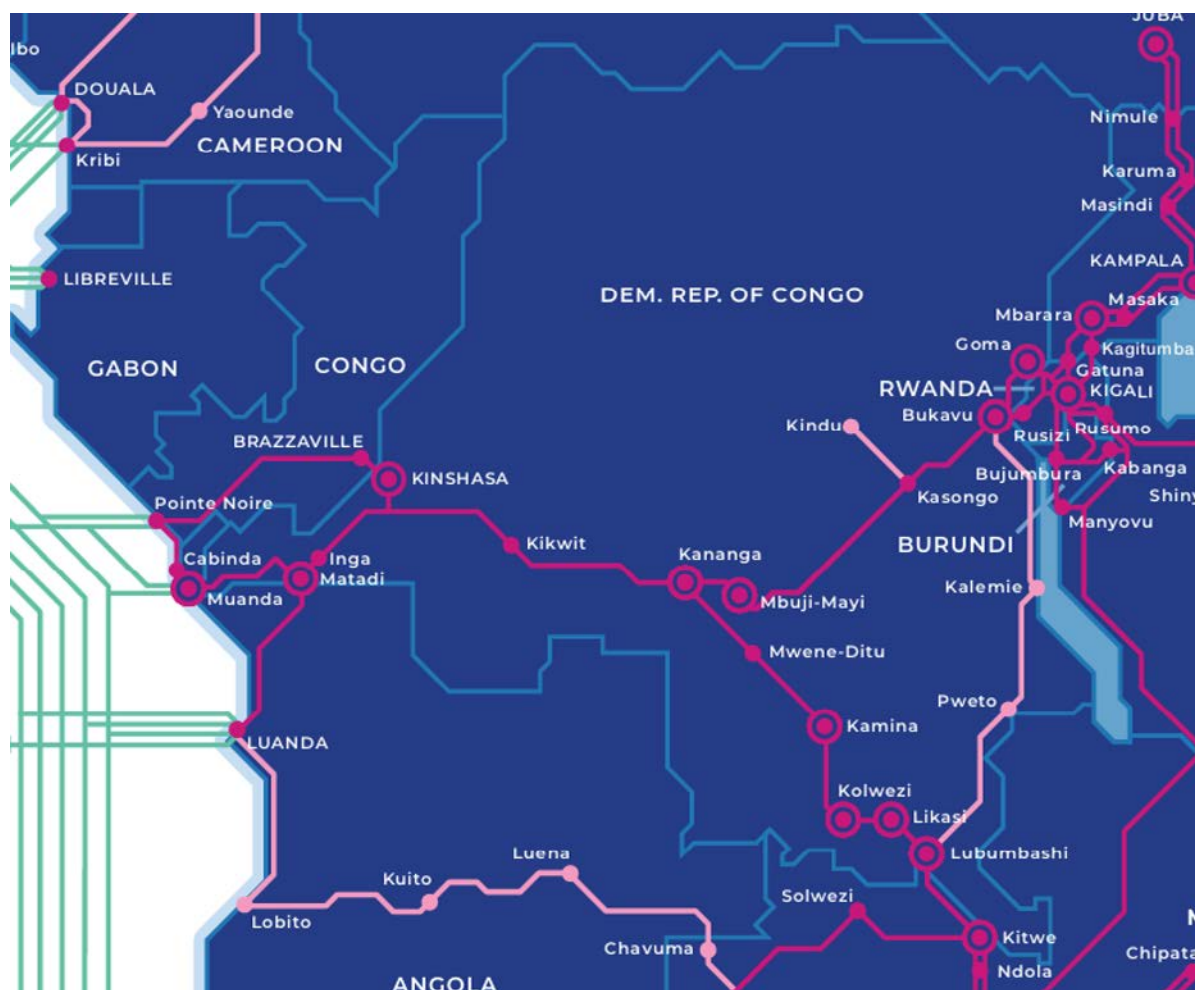
“Connected” refers to unique mobile internet users as a % of population; “Usage gap” refers to populations that live within the footprint of a mobile broadband network but who are not using mobile internet; “Coverage gap” refers to populations that do not live within the footprint of a mobile broadband network (3G or above).

Fixed networks

In addition to mobile networks, in recent years there has been an increase in roll-out of fibre networks, both to support mobile towers and to provide broadband services to individuals and businesses. One of the largest fixed operators, Liquid Telecom, has a network that covers the full breadth of the country, with a growing Fibre-to-the-Premises (“FTTP”) network in Kinshasa (Figure 14). However, at just 23,000 subscribers at the end of 2023, fixed broadband still constitutes a very small percentage of the population (0.024%).⁷⁸

78 ARPTC. 2024. Observatoire Du Marche De Fourniture Des Services Internet, Rapport Semestriel S2-2023, Table 1.

Figure 14: Example of Liquid Telecom's network in the DRC



Source: Liquid Telecom.⁷⁹

Fixed broadband connections are important for the long-run development of large digital businesses, as they can carry much higher loads and can provide faster speeds than mobile broadband. ARPTC reports that the national backbone network has reached 9,600 km of fibre-optic cables, out of an initially planned total of 50,000 km. A number of fibre operators have launched networks, with the latest data showing almost 29,000 km of fibre backbone is currently planned by operators (Table 7).

Table 7: Kilometres of Fibre, by Operator

Operator	Planned (km)	Built (km)
ADS Telecom CDR	6,103	0
Bandwidth&Cloud Services Group (“BCS”)	6,938	756.5
SOCOF (Fast Congo)	680	680
Liquid Telecom		1,927
SCPT	15,000	3,768
Vodacom-Orange-Airtel	300	300
SNEL	2,200	2,200
Total	28,721	9,631

Source: ARPTC.⁸⁰

79 Liquid Telecom. LIT Fibre Map September 2023 Global.

80 ARPTC, 2024, Observatoire Du Marche De Fourniture Des Services Internet, Rapport Semestriel S2-2023, p. 36.

Data Centres

Data centres are key nodes in fixed and mobile networks and are essential for the provision of digital services for large enterprise customers. Data centres may be in-house (i.e. used only to meet an organisation’s own needs) or open-access (i.e. available for access by multiple organisations). The DRC does not have a large number of local open-access data centres, with many enterprises needing to rely on data centres outside of the country. Some operators (such as Liquid Telecom) provide large data centres in regional hubs (such as Nairobi and Lagos); others may be even further afield.

A few local open-access data centres have opened in the DRC. These include United Data Centre,⁸¹ OADC Kinshasa, which went live in July 2024⁸² and Raxio DRC, which went live in August 2024.⁸³ These require significant (and stable) power supplies and high-quality fibre links in order to operate successfully.

Mobile money

Widespread adoption of mobile money in the DRC has lagged behind many other countries in Sub-Saharan Africa but has accelerated in recent years. The number of money mobile accounts rose from around 6.6 million in Q3 2020⁸⁴ to 29.0 million by Q4 2024.⁸⁵ The penetration rate of mobile money stood at 34.6% as of the end of 2024.⁸⁶

The growth of mobile money is the result of competition between the primary service providers. Vodacom is the market leader with 51% of mobile money accounts.⁸⁷ Airtel and Orange have 31% and 18% respectively, while Africell has less than 1%. This growth in mobile money has helped raise the level of financial inclusion in the DRC which has very low levels of penetration of traditional financial accounts.⁸⁸

Not all customers who have a mobile money account use it regularly. ARPTC reports mobile money subscribers who have been active in the last 90 days. When considering only the last 30 days, fewer subscribers are regularly active. For instance, Vodacom reports that it had 5.5 million 30-day active mobile money subscribers in the DRC for the quarter ended 31 March 2024.⁸⁹

Box 10: Digital payments ⁹⁰	
Airtel	Airtel Money had 3.6 million customers in FY24, growing revenues by 31% year on year.
Vodacom	Vodacom M-Pesa had 5.5 million customers in FY24, and provides financial services including: • Payment of utilities (e.g. water). • M-Pesa Rallonge overdraft facility with 1.2 million active users. • Microloans and savings provided in partnership with FINCA DRC. • Foreign exchange solutions are provided in partnership with Equity Bank. • World Food Programme providing cash assistance via M-Pesa to help refugees.

81 United DRC. Service Cloud – UNITED.
82 OADC Kinshasa. 2024. OADC Kinshasa Data Sheet, September 2024.
83 Raxio Group. DR Congo – Raxio Group.
84 ARPTC. 2020. Observatoire du marche de la telephonie mobile, Rapport du 3eme trimestre 2020, Table 1.
85 ARPTC. 2025. Observatoire du marche de la telephonie mobile, Rapport du 4eme trimestre 2024, Table 1.
86 ARPTC. 2025. Observatoire du marche de la telephonie mobile, Rapport du 4eme trimestre 2024, Table 1.
87 ARPTC. 2025. Observatoire du marche de la telephonie mobile, Rapport du 4eme trimestre 2024, Figure 8.
88 IMF. 29 July 2024. Financial Inclusion in Congo: An Unfinished Agenda.
89 Vodacom. 2024. Reviewed Annual Results and Cash Dividend Distribution for the year ended 31 March 2024, p. 45.
90 Airtel Africa PLC. 2024. Annual Report and accounts FY24.
Vodacom Group. 2024. Annual Report FY24.

Policy environment

Sector policy and regulation has a significant impact on the performance of the sector. This includes a broad range of issues such as tax policy, spectrum regulation and others. Some of these issues have a more direct impact on sector development than others. However, it is the overall policy and regulatory environment that affects the willingness and ability of operators to invest and expand their networks.

This overall policy and regulatory environment can be captured through an index which combines different factors. The GSMA Digital Africa Index defines key areas of policy and regulation that affect a country's digital development and identifies where these could be improved. It measures these using a system of colour coding (red, amber and green) and calculates and overall ranking.⁹¹ The results for DRC are summarised below in (Figure 15). Overall, DRC is doing well on licencing and consumer protection, but several areas could be improved including spectrum assignments, network regulation, taxation and affordability and demand policies. The following section describes in more detail these policy challenges.

Figure 15: DRC Digital Africa Index

Congo; Democratic Republic (26/100)		République démocratique du Congo (26/100)	
Licensing and Spectrum Licensing Framework ● 100 /100 Spectrum Roadmap ● 0 /100 Spectrum Assignment ● 57 /100 Mobile backhaul ● 50 /100 Technology neutrality ● 100 /100 Spectrum fees ● 50 /100 License duration ● 100 /100 Spectrum leasing and trading ● 0 /100	Consumer Protection Consumer Protection Framework ● 100 /100 Data Protection Framework ● 25 /100 Cybersecurity ● 5 /100 Cross-border data flow ● 25 /100 SIM Registration ● 0 /100	Octroi de licences et attribution des radio-fréquences Cadre d'octroi des licences ● 100 /100 Feuille de route du spectre ● 0 /100 Attribution des bandes de fréquence ● 57 /100 Réseau de collecte (backhaul) ● 50 /100 Neutralité technologique ● 100 /100 Redevances annuelles ● 50 /100 Durée des licences ● 100 /100 Commercialisation et location du spectre ● 0 /100	Protection des consommateurs Règles de protection des consommateurs ● 100 /100 Protection des données ● 25 /100 Cybersécurité ● 5 /100 Flux de données transfrontaliers ● 25 /100 Enregistrement de la carte SIM ● 0 /100
Network Regulation Harmonised deployment ● 100 /100 Small cell deployment ● 0 /100 Fibre regulation ● 50 /100 Infrastructure sharing ● 60 /100 Coverage Obligations ● 0 /100 Quality of Service ● 0 /100 Commercial Flexibility ● 0 /100	Taxation Consumer mobile taxes ● 20 /100 Consumer handset taxes ● 0 /100 Operator taxes ● 0 /100 Fiscal incentives ● 0 /100 Tax stability ● 0 /100	Régulation du réseau Réglementation harmonisée pour le déploiement des réseaux ● 100 /100 Déploiement des petites cellules ● 0 /100 Réglementation de la fibre optique ● 50 /100 Partage des infrastructures ● 60 /100 Obligations de couverture ● 0 /100 Qualité de service (QoS) ● 0 /100 Flexibilité commerciale ● 0 /100	Fiscalité Taxes à la consommation sur les service mobiles portables ● 20 /100 Taxes à la consommation sur les téléphones portables ● 0 /100 Imposition des opérateurs ● 0 /100 Incitatifs fiscaux ● 0 /100 Stabilité fiscale ● 0 /100
	Public Policy Affordability and Digital Skills ● 75 /100 Gender and rural inclusion ● 0 /100 USF Management ● 25 /100 Competition Policy ● 0 /100 Start-up Regulation ● 0 /100		Politiques publiques Accessibilité financière et compétences numériques ● 75 /100 Inclusion des femmes et des populations rurales ● 0 /100 Fonds de service universel (FSU) ● 25 /100 Politique en matière de concurrence ● 0 /100 Réglementation relative aux start-ups ● 0 /100

Source: GSMA.

B. POLICY CHALLENGES

The Government of the DRC's own "National Strategic Development Plan" set a strategic focus on increased digital connectivity within and between communities,⁹² while the PNN seeks to make "Congolese digital technology a lever for integration, good governance, economic growth and social progress"⁹³ based on the four pillars of Infrastructure, Content, Application Uses, Governance and Regulation.⁹⁴

The PNN defines some high-level objectives that aim to expand the size and role of the digital economy in the DRC. These include:

- (i) the establishment and modernization of infrastructure;
- (ii) the expansion of telecommunications coverage and access to digital technology;
- (iii) the securing of channels and access to digital content;
- (iv) the digital transformation of administrations and businesses;
- (v) the exploitation of financial technology platforms;
- (vi) the improvement of human capital;
- (vii) the production, promotion, hosting, and backup of national content;

91 GSMA. 2024. Digital Africa Index

92 PSND 2019

93 PNN, p. 117, translated.

94 Ibid.

- (viii) the monitoring and appropriation of technological advances in digital technology; and
- (ix) the promotion of digital technology through public policies.⁹⁵

The country's digital strategy is currently being updated but it is expected that the new one, once completed, will include ambitious objectives on coverage, access, usage and governance.

The country's ambitions in the area of digital development have received additional support from the World Bank under the Digital Transformation project that has been recently approved. This sets a goal "to increase inclusive access and use of the internet and strengthen the foundations for digitally enabled services in DRC".⁹⁶

Increasing affordability and inclusivity of internet access

A key challenge in the DRC is in making the benefits of internet access affordable to the majority of the population, who are often on low incomes. This was identified as a key objective in the PNN. For example, General Objective I.1.1 in the plan is to "Generalize broadband access for citizens, households, businesses and public services." This is also one of the core objectives of the World Bank supported Digital Transformation project.

One major lever for addressing this challenge is the system of taxation that is applied to the telecoms sector. Excessive taxation of the sector increases the cost to consumers, irrespective of how the taxes are structured. Although most of the taxes are levied on the mobile operators themselves, the cost is ultimately passed on to customers in the form of higher prices. Previous studies have found that 90% of changes to the value of consumer taxes (e.g. sales and usage taxes) are passed through to consumers, while 85% of changes to the value of operator taxes (e.g. revenue and profit taxes, spectrum and license fees) are passed through to consumers.⁹⁷ Studies also show a relationship between data and handset prices, on the one hand, and the rate of uptake of mobile broadband on the other - higher prices lead to lower rates of broadband uptake.⁹⁸

As illustrated in Table 8 below, **there are at least 50 taxes and fees applying to the telecom sector, including several sector-specific fees and a number of general taxes.** In addition, unlike most countries, including those in the East African Community (EAC) and Southern African Development Community (SADC), DRC has a decentralised tax revenue authority system. This includes three national revenue authorities (DGI, DGRAG, DGDA), 26 regional tax authorities and multiple local entities. This gives rise to a multiplicity of tax audits and assessments that often overlap, frequently resulting in double taxation for MNOs.

⁹⁵ PNN, p. 7.

⁹⁶ World Bank. 2024. Project Appraisal Document Under The Inclusive Digitalization In Eastern And Southern Africa (IDEA), p. 44.

⁹⁷ World Bank. 2022. Using Geospatial Analysis to Overhaul Connectivity Policies, Table A.2.

⁹⁸ See separate methodological document for details on the elasticities used.

Table 8: Taxes and fees applicable to the mobile sector in DRC

INDICATEURS			
		DIRECTION GÉNÉRALE DES IMPÔTS (DGI)	TAUX
1	1	Taxe sur la valeur ajoutée	TVA 16% sur ventes
2	2	Impôt sur le revenu professionnel	IRPM Max 30%
3	3	Impôt exceptionnel sur rémunérations des expatriés	IER Max 25%
4	4	Impôt sur les bénéfices et profits des non-résidents	IBPNR 14%
5	5	Impôt sur les bénéfices et profits des sociétés	IBP 30%
6	6	Impôt Mobilier - IM	20% sur la valeur totale et 20% sur 70% des redevances
SOUS-TOTAL 1 DGI			
		2. TAXES - DGRAD	
1	7	Taxe d'homologation équipements	5% sur la valeur CIF
2	8	Taxe sur le numéro Import - Export	500\$ de forfait
3	9	Taxe d'implantation	Varie en fonction de la nature du bien
4	10	Taxe rémunératoire annuelle	Varie en fonction de la nature du bien
5	11	Taxe de pollution	Varie en fonction de la nature du bien
6	12	Taxe sur la Détention Instruments de mesure	Varie en fonction de la nature de l'instrument de mesure
7	13	Redevance annuelle sur le chiffre d'affaires	3% du chiffre d'affaires hors-taxes
8	14	Redevance sur les fréquences mobiles (2G, 3G, 4G)	52.500\$ par MHz
9	15	Redevance annuelle sur exploitation des stations terriennes (VSAT)	3% du chiffre d'affaires hors-taxes
10	16	Redevance sur les fréquences Internet dédiées	3.000\$ par MHz
11	17	Redevance sur les fréquences Internet non dédiées	18.000\$ forfait
12	18	Redevance sur les Faisceaux Hertiens	6.000\$ par MHz
13	19	Taxe de régulation	34% du coût d'émission (MTR) avec un minimum 0,08\$
14	20	Taxe annuelle sur la numérotation	Varie selon le type de numéro
15	21	Redevance Annuelle sur Concession Ordinaire	0,6\$ par n° annuel + Droits/frais d'enregistrement
16	22	Taxe sur le transfert des redevances	5% du montant transférable
17	23	Autorisation d'Exploitation Licence de Distribution FTTH	DGRAD
18	24	Autorisation d'Exploitation Licence de Distribution FTTX	DGRAD
19	25	Autorisation d'Exploitation Licence 4G	DGRAD
20	26	Droits proportionnels d'enregistrement	1% du capital/augmentation
21	27	Autorisation de transport et stockage des produits pétroliers	Varie selon la quantité manipulée
22	28	Taxe sur la capture des recettes routières	Varie selon la nature des routes
23	29	Taxe sur l'obtention d'un permis de construire pylône	DGRAD
24	30	Autorisation de la Diffusion Publicité dans la presse	2.000\$ par chaînes privées (radio et télé)
SOUS-TOTAL 2 : DGRAD			
		3. TAXES - DGDA	
1	31	Droits d'accises	10% sur la consommation
2	32	Droits de Douanes à l'importation/TVA à l'importation	5% à 20%
SOUS-TOTAL 3 : DGDA			
		4. PROVINCES, VILLES & ENTITÉS TERRITORIALES DÉCENTRALISÉES	TAUX & REGIE
1	33	Taxe d'assainissement	Varie selon les provinces
2	34	Redevance sur Éclairage des poteaux d'éclairage Public	Varie selon les provinces
3	35	Autorisation et redevance sur l'exploitation des eaux naturelles	Varie selon les provinces
4	36	Taxe sur les matières non biodégradables - Cartes à gratter	Varie selon les provinces
5	37	Taxe sur l'autorisation de construction d'une antenne de télécommunication	Varie selon les provinces
6	38	Taxe d'implantation enseignes et totems	Varie selon le support, la taille, localisation et province
7	39	Taxe sur l'organisation des Spectacles et autres manifestations	Varie selon les provinces
8	40	Taxe Professionnelle Annuelle	Varie selon les provinces (commune)
9	41	Taxe spéciale conventionnelle	De \$50 à \$100
10	42	Taxe sur l'utilisation temporaire du domaine public de l'État	Varie selon les provinces
11	43	Impôt foncier	Varie selon les provinces
12	44	Retenue locatif	Varie selon les provinces
13	45	Taxe sur la Publicité - Permanente, Autorisation de dépôt des affiches dans les lieux publics	Varie selon les provinces
14	46	Taxe sur l'obtention d'un permis de construire d'une antenne	Varie selon les provinces
15	47	Utilisation Temporaire Domaine Public de l'État	Varie selon les provinces
SOUS-TOTAL 4: PROVINCES ET AUTRES ENTITÉS TERRITORIALES			
		5. FONDS DE PROMOTION CULTURELLE - FPC	
1	48	Redevance advalorem	5% valeur de la présentation
SOUS-TOTAL 5 : FPC			
		6. AUTRES	
1	49	CNSS	18% sur la rémunération de base
2	50	ONEM	0.2% sur la rémunération de base
3	51	INPP	Varie selon l'effectif du personnel

Source: Harmonized list provided by the MNOs and ARPTC.

The overall burden of taxation is also higher than in most other countries in Africa. The GSMA estimated in 2023 that tax payments from the mobile sector in the DRC represented 34% of its total revenues and 11% of the government’s total tax receipts.^{99 100} Of this, 41% of the total tax burden on the mobile operators is in the form of sector-specific taxes which are not levied on companies in other sectors. These taxes result in higher consumer prices and a higher cost of doing business for telecoms companies in the DRC.

The Average Effective Tax Rate (AETR) is much higher for the telecoms sector in the DRC than the mining or finance sectors, despite having similar operating margins. This results from the specific tax structure of the tax regime applied to the telecoms sector that includes sector-specific non-profit-based levies (such as turnover and excise taxes and regulatory fees). These imply that only 8% of the fiscal burden in the mobile sector is profit-based, compared to 35% and 54% in the mining and retail finance sectors, respectively (Table 9).¹⁰¹

Table 9: Comparison of effective tax rates in different sectors in the DRC

	Mining & Extraction	Mobile Telecoms	Retail Finance
Operating margin (EBITDA / Revenue)	50%	49%	44%
AETR as a share of revenue	30%	35%	11%
AETR as a share of pre-tax profit	71%	91%	34%

Source: GSMA. Assessing the Tax Burden on the Mobile Sector in the DRC: A cross-sector comparison. April 2025.

Reducing the overall tax burden by eliminating some taxes will increase the number of mobile broadband users. It is estimated that removing excise duty on telecom services, reducing import duty on handsets, terminals and other equipment by 50%, the “numbering tax” by 50%, and reducing “royalties on turnover” by 50% will increase the number of unique mobile broadband subscribers by 6%, or 1.8 million. Furthermore, removing the 25% license modification tax is expected to increase the dynamism of the sector, allowing for further investment and network coverage. This will further increase the number of unique mobile broadband subscribers.

Box 11: United Nations Economic Commission for Africa

The United Nations Economic Commission for Africa (UNECA) has undertaken modelling of the impact of telecom sector tax cuts on economic development in countries across Africa.¹⁰² They found that removing taxes on telecom services leads to large increases in demand and penetration, as well as leading to economic growth.

In the DRC specifically, UNECA estimated that removing excise duty and VAT on telecom services would result in lower prices and higher demand, with broadband penetration increasing by 25.3%. It would also lead to significant economic growth, with 2 million additional jobs generated and a USD 4.1bn increase in national GDP.¹⁰³

In addition the overall level of taxes, the complexity of the system and the difficulties that operators face in dealing with tax authorities in the DRC adds further costs. Different government entities have the right to enforce government revenue collection requirements, but no clear process exists. In most countries, tax collection is managed and coordinated by the revenue authority, which is not the case in DRC. The unpredictability and frequent errors in tax assessments result in delays and disputes between operators and authorities. This causes delays to tax collection and also imposes a heavy cost burden on the sector. Lastly, the process of assessing and collecting taxes and levies on the sector needs to be streamlined and simplified.

99 GSMA. 2023. Mobile tax policy and digital development: A study of markets in Sub-Saharan Africa.
100 A more recent estimate is that telecoms taxes account for 13% of government’s tax revenues in the DRC: GSMA. April 2025. Assessing the Tax Burden on the Mobile Sector in the DRC: A cross-sector comparison.
101 GSMA. April 2025. Assessing the Tax Burden on the Mobile Sector in the DRC: A cross-sector comparison.
102 United Nations Economic Commission for Africa. January 2024. Optimising Africa’s ICT Tax Regimes Towards Economic Growth and Job Creation.
103 Ibid, p. 58.

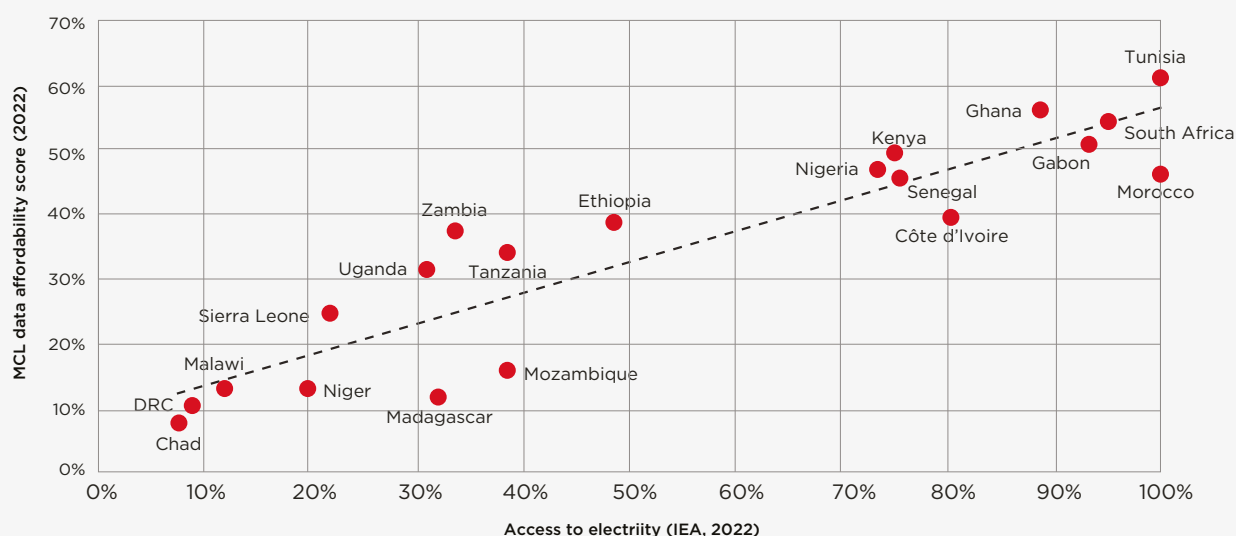
Taken together, the high overall level of taxation on the sector and the cost of dealing with government authorities charged with collecting taxes extracts significant resources from the sector. These are funds that could otherwise be spent on more valuable activities such as investment into infrastructure or expansion of services. Such activities would benefit consumers directly but would also benefit the government by generating more taxes from an increased sector revenue base and greater economic growth.

Furthering digital connectivity within and between communities: maximising synergies between energy and digital networks to increase reach and accessibility

A key challenge for the digitalisation process is the extent and reach of the broadband networks. Extending these and ensuring that citizens have access to connectivity is a key objective in the PNN. One of the factors that currently impedes the rollout of broadband networks is the high cost of rolling out and operating the networks. The cost of doing business in the DRC is higher than in most other African countries. MNOs are particularly exposed to higher costs because their infrastructure is widely deployed across the country, is subject to extensive regulatory approvals and other permitting processes and requires ongoing fuelling and maintenance in order to provide services. These regulatory and non-regulatory requirements impose costs on the MNOs when they are planning, building and then operating sites across the country. The lack of quality transport infrastructure within the country further exacerbates the operating costs that the MNOs face.

Energy costs are one of the single-largest drivers of data costs in the DRC. It is estimated that almost 80% of DRC's population does not have access to electricity. A large proportion of MNO sites are not connected to the national grid, and this is expected to grow as operators seek to roll out coverage to more of the population (Figure 17). Operators already spend 40-60% of their operating expenditure on purchasing and transporting diesel to their sites. These higher costs of fuel feed through into higher prices paid by consumers. Conversely, in countries where MNOs are able to access grid electricity, they are able to reduce prices and improve the affordability of their services (Figure 16).

Figure 16: Relationship between energy costs and data affordability in select African countries

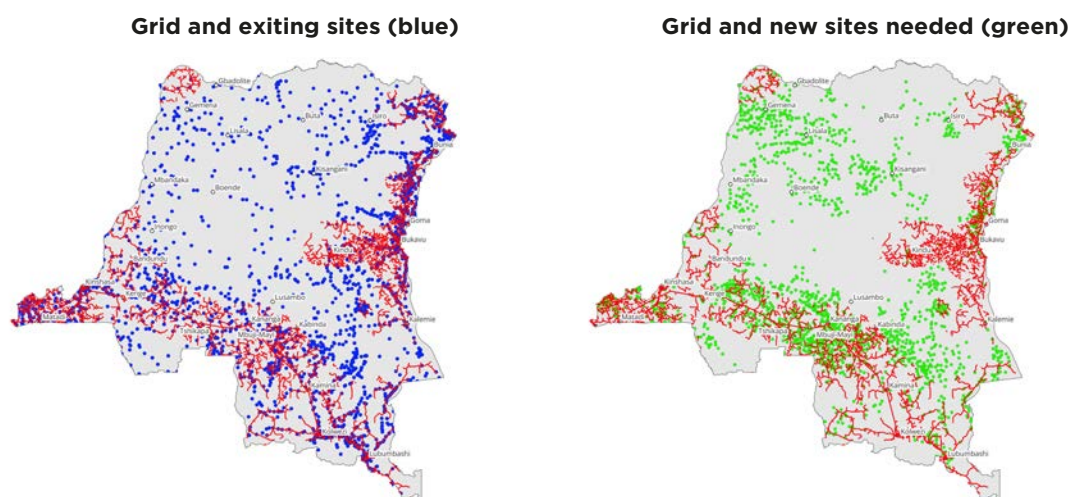


Source: GSMA¹⁰⁴

In the DRC, the limited number of sites connected to the electricity grid is both a challenge and an opportunity. The reliance on diesel generators increases the cost of operating the networks very significantly and this feeds through into higher prices and more limited network coverage. 63% of existing mobile sites lie within 1km of the electricity grid but many of them are not connected and continue to rely on diesel generators. 13% of the new sites that are needed to expand coverage also lie within 1km of the existing electricity grid. There is therefore a major opportunity to reduce operating costs by connecting sites to nearby electricity grid infrastructure. This would feed through into lower prices for customers and make expanding network coverage more financially sustainable.

A key challenge in the DRC is that most of the new sites that are needed to expand coverage are more than 1km away from the electricity grid. Almost one-third of the new sites needed are more than 100km away from the electricity grid. Without further extension of the electricity grid, these sites are likely to remain financially unviable and therefore very difficult for operators to build (Figure 17).

Figure 17: Electricity grid and mobile site locations



Source: Analysis of operator site data and World Bank data by GSMA Intelligence and GoYo Analytics.

MNOs are working together to address these challenges. For example, Vodacom and Orange have announced recently the formation of a joint venture tower company to build, own, and operate solar-powered 2G and 4G mobile base stations in underserved areas, subject to regulatory approvals. The initial phase includes 1,000 base stations, with a further 1,000 planned. They estimate that this would increase access to mobile telecoms and mobile money services to a further 19 million people.¹⁰⁵

Under current market conditions, the MNOs may be able to eventually increase their 4G network coverage by 17 percentage points, from 57% to 74%. However, high energy costs remain a significant barrier to both further population coverage and more affordable mobile prices. Modelling undertaken for this study and elsewhere in Africa indicates that if MNOs faced lower costs to deploy and operate their networks, they could expand the area of the country that they cover.

A combination of lower sector-specific taxes and expanded access to electricity will further increase 4G network coverage to 87% of the population. Higher 4G coverage will result in both higher mobile broadband uptake and lower prices. More network coverage leads to increased adoption of mobile broadband. It also pushes down costs because 4G networks are more efficient than 3G networks and have lower operating costs. This leads to lower prices, which further increases mobile broadband adoption. Higher 4G coverage will result in at least 3.6 million additional unique mobile broadband subscribers by 2029, an increase of 12%.

¹⁰⁵ Orange. 14 January 2025. Orange and Vodacom create a joint venture to expand network coverage in rural areas in the DRC.

In addition to this expansion of network coverage, simply connecting existing mobile sites that currently lie within 1km of the electricity grid would lower costs and the prices that subscribers pay. Lower prices will drive further increases in the uptake of mobile services, including mobile broadband. This change alone would reduce data prices by 7% and an additional 500,000 unique mobile broadband subscribers would join the networks by 2029.

In many countries, Universal Service Fund (USF) programs are being implemented to address network infrastructure and coverage in areas which are not commercially viable, complementing the network infrastructure and coverage provided by mobile operators. The following GSMA and African Telecommunications Union policy recommendations on USF may be instructive for the further development of universal service fund policy in the DRC:

1. Adopt mechanisms to incentivise disbursement of funds – Establish clear targets and use incentives to ensure effective and timely disbursement.
2. Implement an evidence-based contribution rate – An evidence-based approach, in consultation with service providers, should be used to decide a suitable contribution rate.
3. Set clear and measurable targets for the USF – Clearly define the parameters for USF projects and outline key success measures following implementation.
4. Prioritise stakeholder consultation – Stakeholder consultation should not be a one-off or an occasional call for submissions; rather, it should be a continuous process of engagement, with direct contributions and feedback from service providers.
5. Use a data-led approach to select USF projects – Data gathering and efforts to apply relevant insights to project selection should form part of the operational reform of USFs.
6. Ensure regular performance monitoring and reporting – Regular reporting is paramount to provide visibility and accountability.
7. Establish a project costing system that accounts for overheads – A comprehensive costing system should account for overheads and opex from the outset, with a sustainable solution that guarantees the long-term viability of a USF project.
8. Explore alternative funding mechanisms – The ‘pay or play’ model adopted in Morocco is an example of an alternative model with the potential to incentivise investments in coverage expansion and tackle the challenges associated with the traditional USF model.
9. Build capacity and develop skills within the USF – Focus on reskilling and upskilling existing personnel, recruiting new people and retaining qualified staff at the USF authority.
10. Engage with local communities on the benefits of connectivity – Take steps to engage with consumers and community leaders to address any perceived concerns about digital technology.
11. Consider an independent governance structure – Seek to minimise or eliminate red tape and political interference in the management of funds and the implementation of USF projects.¹⁰⁶

MNOs have been contributing to the USF for over 20 years. The current rate of contribution is 3% of annual gross turnover. Despite this significant financial contribution, the fund has remained inactive to date. A USF commission was established in 2024 under the Ministry of Telecommunications but this has not yet resulted in the funds being used for extending network coverage. The funds from this contribution could be used to help close the coverage gap in rural and remote areas and drive digital inclusion initiatives.

¹⁰⁶ GSMA and ATU. October 2023. Universal service funds in Africa Policy reforms to enhance effectiveness.

Increasing transparency and stability

The PNN recognises the critical role of governance and regulation in the success of the digital sector. For example, Axe IV.1 and Axe IV.2 of the objectives defined in the strategy concern the legal and regulatory frameworks for the sector and recognise the importance that they ensure the rapid and sustainable growth of the digital economy.

The policy and regulatory environment in a country is a key driver of businesses' investment and operational decisions. Decisions made by government and regulators will significantly affect the amount that operators are able to invest and the cost of operating and providing services to customers. They affect the prices that operators charge customers either directly or indirectly and will therefore also impact the success of the Digital Plan Horizon 2025 and any future national digital plans.

The complexity of the regulatory regime affects businesses. More complex regulations and other obligations will require operators to spend more resources on complying with them and reporting this compliance to the relevant regulatory authorities. Further complexity is caused by multiple government and regulatory authorities making decisions on the sector, without alignment and coordination.

The lack of stability of the regulatory regime is also a problem for the industry. If policy and regulation changes frequently without consultation, operators are not able to plan effectively for their businesses. The result is lower investment and a more cautious approach to network expansion and modernisation, service innovation and competition. If operators are unsure about whether the current regulatory rules will remain in place, they will be reluctant to make significant business decisions. This is ultimately detrimental to customers. They suffer because of lower investment, poorer quality of service, slower network rollout and higher prices.

Countries benefit from a stable and transparent regulatory regime, and the implementation of a coordinated national digital policy programme. This ensures that operators are aware of forthcoming decisions and can be confident that they will be taken with due consideration of the impact on sector stakeholders. If this could be achieved in the DRC, it would contribute to improving the investment and competitive environment in the market.

The rollout of telecommunication infrastructure needs to be simplified. This can be done by reducing the number of approvals required from different government authorities, automating the approval process to shorten the time it takes, and declaring telecom as critical national infrastructure to reduce vandalism that leads to high repair costs and poor quality of service.

The process of license conversion to a universal licensing framework is currently ongoing. This needs to be fast-tracked and finalised as quickly as possible.

Enabling and encouraging the use of the internet

In order for citizens to start using and benefiting from digital services, they first need to understand their value. One key way that the government can influence this is through the provision of high-quality digital public services. This is a central feature of the government's digital strategy and its plans for government reform more widely. Ensuring that public services are made available through digital channels is a key part of the country's overall development strategy.

As citizens begin to use and value digitally delivered public services, they in turn begin to engage with the wider digital ecosystem. However, a major barrier to citizens learning the value of digital services is the affordability of telecoms devices and terminals: because many individuals do not possess these devices they never have the chance to learn the value that digital can bring.

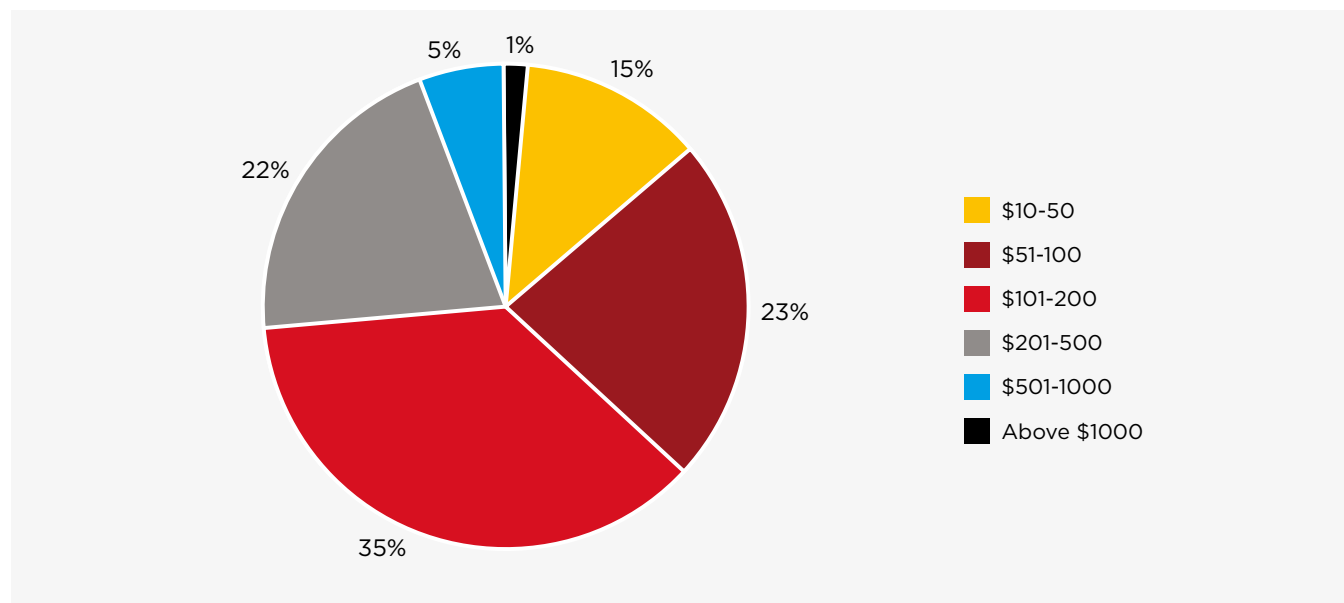
Device affordability remains the greatest barrier to mobile internet adoption across Sub-Saharan Africa. Lack of literacy and digital skills, lack of local content, safety and security concerns and lack of perceived relevance are also important barriers.¹⁰⁷ The MNOs are striving to improve the affordability of devices through accessing low-cost handset models from the global market.

Smartphone adoption is increasing in the DRC due to demand and supply factors. By the end of 2025, smartphones are expected to account for 40% of mobile connections in the DRC, more than double the figure at the start of this decade. Insights from a recent GSMA smartphone survey indicate that internet access is the primary use case for smartphone owners in the DRC. For consumers and businesses, particularly SMEs, mobile technology often serves as the first and only form of internet connectivity. Additionally, the high cost of computers and other internet-enabled devices relative to average income levels makes them inaccessible for most users. This highlights the significant role that smartphones play in providing access to online information and services, as well as enabling SMEs to expand their market reach and improve operational efficiencies.

Despite the growth in smartphone uptake, consumers and businesses continue to encounter considerable obstacles, especially in rural areas. Affordability remains a major impediment to smartphone adoption. The average selling price (ASP) of smartphones stands at \$305, which is far above what most users can afford. Over 70% of individuals in the DRC are unwilling to pay more than \$200 for a smartphone (Figure 18). This highlights the size of the device affordability challenge in the country.

¹⁰⁷ GSMA. October 2024. The State of Mobile Internet Connectivity 2024.

Figure 18: Willingness to pay for a smartphone

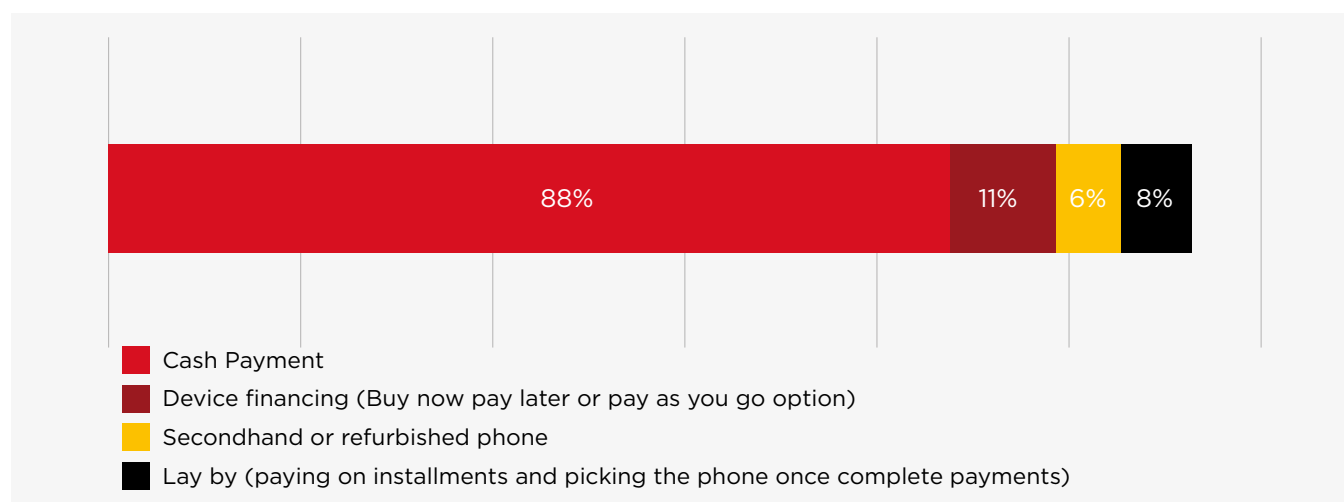


Percentage of respondents. N=1000

Source: GSMA smartphone survey conducted by Qhala.

The problem of high smartphone prices is made worse by the requirement for upfront cash payments by most users. For consumers and SMEs in lower income brackets, the initial cost of smartphones constitutes a substantial portion of their annual income and often competes with other essential needs, such as housing and food. Prices of smartphones, including budget models, are further increased by taxes and levies, including VAT, customs duties, and para-fiscal fees. Reducing or eliminating these levies and other sector-specific taxes is a crucial step towards enhancing smartphone affordability. Increasing awareness and availability of device financing solutions, as well as expanding access to refurbished devices, would also help to address the challenge of smartphone device affordability (Figure 19).

Figure 19: Methods for buying smartphone



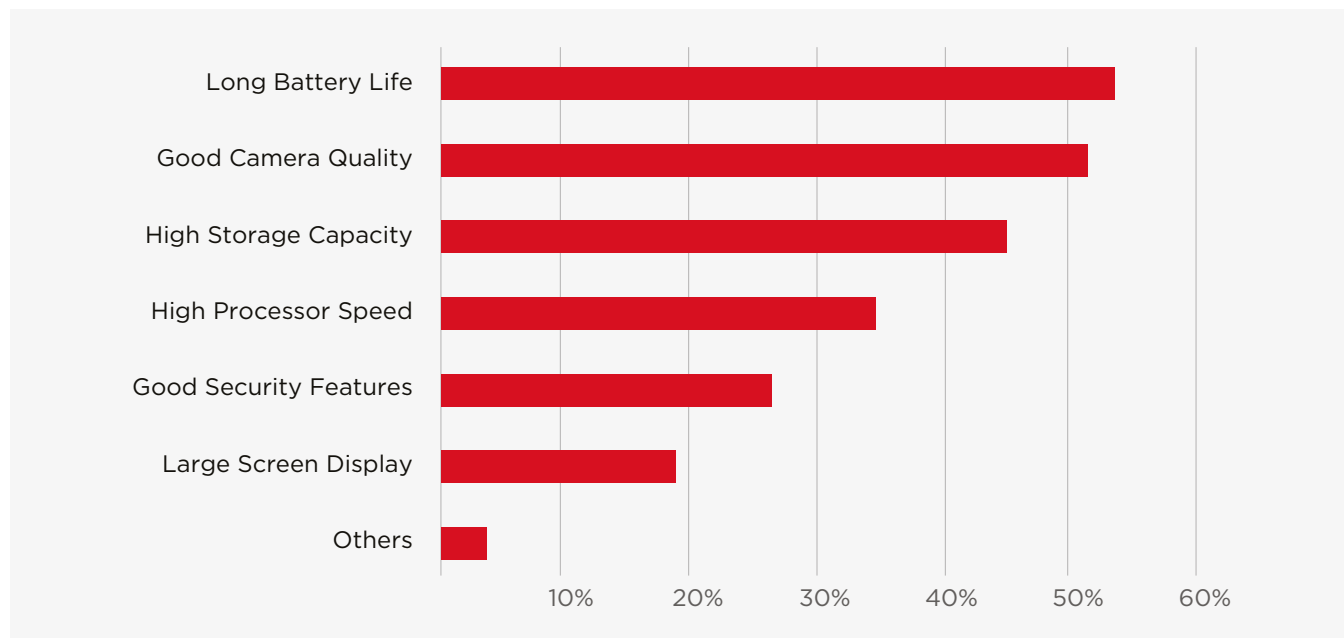
Percentage of respondents. N = 1,000

Source: GSMA smartphone survey conducted by Qhala.

Limited access to reliable power supply affects smartphone adoption and usage. Smartphones typically consume more power than feature phones because they have more complex operating systems, powerful processors, larger displays, and more power-intensive networks. Generally, the

battery life of a smartphone is 1-2 days with moderate use, whereas feature phones can last 5-15 days on a single charge. The GSMA survey indicates that limited access to reliable power supply in the DRC impacts smartphone adoption and usage. This is particularly relevant for consumers in rural areas who may not be able to charge their devices regularly or conveniently. Most respondents identified long battery life as the most desirable feature in a device (Figure 20).

Figure 20: Most attractive mobile device feature



(Percentage of respondents. N = 1,000)

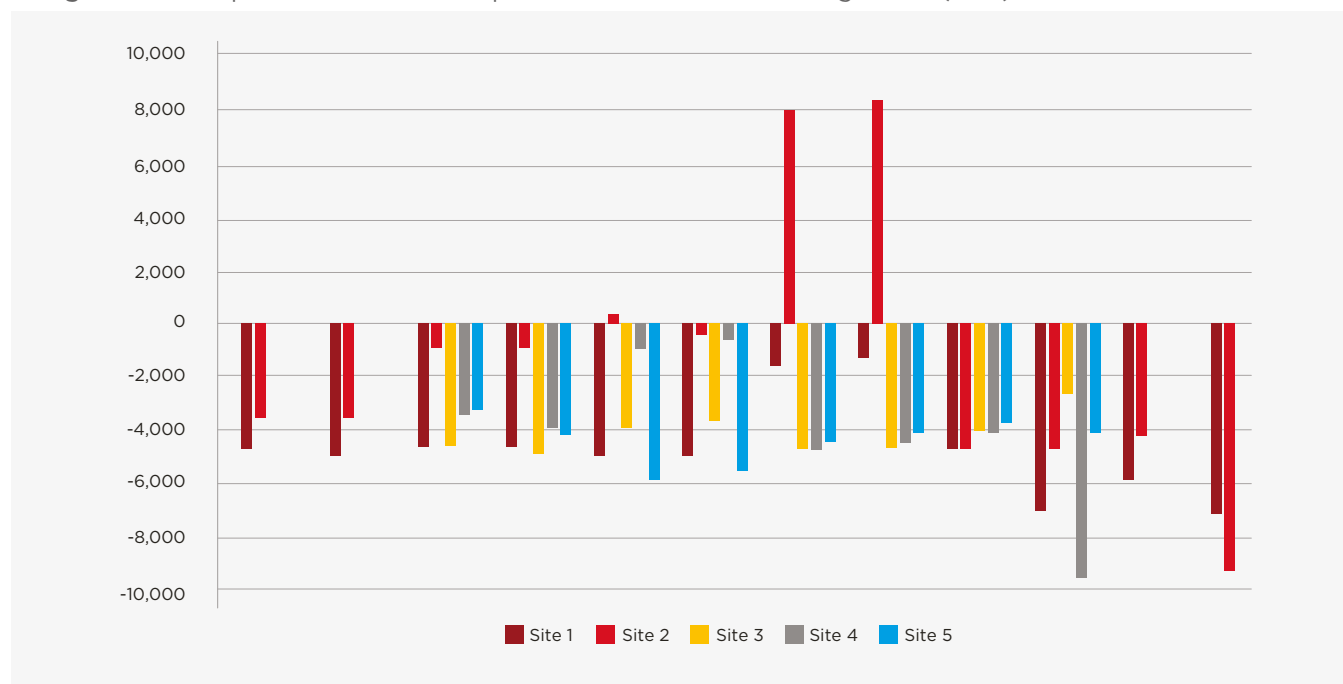
Source: GSMA smartphone survey conducted by Qhala.

The government also has an important role to play in improving the affordability of devices and terminals. This can be done through schemes such as device subsidies and skills training. In addition, by making public services available digitally, the government can make it more attractive for citizens to adopt the internet. Digital IDs, government payments, passport and driving licence renewal, healthcare, and education can all be delivered via digital channels. By doing so, the government can stimulate demand by citizens to adopt and use mobile broadband. If the government of the DRC were to accelerate its delivery of e-government, it would increase the rate of digital adoption in the country, benefit citizens, and improve public services.

Increased mobile internet adoption has a positive impact on the economics of additional network roll-out. Rapid uptake of mobile internet services in the area around a proposed new site makes it more financially viable and therefore easier to finance. However, if an operator thinks that usage is likely to be low for the first few years following establishment of a site, the investment case is more difficult to make.

Many mobile sites experience very low levels of usage, making them often either loss-making or only marginally profitable. There is also wide variability in the profitability of sites across the network and over time, further increasing the commercial risk that operators face when expanding their networks into new areas. Figure 21 below provides examples of how many rural sites in an operator's network can be both loss-making overall in the months after first coming online and have highly variable profitability over time. This provides a good illustration of the financial challenges facing operators in the DRC.

Figure 21: Examples of rural site-level profits in months after coming online (USD)



Source: Operator data

Any measures that the government can take to increase uptake and demand for mobile services would have a positive impact on marginal users and on the financial viability of these marginal sites. This will result in the operators expanding their sites at a more rapid rate, thereby increasing mobile broadband network coverage and stimulating further take-up.

It is estimated that increasing affordability and stimulating demand for mobile broadband services in the DRC could increase uptake by 13%, equivalent to 3.8 million more unique users by 2029. This in turn would have beneficial impacts on network coverage and operator returns for new or upgraded sites.

C. MODELLING FUTURE DEVELOPMENTS IN THE TELECOMS SECTOR

The digital communications market has been extensively studied by academics and policy makers. Much of this research has been in relation to markets in Africa. This has been applied in a model of the telecoms market in the DRC that combines up-to-date information on the current market with this body of evidence.

The base case forecast of the market projects market developments, assuming that the policy environment remains as it is today. It is based on historical trends and sector analysis which are used to extrapolate market outcomes to 2029. This base case focuses on mobile broadband adoption.¹⁰⁸

The impact of changes in regulation and policy towards the sector are modelled by analysing how these changes would affect the operators in general and how they would affect adoption and usage of mobile broadband compared to the Business-as-Usual (“BAU”) case. Increases in mobile broadband usage then have a broader economic impact on other sectors of the economy, as discussed in Section 4.

Reducing the taxation on mobile services as discussed above would feed through into lower prices and higher levels of digital adoption. Competition forces MNOs to pass the majority of any reduction in tax rates onto customers in the form of lower prices. These lower prices then stimulate uptake and adoption of mobile broadband across the country. The modelled impact of these changes

¹⁰⁸ The number of unique mobile internet subscribers used in this section is based on the GSMA Intelligence measurement and forecast of this number.

in each year are summarised below in Table 10, which shows the number of unique mobile internet users in the BAU scenario, how this would change in the tax reduction scenario, and the year-on-year difference and change in growth between the two scenarios.

Table 10: Mobile internet uptake with sector-specific tax reduction

Mobile internet users (m)	2024	2025	2026	2027	2028	2029
BAU	18.08	19.98	22.07	24.41	26.98	29.83
Tax reduction	18.08	20.26	22.67	25.35	28.31	31.59
Y-on-Y difference to BAU	0%	1%	3%	4%	5%	6%
Increase in growth vs BAU	0%	+2%	+3%	+5%	+7%	+10%

Expanding network coverage also has an impact on the number of mobile users. Additional sites provide access to groups of subscribers who were previously unable to connect to the internet. The MNOs' ability to build and operate new sites is dependent on their financial sustainability, which is determined by a range of factors including energy costs, taxes, site permitting and regulatory approvals. If the investment environment could be improved by increasing the financial viability of new sites, it would encourage operators to expand their networks more quickly, which would increase the number of mobile subscribers. This additional impact on mobile internet uptake arising from expanded network coverage is summarised below in Table 11.

Table 11: Mobile internet uptake with sustainable investment

Mobile internet users (m)	2024	2025	2026	2027	2028	2029
BAU	18.08	19.98	22.07	24.41	26.98	29.83
Sustainable investment	18.08	19.93	22.48	25.40	28.26	33.48
Y-on-Y difference to BAU	0%	0%	2%	4%	5%	12%
Increase in growth vs BAU	0%	-0%	+2%	+6%	+7%	+20%

Increasing the number of existing sites connected to the grid will have a further impact on the number of mobile users. One of the largest expenditures of the MNOs is the running of diesel-powered sites where there is no national electricity grid connection. Just connecting the sites that were within 1km of the national electricity grid will have a substantial impact on operator costs. This will reduce data prices by 7%, which will feed through to an increase in mobile internet users. This additional impact on mobile internet uptake arising from expanded network coverage is summarised below in Table 12.

Table 12: Mobile internet uptake with increased grid connection

Mobile internet users (m)	2024	2025	2026	2027	2028	2029
BAU	18.08	19.98	22.07	24.41	26.98	29.83
Increased grid connection	18.08	20.00	22.15	24.58	27.28	30.32
Y-on-Y difference to BAU	0%	0%	0%	1%	1%	2%
Increase in growth vs BAU	0%	+0%	+0%	+1%	+2%	+3%

The demand for mobile internet is also a key factor in driving uptake. This demand is determined by affordability and people's ability to pay for handsets and use them for mobile internet. The government can improve affordability and boost demand through a range of demand stimulating measures such as handset subsidies, skills training, migration to digitised delivery of public services etc. The impact of such measures on internet uptake is summarised in Table 13.

Table 13: Mobile internet uptake with demand stimulation

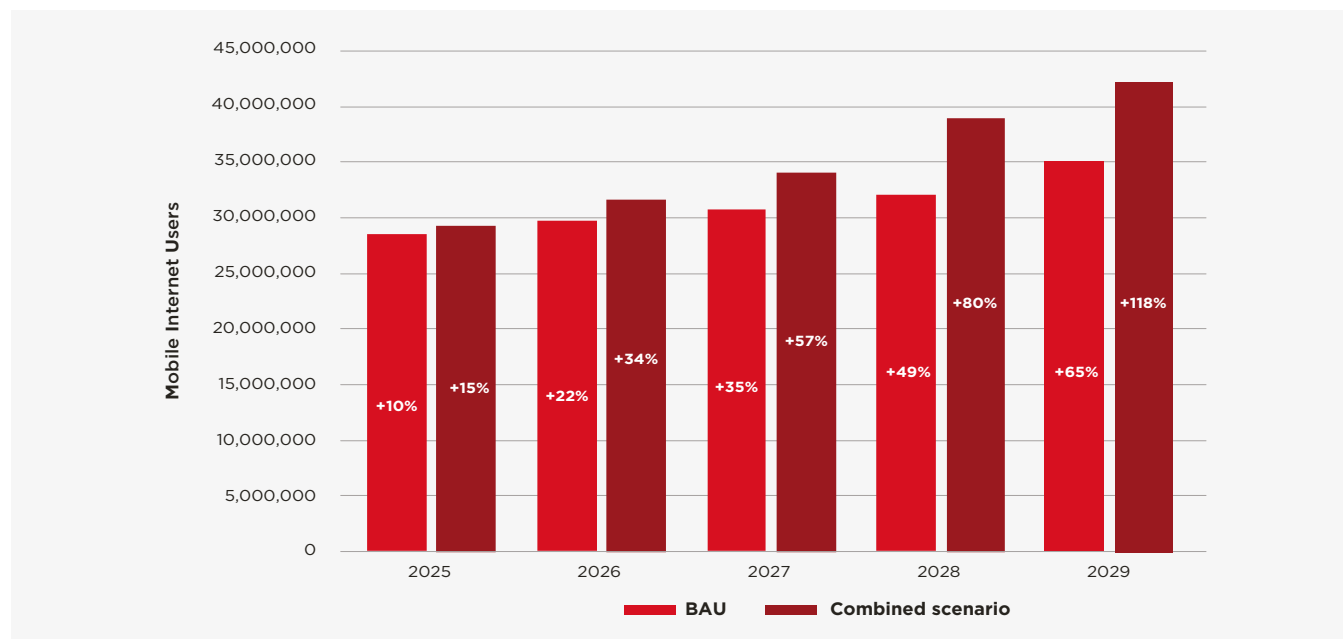
Mobile internet users (m)	2024	2025	2026	2027	2028	2029
BAU	18.08	19.98	22.07	24.41	26.98	29.83
Demand stimulation	18.08	20.48	23.20	26.27	29.72	33.62
Y-on-Y difference to BAU	0%	3%	5%	8%	10%	13%
Increase in growth vs BAU	0%	+3%	+6%	+10%	+15%	+21%

Taken together, these policy initiatives would have a significant impact on digital adoption in the DRC. The policies outlined in this report would be mutually reinforcing. They would reduce costs to customers, increase access and promote digital adoption. They would increase the number of people using the internet by one-third compared with the BAU scenario (Table 14), which is a more than 100% increase compared to current levels (Figure 22). This increase in the number of internet users would have a major impact on the usage gap in the DRC. By 2029, the usage gap would be 50% of the population in the base case. The combined effect of these policies would be to reduce the usage gap by 8 percentage points (Figure 23).

Table 14: Mobile internet uptake with combined policy initiatives

Mobile internet users (m)	2024	2025	2026	2027	2028	2029
BAU	18.08	19.98	22.07	24.41	26.98	29.83
Combined scenario	18.08	20.75	24.28	28.38	32.64	39.51
Y-on-Y difference to BAU	0%	4%	10%	16%	21%	32%
Increase in growth vs BAU	0%	+4%	+12%	+22%	+31%	+54%

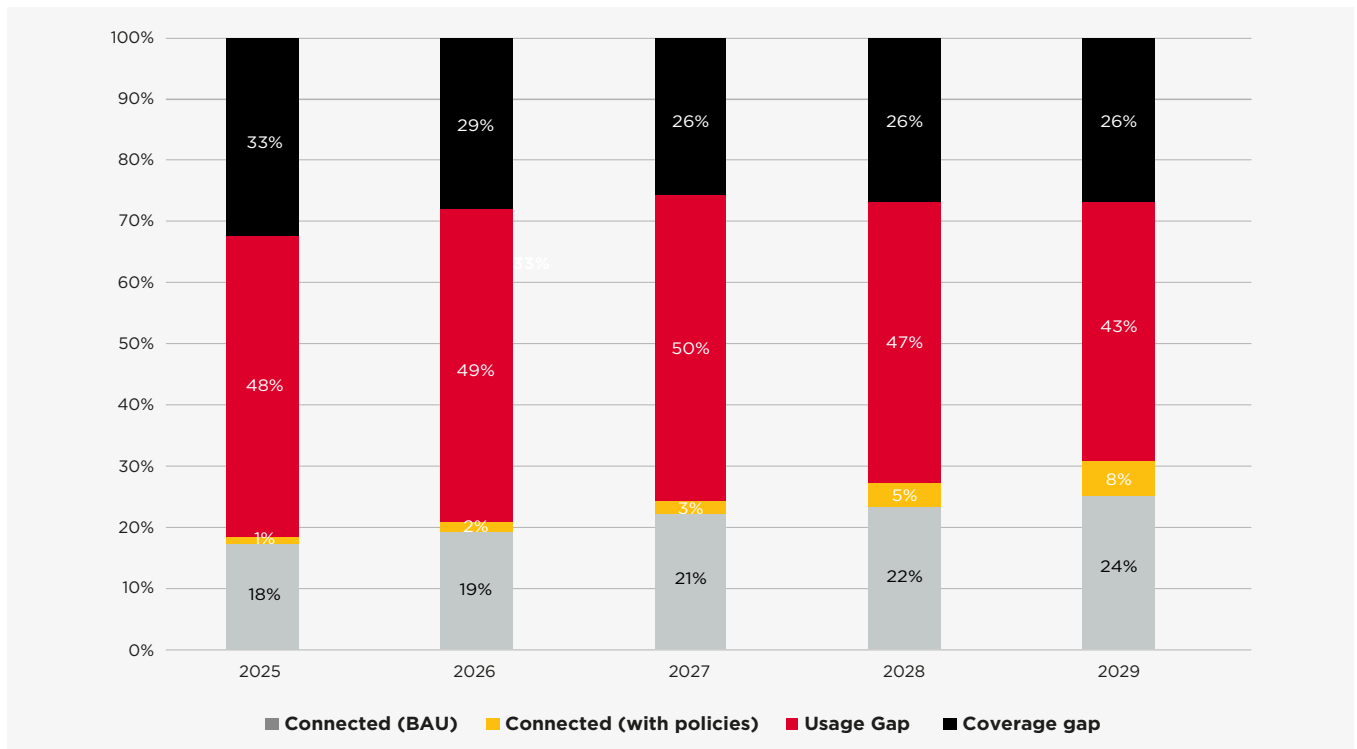
Figure 22: Impact of Combined Policy Scenario (Number of mobile internet users)



Source: See separate methodological document that accompanies this report.

As a result of these policies, the usage gap would also reduce by an additional 8 percentage points on top of the growth expected in the BAU.

Figure 23: Impact of Policies on Usage Gap

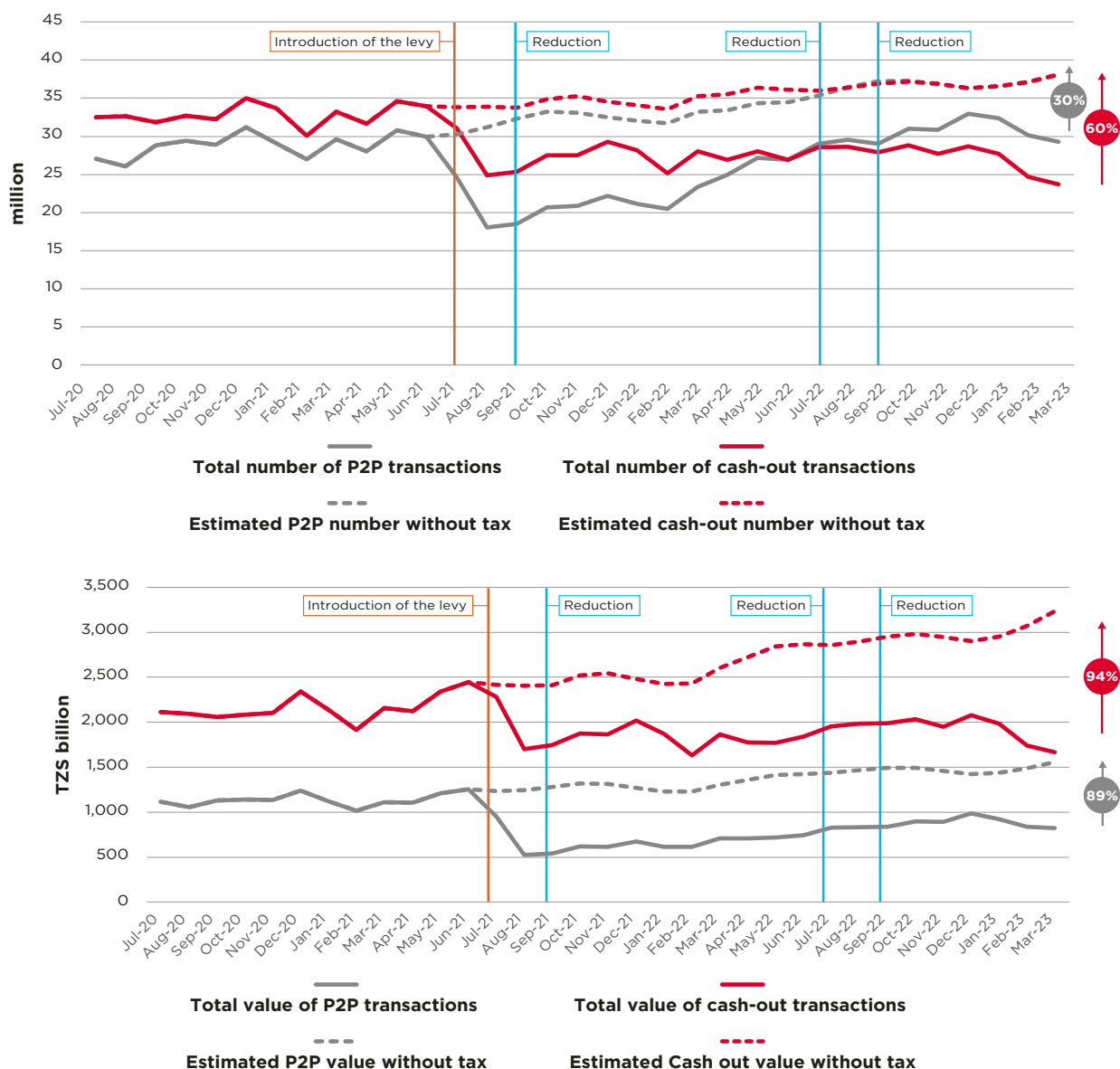


Source: See separate methodological document that accompanies this report.

Importantly, this will also benefit the government and the country more broadly. Greater digital adoption will promote uptake of digital government services. This will reduce costs, increase access and reduce leakage within the public financial management system. Greater levels of digital adoption will also increase productivity and expand the output of businesses in the DRC. These policies applied to the ICT sector will therefore have a positive impact on the government's broader development objectives.

The growth in the sector that will follow from these recommended policy reforms will also feed through into higher tax revenues for the government. The overall amount of tax revenue that is collected can increase rapidly in response to reductions in selected taxes because customers are very price sensitive and as they increase usage this feeds through to greater digitalisation throughout the economy. In Tanzania, for example, the government imposed a tax on mobile money. This resulted in a very significant reduction in both the volume and value of such transactions. Modelling indicates that, if the tax on mobile money had not been imposed, the volume and value of transactions would have been a lot higher than they were in fact (Figure 24).

Figure 24: Impact of Tax on mobile money transactions in Tanzania



Source: GSMA. 2023. Tanzania Mobile Money Impact Assessment.

Such rapid demand responses are seen across the digital sector more broadly. When governments reduce tax rates, prices fall and customers consume more in the form of greater uptake and more service use. This effect is particularly strong on taxes that affect adoption. Any tax that increases the price of handsets suppresses adoption, which then has a knock-on effect on the total revenue (and tax) generated from services. Conversely, removal of such taxes results in lower prices, increased adoption and greater revenues. Taxes that affect site rollout have a similar effect.





6. Policy Recommendations

This report identifies four areas of policy recommendations to support the development of the mobile sector and the wider process of digital transformation in the DRC. These are summarised in Table 15 below. Each of these policies would increase the number of internet users, contribute to meeting the goals laid out by the Government of the DRC and the World Bank, and lead to the economic benefits laid out in section 4.B above, which include billions of additional value add in industry, agriculture and services. These benefits also include net increases in tax revenues of CDF 3,000 billion¹⁰⁹ by 2029 as a result of higher digitalisation across the economy.

Table 15: Policy recommendations

Policy area	Description and detailed recommendations for the telecom sector	Increase in internet users by 2029	Increase in government tax revenue by 2029*	Increase in operator revenue by 2029**
Increase affordability and inclusivity of internet access	Affordability and inclusivity could be improved by: - Improving accessibility and reducing costs for consumers, significantly lowering tax on telecommunications services. - Encouraging innovation and the adoption of new technologies, through customs duties reduction on handsets, terminals, and other telecommunications equipment by more than 50%. - Offering more transparent and advantageous pricing for users by significantly reducing (50%) the "numbering tax". - Stimulating economic digitalization, growth, and competitiveness in the telecommunications sector by reducing the "revenue royalties". - Simplifying administrative procedures and encourage investments.	1.8 million more unique mobile internet users	CDF 35 billion	CDF 90 billion
Furthering digital connectivity within and between communities: increasing the reach and accessibility of digital services	The reach of ICT services could be expanded by reducing the cost of building and operating new mobile network sites. This could be achieved by: - Improving access to grid electricity through facilitating connections to new build sites, where technically feasible. Encourage cross-sectoral collaboration in this effort. - Expanding the electricity grid in coordination with MNOs to ensure that new mobile sites can be connected. - Reviewing the licensing process and regulation for new sites to reduce costs and accelerate rollout. - Industry consultation on USF policy, considering GSMA and ATU policy recommendations.	3.6 million more unique mobile internet users	CDF 1,400 billion	CDF 40 billion
	The affordability of services could also be improved by: Enabling the connection of all current sites within 1km of the national electricity grid. This would reduce the cost of operating the network, leading to lower prices for consumers.	500,000 more unique mobile internet users	CDF 180 billion	CDF 5 billion
Increase transparency and stability	Increasing transparency in official decision making and improving policy and regulatory stability would play out in the digital sector through: - Developing clear policy and strategy for the sector to give guidance to stakeholders. - Improving transparency of regulations through consultation. - Publishing regulatory strategy and annual workplans to give stakeholders visibility of what regulatory initiatives are to be undertaken.	Not modelled	Not modelled	Not modelled
Enabling and encouraging the use of the internet	Increasing the value of digital services to citizens can be done through: Increasing the provision of public services via digital channels. Improving handset affordability through support for device subsidies and financing.	3.8 million more unique mobile internet users	CDF 1,400 billion	CDF 40 billion

109 This figure is net of the impact of a tax reduction on the mobile sector.

**These figures are net of the impact of a tax reduction on the mobile sector.*

***Operator revenue figures do not include other benefits, such as cost reductions, that operators will experience as a result of these policies. Many of these cost reductions will ultimately be passed through to consumers.*

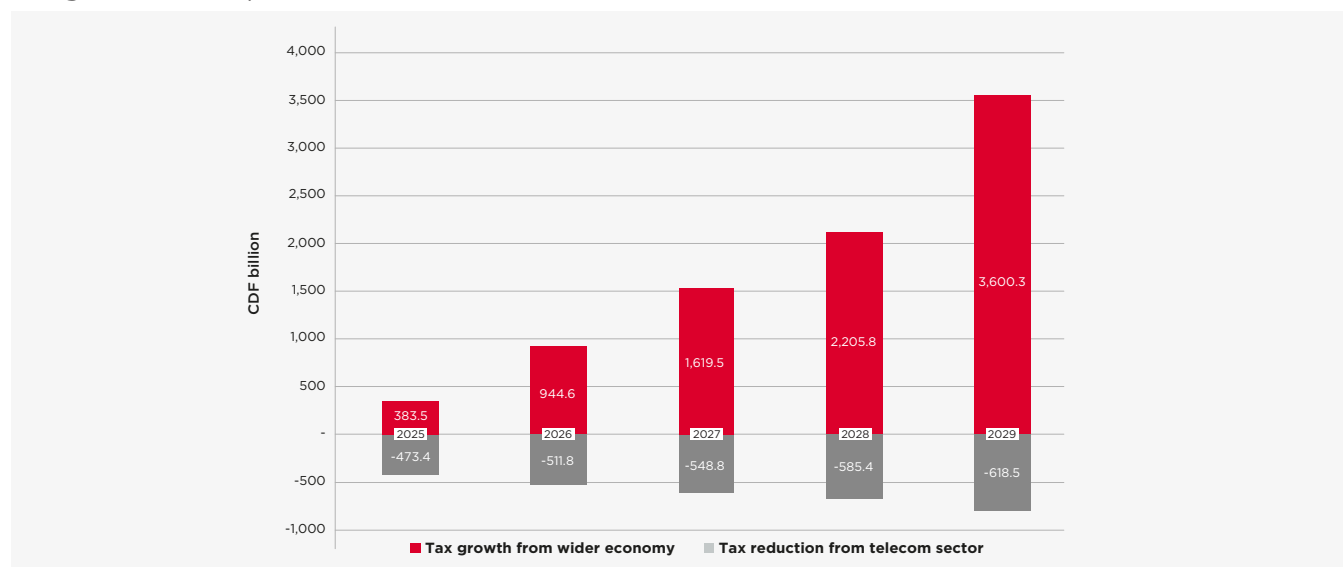
Combined scenarios

Table 16 shows the modelled impact of all of the recommended policies on the number of unique internet subscribers, telecom sector revenue, GDP and tax revenue by year. Figure 25 shows the two countervailing tax impacts by year. By 2029, the increase in GDP from these policies would be CDF 14,000 billion, while the net tax impact of the policies would be CDF 3,000 billion.

Table 16: Annualised impact of the Combined Scenario

Combined scenario	2025	2026	2027	2028	2029
Increase in unique internet subscribers (millions)	0.85	2.21	3.97	5.66	9.68
Increase in telecom sector revenue (billions CDF)	62	81	105	127	174
Increase in GDP (billions CDF)	1,498	3,690	6,326	8,617	14,064
Tax change from telecom sector (billion CDF)	-473	-512	-549	-585	-619
Tax increase from wider economy (billion CDF)	383	945	1,619	2,206	3,600
Net tax impact (billion CDF)	-90	433	1,071	1,620	2,982

Figure 25: Tax impact in the Combined Scenario



Source: See separate methodological document that accompanies this report.

Policy area: Increase affordability and inclusivity of internet access

Table 17 shows the modelled impact of reducing sector-specific taxes on the number of unique internet subscribers, telecom sector revenue, GDP and tax revenue by year. This is described in Section 4.B above.

Table 17: Annualised impact of the sector-specific tax reduction

Sector-specific tax reduction scenario	2025	2026	2027	2028	2029
Increase in unique internet subscribers (millions)	0.28	0.60	0.95	1.33	1.76
Increase in telecom sector revenue (billions CDF)	56	63	71	80	88
Increase in GDP (billions CDF)	497	998	1,506	2,026	2,553
Tax change from telecom sector (billion CDF)	-473	-512	-549	-585	-619
Tax increase from wider economy (billion CDF)	127	255	386	519	653
Net tax impact (billion CDF)	-346	-256	-163	-67	35

Policy area: Furthering digital connectivity within and between communities: increasing the reach and accessibility of digital services

Table 18 shows the modelled impact of reducing the cost of network expansion on the number of unique internet subscribers, telecom sector revenue, GDP and tax revenue by year. Table 19 shows the impact of enabling the connection of existing sites to the national grid, when they are already within 1km of it. These scenarios are described in greater detail in section 4.B above.

Table 18: Annualised impact of the sustainable investment Scenario (reducing the cost of network expansion)

Sustainable investment (reducing cost of network expansion)	2025	2026	2027	2028	2029
Increase in unique internet subscribers (millions)	0.04	0.41	0.99	1.28	3.64
Increase in telecom sector revenue (billions CDF)	0	4	11	14	39
Increase in GDP (billions CDF)	66	685	1,585	1,953	5,295
Tax change from telecom sector (billion CDF)	n.a.	n.a.	n.a.	n.a.	n.a.
Tax increase from wider economy (billion CDF)	17	175	406	500	1,356
Net tax impact (billion CDF)	17	175	406	500	1,356

Table 19: Impact of increasing grid connection of existing sites

Increased grid connection of existing sites	2025	2026	2027	2028	2029
Increase in unique internet subscribers (millions)	0.02	0.08	0.17	0.30	0.49
Increase in telecom sector revenue (billions CDF)	0	1	2	3	5
Increase in GDP (billions CDF)	43	132	271	462	710
Tax change from telecom sector (billion CDF)	n.a.	n.a.	n.a.	n.a.	n.a.
Tax increase from wider economy (billion CDF)	11	34	69	118	182
Net tax impact (billion CDF)	11	34	69	118	182

Policy area: Enabling and encouraging the use of the internet

Table 20 shows the modelled impact of various actions to stimulate demand on the number of unique internet subscribers, telecom sector revenue, GDP and tax revenue by year. These scenarios are described in greater detail in section 4.B above.

Table 20: Impact of Demand Stimulation Scenario

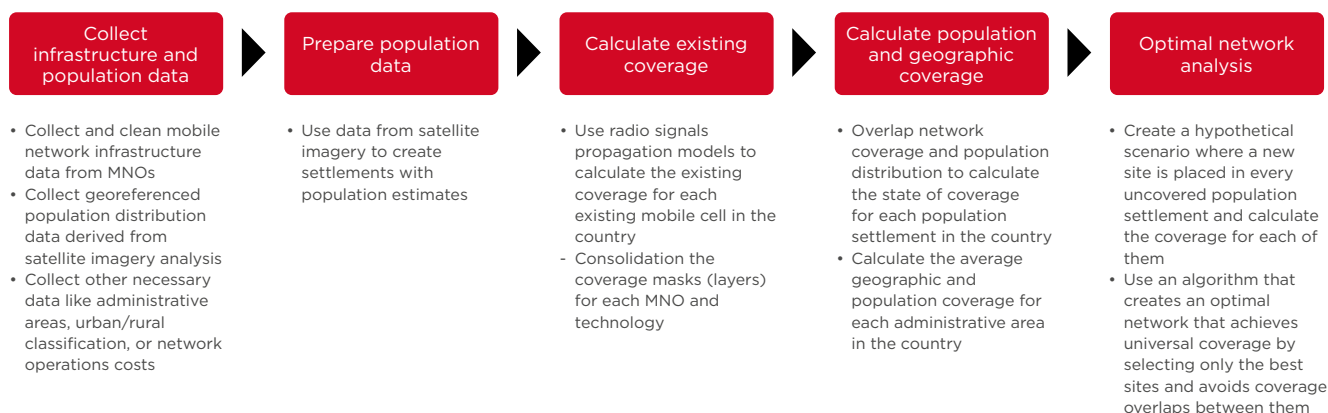
Demand stimulation	2025	2026	2027	2028	2029
Increase in unique internet subscribers (millions)	0.51	1.12	1.86	2.74	3.79
Increase in telecom sector revenue (billions CDF)	6	12	20	30	41
Increase in GDP (billions CDF)	891	1,875	2,964	4,175	5,505
Tax change from telecom sector (billion CDF)	n.a.	n.a.	n.a.	n.a.	n.a.
Tax increase from wider economy (billion CDF)	228	480	759	1,069	1,409
Net tax impact (billion CDF)	228	480	759	1,069	1,409



7. Appendix: Coverage Modelling

Appendix: Coverage Modelling

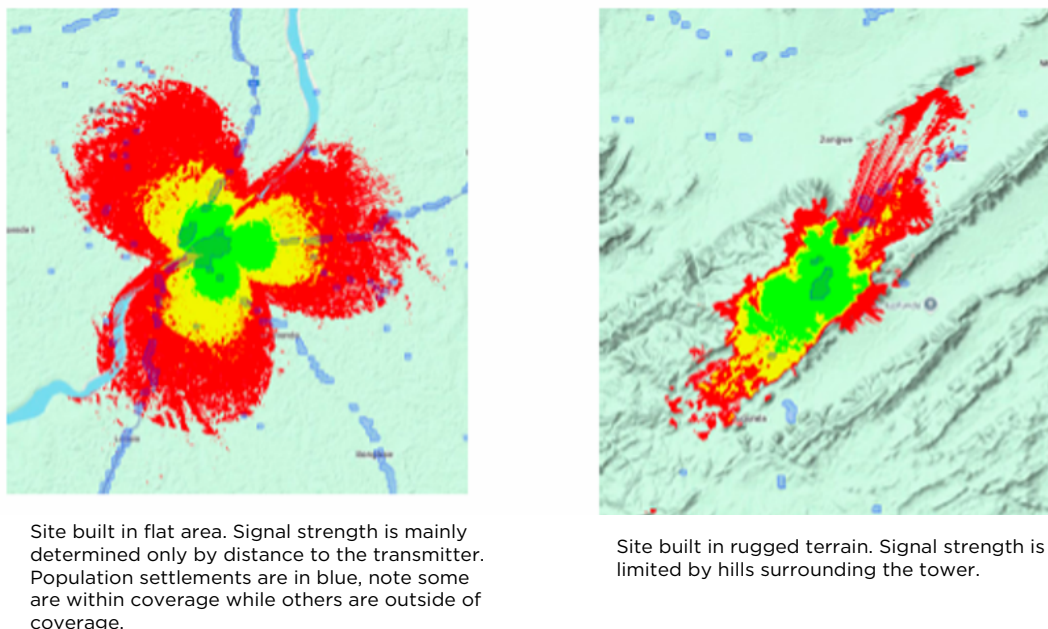
Network coverage modelling is done using a detailed geospatial analysis of mobile network coverage and population distribution. The modelling methodology is summarised in the following diagram:



Coverage is calculated using a Cost-231 signal propagation model that considers the local environment as well as the technical parameters of the MNO's existing networks. These models are similar to those used by MNOs to design and optimise their network. The main technical parameters included in the modelling are: sites geographic coordinates, tower height, transmitting power, antenna gain, antenna azimuth and tilt, and spectrum frequency. This is combined with data on terrain, type of climate and any obstacles that may be present.

The result is a mapping over coverage against population, which takes into account signal propagation in the physical environment. An example calculation of the coverage of sites in different terrain is shown in Figure 26.

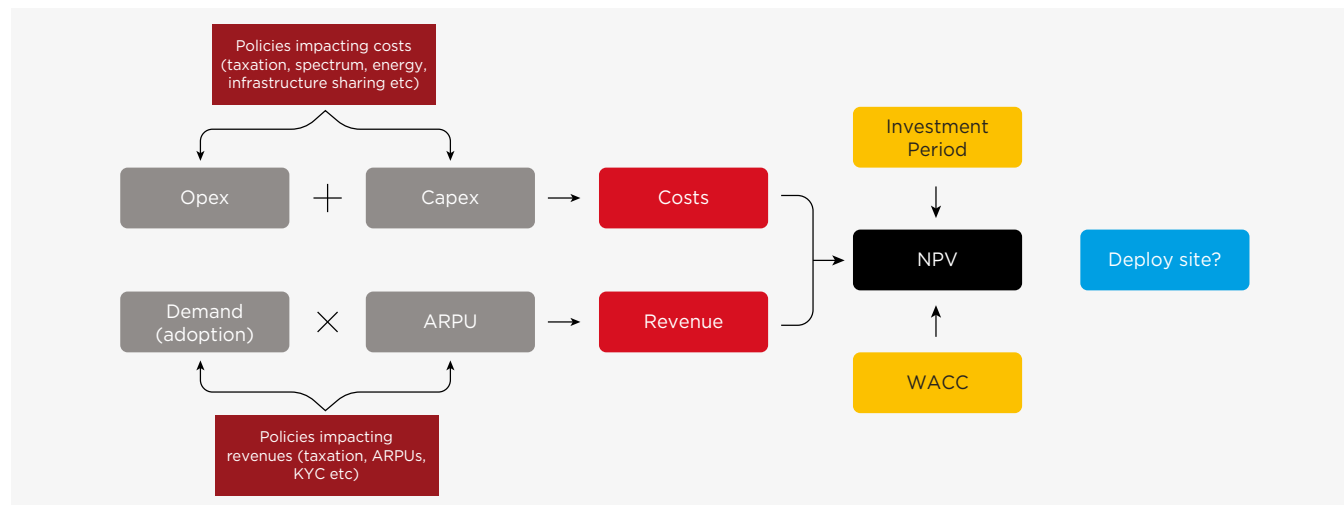
Figure 26: Coverage calculation examples



Source: Analysis of operator site data by GSMA Intelligence and GoYo Analytics.

To estimate the cost of expanding 4G coverage, the costs and revenues of each site that are required to close the coverage gap are modelled. From this, it can be determined whether it is profitable for the operator to deploy a site in a given location. Potential changes in policies are also taken into account in different scenarios (Figure 27).

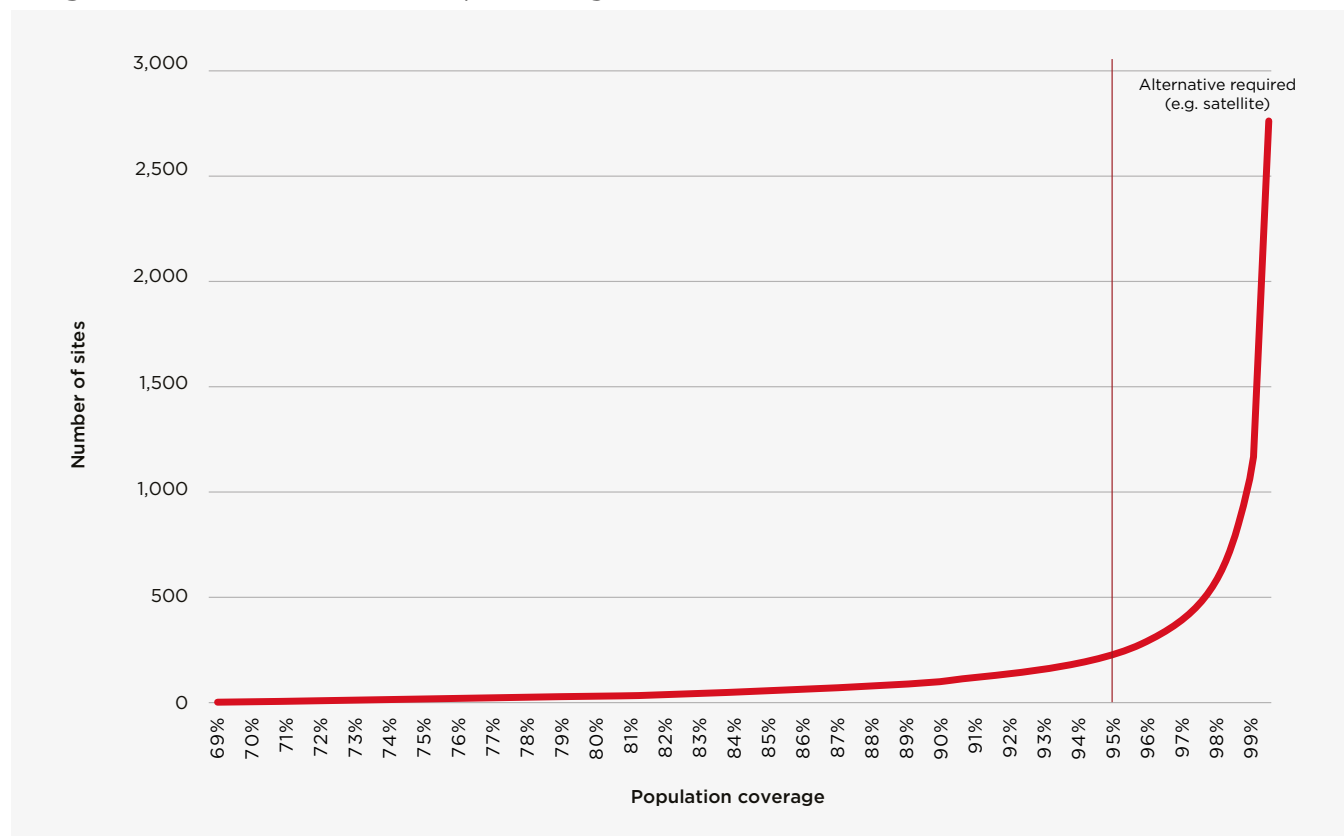
Figure 27: Deployment modelling approach



Source: GSMA Intelligence analysis.

When modelling 'universal' 4G coverage, it is not realistic to estimate 100% population coverage because, at some point, the number of sites needed to cover each population increment rises exponentially – in the DRC this happens after around 95% population coverage (Figure 28). The cost of deploying existing terrestrial networks in such areas would be unsustainably high – it is therefore likely that such areas will require alternative technologies (e.g. satellite).

Figure 28: Number of sites needed per coverage increment



Source: GSMA Intelligence analysis.



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