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Driving digital transformation of the economy in Senegal

Opportunities, policy recommendations and the role of mobile

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Glossary of Abbreviations

Term	Description
AI	Artificial Intelligence
ARTP	Telecommunications and Posts Regulatory Authority
ATM	Automated Teller Machine
ATU	African Telecommunications Union
ECOWAS	Economic Community of West African States
FCFA	West African Franc
FDSUT	Universal Telecommunications Service Development Fund
FY	Financial Year
GDP	Gross Domestic Product
GHG	Green House Gases
GSMA	GSM Association
GSMAi	GSMA Intelligence
ICT	Information Communication Technologies
IoT	Internet of Things
ITU	International Telecommunications Union
MCTN	Ministry of Communication, Telecommunications and Digital Affairs
MNO	Mobile Network Operator

Glossary of Abbreviations

Term	Description
MSHP	Ministry of Health
MW	Megawatt
OTT	Over The Top
PAENS	Senegal Digital Economy Acceleration Project
QoS	Quality of Service
RAN	Radio Access Network
SENUM	Sénégal Numérique SA
SIM	Subscriber Identity Module
SME	Small Medium Enterprise
SSA	Sub-Saharan Africa
STEM	Science Technology Engineering Mathematics
UNECA	United Nations Economic Commission for Africa
USF	Universal Service Fund
VAT	Value Added Tax
WAEMU	West African Economic and Monetary Union

Senegal digital economy

Key findings and recommendations

97%
4G population network coverage*

43%
population unique mobile internet users*

54%
Usage Gap *

38%
population using smartphones*

14.65 million
active electronic money accounts**

2.9 billion
billion electronic money transactions**

GSMA Digital Africa Index 2025:

52/100
Digital Nations and Society Index score

69/100
Digital Policy and Regulatory Index score

Policy recommendations. contributing to Senegal's **New Deal Technologique 2034:**

1 | Sustainable infrastructure investment environment

2 | Use of digital technology for government revenue & tax collection + Optimise sector taxation

3 | Entry-level smartphone affordability, digital skills, and digital government

4 | Prioritise most important New Deal Technologique 2034 objectives + modernise regulatory framework

Policy recommendations impact by 2030:

99.5 %*
4G population coverage (remaining remote areas to be covered by alternative technology)

+2.6 million
additional unique mobile internet subscribers, totalling 13.1 million (61% total population)

Billion FCFA 1 100
value add (5% GDP) and 280,000 jobs in key economic sectors and public services

Billion FCFA 417
net tax impact. including FCFA 174 billion from digitalisation of tax receipts

* GSMA Intelligence
**BCEAO Financial Inclusion Dashboard 2024

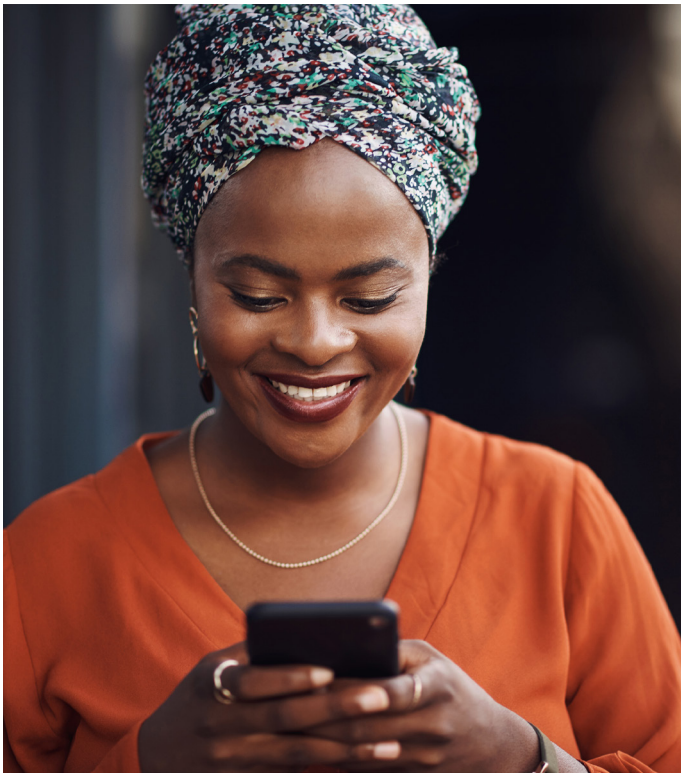
Executive Summary

Senegal has incorporated digital transformation in its national strategies - notably Vision Senegal 2050 - and programmes to modernize the economy and digital inclusion for citizens, including Digital Senegal 2025 launched in 2016, Senegal Digital Economy Acceleration Project 2023 - 2028, Digital Senegal 2025 - 2035 launched in 2024, and most recently the New Deal Technologique 2034 launched in February 2025. The New Deal Technologique 2034 aims to make digital technology a driver of social and economic transformation, with FCFA 1105 billion (~USD 1.7 billion) investment to achieve 95% connectivity, 80% digital public service usage, create 350,000 jobs, and contribute 15% GDP.[1]

International organisation digital indices such as the International Telecommunications Union (ITU)'s Global ICT Development Index[2] and the GSMA's Digital Nations and Society Index[3] recognise Senegal's digital progress, however further action is required to ensure that Senegal is amongst the leading African nations.

The mobile telecommunications sector, together with mobile money, provides digital infrastructure and connectivity and is a critical partner for the achievement of Senegal's digital objectives.[4] GSMA Intelligence analysis for this report finds that Senegal has 97% 4G population coverage and 39% 5G population coverage, and that there are 8.16 million unique mobile internet (broadband) users, representing 43% population, which is above West Africa and Africa averages (~30).[5]

As part of this partnership, the Government and regulators can, in turn, support the mobile sector to deliver on these initiatives by improving the regulatory environment and investment climate through the Policy Recommendations identified in this report and contribute to the New Deal Technologique 2034 and its 4 axes: Digital Sovereignty, Digitalisation of Public Services, Development of Digital Economy, and Make Senegal an African leader in digital technology (Figure 1).



1/ New Deal Technologique 2034, Executive Summary.

2/ ITU Global ICT Development Index 2024 reported Senegal at 69.3, ranked 12th in Africa and 1st in Western Africa (followed by Cape Verde (score 69.1), and Ghana (66.2).

3/ GSMA Digital Africa Index - Digital Nations and Society (2025) scored Senegal at 52 (10 points higher than in 2024) with digital business assessed as a key area for improvement. Senegal is ranked behind or similar to African leading countries such as South Africa (65), Kenya (59), Ghana (50), Rwanda (48), Cape Verde (46), Nigeria (45), and Ivory Coast (41).

4/ Throughout this study, the term digitalisation (sometimes referred to as Information Communication Technologies ("ICT")) 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.

5/ Coverage: GSMA Intelligence - 4G Coverage and Investment in Senegal, October 2025. Unique mobile internet users: GSMA Intelligence database 2025.

Figure 1

Policy recommendations

POLICY AREA	DESCRIPTION AND DETAILED RECOMMENDATIONS
Infrastructure investment environment	Building on the current 97% 4G population coverage and 39% 5G population coverage[6] which is contributing to the New Deal Technologique 2034 objective of 95% connectivity. Ensure that policies and decisions create a sustainable digital infrastructure investment environment to provide high-quality, high-performance and low cost connectivity. These include: • New spectrum policy and roadmap, following sector consultation, that promotes efficient assignment and investment in digital infrastructure for all licensees, including the assignment of 5G and future spectrum, license renewals and longer duration periods (at least 20 years), and the setting of spectrum and mobile backhaul fees aligned with international benchmarks adjusted for Senegal's economic conditions and investment requirements to achieve New Deal Technologique objectives. • ARTP to update the market analysis and assessment of Single Market Power (SMP) using an independent competition and cost study and public consultation to determine, implement, and enforce specific and effective regulatory remedies in accordance with Articles 14 to 16 of the Electronic Communications Code (2018), taking into account the need for sustainable investment and the implementation of effective infrastructure sharing regulatory framework (in line with the applicable legal instruments Article 103 of the Electronic Communications Code, Decree No. 2022-1357 on interconnection, infrastructure sharing and access in the electronic communications sector, and Decision No. 2023-022 setting out the conditions and modalities for infrastructure sharing). • Ensure telecoms energy supply requirements and costs are lowered through Senegal's Mission300 Energy National Compact, World Bank Expand Energy Access (PADAES), and the African Development Bank Desert to Power and other programmes. If Senegal's National Compact 100% population energy access objective by 2030 is achieved and energy supply at lower costs is provided to telecommunications infrastructure, it is estimated that USD 10 million investment (compared to USD 20 million if no changes are made) would be required to achieve 99.7% population 4G mobile network coverage according to GSMA analysis. GSMA analysis, including geospatial planning, is available to be utilised for these programmes. • Designate telecoms infrastructure as constituting Critical National Infrastructure and measures to provide more effective deployment and protection against criminal damage. • Develop Quality of Service regulation in line with international standards and an action plan to address barriers. • FDSUT policy review including: USF contributors to participate in fair and transparent FDSUT decision-making and programmes; use of shared infrastructure with effective regulation; rural connectivity subsidy programme including CAPEX and OPEX costs; tax relief and incentives, and published audited funds reports for transparency. Noting that recent GSMA analysis finds that: • Expanding 4G coverage from the current 97% total population and 92% rural population to 99.5% total population will require at least USD 20 million additional investment, which could be lowered to USD 10 million if policy recommendations are adopted. • GSMA analysis finds that 35% of existing 4G mobile network sites are outside of 1 kilometre and more than 98% of new sites potentially required to expand from 97% to 99.5% population 4G coverage are outside of 1 kilometre of the national electricity grid. In order to support New Deal Technologique 2034 objectives, telecoms must be included as a priority sector for energy supply in Senegal's Mission300 National Energy Compact. • The remaining 0.5% of the population is in very remote and sparsely populated areas and will require alternative technology (e.g. LEO satellite) to provide coverage.[7]

6/ GSMA Intelligence - 4G Coverage and Investment in Senegal, October 2025. See Figures 12 - 13 for analysis, including 4G population coverage total (97%), urban (100%), rural (92%), and 5G coverage total (39%), urban (58%), peri-urban (39%), and rural (4%). Please note that population 4G coverage is calculated from combined MNO network coverage data and mapped against Global Human Settlement Layer (GHSL) population estimates for 2025. This is used to calculate the state of coverage for each population settlement in the country, and the average geographic and population coverage for each administrative area in the country.

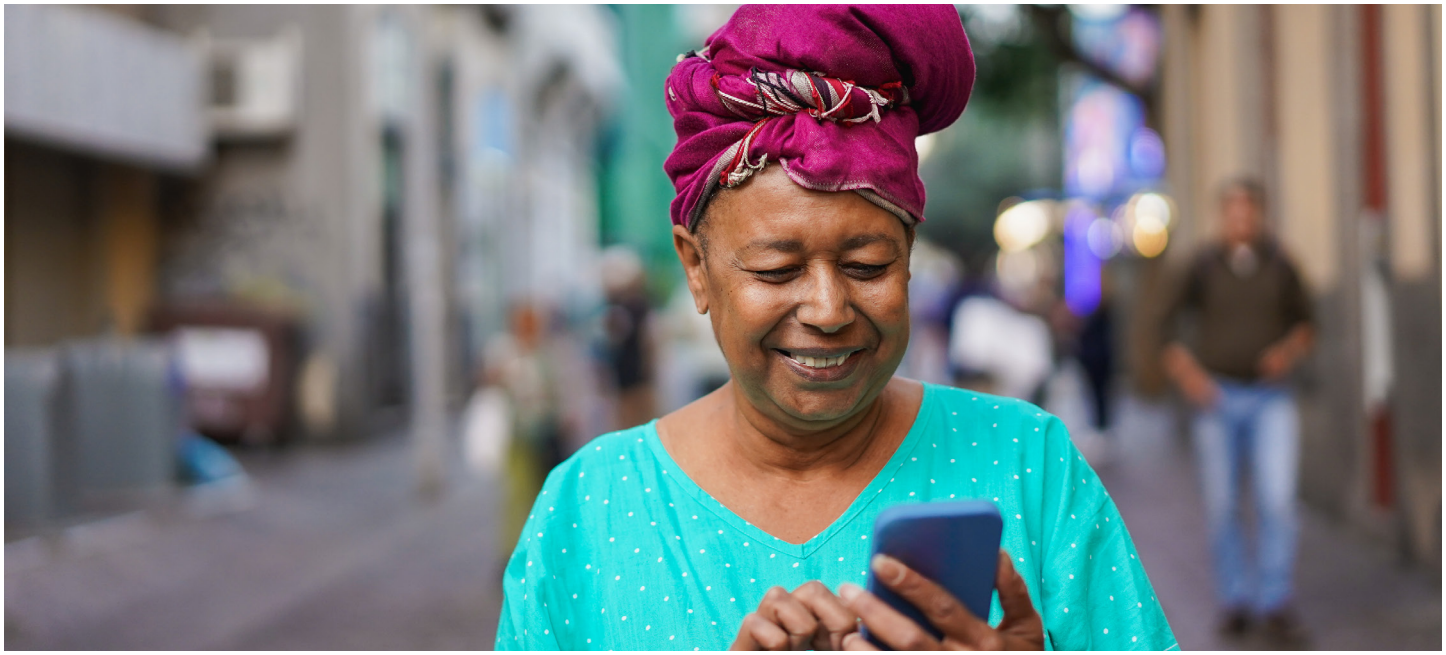
7/ GSMA Intelligence - 4G Coverage and Investment in Senegal, October 2025.

Figure 1

Policy recommendations

POLICY AREA	DESCRIPTION AND DETAILED RECOMMENDATIONS
Use of digital technology for government revenue & tax collection AND Optimise Sector Taxation	Increase government revenue mobilisation through accelerating the use of digital technology for cashless payments, to improve accuracy in filed tax returns and tax compliance, and public service delivery. Forward looking fiscal policies to optimise sector specific taxation on telecoms, mobile money and entry-level smartphone devices to broaden the tax base, thereby increasing affordability and promoting digital inclusion, including: • Reduce both 4.5% Contribution spéciale du secteur des télécommunications (CST) and 5% Redevance d'Utilisation des télécommunications (RUTEL) to 3% each. • Remove 18% VAT and import duties (totalling 7.7%) on entry-level smartphones priced below FCFA 17,500. GSMA analysis finds that entry-level internet enabled phones are priced at ~USD 31 in Senegal. This equates to 19% of monthly GDP per capita and 42% of monthly GDP per capita for the poorest 40% of the population. Taxation contributes to 21% of phone cost. • Remove 0.5% taxes on mobile money transfers, withdrawals, and merchant payments and ensure harmonised regulatory taxes and fees for all mobile money and electronic money providers.
Entry-level smartphone affordability, digital skills & other demand side reforms	Increase digital adoption through demand side reforms and programmes including: • Establish entry-level smartphone affordability programme, considering GSMA Handset Affordability Coalition and Accelerating Smartphone Affordability in Africa Report recommendations.[8] • Accelerate National Digital Training Program and other digital skills initiatives (e.g. SENUM - Orange partnership). • As part of the Senegal Digital Factory, use embedded solutions and APIs in commercial and public service delivery to address digital skills and increase digital adoption. • Implement updated national cyber security strategy and data protection to build digital trust. • Fast track the use of digital technology for public service delivery (e.g. national digital masterplan implementation, national single window, one stop shop).
Prioritize most important New Deal Technologique 2034 initiatives AND Modernise regulatory framework	Prioritise the most important initiatives under the New Deal Technologique 2034 and the Digital Masterplan, with phasing for other initiatives, to enable delivery with impact. Upgrade and modernise the digital regulatory and governance framework, with key areas being: • A simplified, harmonised, and transparent licensing regulatory framework which implements technology neutrality and provides certainty (license renewal, +20 year duration, and reasonable fees) to licensees to enable continued investment and innovation to achieve New Deal Technologique 2034 objectives. • Regulatory framework for emerging technologies (e.g. partnerships between mobile operators and LEO satellites to extend broadband coverage to sparsely populated or inaccessible areas and the use of Direct-to-Device connectivity). • National AI Strategy informed by African Union Continental AI Strategy and addresses local languages. • Enhance mobile money regulation with a memorandum of understanding (or similar instrument) between regulatory authorities to improve coordination, provide regulatory certainty and transparency, and minimise regulatory overlap.

8/ See Section 2D.3.1 of this report for Entry-level Smartphone Affordability programme recommendations.



This report finds that these proposed policy recommendations would accelerate the mobile sector's contribution to the New Deal Technologique 2034 objectives as follows:

01. Extending 4G mobile network coverage from 97% to 99.5% population:

Policy recommendations would result in lower USD 10 million investment cost compared to USD 20 million cost if no policy recommendations. Remaining 0.5% remote areas covered by alternative technologies), contributing to the New Deal Technologique 2034 objective of 95% quality connectivity.

02. Adding an additional 2.6 million unique mobile internet (broadband) subscribers by 2030 totalling almost 13.1 million (61% total population, 94% adult population).

This would reduce the mobile internet usage gap by 12%. By 2030 the number of unique mobile subscribers will be almost 60% greater than in 2025, and contribute to the New Deal Technologique 2034 objective of +80% digital service usage rate.

03. Increasing digitalisation across important sectors and in public services.

The potential macroeconomic impacts on agriculture, manufacturing, transport, trade, healthcare sectors and government public services, implying additional FCFA 1,100 billion value add (5% GDP contribution) and 280,000 jobs. Contributing to New Deal Technologique 2034, 350,000 direct and indirect jobs, and national 15% GDP objectives.

04. Should the proposed sector tax policy recommendations be adopted,

Combined with the other policy recommendations, economic growth, generated by increased mobile digital usage across all sectors of the economy, will have a FCFA 417 billion net tax impact (including an estimated gross additional tax revenue of FCFA 319 billion across the economy, an additional FCFA 174 billion raised by greater use of digital tax collection, and a net loss of FCFA 75 billion in taxes from the mobile sector) by 2030. Contributing to government revenue mobilization and tax collection objectives.

1.Introduction

1A. Digital economy country snapshot

Senegal, located in West Africa, with a population of ~18 million people, nearly a quarter of whom live in the Dakar region. Economic growth rate stood at 4.3% in 2023, up from 3.8% in 2022, largely driven by hydrocarbon production and a resilient agricultural sector.[9] The country faces global and regional macro-economic conditions and key structural challenges, including inflationary pressures. In June 2025, the World Bank announced a USD 115 Million program with the Government of Senegal to support Senegal's fiscal reforms and strengthen public financial management.[10]

Digitalisation has been identified as a key pillar for economic development and inclusion in the Government's National Vision 2050, with New Deal Technologique 2034 launched this year providing an implementation programme and targets.

Figure 2

Senegal – key indicators

Source: Data for 2025, except 2022 if marked *** or 2021 if marked ****. Source: World Bank World Development Indicators, GSMA Intelligence, Findex.

9/ World Bank report, Seizing the opportunity - Senegal Economic Update, June 2024.

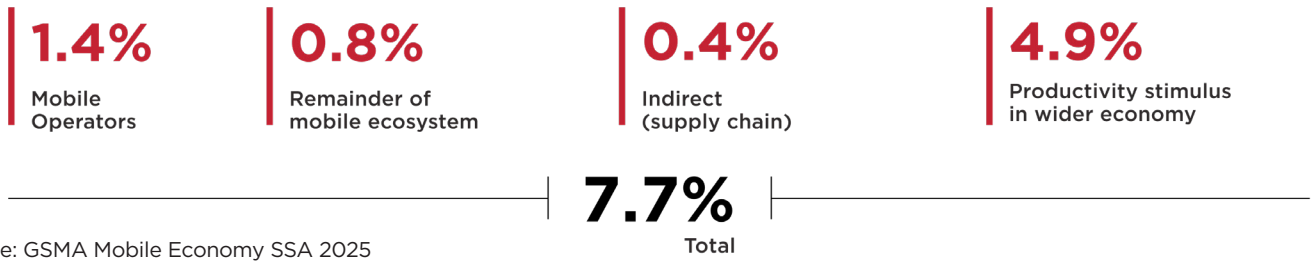
10/ World Bank press release - World Bank Approves USD 115 Million to Support Senegal's Fiscal Reforms and Strengthen Public Financial Management, June 2025.

The further digitalisation of public services (e.g. government, education, healthcare) and key economic sectors, examined in this study, has the potential to build upon this and contribute significantly to Senegal's economy and citizen's lives.

It is estimated that, in 2025, the telecommunications sector contributed 7.7% of GDP in Sub-Saharan Africa when account is taken of direct and indirect components and productivity stimulus from mobile technologies used across the economy. The estimated breakdown of GDP contributions is shown in Figure 3.

Figure 3

Direct, indirect and productivity impacts of mobile in 2025



Source: GSMA Mobile Economy SSA 2025

1B. The impacts of digital transformation

Senegal has incorporated digital transformation in its national strategies - notably Vision Senegal 2050 - and programmes to modernize the economy and digital inclusion for citizens, including Digital Senegal 2025 launched in 2016, Senegal Digital Economy Acceleration Project 2023 - 2028 (with investment and support from the World Bank), Digital Senegal 2025 - 2035 launched in 2024, and most recently the New Deal Technologique 2034 launched in February 2025. In doing so, partnering with continental and global initiatives, including the African Union Agenda 2063 and the United Nations Sustainable Development Goals.

Adoption of digital technologies across public services and economic sectors can unlock important pathways for inclusive digital transformation.[11]

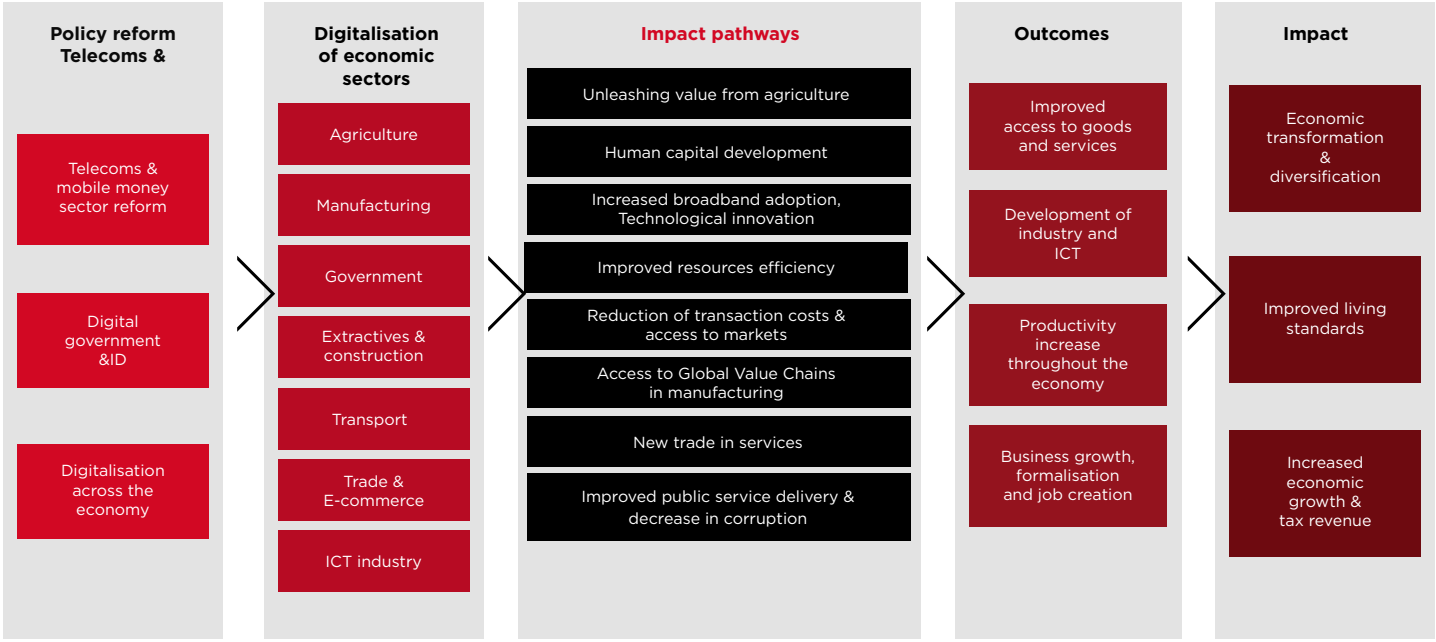
This is experienced, for example, through increasing value from existing agricultural resources, improving access to global value chains, enhancing education and healthcare provision, reducing transaction costs and improving the inclusivity, efficiency, transparency and governance of government-to-business and government-to-citizen services. Access to emerging technologies such as AI, big data and cloud computing, as well as services such as mobile money drive increased digital and financial inclusion.

11/ GSMA, Driving Digital Transformation of African Economies – Evidence and Methodology Document, 2024.

As digitalisation progresses through each sector of the economy, the resulting effects include improvements in productivity, job creation and formalisation of the economy. This in turn leads to increased standards of living, higher economic growth, and greater availability of public resources (Figure 4). The internet economy is projected to reach 5.2% of the GDP in Africa in 2025 and the development of the digital ecosystem has been shown to add up to 1.9% in GDP per capita in Sub-Saharan Africa (SSA).[12]

Figure 4

Digital pathways to economic transformation



Source: GSMA, Driving digital transformation of African economies, 2024.

12/ Accenture Africa, iGPD forecast; ITU Economic contribution of broadband, digitization and ICT regulation: Econometric modelling for Africa, 2019.

1C. The role of the mobile sector in the digital economy

The mobile telecommunications, together with mobile money, sector provides the digital connectivity that forms the foundation on which the digital transformation process is built.

In Africa for the calendar year 2024:

- The mobile sector contributed USD 220 billion to Africa's economy, representing 7.7% of GDP. By 2030, this is expected to increase to USD 270 billion (7.4% of GDP).
- The mobile ecosystem (i.e. MNOs, infrastructure companies, and content and services) contributed USD 30 billion to public funding.
- The mobile ecosystem supported 5 million jobs directly and an additional 3 million indirect jobs.[13]

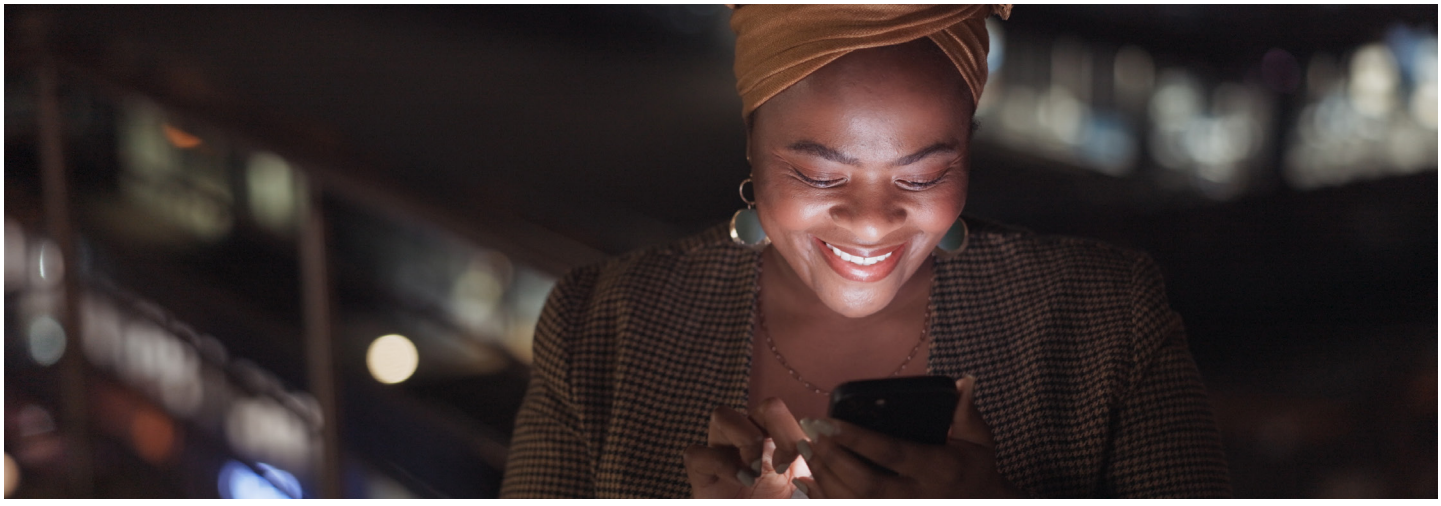
Mobile telecommunications, together with mobile money, is the most common means of access to broadband and financial services in Africa and is essential to the realisation of this potential economic impact.

Research shows that a 10% increase in mobile internet penetration is estimated to increase GDP per capita by up to 2.5% in Africa.[14] Mobile money contributed USD 190 billion to GDP (4.5%) in 2023 in SSA.[15]

The adoption of 5G alone is expected to benefit most sectors of the economy. Low-band 5G could contribute nearly USD 3 billion in Sub-Saharan Africa, whilst the mid-band 5G could deliver USD 13 billion, adding almost 0.4% to GDP in 2030.[16]

The wide area coverage enabled by low band 5G will be essential in driving the digital transformation of the agricultural and manufacturing sectors, enabling Internet of Things (IoT) applications such as smart farming solutions, smart factories, smart cities and smart grids.[17]

For the economy to realise these gains, an enabling policy and regulatory environment is critical.



13/ GSMA The Mobile Economy Africa 2025, Pages 2 and 4.
14/ Ibid.
15/ GGSMA State of Industry Report on Mobile Money, 2025.
16/ GSMA The Mobile Economy Africa 2025.
17/ GSMA Socio-Economic Benefits of 5G: The importance of low-band spectrum, 2023.

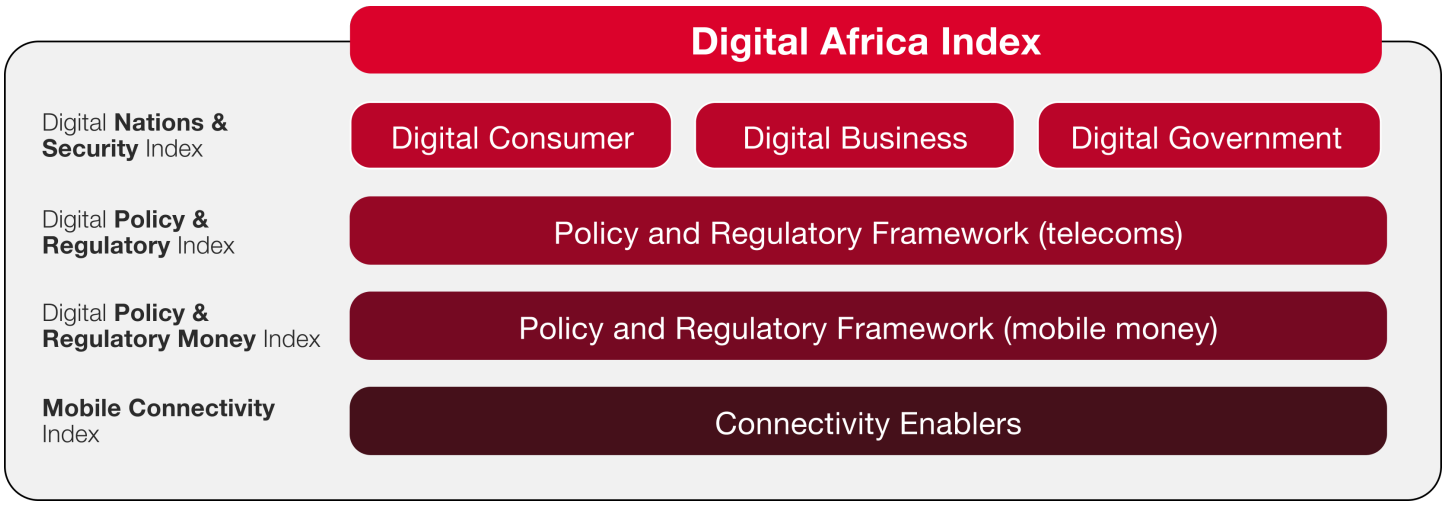
1D. Objectives and Contents of the report

This report examines the role of digital technologies in Senegal's National Vision 2050 and New Deal Technologique 2034, and other applicable government and regulatory frameworks and strategies. 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 improve the efficiency of government and public services. 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 mobile telecommunications sector's role in supporting digitalisation. It then quantifies the impacts of these policy reforms on digitalisation of key sectors of the economy.

In doing so, this study has considered information provided by government, regulators, telecoms operators, industry and other stakeholders; public source reports from national agencies and international organisations; and the GSMA's Digital Africa Index.[18]

Figure 5

GSMA Digital Africa Index[19]

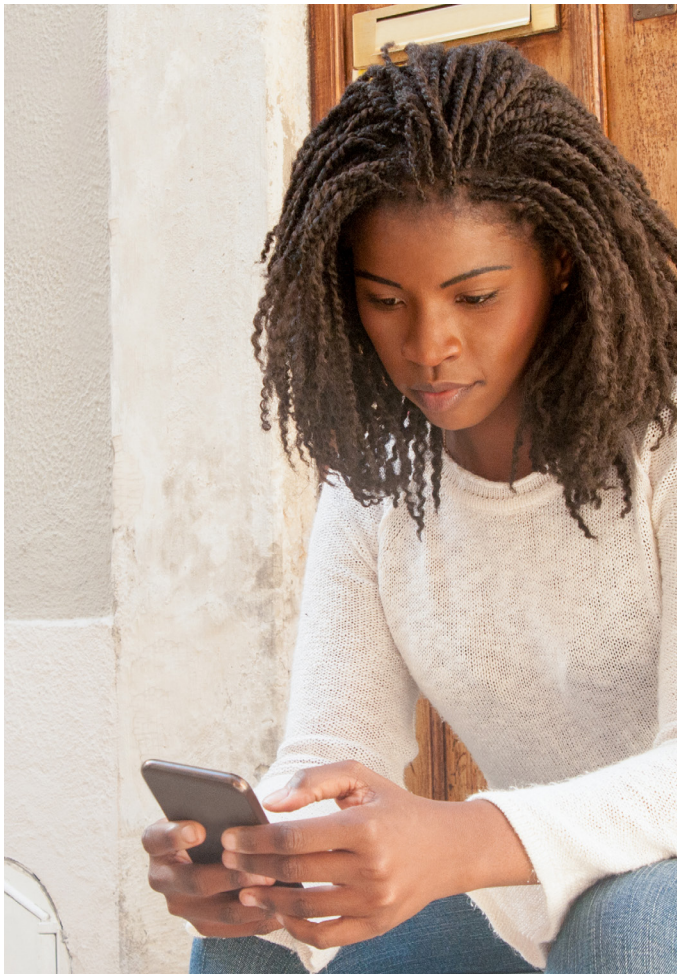


18/ GSMA Digital Africa Index 2025 and methodology document.

19/ Ibid.

The GSMA Digital Africa Index, first published in 2024 and updated in October 2025, includes a Digital Nations and Society Index and a Digital Policy and Regulatory Index, and complements other existing GSMA indices (notably, Mobile Connectivity Index and the Mobile Money Regulatory Index) in providing a comprehensive assessment of African countries' levels of advancement in integrating digital technologies into society and offering guidance on policy and regulatory interventions required to accelerate digital growth. The Digital Africa Index is informed by information requests provided by operators and regulatory authorities, public source information from national and international organisations, and other GSMA indices and research.

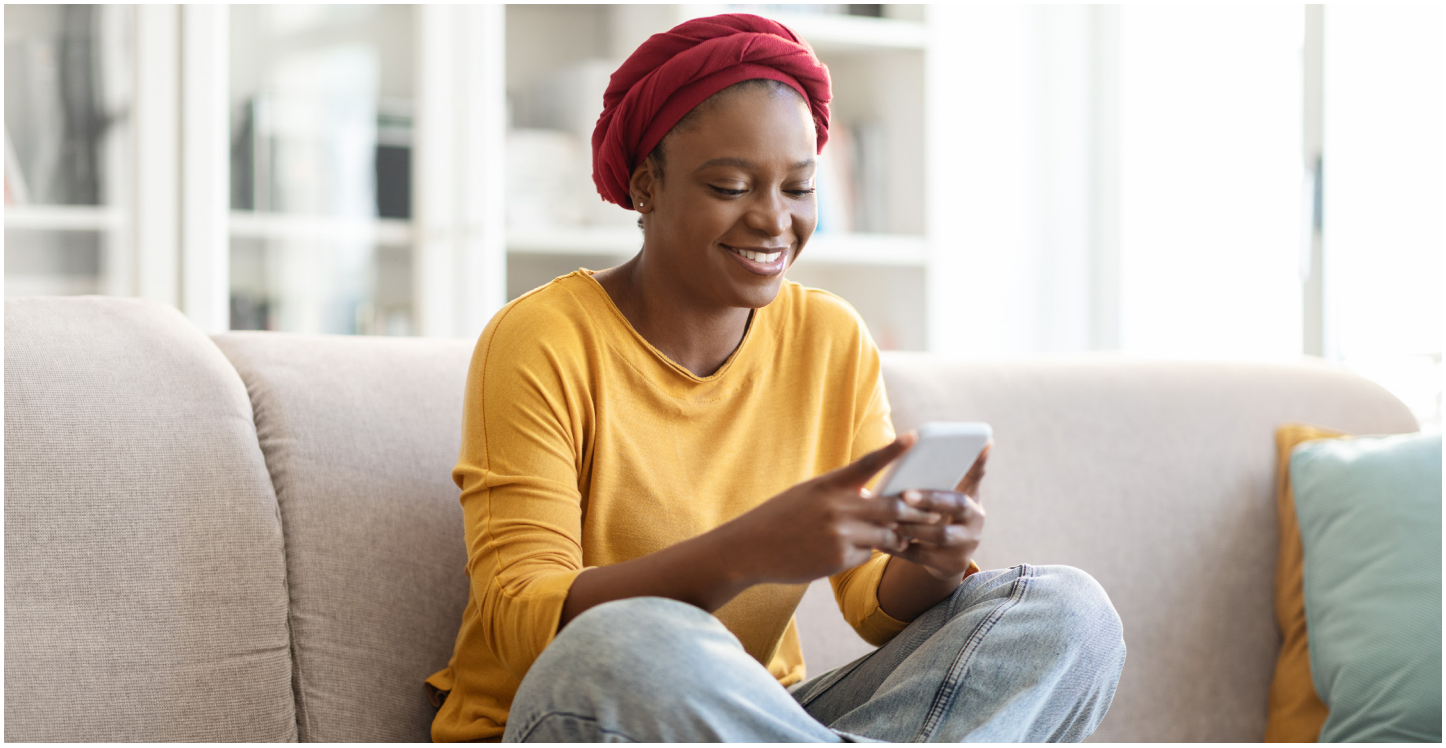
> This report provides a quantitative model of Senegal's mobile sector to evaluate the impacts on the wider economy of the proposed policy recommendations to address the challenges, maximise the digital economy potential, and contribute to Senegal's New Deal Technologique 2034 objectives.[20]



The base case forecast 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 2030. This base case focuses on unique mobile subscriptions, mobile broadband adoption and mobile money usage.

The impact of changes in regulation and policy on the sector is modelled by analysing how these changes would affect the operators in general and how they would affect the adoption and usage of mobile broadband and mobile money.

20/ Further information on the methodology and modelling for this report, please see GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.



In contrast to many models used to evaluate policy changes, the model developed for this report is dynamic rather than static. This means it is able to model the impact of policy changes over time on the growth of the mobile market. For example, a reduction in excise duties, will not immediately raise the number of mobile users, but rather will increase the rate of adoption. In this way the model more accurately reflects the build-up of policy change impacts over a number of years.

The following sections of this report consider how digitalisation affects outcomes in the key economic sectors, public service delivery, and contribute to New Deal Technologique 2034 objectives:

The following sections of this report consider how digitalisation affects outcomes in the key economic sectors, public service delivery, and contribute to New Deal Technologique 2034 objectives:

- Section 2 focuses on the mobile telecommunications sector, assessing its performance in terms of infrastructure, access, and adoption of digital services and mobile money. It identifies important policy challenges and recommendations, and quantifies the impact of these recommendations.
- Section 3 summarises the policy and regulatory recommendations that the government and regulators could undertake to support the mobile sector development and the achievement of the New Deal Technologique 2034 objectives.
- Section 3 also provides the estimated impact of increased mobile adoption and digitalisation from these recommendations on economic growth, job creation, taxation revenue to the government, and contribution to New Deal Technologique 2034 objectives.

2. The Mobile Sector in Senegal

2A. The mobile market

2A.1
Mobile Penetration and usage

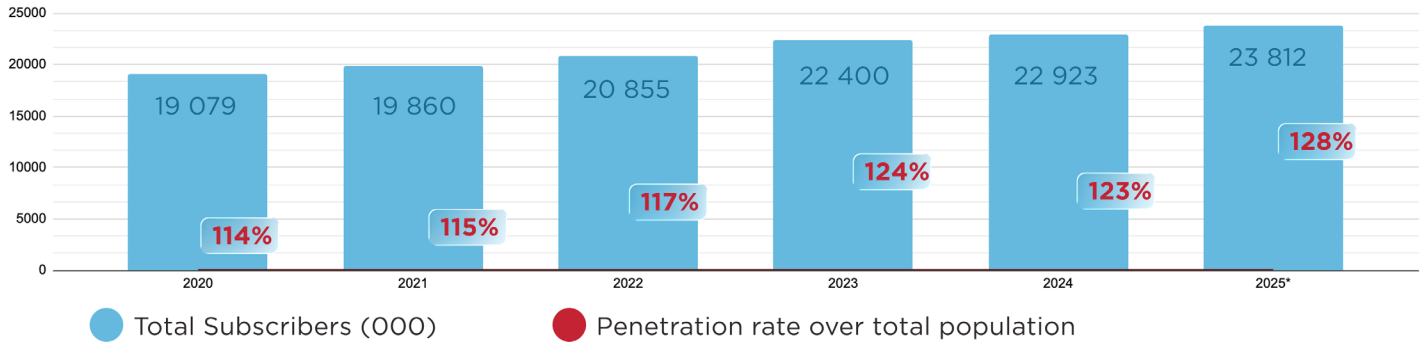
Orange Sonatel Senegal (whose shareholders include the Government of Senegal (27%) and Orange Group (42.33%) referred to in this report as "Orange"), Yas Senegal (formerly owned Free Senegal, now part of AXIAN Group), Expresso Senegal (part of Sudatel Group) are the main providers of mobile telecommunications services in Senegal. In addition, there are two other smaller (by market share) operators: ProMobile (an MVNO hosted by Sonatel network) and Hayo (owned by CSU[21]), a universal service regional operator).

According to the Mobile Telephony Observatory 2025, 2nd Quarterly Dashboard, from the ARTP[22]:

- Mobile telephone penetration in Senegal reached a level of 128% in June 2025. A year-on-year growth of 2.4%.
- 23.8 million active SIM cards for an estimated population of 18.5 million inhabitants in June 2025 based on World Bank Database demographic projections.[23]

Figure 6

Total number of subscribers and penetration rate - ARTP



Source: ARTP – 2020,2021,2022,2023,2024 Q4 Quarterly and *2025 Q2 Quarterly Dashboard ARTP

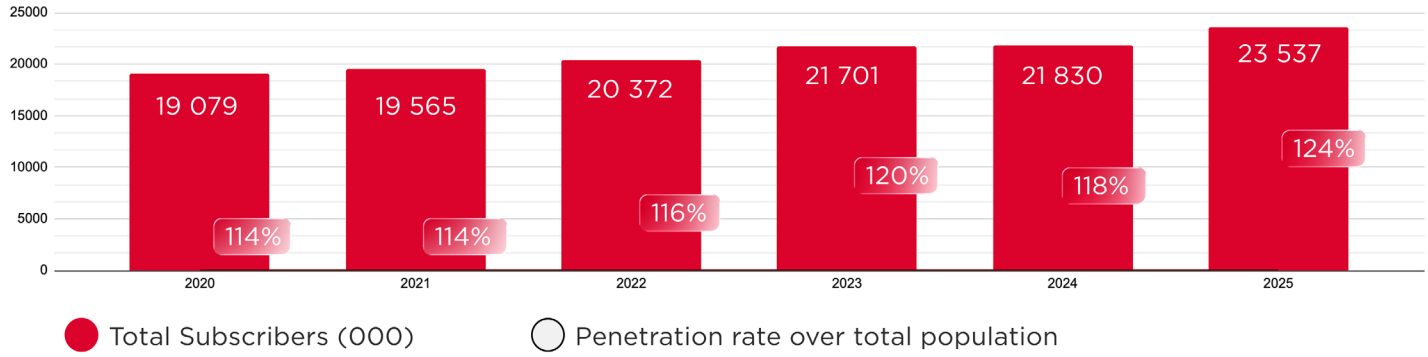
21/ Consortium du Service Universel.

22/ Mobile Telephony Observatory - Quarterly Dashboard as of December 31, 2024 - ARTP.

23/ World Bank report for Senegal, 2025.

Figure 7

Total number of subscribers and penetration rate - GSMA Intelligence



Source: GSMA Intelligence[24]

The GSMA undertakes analysis of the number of unique mobile subscribers across Africa and globally. This is lower than the number of active SIM cards reported by the ARTP because many customers have multiple SIM cards.

Figure 8

SIM Card per unique mobile subscriber

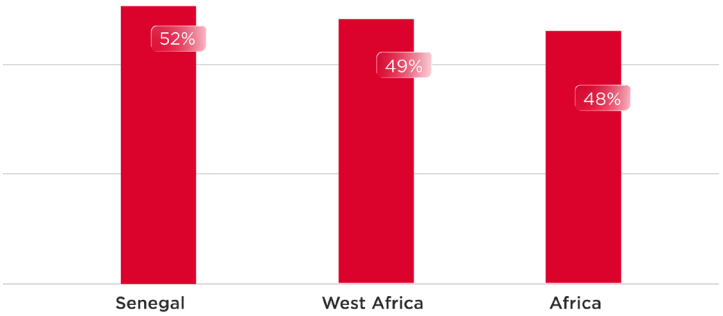
Source: GSMA Intelligence

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, in 2025, that approximately 9.9 million people in Senegal use mobile services, equivalent to 52% of the total population. Senegal compares favorably with the West Africa average of 49% and Africa average of 48% for the percentage of population using mobile services.

24/ ProMobile not accounted in GSMA Intelligence data.

Figure 9

Unique mobile subscriber penetration



Source : GSMA Intelligence

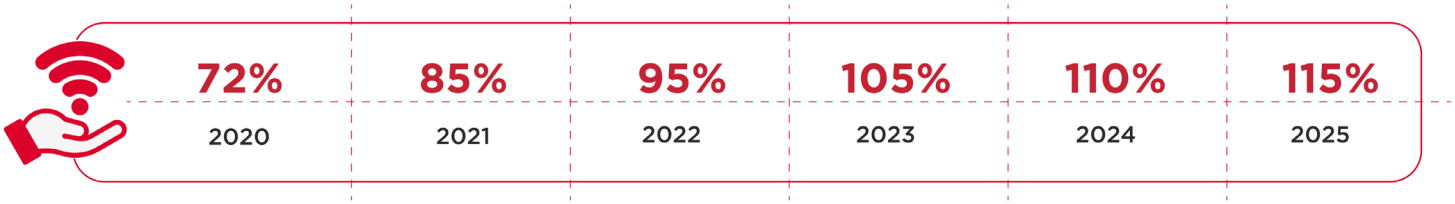
By the end of June 2025, the ARTP reported that there were 23.14 million internet connections with 96% mobile internet connections (22.11 million) and 3.5% fixed broadband connections, giving a mobile broadband internet penetration rate of 103%.[25]

The number of mobile internet subscriptions has doubled over the last 5 years, growing from 14 to 22 million, representing an annual growth rate of 10%.[26]

Based on GSMA Intelligence estimates, the penetration rate will reach 115% by the end of 2025 as shown in Figure 10 below.

Figure 10

Market penetration-mobile broadband

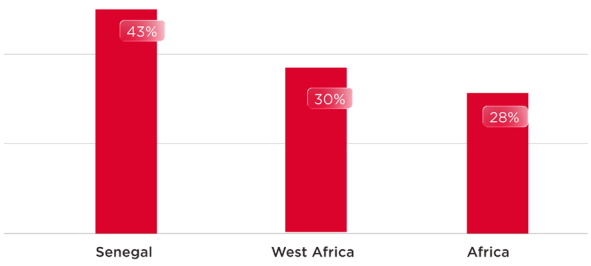


Source: GSMA Intelligence

According to GSMA Intelligence, the number of unique mobile internet subscribers in Senegal is 8.16 million in 2025, representing a penetration rate of 43%, which is well above the regional average of 30% and even Africa average that stands at 28%. The technologies primarily used at end of 2024[27] are 4G (63% of connections) and 3G (29%). Although the rate of 2G connections is decreasing, it still accounts for 14% of connections. 5G connections stand at 1.6%.

Figure 11

Mobile internet unique subscribers as % of population



Source : GSMA Intelligence

25/ Internet Telephony Observatory - Quarterly Dashboard as of June 31, 2025 – ARTP.

26/ Internet Telephony Observatory - Quarterly Dashboards as of June 2025 & 2020 – ARTP.

27/ Internet Telephony Observatory - Quarterly Dashboards as of December 31, 2024 – ARTP.

2A.2
Mobile coverage and the internet usage gap

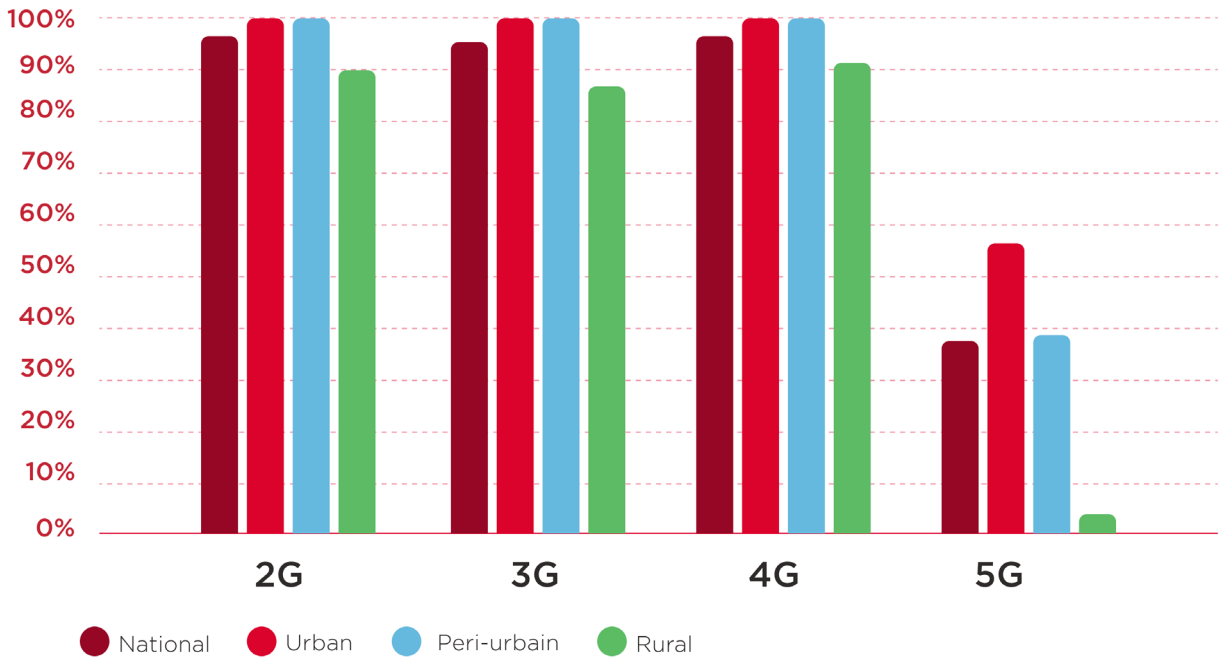
The GSMA Mobile Connectivity Index 2025 measures how well countries enable mobile internet connection and use. Senegal has an overall score of 51 points and an infrastructure score of 64 points (on a scale of 100, which represents the highest score), both are amongst the top 20 countries in Africa.[28]

GSMA Intelligence analysis for this report finds that Senegal's 4G total population coverage is 97% with rural coverage at 91% population, one of the highest in Africa.

Investment is being made by mobile operators with 5G coverage at 39% total population and 58% urban population covering the major cities, however there is more to do on 5G coverage in other areas of the country.[29]

Figure 12

Mobile network population coverage by technology and degree of urbanisation



Source: GSMA Intelligence. Urban and rural classification are based on Global Human Settlement Layer (GHSL) "Degree of Urbanisation Classifications"[30]

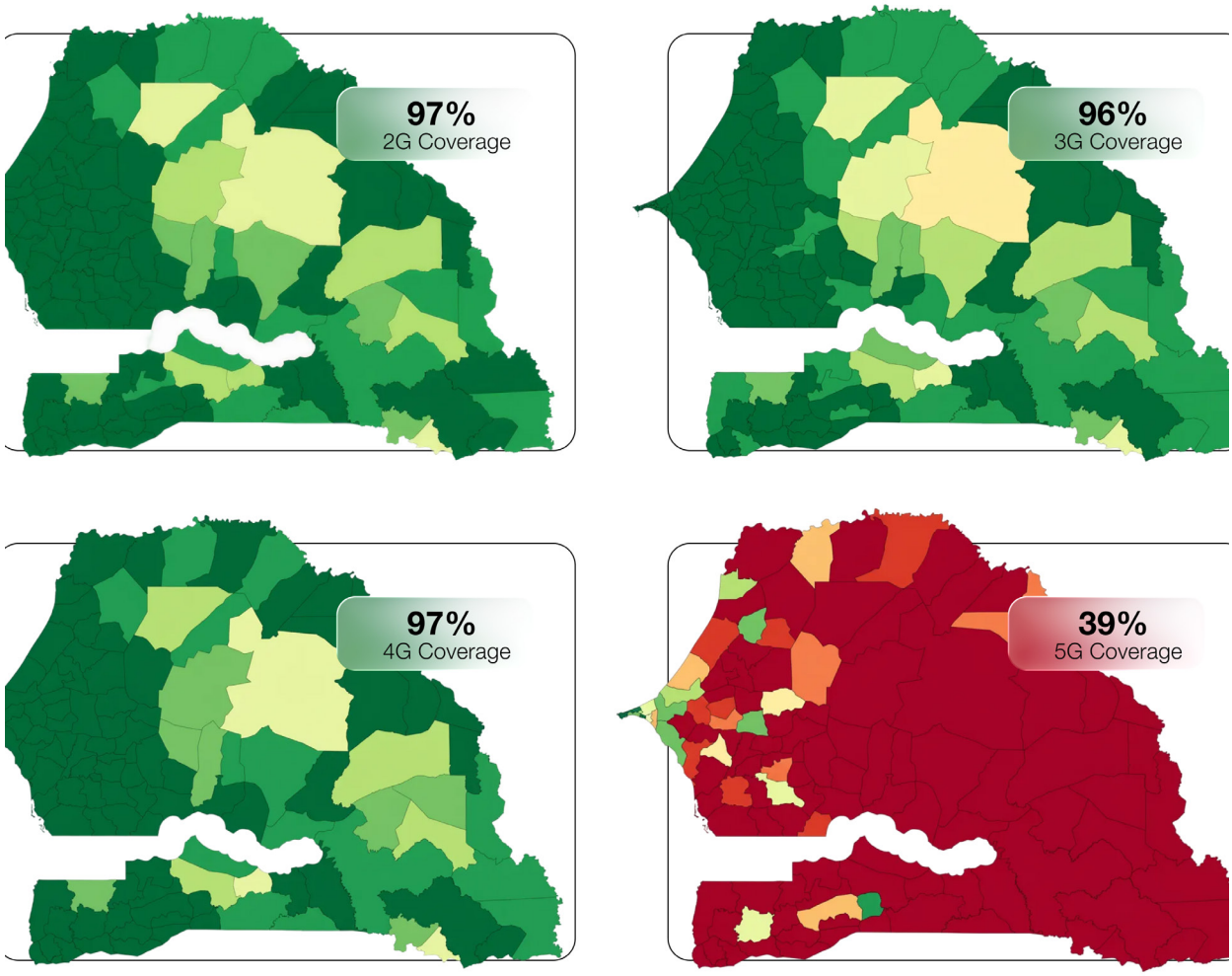
28/ GSMA Mobile Connectivity Index 2025.

29/ GSMA Intelligence - 4G Coverage and Investment in Senegal, October 2025.

30/ Ibid.

Figure 13

Population coverage maps by 2G, 3G, 4G and 5G mobile technology



Source: GSMA Intelligence. Urban and rural classification are based on Global Human Settlement Layer (GHSL) "Degree of Urbanisation Classifications"

The GSMA undertakes "usage gap" analysis[31] by comparing the number of unique mobile internet (broadband) users with the size of the population covered by the mobile broadband networks.

This is a measure of the number of individuals covered by mobile networks but who do not use it.

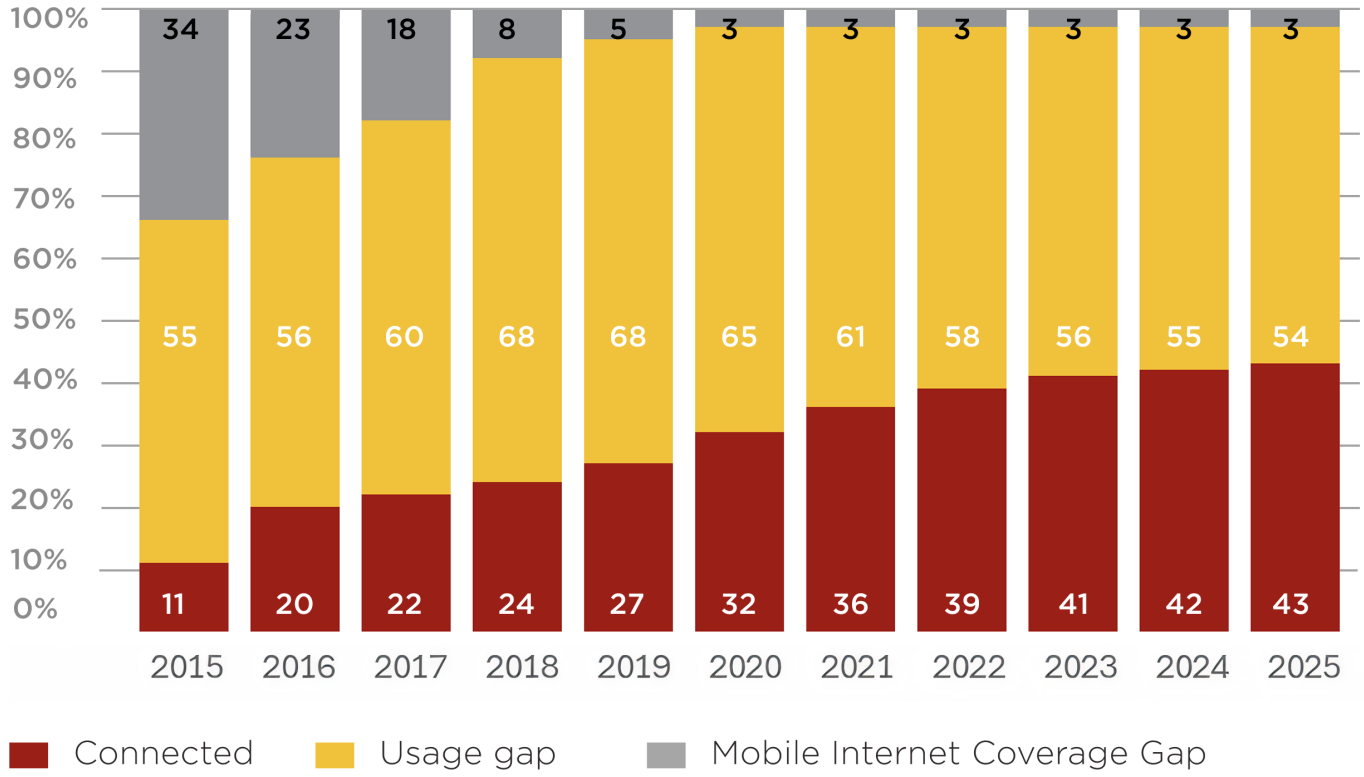
Whilst there is significant 3G and 4G, and increasing 5G, mobile network coverage in Senegal the percentage of connected subscribers still lags behind the Western African average.

The usage gap in Senegal is around 54%, meaning that around 9.9 million people (equivalent to 1.9 million adults) are not using mobile internet services when mobile network coverage is available to them (see Figures 14 and 15).

31/ GSMA State of Mobile internet connectivity report 2025.

Figure 14

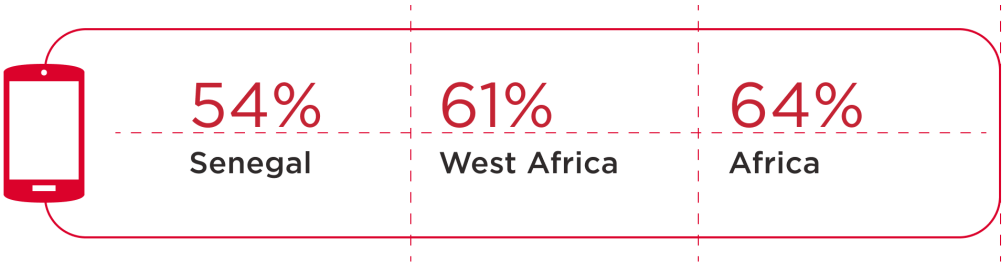
Mobile internet usage gap in Senegal 2015 - 2025



Source: Calculated from GSMA Intelligence data. Unique mobile internet users as a % of adult population; "Usage gap" refers to populations that live within the footprint of a mobile broadband network but who are not using mobile internet.

Figure 15

Mobile internet usage gap in senegal compared to other African countries (2025)



Source: Calculated from GSMA Intelligence data and GSMA Mobile Economy Africa 2025

"Connected" refers to unique mobile internet users[32] 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).

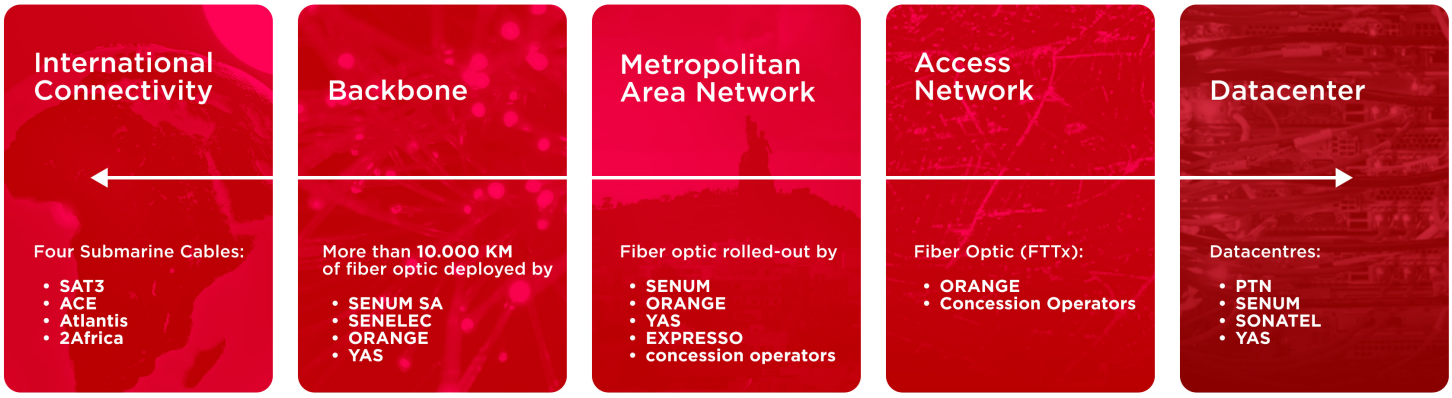
32/ In this report "mobile internet users" or "unique mobile internet users" refers to unique individuals using the mobile internet. It does not refer to the number of SIM cards or mobile internet accounts, which is usually greater than the number of individuals using the internet.

2A.3
Status of domestic and international connectivity[33]

Since liberalization of the sector in the 1990s, Senegal has transformed into a leader in West Africa for developed and modern telecommunications infrastructure. It has embarked in implementing broadband infrastructure projects along the mobile networks to enhance its digital infrastructure and connectivity. They are structured into several network segments as follows[34] :

Figure 16

Senegal domestic and international connectivity segments



33/ Plan national Haut Débit du Sénégal.

34/ Plan national haut débit du Sénégal.

Key Fibre Projects in Senegal include:

Figure 17

Key fibre projects in Senegal

International Connectivity	• 2Africa: In addition to submarine cables SAT3, ACE, and Atlantis, Orange Sonatel is connecting the country to the 2Africa submarine cable, which aims to improve broadband connectivity in Africa. • Senegal-Cabo Verde Optic Fibre Interconnection Project: The 720-kilometre cable will have landing points in Dakar and Praia. The broadband infrastructure, deployed by Huawei Marine Networks (HMN), will be the first direct link between Africa and Cabo Verde islands, which are located approximately 570 kilometres off the coast of Africa in the Atlantic Ocean.
Backbone, Metropolitan area network & Datacentre	• The National Broadband Project focuses on extending the government intranet infrastructure and building a new datacentre in Diamniadio. It is led by SENUM, and includes deploying over 2,500 kilometre of fibre optic cables and connecting numerous administrative buildings. • Project PASSANT[35] consists of deploying fibre optic and wireless infrastructures to strengthen connectivity between cities, administrative establishments and public places. In its design, the project also includes a construction component of a datacentre for hosting information systems, national content and an Operational Centre for Supervision of the administrative Intranet. The deployment of optical fibre has been completed at 80%. • SENELEC-Huawei Collaboration: SENELEC (Senegal's national electricity company) and Huawei are collaborating to digitalize Senegal's network, leveraging SENELEC's existing 2,000+ kilometre fibre optic infrastructure. This includes a secure optical fibre radio network for critical communications and automation of the electrical network.
Access network	• Funded through the Universal Telecommunications Service Development Fund (FDSUT), with 1,550 priority localities identified for immediate intervention, the Universal Access Project aims to achieve complete national coverage by 2029. The phased rollout will upgrade 1,058 villages from 2G to 4G networks and connect 492 completely unserved communities.[36]

35/ Senegal Numerique website information, accessed October 2025.

36/ Senegal is expanding access to digital technology in remote areas with new initiatives" Tech Review news article, May 2025.

2A.4
Mobile data usage and tariffs

Mobile data traffic in Senegal is experiencing substantial growth, resulting from increasing internet penetration and the adoption of 4G and 5G technologies with a 35% increase in volume between 2023 and 2024, reaching 1,158,505 terabytes. It has multiplied by 4.26 between 2020 and 2024.

Figure 18

Total mobile data traffic

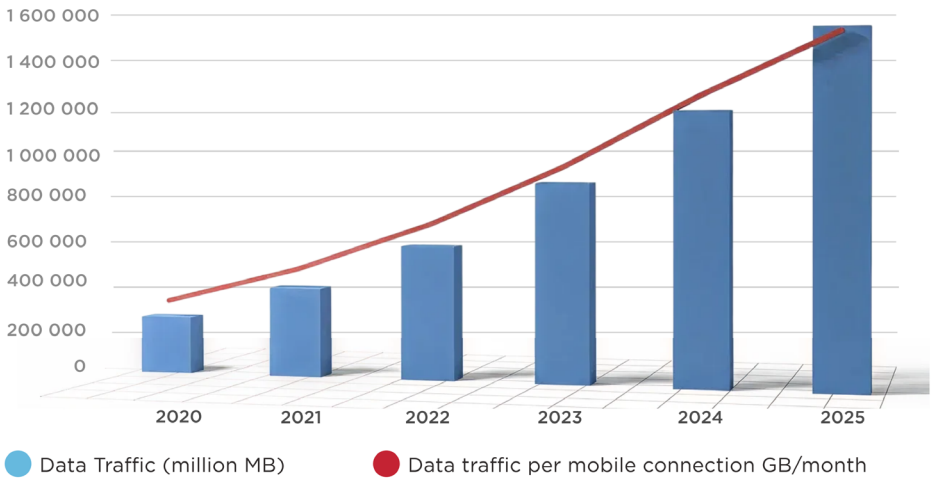
Source : GSMA Intelligence

Per subscriber, mobile data traffic increased from 1.2 GB to 5.5 GB/month, representing a growth of 268% over the 2020-2024 period, corresponding to an average of 53.6% per year. According to GSMA Intelligence, the regional average is 3.33 GB/month.

This evolution reflects the increasing adoption of bandwidth-intensive digital services, notably video streaming platforms like YouTube andNetflix, as well as social networks such as TikTok, Facebook, and Instagram, whose usage has intensified considerably among the Senegalese population.

Figure 19

Mobile data traffic

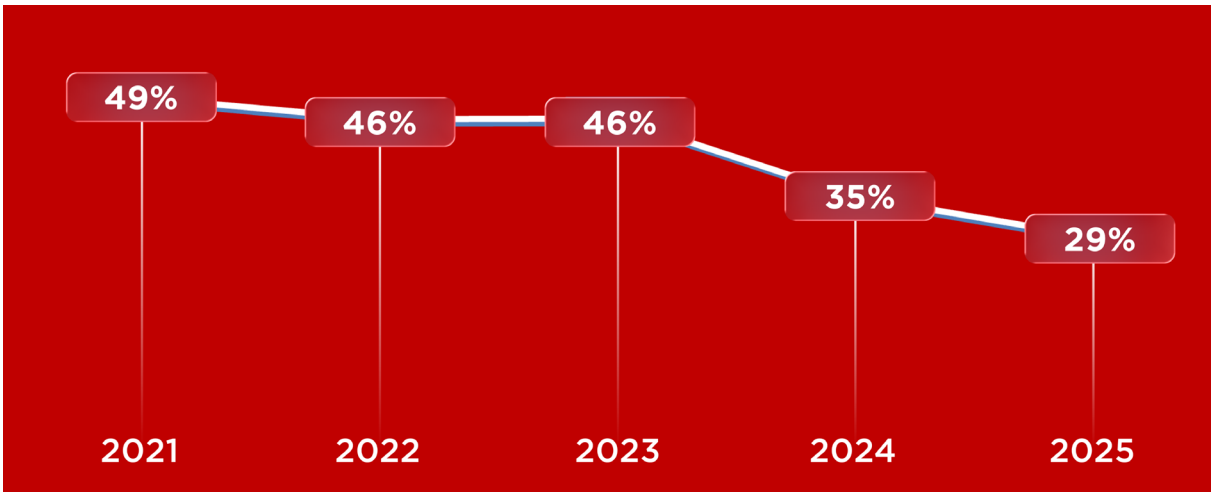


Source : GSMA Intelligence

However, looking more closely at the graph below, one can see that after 2021, a flat growth in 2022 and 2023 and an annual growth decreased from 35% in 2023 to 29% in 2024 (Figure 20).

Figure 20

Mobile data traffic growth

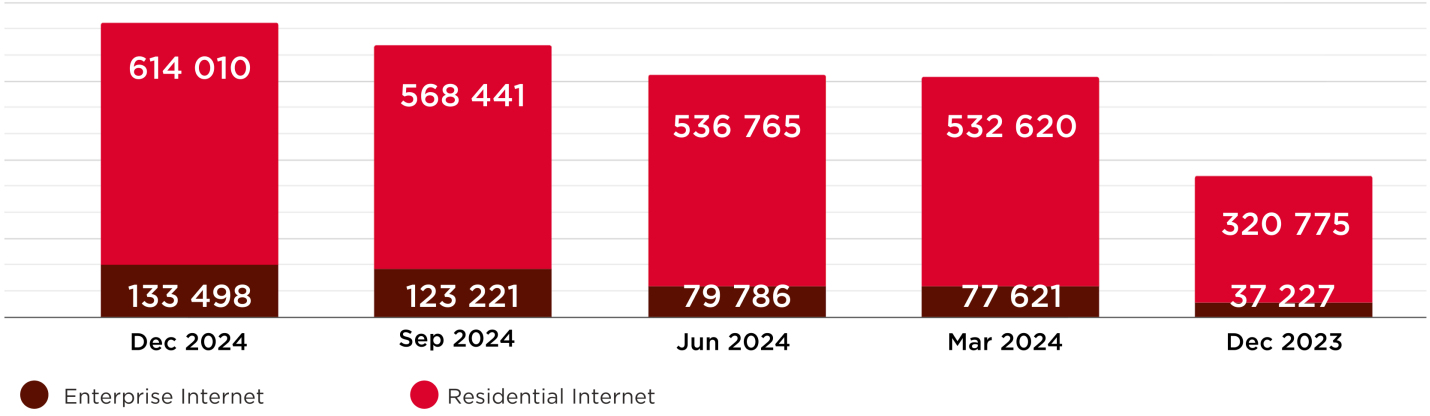


This trend could be explained by a substitution effect toward fixed Internet products over the period, with increasingly affordable rates and greater accessibility of the technology with more available technology, more operators, and increasingly lower prices due to international fibre links that have made broadband services cheaper by providing more reliable and affordable international bandwidth. According to ARTP in its fourth quarter 2024 Internet market report, the number of fixed internet subscriptions is only 747.508, primarily through FTTH (fibre to the home), with 82% residential and 18% enterprises, representing a 109% growth compared to 4th quarter 2023.

Moreover, fixed broadband has grown by more than 321% since 2020 due to the development of FTTH infrastructure in the country (Figure 21).

Figure 21

Fixed internet subscriber



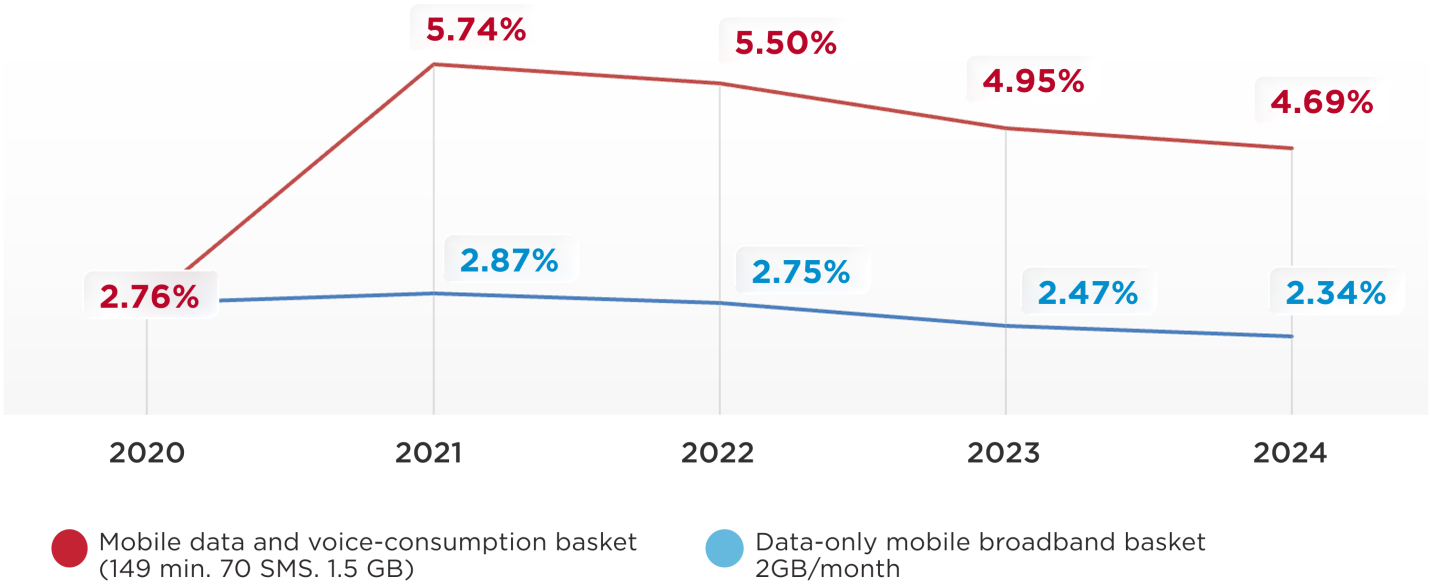
Source : ARTP

Mobile service pricing has seen a downward trend in recent years, as a result of intensive price competition in the market. Between 2019 and 2024, Senegal saw a decrease in the cost of mobile tariffs as a percentage of Gross National Income (GNI) per capita. This indicates that mobile services became more affordable in Senegal during this period, with the affordability gains accelerating between 2022 and 2024 according to the ITU[37] (Figure 22). Specifically, the price of mobile data and voice low-consumption baskets, as well as the data-only mobile broadband basket, decreased as a percentage of GNI per capita.

The relative mobile broadband basket (2 GB/month) decreased from 2.76% in 2020 to 2.34% in 2024 of the average income per capita. The high-consumption mobile broadband and voice basket (140 mn, 70 SMS, 1,5GB per month) represents 4.69% of the average GNI per capita.

Figure 22

Mobile tariffs basket decrease 2020 - 2024 (ITU)



Source : ITU

Based on a study on the average cost of one gigabyte (1GB) using over 5,600 mobile data plans worldwide, Senegal is ranked 133 cheapest in the world out of 237 countries with an average price of 1.63 USD per GB. 28 data plans have been used to calculate the average price for 1 GB. The price per GB % change for 5 years (2019-2023) stands at -50.20%.

For comparison, Sub-Saharan Africa with 50 countries tested over 1,396 tariffs measured has an average cost of 1GB of USD 3.31. Senegal is ranked 18th in Sub-Saharan Africa.[38]

37/ Cf ITU Data Hub – Sénégal – Section Affordability.

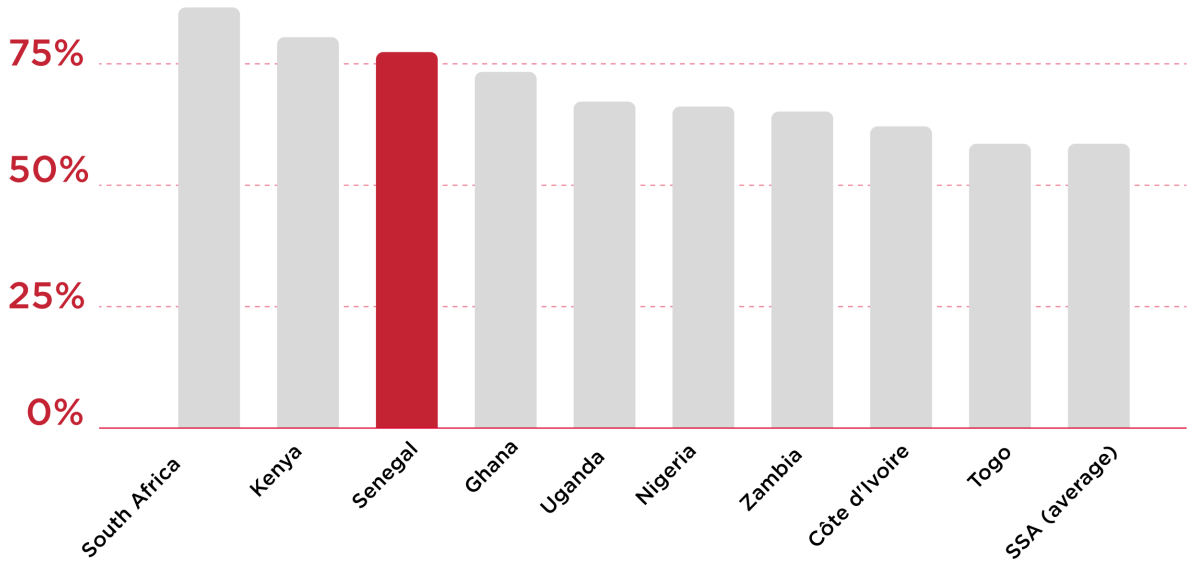
38/ bestbroadbanddeals.co.uk: mobiles, worldwide-data-pricing (accessed October 2025).

2B. The mobile money market

Financial inclusion is a key priority in Senegal and is making significant progress with 76% of the adult population using financial services accounts, a more than 20% increase since 2021. One of the highest in Africa (Figure 23).[39]

Figure 23

Proportion of adult population with a financial services account, compared to other countries in africa (2024)



According to a 2024 BCEAO financial inclusion report,[40] which details financial inclusion in the UEMOA zone, at the regional level, since the adoption of the regional financial inclusion strategy in 2016, the financial inclusion rate has improved considerably. Indeed, from 2019 to 2024, the level of financial inclusion increased by ~14% percentage points, from 60% to 74%. These developments could be explained by the continuous improvement in the level of use of electronic money services.

According to the BCEAO report, these developments could be explained by the continuous improvement in the level of use of electronic money services as well as the adoption of digital strategies by traditional financial institutions in the provision of financial services.

The utilization rate of electronic money services in the UEMOA region reached 57% in 2024, compared to 22% for microfinance services and 25% for banking services

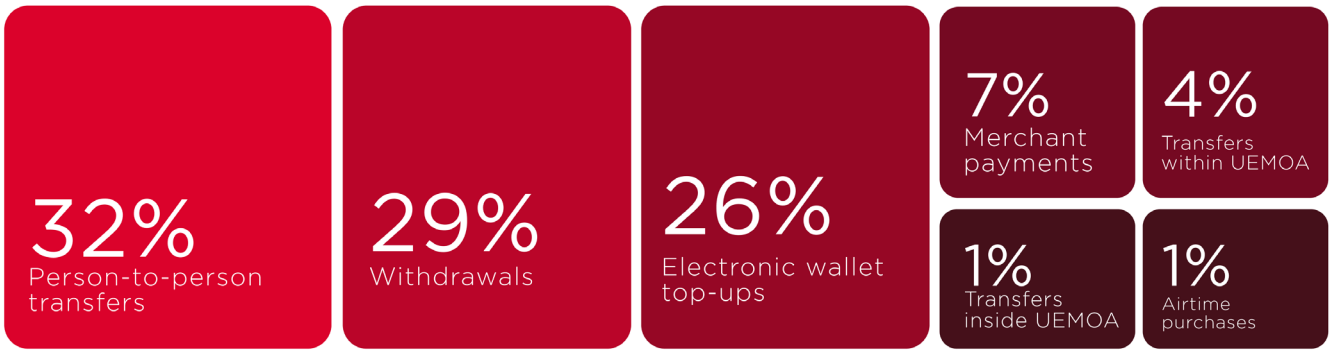
39/ The Global 2025 Findex database.

40/ WAEMU Financial inclusion dashboard 2024.

Mobile money has been the primary driver of the high level of financial inclusion in the country. Senegal's financial inclusion rate increased from 70% in 2019 to 86% in 2024. This has been driven using electronic money services, which stood at 64% in 2024, compared to 39% for microfinance services and 23% for banking services. Figure 24 below shows the different types of mobile money transactions which are being used.

Figure 24

Distribution by value of mobile money transaction types



Source : BCEAO 2024

BCEAO reports that in 2024, Senegal had 11 electronic money issuers, 14.65 million active accounts (19.06% of those in UEMOA) out of nearly 42,58 million open accounts, representing an active account rate of 34.4%, and 125,292 service points with a volume of nearly 2.9 billion transactions representing a value of FCFA 48.48 billion (approximately USD 85.47 billion).

The main mobile money providers in Senegal are as follows:

- Orange Money: A leading player in Francophone Africa, Orange Money is a key mobile money service offered by Orange, one of Senegal's largest mobile network operators.
- Wave: Wave has significantly disrupted the mobile money market in Senegal and other parts of Africa with its low-cost, agent-based model.
- Yas (formerly Free): Another major mobile network operator in Senegal, Yas offers mobile money services.
- WIzall/Wave: Ecobank Senegal partners with WIZALL/WAVE to offer mobile money services.
- E-Money: BSIC SN and Expresso also collaborate to offer E-MONEY mobile money services.

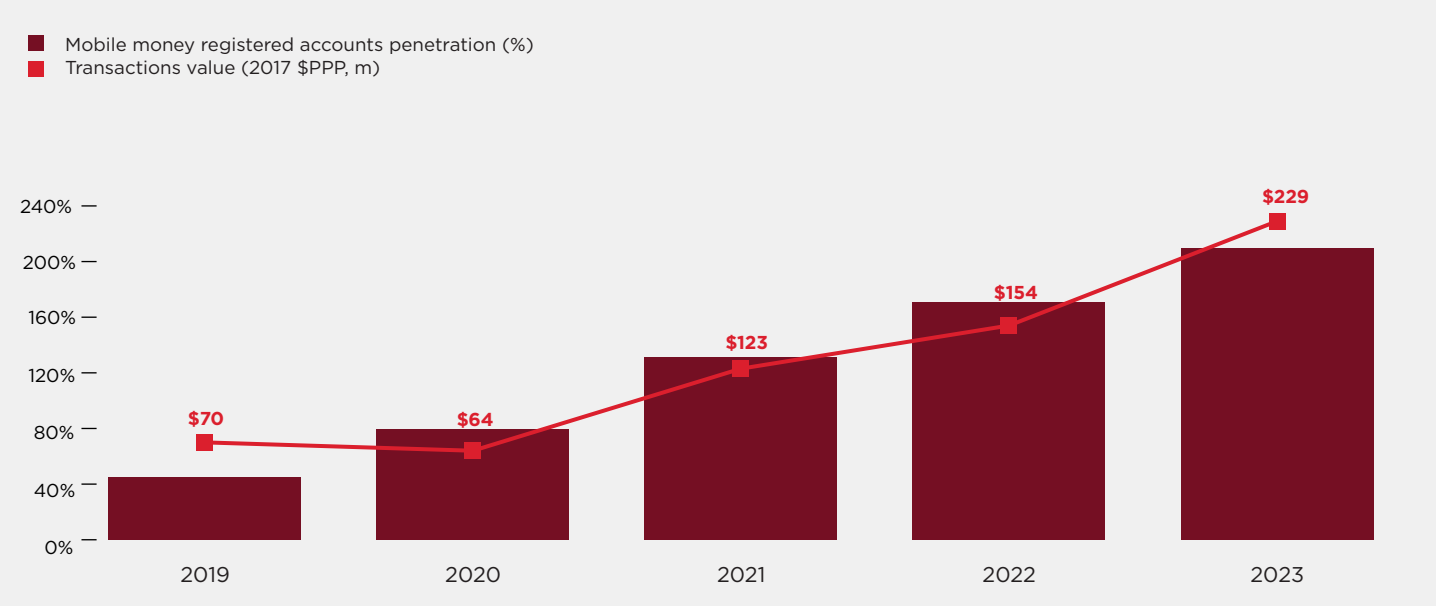
The mobile money market is making an increasing contribution to the economy with a multitude of players providing competition and choice, rapidly growing transaction volumes, increasing financial inclusion, creating tens of thousands of jobs. Providing services such as: payment of employees, payment of grants with the General Directorate of Solidarity, and utility bills payments.[41]

GSMA research on mobile money's economic impact in Senegal[42] shows the continued increase in mobile money adoption and contribution to the economy

Between 2013 and 2023, the number of registered mobile money accounts in Senegal increased more than five-fold from 7 million to 38 million. This reflects an increase in mobile money penetration from 45% to 210%. The value of mobile money transactions grew 3.3 times during the same period, reaching USD 230 million in 2023 (Figure 25):

Figure 25

Registered mobile money account penetration, transaction value in Senegal 2019 - 2023



Source: GSMA Mobile money's economic impact report - Senegal Country brief 2024

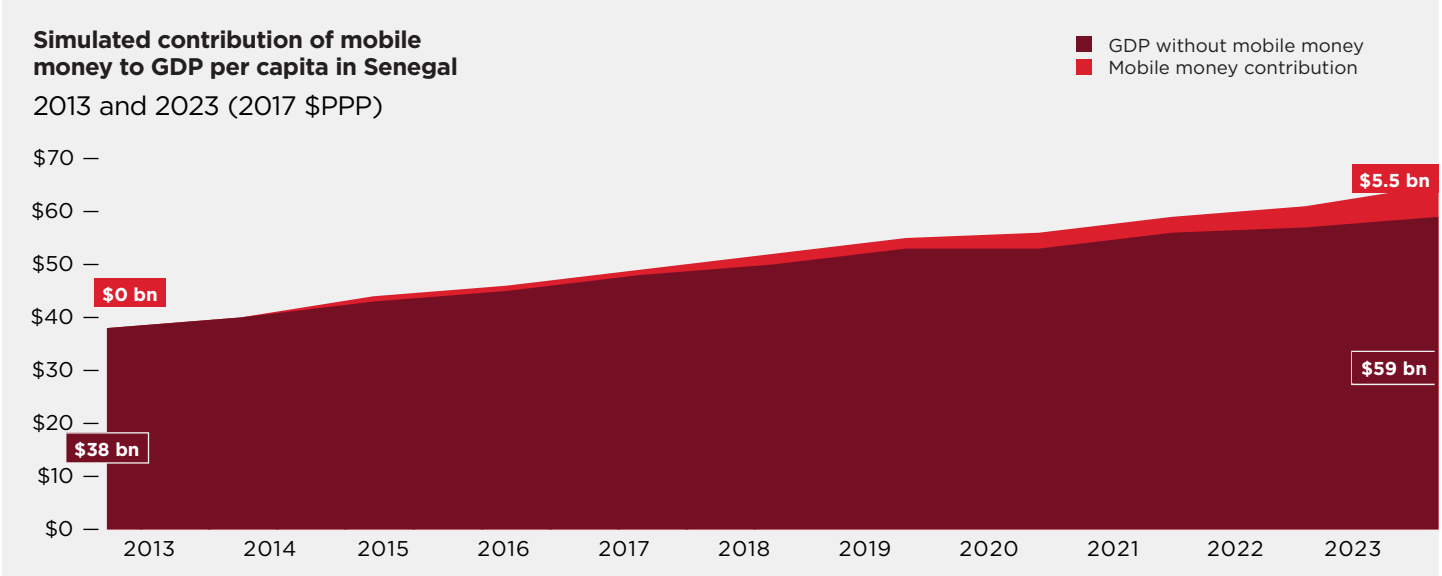
41/ Sonatel White Paper on Mobile Money.

42/ GSMA Mobile money's economic impact report - Senegal Country brief 2024.

The GSMA estimated that at the end of 2023, mobile money registered accounts contributed USD 6 billion to total GDP in Senegal, an increase of 26% compared to the year before (Figure 26).

Figure 26

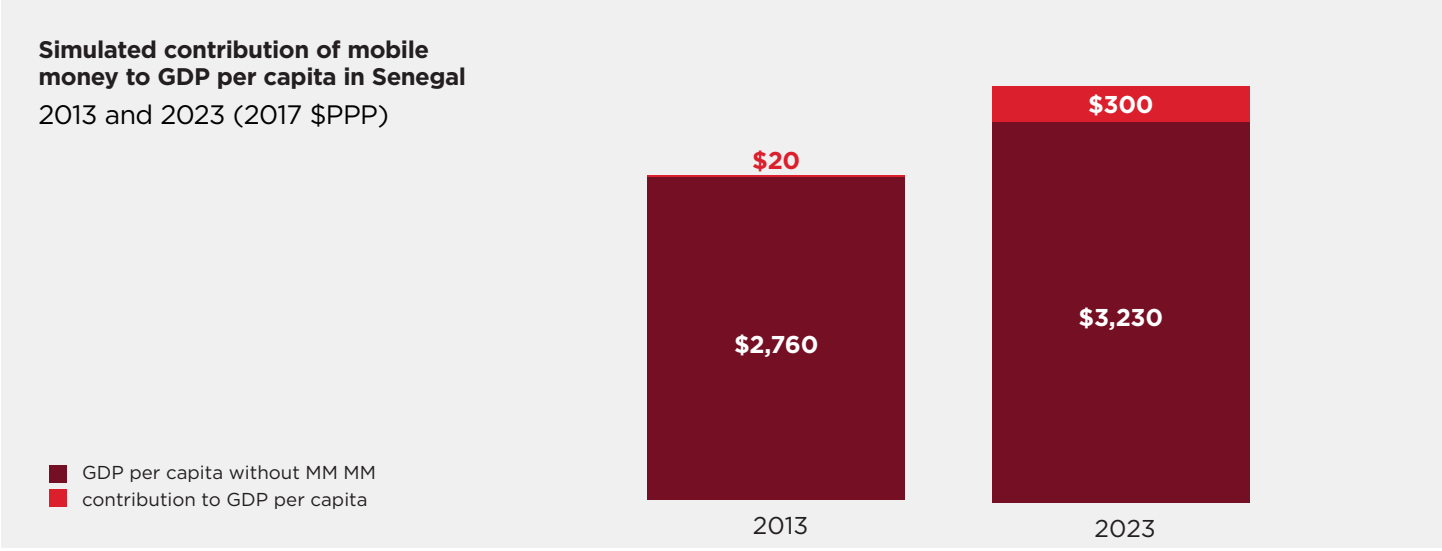
Simulated impact of mobile money registered accounts on GDP in Senegal



This is equivalent to mobile money increasing GDP by up to 8.6%, similar to the contribution made by the country's construction and real estate and services sectors. Mobile money's contribution to Senegal's economy in 2023 was twenty times its impact in 2013 (0.7%). It was also significantly higher than the impact of mobile money in Sub-Saharan Africa (4.5%) in 2023. At the individual level, mobile money increased GDP per capita (2017 PPP) by USD 300 in 2023, an almost fifteen-fold increase compared to 2013 (Figure 27).

Figure 27

Simulated contribution of mobile money to GDP per capita in Senegal



2C. Senegal digital strategies

Senegal has incorporated digital transformation in its national strategies – notably Vision Senegal 2050 - and programmes to modernize the economy and digital inclusion for citizens, including Digital Senegal 2025 launched in 2016, the Code on Electronic Communications 2018, Senegal Digital Economy Acceleration Project 2023 – 2028, Digital Senegal 2025 – 2035 launched in 2024 (including the new Universal Access Program), and most recently the New Deal Technologique 2034 launched in February 2025.

2C.1 National Vision 2050

The National Vision 2050 adopts digital as a key priority for Senegal's inclusive and sustainable development, with the aim to make the country a leader in the digital economy in Africa. The New Deal Technologique 2034 is the digital implementation programme for the National Vision 2050.[43]

2C.2 New Deal Technologique 2034

The New Deal Technologique 2034, launched in February 2025, is an ambitious digital transformation program with four axes (Digital Sovereignty, Digitalisation of Public Services, Development of Digital Economy, and Make Senegal an African leader in digital technology) and a digital masterplan (with 12 priority programmes and 50 projects).

The New Deal Technologique 2034 aims to modernize public services, and boost its digital economy with an investment of more than USD 1.7 billion to achieve 95% connectivity, 80% digital public service usage, create 350,000 jobs, contribute 15% GDP, and other objectives (see Annexure 1, Figure 1 for a summary of the New Deal Technologique and digital masterplan).[44]

This builds on the previous Senegal Digital Strategy 2016 – 2025, which included 28 reforms and 69 projects and USD 2.3 billion investment, with projections to increase digital up to 10 percent of Senegal's GDP by 2025 and creating 54,000 direct and 162,000 indirect jobs.[45]

Oversight for the implementation of the New Deal Technologique 2034 is the responsibility of the new Digital Council, reporting to the Prime Minister's office. This council includes the Ministry of Communications and Digital Affairs, the ARTP, and Senegal Numérique SA.[46]

43/ Presidency of Senegal press release - New Deal for Technology: A national ambition to make Senegal a leader in the digital economy in Africa, February 2025.

44/ Ibid.

45/ Senegal Numeriquesa website information, accessed October 2025.accessed October 2025.

46/ Ibid.

2C.3
Senegal Digital Economy Acceleration Project 2023 - 2028 (PAENS)

PAENS is a FCFA 95.05 billion project financed by the World Bank in partnership with the Ministry of Communication, Telecommunications and Digital Affairs (MCTN) and the Ministry of Health.

PAENS aims to "expand access to affordable and climate-resilient broadband connectivity and improve the adoption of online government services and electronic health records", and has four components:

01. Strengthening the legal, regulatory and institutional environment of the climate-sensitive digital economy.

02. Development of digital broadband connectivity and digital inclusion, providing fixed and mobile broadband coverage to underserved or unserved areas, primarily in the Casamance and Groundnut Basin regions.

03. Support for digital adoption, including expanding the availability of high-quality transactional digital public services in key sectors, and strengthening basic and intermediate digital skills of the population to develop the adoption of the Internet for productive purposes.

04. Drive the digital transformation of the health sector by making the most of digital technologies to strengthen the accessibility, safety and quality of health services, in accordance with the strategic orientations of the Health System Digitalization Program (PDSS).[47]

2C.4
Universal Access Program (PAU)

An ambitious national program (PAU) supported by the Universal Service Fund (FDSUT) and the PAENS program, aims to cover 1,550 localities by 2028 at a total cost of FCFA 70 billion. The FDSUT is financed by a 0.75% levy on the turnover of mobile operators.

A pilot phase has already begun, with 10 sites deployed by Orange in 3G+ (converted to 4G), 5 planned for Free (Yas) and 4 for Expresso. The experience of this pilot, combined with a survey of 250 localities, will serve to prepare the tender documents for the progressive coverage of 200 localities in 2026, 495 in 2027 and 275 in 2028, all in 4G.

The targeted areas correspond to "zone 0", meaning localities with no operator presence, unlike zones 1, 2 and 3 where there are respectively 1, 2 or 3 operators. The list of eligible localities is established by decree, based on techno-economic modelling that evaluates net present value over 10 years, population census data, and the presence of infrastructure. Other technical sizing parameters estimate a coverage radius of 3 kilometres in urban areas and 5 kilometres in rural areas. The current 2025 list was developed in consultation with the operators.

To encourage deployment, national roaming and infrastructure sharing are mandatory on these sites, while frequency fees are reduced by half in accordance with a ministerial decree. However, the government, having observed that some sites reached profitability earlier than expected, calls for greater transparency and diligence from operators in sharing information that would enable a better assessment of demand.

In parallel, to strengthen digital inclusion, the program also provides for the deployment of multimedia rooms in 100 colleges through FDSUT and PAENS, in the covered localities.[48]

47/ AMCTN article, Senegal Digital Economy Acceleration Project, 1 January 2025.

48/ FDSUT.

2C.5
Other strategies

Senegal has adopted other notable strategies, including: the 2022-2026 National Financial Inclusion Strategy, the National Cybersecurity Strategy 2022 (SNC 2022), the National Strategy for the Development of Artificial Intelligence (SNDIA), and the National Data Economy Strategy 2028. A summary of these strategies is provided in Annexure 1, Figure 2.

These frameworks, building on the progress of previous initiatives, provide a clear program to accelerate Senegal's digital economy and financial inclusion in partnership with the government, regulators, industry, and international organizations.

Recent progress in implementing these digital strategies has been significant, with achievements in key areas such as (which are described further in this report):

- Increasing mobile and fixed internet penetration;
- An extensive 4G coverage with efforts ongoing to extend coverage to more remote areas, including the connection of 1,550 localities by 2028; and roll-out of 5G networks;
- Growth of mobile money accounts to 14.66 million active accounts;[49]
- Evolving regulatory frameworks for digital financial services (DFS), including those accessed via USSD to support financial inclusion;
- Development of digital government platforms and services; and
- Enhanced cybersecurity frameworks and infrastructure.

However further work is required to put the country amongst Africa's digital leaders as identified by the New Deal Technologique 2034.

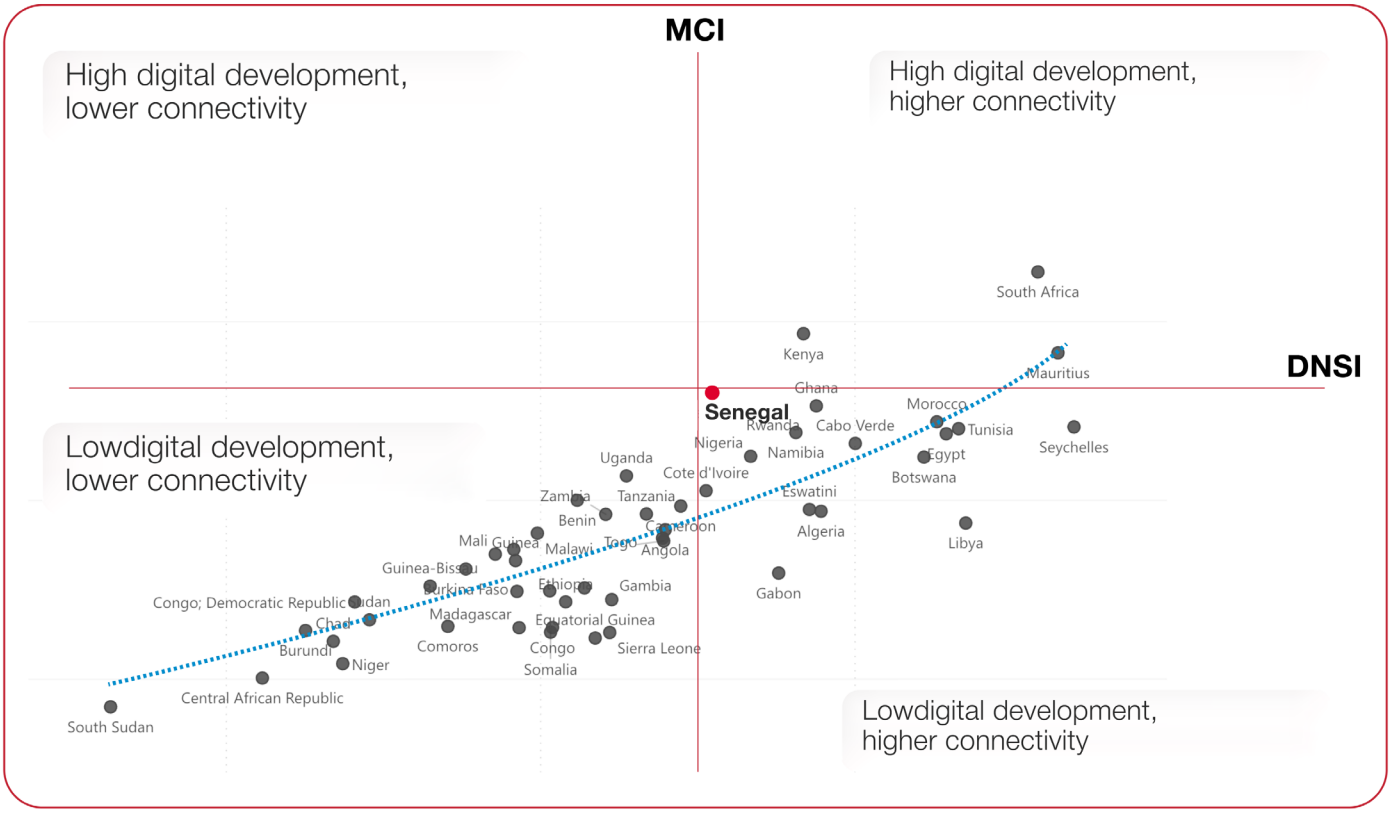
This is recognised by the ITU's Global ICT Development Index 2024, which scored Senegal at 69.3, ranked 12th in Africa and 1st in Western Africa (followed by Cape Verde (score 69.1), and Ghana (66.2)

The GSMA Digital Nations and Society Index 2025 scored Senegal at 52, increasing from 42 in 2024 with improvements across digital consumer (2024: 60, 2025: 65) digital business (2024: 17, 2025: 27) and digital government (2024: 51, 2025: 63) assessments. This compares with countries such as South Africa (65), Kenya (59), Ghana (50), Rwanda (49), and Cape Verde (46), Nigeria (45), and Côte d'Ivoire (41). Figure 28 below shows the correlation between mobile connectivity and digitalisation, with Senegal in the "low digital development, higher connectivity group" indicating the need for action to realise the economic and social benefits from mobile services and digitalisation.

49/ Financial Inclusion Dashboard, BCEAO, October 2025.

Figure 28

Digital Nations and Society Index (DNSI) and Mobile Connectivity Index (MCI) scores in Africa, 2025



Source: GSMA Digital Africa Index 2025

The following sections 2D and 3 of this report identify key challenges and propose policy recommendations to increase mobile internet adoption and digitalisation across the economy and public services and contribute to New Deal Technologique 2034 objectives.

2D. Regulatory and policy challenges in the telecommunications and mobile money sector

2D.0
Policy environment overview

The current telecoms sector regulatory framework is Law No. 2018-28 of 28 November 2018 (Code of Electronic Communications), which repealed and replaced Law No. 2001-15 of 27 December 2001 (Code of Telecommunications). This law modernized terminology by adopting "Electronic Communications" in place of "Telecommunications" and was developed through public consultation with all sector stakeholders. A summary of the key reforms introduced by the 2018 law and other applicable regulatory framework are summarised in Annexure 2.

Governance of this sector is overseen by the Ministry of Communications, Telecommunications and Digital Economy, which relies on the structures under its supervision, namely the regulator, the Agency for Telecommunications and Postal Regulation (ARTP), and SENUM (Sénégal Numérique S.A, ex-ADIE), the state-owned IT agency, which are key players in Senegal's digital infrastructure.

The 2018 Code and the applicable regulatory framework have assisted the development of the electronic communications sector in Senegal, however continual and rapid evolution of technology and business models means that the regulation of the sector also needs to continually change to ensure that it reflects current market realities and to achieve Senegal's digital objectives. This is recognised by both the New Deal Technologique 2034 and the Digital Masterplan which outlines priority programme number 1 to review and update the Digital Regulatory and Governance Framework.

This requirement for Senegal to undertake the modernisation of the legal and regulatory framework to enable digital objectives is consistent with international organisations' assessments. Using the ITU G5 Benchmark that assesses the progress of countries in collaborative digital regulation, Senegal is ranked 98th out of 193 countries globally and 20th out of African countries in ITU G5 Benchmark 2023 and it is listed as "Transitioning" with a score of 50.[50]

50/ ITU Benchmark of fifth-generation collaborative digital regulation 2023: Global and regional trends. This ITU benchmark, operational since 2020, aims to help national regulators to evaluate their progress toward inclusive, cross-sector digital regulation primarily based on self-reported information gathered via official ITU surveys, datasets compiled by international organizations, as well as desktop research based on official government sources and direct outreach to national telecommunication and ICT regulatory authorities. The benchmark overall score is calculated based on seventy indicators grouped around four pillars: (i) national collaborative governance; (ii) policy design principles in the digital arena; (iii) digital development toolbox; and (iv) digital economic policy agenda.

The GSMA Digital Policy and Regulatory Index 2025 ranks Senegal with an overall score of 69 out of 100, which is amongst the leading countries in Africa, albeit behind South Africa with the highest score of 80. This recognises the progress made by Senegal including the recent launch of the New Deal Technologique 2034, however identifies key policy challenges to address including spectrum roadmap, quality of service regulation, operator taxation, and competition policy (Figure 29).

Figure 29

GSMA digital policy and regulatory index - Senegal - September 2025

69/100

Senegal overall DPRI score

September 2025

Licensing and Spectrum 62/100

100/100 | Licensing Framework
0/100 | Spectrum Roadmap
65/100 | Spectrum Assignment
67/100 | Mobile backhaul
50/100 | Technology neutrality
100/100 | Spectrum fees
50/100 | License duration
50/100 | Spectrum leasing and trading

Taxation 65/100

60/100 | Consumer mobile taxes
100/100 | Consumer handset taxes
0/100 | Operator taxes
100/100 | Fiscal incentives
100/100 | Tax stability

Network Regulation 62/100

100/100 | Harmonised deployment
0/100 | Small cell deployment
100/100 | Fibre regulation
60/100 | Infrastructure sharing
50/100 | Coverage Obligations
0/100 | Quality of Service
100/100 | Commercial Flexibility

Public Policy 73/100

100/100 | Affordability and Digital Skills
100/100 | Gender and rural inclusion
63/100 | USF Management
0/100 | Competition Policy
100/100 | Start-up Regulation

Consumer Protection 85/100

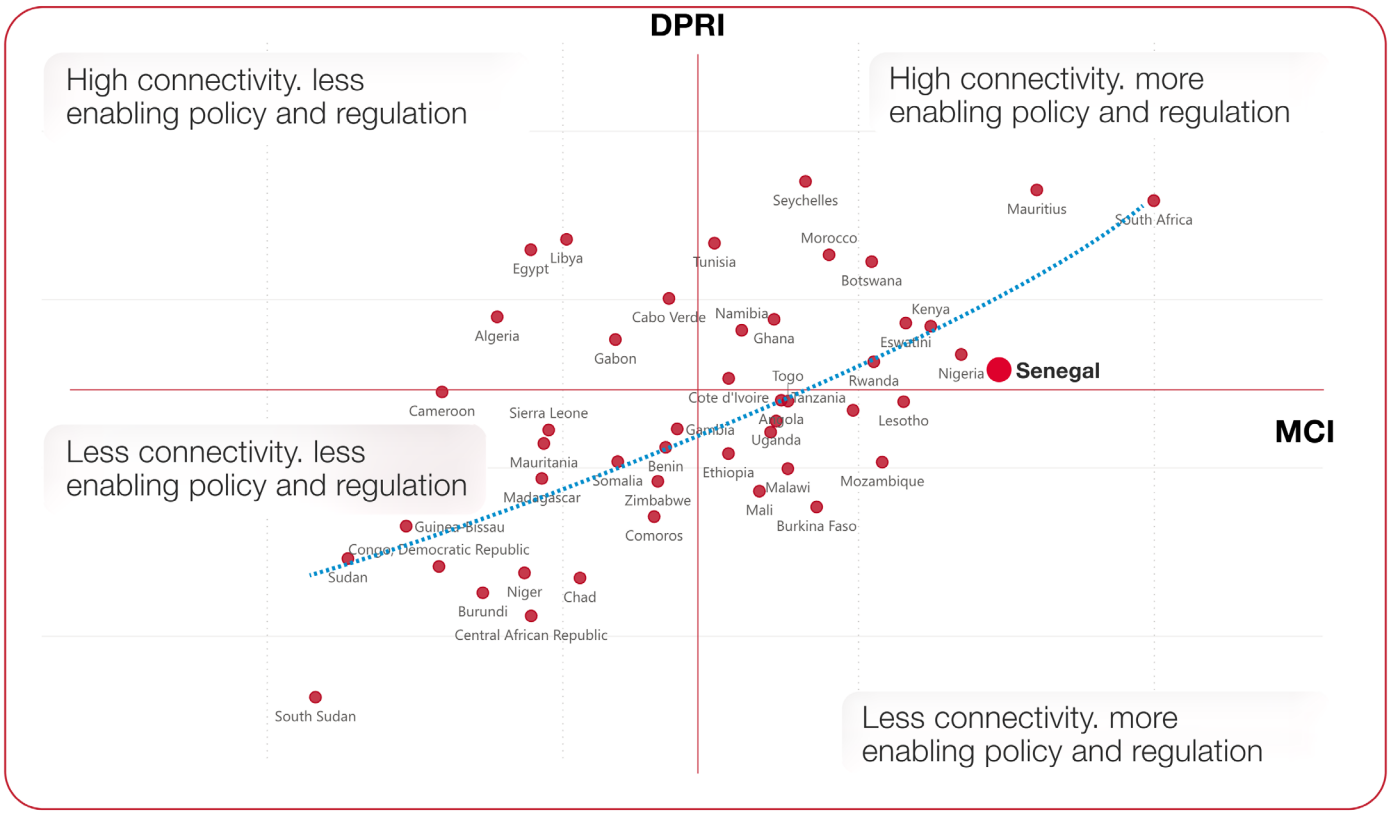
100/100 | Consumer Protection Framework
100/100 | Data Protection Framework
67/100 | Cybersecurity
100/100 | Cross-border data flow
60/100 | SIM Registration

The GSMA Digital Africa Index 2025 indicates that countries with higher Digital Policy and Regulatory Index have higher mobile adoption (Figure 30) and higher Digital Nations and Society Index scores (Figure 31).

Therefore, addressing these challenges, identified in the Digital Policy and Regulatory Index and in this report through enabling policy and regulatory framework can result in increased mobile internet adoption and contribute to the New Deal Technologique 2034 objectives.

Figure 30

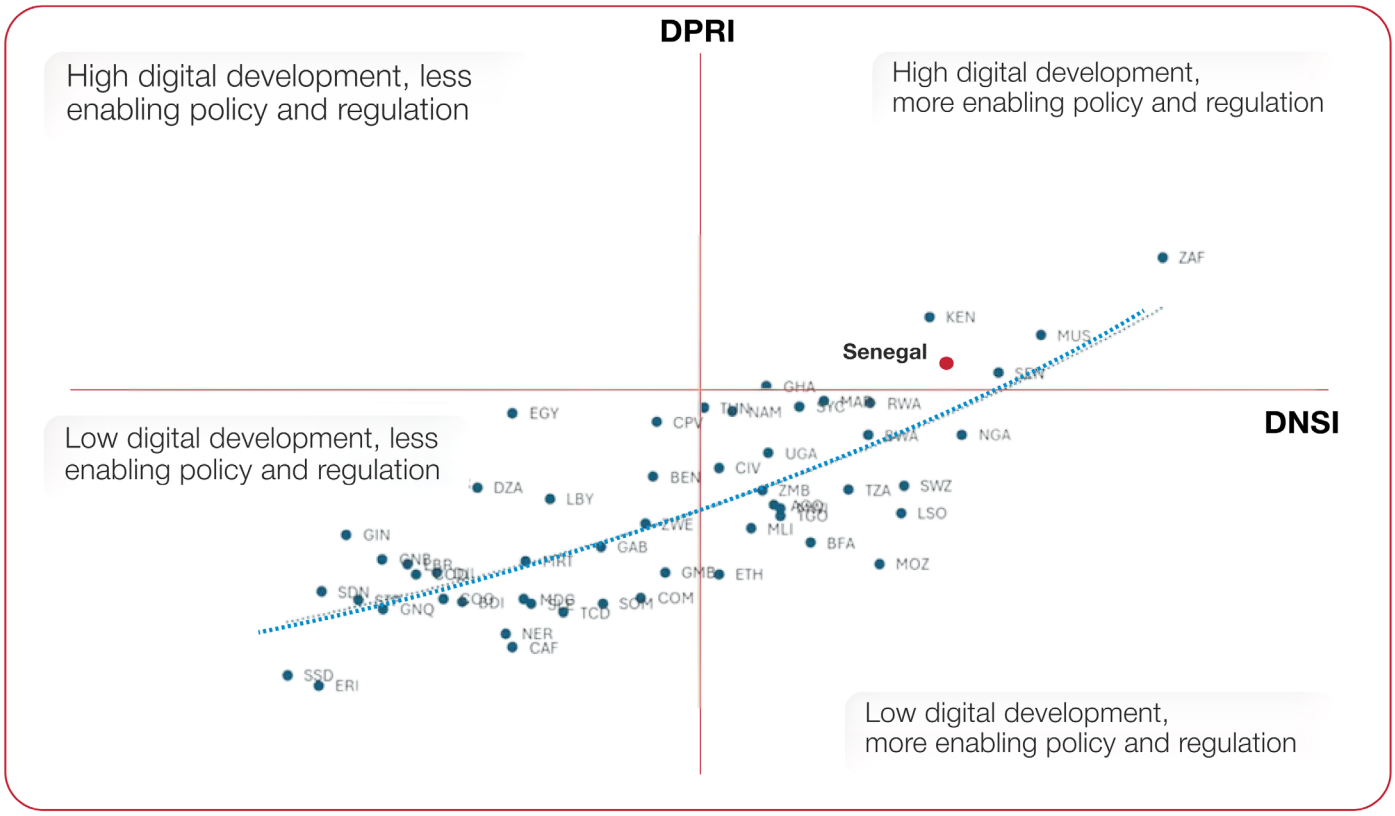
GSMA - Mobile Connectivity Index (MCI) and Digital Policy and Regulatory Index (DPRI) scores in Africa, 2025



Source : GSMA Digital Africa index 2025

Figure 31

GSMA - Digital Nations and Society Index DNSI) and Digital Policy and Regulatory Index (DPRI) scores in Africa, 2025



Source: GSMA Digital Africa Index 2025

Following the consultation process and information gathered for this report, 4 key policy challenges have been identified:

1. Costs and operational conditions of providing digital infrastructure and services;
2. High and complex taxes on mobile telecoms services and mobile money;
3. Smartphone and device affordability, digital skills, and other demand barriers; and
4. Regulatory reforms required to enable the digital economy.

2D.1 Policy challenge 1

Costs and operational conditions of providing digital infrastructure and services

2D.1.1
License and spectrum

The GSMA Digital Policy Regulatory Index 2025 identifies licensing and spectrum as an area for improvement.

Whilst the Electronic Communications Code 2018 provides a regulatory framework for licensing and spectrum assignment, the implementation has resulted in complexity and inconsistencies. Consultation for this report has identified the following key license and spectrum policy challenges:

Figure 32

Key license and spectrum policy challenges

Spectrum Roadmap	A longer term spectrum roadmap should be developed by the ARTP to provide harmonised and clear spectrum bands planning. Senegal (65 score) is behind on the GSMA Digital Policy and Regulatory Index 2025 for spectrum assignment policy when compared to leading African nations in terms of assignment of spectrum, such as Tanzania (100), Nigeria (91), Namibia (81) and Uganda (80).
High spectrum fees	High annual spectrum and mobile backhaul fees are impacting the ability of MNOs to invest in infrastructure and services. Microwave spectrum fees are ~7 times regional benchmarks and 3.5% of operator revenues compared to a 0.5% average in Africa.[51] Section 2D.1.7 includes the proposed reduction of mobile spectrum fees to regional benchmark levels as part of this report's analysis of the investment case to increase network coverage and reduce the Usage Gap. The licensing and assignment of 5G spectrum in Senegal provides recent examples where the level of spectrum fees and related obligations have deterred investment in network and services, and restricted the ability of licensees to compete. In the 5G spectrum tender (700 MHz and 3.5 GHz) conducted in 2023, only Orange Sonatel (FCFA 34.5 billion paid) met the tender reserve price (FCFA 19.5 billion) and was assigned 5G spectrum.[52] Yas (FCFA 3 billion) and Expresso (FCFA 2 billion) bids were lower than the reserve price. As of July 2025, Yas and Expresso do not have 5G spectrum assignment and licenses.[53] When extrapolating the cost for the 700 MHz and 3.5 GHz band , the unit price paid (after adjusting for the license duration, bandwidth, and revenues) was more than two times higher than the global median price for both bands.[54]

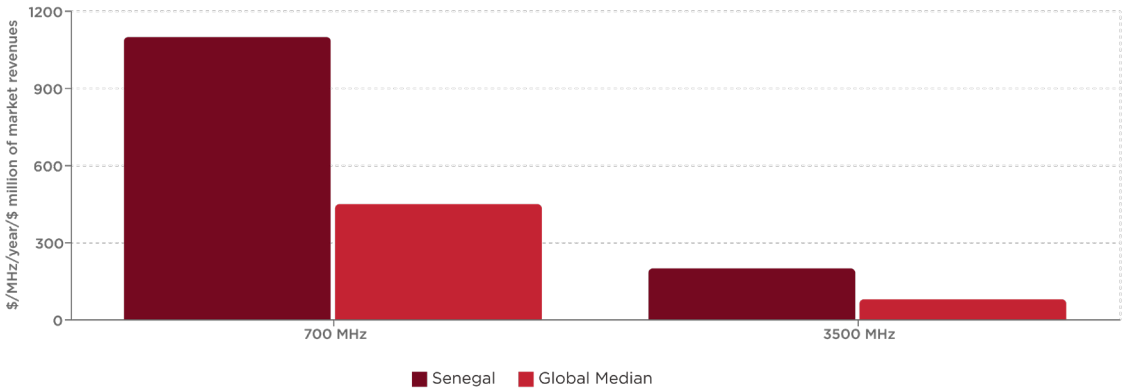
51/ GSMA Intelligence analysis of operator data.

52/ Tech Africa news article, Senegal Provisionally Awards 5G License to Sonatel in Competitive Call for Tenders, July 2023.

53/ Pulse news article, State withdraws 5G license from YAS and Expresso, July 2025.

54/ GSMA Intelligence analysis based global price benchmarks for 700 MHz and 3.5 GHz assignment.

Comparison of spectrum prices relative to revenues



High spectrum fees

Consultation with the industry for this report indicates that the current spectrum fees, particularly for mobile backhaul, and future spectrum assignments should be reduced for all licensees to enable a sustainable investment environment for 4G and 5G network infrastructure and market competition required to achieve the New Deal Technologique 2034 objectives.

High spectrum fees function as a structural levy on the mobile industry, absorbing capital that could otherwise be allocated towards network sites, expanded capacity, and service enhancements. This limitation impacts coverage, diminishes quality of service, and restricts potential reductions in retail prices.[55] The effect is particularly notable in developing markets where operators contend with constrained budgets and relatively higher spectrum costs, making equitable infrastructure expansion and affordable, high-quality connectivity more difficult to achieve.

When spectrum prices make up a significant part of revenues, operators have less capital available for network investment, especially in rural and low-ARPU areas where business cases are already less viable. Global aggregate spectrum costs increased by 63% between 2014 and 2023.[56]

This reduction in available capital further constrains operators' ability to expand coverage and improve service quality, particularly in remote and underserved communities. As spectrum costs rise, operators are forced to make difficult trade-offs, often prioritising investments in denser, higher-revenue urban areas while postponing or scaling back upgrades in regions where returns are less certain. This dynamic exacerbates existing disparities in digital access and service performance, reinforcing barriers to inclusion and slowing progress towards universal connectivity. The cumulative impact of rising spectrum costs thus not only limits network expansion but also deepens the challenge of achieving equitable and affordable digital services for all.

The World Bank and the ITU recommend that "regulators should be cognizant of operators' investment and deployment burdens to improve networks, as spectrum utilization fees may impact operators' ability to invest." GSMA's global spectrum pricing research shows that when spectrum costs take a larger share of operator revenues, population coverage is significantly lower; a 10 percentage point increase in the spectrum cost-to-revenue ratio correlates with up to 6 percentage points lower 4G/5G coverage.[57]

Further, the findings from the GSMA Effective Spectrum Pricing in Africa report 2022 revealed that spectrum in developing countries is often priced several times higher than expected revenues in advanced markets, linked to slower rollouts and ongoing coverage gaps, especially in rural areas.[58]

55/ GSMA High Spectrum Fees Risk Slowing Bangladesh's Digital Future, September 2025. GSMA Global Spectrum Pricing Report, May 2025.

56/ GSMA Global Spectrum Pricing Report, May 2025.

57/ Ibid.

58/ GSMA Spectrum Pricing and Licensing in Africa – Driving Mobile Broadband, November 2022.

Calculation of Rural Area spectrum fees	The Joint Decision No. 025982 reducing spectrum fees in rural areas by 50% is welcome, however there are differences in the calculation of the reduction being applied by the ARTP and the understanding of the MNOs which need to be clarified. For example, one operator estimated a reduction of FCFA 600 million in 2024, while the ARTP's computation reflected only about 10% of that amount, highlighting differing understandings of how the reduction should be applied.[59]
Implementation of technology neutrality on spectrum assignment	Whilst unified licenses and technology neutrality principle are included in Article 10 of the Electronic Communication Law 2018, it is not always implemented through a clear and harmonised approach. For example, operators are required to apply to the ARTP for permission to refarm spectrum assigned, rather than such spectrum being assigned in accordance with technology neutral principles as per of the unified licenses.
Service License and spectrum assignment duration period	There is an inconsistency in the approach to license and spectrum assignment duration periods, and the current framework is silent on the license renewal process. For example, Orange Sonatel's unified license granted in 2016 for a 17 year period until 2033 and subsequent spectrum assignments (e.g. 5G in 2023) are granted for the duration of the unified license (e.g. 5G spectrum in 2023 assigned for 10 years until 2033). It is recommended that a harmonised approach is adopted to license awards and renewals and spectrum assignments. The process for the renewal of licenses should start at least 12 months before expiry, and be consistent with ATU recommendation and ITU and World Bank guidance that longer license and spectrum assignment duration periods (together with related service rights and obligations) provide regulatory certainty and encourage investment. 20 years and renewable license duration periods are recommended by the ATU. Longer duration periods provide operators with regulatory certainty for the significant capital infrastructure investment required for 4G and 5G (and future technology) network investment, for financial and operational planning, and to recover investment costs.[60]

Addressing these and other spectrum policy challenges should be part of the New Deal Technologique 2034 and Masterplan review of legislative and regulatory framework, and it is recommended that the ARTP should undertake a comprehensive license and spectrum policy review (including the level of license and spectrum fees) in consultation with the sector to provide a clear, harmonised, and transparent license and spectrum policy and regulatory framework.

The following GSMA spectrum policy recommendations in Figure 33 are recommended for consideration in this proposed review.

59/ Consultation interviews for this report.

60/ ATU-R Recommendation relating to spectrum licensing for mobile/broadband systems, March 2021, Page 36. ITU and World Bank Digital Regulation Platform, Spectrum management: Key applications and regulatory considerations driving the future use of spectrum, 25 April 2025.

Figure 33

GSMA Spectrum Policy Recommendations[61]

1	Full-power, licensed spectrum is vital to the success of mobile broadband networks.
2	Mobile broadband needs spectrum across low, mid- and high bands to deliver capacity in all areas and support the full range of use cases. All three ranges have important roles to play. • Low-band spectrum (below 1 GHz) is needed to drive digital equality, provide capacity in wider and rural areas, and for deep indoor coverage. • Increased low-band capacity creates greater equality between urban and rural broadband connectivity and supports addressing the digital divide. • Mid-bands (1-7 GHz) provide city-wide 5G capacity. They play a core role in delivering enhanced mobile broadband and applications which impact how we manufacture goods, deliver education, and build smart cities. To date, mid-band spectrum has been the most used to launch 5G networks around the globe. • High-bands or mmWave (above 24 GHz) deliver the fastest broadband speeds and lowest latencies. They deliver the highest performance for 5G but only cover shorter distances so are used for high-capacity hotspots.
3	Mobile broadband needs significant harmonised spectrum and clearing prime bands should be prioritised to meet market demand. Regulators should aim to: • Award 100 MHz of contiguous mid-band spectrum per operator for 5G launch • Increase low-band spectrum capacity by assigning all available bands (including 600 MHz) • Make 2 GHz of mid-band spectrum available per market by 2030 (e.g. through 3.5 GHz and 6 GHz assignments) • Consult with industry over the need for mmWave to cover busy hotspots, allowing for an initial assignment of 800 MHz per operator and potentially making 5 GHz available per market as demand grows.
4	High spectrum prices should be avoided as this is linked to slower broadband speeds and lower coverage. Excessive reserve prices and poor auction design, high annual fees, or limited spectrum supply (including through set-asides) can all lead to high spectrum costs. Increased network investment can also be supported through coverage and QoS commitments in exchange for cash payments.
5	Spectrum licence commitments and conditions must be related to achievable targets, deducted from reserve prices, and used to benefit broadband connectivity. Arbitrary targets can create unnecessary high costs and impact network investments.

61/ 5G Spectrum - GSMA policy position (2025).

6	Spectrum policy measures should be adopted to encourage long-term investment in networks. Indefinite or long-term licences, with a presumption of renewal, should be used for spectrum assignment. Further certainty can be provided through a long-term, technology-neutral spectrum roadmap.
7	Spectrum for private and local networks can be made available through public mobile networks or through network slicing or sub-leasing of national licences. Setting spectrum aside for private networks in priority bands could jeopardise the success of public services and has no positive impact on enterprise digitalisation.
8	Voluntary spectrum sharing and sub-leasing between operators does not reduce the overall amount of spectrum required in any market. However, allowing spectrum sharing between operators may support efficient spectrum use, lower network costs and optimise connectivity
9	Regulators should carefully consider mobile broadband backhaul needs, including making additional bands available and supporting wider bandwidths in existing bands. Measures should also be taken to ensure mobile backhaul licences are affordable and designed effectively.
10	WRC harmonisation helps the evolution of mobile. Governments and regulators should adopt internationally harmonised bands in their national plans to support affordability through economies of scale. Further harmonisation of mobile spectrum at future WRCs should be sought.

It is essential that the proposed license and spectrum management review and the related decisions by the government and regulator, including license renewals, assignment of spectrum and the determination of license and spectrum fees, are subject to a comprehensive industry consultation and an evidence-based impact assessment.

This will help to ensure the license terms and spectrum assignment are implemented to create a more sustainable investment environment for the sector, and to contribute to Senegal's New Deal Technologique 2034 objectives.

2D.1.2
Infrastructure deployment and maintenance

The telecommunications sector and digital infrastructure requires continued large-scale investment into building and maintaining infrastructure, including mobile sites and fibre-optic cables. This begins with the regulatory processes to obtain construction permits from local authorities and the conditions that are attached to those permits, and includes the implementation of regulation under the Electronic Communications Code 2018 including decisions following the competition market review process (Articles 14 - 16) and infrastructure sharing (Article 103 and implementing decrees and decisions).

The sector is facing key challenges with regard to infrastructure construction and maintenance regulatory processes, which are creating difficulties in building new network infrastructure and inflated operating costs.

The following challenges have been identified through our market knowledge and responses gathered during public consultations and roundtable discussions with telecommunications operators in Senegal.

Figure 34

Infrastructure construction and maintenance challenges

Administrative process and rights of way fees	MNOs and towercos are subject to local authority processes and fee requirements which differ across authorities, following the introduction of the Law No. 2019-12 amending and supplementing Law No. 2013-10 of December 28, 2013, on the General Code of Local Authorities. This is resulting in increased complexity and fees, resulting in delays and increased cost to deploy and operating telecoms infrastructure.
Civil Works	MNOs highlight the significant impact of rapid urbanization and construction projects on network quality and recommend integrating telecom infrastructure requirements into the design phase of construction projects, in collaboration with public authorities and real estate developers. This should include access to potential sites for telecoms infrastructure deployment to facilitate coverage in new urban developments.

Infrastructure sharing	Considering that, under Article 103 of Law No. 2018-28 of December 12, 2018, on the Electronic Communications Code, "the Regulatory Authority shall encourage the sharing of active and passive infrastructure and access to alternative infrastructure under conditions of fairness, non-discrimination, and equal access," and that, to reflect these provisions, Decree No. 2022-1357 of July 7, 2022, on interconnection, infrastructure sharing, and access in the electronic communications sector was adopted, the ARTP subsequently issued Decision No. 2023-022 setting the conditions and procedures for the sharing of electronic communications infrastructure. All operators - both access seekers and access providers - consider that the current infrastructure sharing regulations - towers and fibre - are not being implemented effectively in practice and therefore are not achieving the objectives of these regulations. Examples include: • Access seekers cite that high wholesale costs result in an average cost per gigabyte is five times higher than operators which self-provide fibre infrastructure. • Access seekers cite that access requests for sharing can take considerable time to process and often result in refusals, with reasons linked to technical configurations or limited hosting capacity. • Access providers cite that passive infrastructure sharing on fibre is requiring a redesign of existing direct architecture which is resulting in increased cost (~1.7 times more expensive) and deployment requirements and time, without a guarantee of colocation being completed.

These challenges facing mobile operators in Senegal are also being faced in other countries. To partner with the sector to address them, government and regulators are taking action to put in place more efficient and effective "priority national infrastructure" harmonised planning, building, rights of way, customs and other administrative processes for telecommunications nationally and across all local administrations using centralised digital platforms.

Governments are imposing lower or zero-rated right of way fees as part of their digital infrastructure programs. For example:

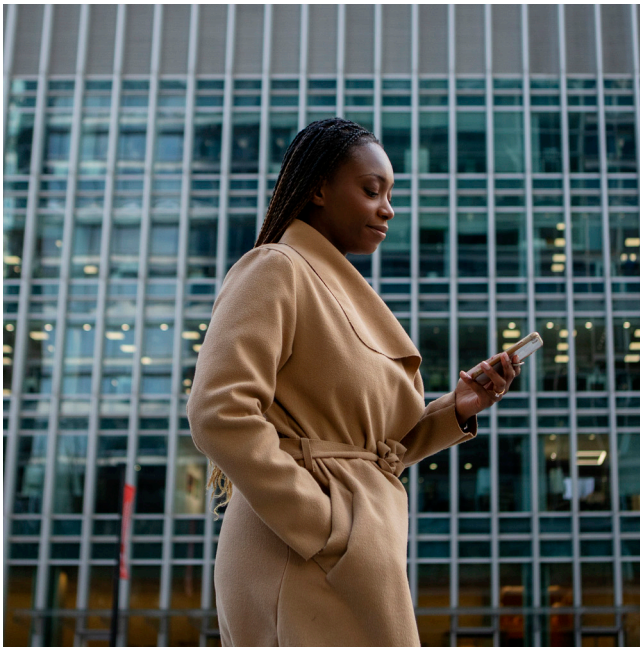
- ☐ The Indian government passed reforms to introduce a national right of way policy and introduced a single rights of way platform in 2022 across all 36 States and central government ministries, which has contributed to increasing connectivity of villages from 50% in 2020 to 93% by March 2023.[62]
- ☐ Right of Way fees have been lowered in countries, such as Nigeria and Tanzania.[63]

62/ www.gatishaktisanchar.gov.in.

63/ GSMA digital economy reports for Nigeria (2024) and Tanzania (2025).

With regard to infrastructure sharing regulation, and more broadly ARTP market analysis and assessment of Single Market Power (SMP) reviews, many countries globally adopt a regulatory framework that enables competitive markets and protects consumers, addressing anti-competitive behaviour and barriers to competition. Regulators undertake periodic reviews of the sector and, if so, apply proportionate regulation to address potential harm that may arise from it.

The ITU and World Bank's Digital Regulatory Platform - Competition and Economics section (2020) provides guidance to assist regulatory authorities with market reviews, including infrastructure sharing and other wholesale access regulation.[64]



It is recommended that:

- ☐ The government and ARTP consult on the development, as part of the New Deal Technologique 2034 and Digital Masterplan, and then prioritise implementation - of a national (harmonised across all national and local authorities) infrastructure policy and applicable regulation for telecommunications and the introduction of a single digital administrative, coordination, and approvals platform to address these infrastructure deployment and maintenance challenges.
- ☐ The ARTP undertake a review to address barriers and delays of implementation of the infrastructure sharing regulation in accordance with the applicable regulatory framework using an independent competition and cost study and public consultation to determine, implement, and enforce specific and effective regulatory remedies (notably Decision No. 2023-022 setting the conditions and procedures for the sharing of electronic communications infrastructure).
- ☐ The ARTP update the market analysis and assessment of Single Market Power (SMP) using an independent competition and cost study and public consultation to determine, implement, and enforce specific and effective regulatory remedies in accordance with Articles 14 - 16 of the Electronic Communications Code 2018 at wholesale, including the implementation of effective infrastructure sharing regulation under Article 103 and related Decree 2022 and Decision 2023, and retail markets, considering sustainable investment infrastructure and services requirements to achieve New Deal Technologique 2034 objectives.

64/ See ITU and World Bank Digital Regulatory Platform Competition and Economic and ITU and World Bank Digital Regulation Platform Infrastructure Sharing.

2D.1.3
Quality of Services regulation

Decision No. 2021-002 of January 2021 establishing the conditions and procedures for monitoring and controlling coverage and quality of service (QoS) for voice, data and SMS in mobile telecoms networks repealed and replaced Decision No. 0004/ARTP/COL of June 2013, establishing a system for monitoring the quality of mobile telephone network services in Senegal and, at the same time, specifies the procedures for monitoring and controlling the obligations of operators in the electronic communications sector in terms of coverage and QoS.

The reasons that triggered this replacement are as follows:

- Despite efforts by operators to improve service quality and coverage, there remains a high rate of dissatisfaction among consumers and state authorities, as evidenced by the related complaints that the ARTP receives on a recurring basis;
- Consideration of new obligations contained in the operators' licenses specifications;
- Consideration of quality of service indicators consistent with the provisions of the MNOs' licenses;
- Consideration of indicators that allow for a better assessment of the various uses existing on the market and, in other words, that they promote a better simulation of the customer experience regardless of the technology deployed by the MNOs; and
- Ensuring that the measurement protocol refers to certain ITU-T recommendations, benchmarking data, and, above all, the ITU QoS regulation manual.

Current obligations and the results of the Q2 2025 ARTP national campaign to measure Voice, Data and SMS coverage and QoS are provided Annexure 4, which show that operators are facing challenges to comply with the QoS obligations.

The mobile sector recognises that delivery of high Quality of Service is non-negotiable. It is recommended that the ARTP undertake a consultation with the mobile operators on a strategy to improve the quality of service that customers experience, including updating quality of service obligations for digital infrastructure in line with international standards, together with an action plan to address underlying barriers to Quality of Service delivery (many of which are covered in this Section 2D of the report).

2D.1.4
Energy

Digital infrastructure is dependent on electric power supply. Meeting telecoms network coverage and quality of service obligations, especially in remote rural areas, are challenging due to inconsistent power supply and rising costs of national grid electricity and alternative energy sources such as diesel generators.

2D.1.4.1
Senegal's energy capacity

Senegal has a power score of 1.78, which puts it at rank 68 in the Emerging Markets power ranking. In comparison to 2023, Senegal has dropped in the power rankings by 10 places, from rank 58, to rank 68. At 1.78, the power score of Senegal is worse than the regional average of 1.8 in the Africa region and puts it at rank 22 in the region.[65]

Senegal currently has an installed energy capacity of 3 gigawatts, including 1 gigawatt from renewable sources, with a national coverage rate of 80% and 65% in rural areas. The objective is to reach full coverage by 2030 and 10 gigawatts by 2050 in line with the country's energy strategy. Production remains 80% thermal and only 20% renewable, which makes the country strongly dependent on fuel imports and exposes costs to international fluctuations. Energy is therefore a decisive factor in the provision of connectivity services, and operators identify availability and affordability as blocking factors, particularly in the absence of specific industrial tariffs for the telecom sector.[66]

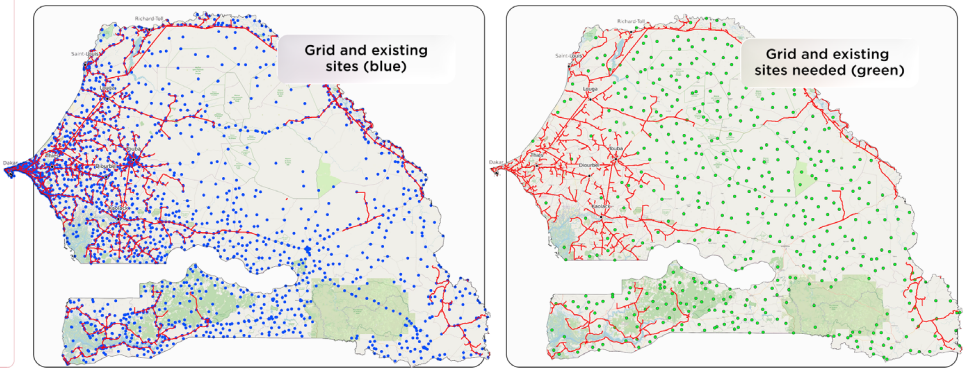
Energy supply is a key issue for the mobile telecoms sector. GSMA analysis finds that 35% of existing 4G mobile network sites are outside of 1 kilometre and more than 98% of new sites potentially required to expand 4G coverage from 97% to 99.5% population are outside of 1 kilometre of the national electricity grid (see Figure 35).[67]

65/ Ibid.
66/ Consultation visit Interviews.
67/ GSMA Intelligence - 4G coverage and investment in Senegal, September 2025.

Figure 35

Electricity grid and mobile site locations

Distance (Km)	Existing Sites	Optimal Sites
0-1	65.65%	2.27%
1-2	10.28%	1.65%
2-3	2.32%	2.06%
3-4	1.32%	2.68%
4-5	1.51%	3.51%
5-10	5.33%	15.67%
10-15	2.32%	10.72%
15-20	1.47%	8.04%
20-30	1.66%	12.16%
30-40	1.93%	12.99%
40-50	1.44%	10.52%
50-100	4.08%	14.58%
>100	0.7%	2.89%



Source: Analyses GSMA à partir des données des opérateurs, GHSL et de la Banque Mondiale

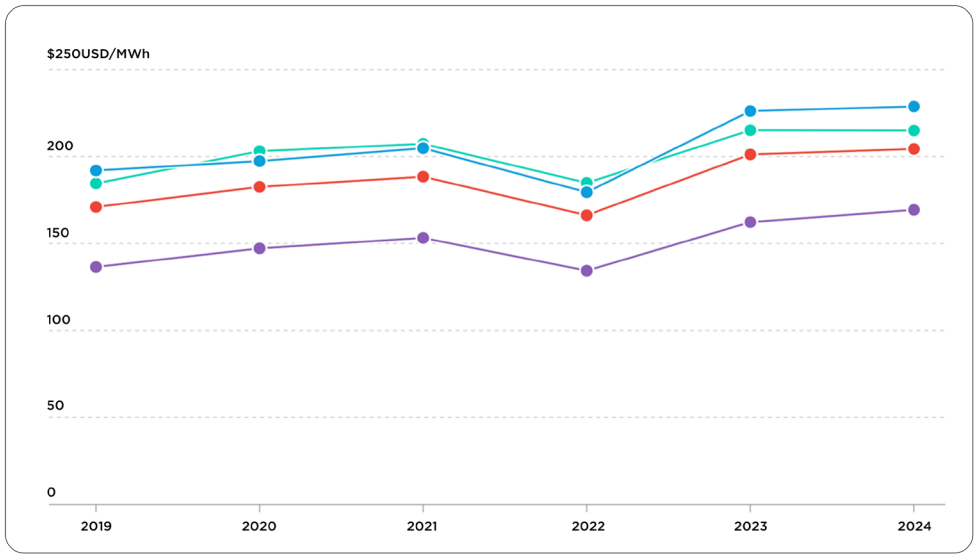
2D.1.4.2 Energy prices

Electricity prices are regulated by the CRSE,[68] which sets the tariffs for all consumer segments and establishes the modalities for reviewing those tariffs. Electricity prices are subsidised and Senelec receives compensation from the government. Subsidies for electricity, which amounted to FCFA 280 billion (USD 460 million) in 2023, are scheduled to end in 2025.[69]

The average electricity price in Senegal increased from 167.53 USD/MWh in 2022 to 180.93 USD/MWh in 2023 (Figure 36).[70]

Figure 36

Electricity prices - Senegal



68/ Electricity Sector Regulatory Commission.

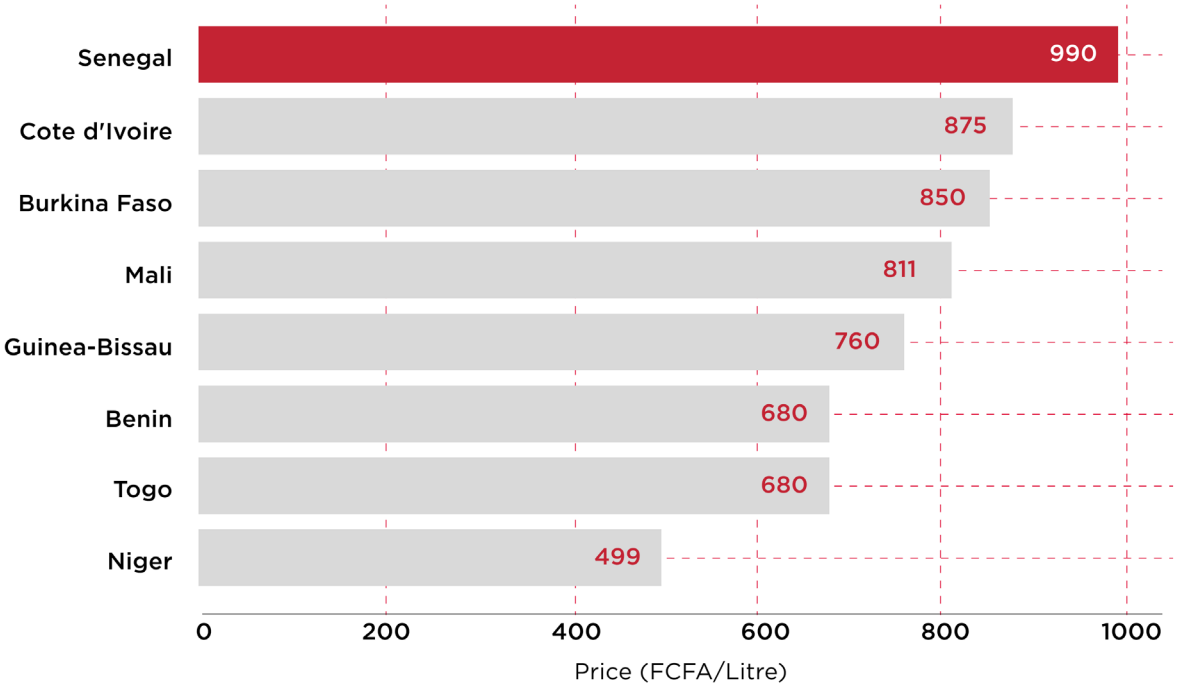
69/ Senegal profile – Enerdata.

70/ Senegal profile- CLIMATESCOPE.

Fuel pump prices[71] vary a lot within the West African Economic and Monetary Union (WAEMU). The latest data from the regional central bank (BCEAO) places Senegal at the top while Niger sits at the bottom.

Figure 37

Fuel pump prices per litre across WAEMU countries, December 2024



Source: BCEAO

The price in Senegal is FCFA 990 per litre, far above its neighbours. This is due to fuel taxes, import costs, and the country's subsidy policies. Côte d'Ivoire and Burkina Faso also have relatively high prices, at around FCFA 875 and FCFA 850 per litre, respectively. Niger, the least expensive, offers FCFA 499 per litre thanks to its local oil production and government subsidies.[72]

Energy represents a significant cost for MNOs (for example, one MNO estimates monthly energy bills reach FCFA 300 million, while for others annual payments to the electricity utility have doubled over recent years, rising from FCFA 15 to 30 billion). These costs weigh heavily on investment capacity at a time when networks must evolve from 2G to 4G and 5G, and support new infrastructures such as energy-intensive data centres.

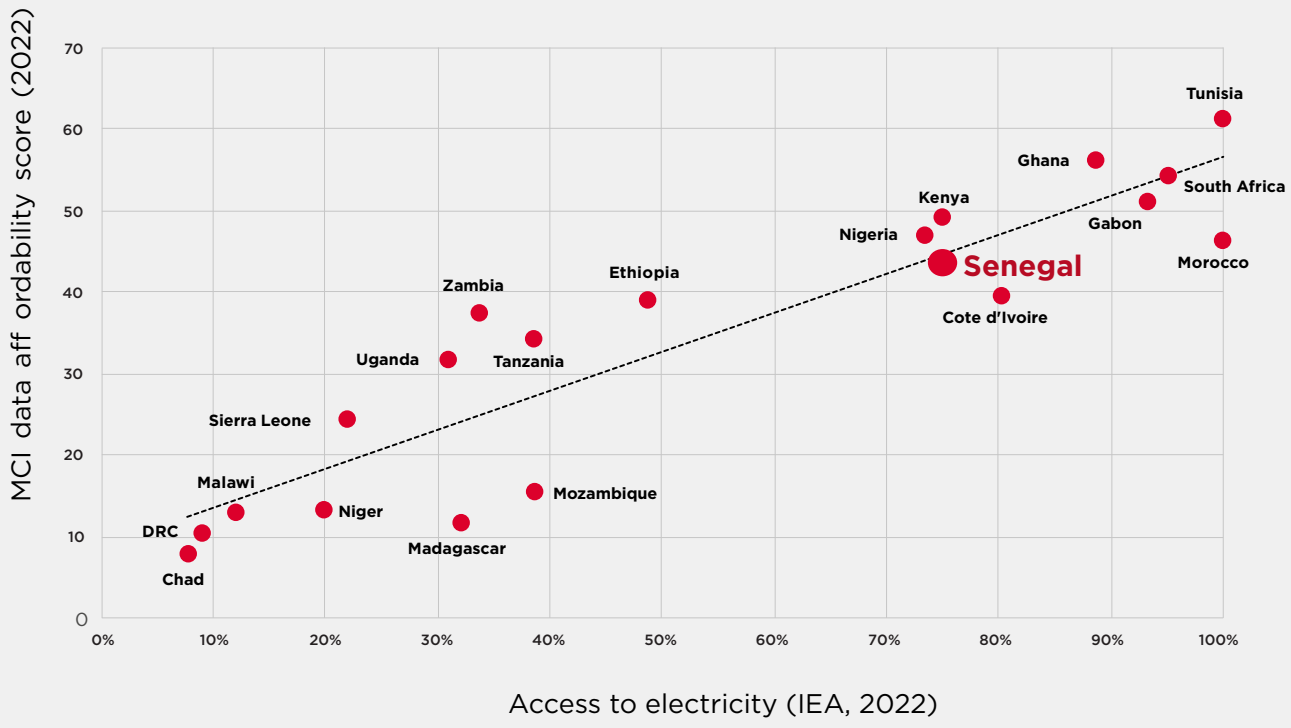
71/ "Gas Prices Vary Widely in West Africa (Ranking)", Ecofin Agency, March 2025.

72/ BCEAO.

GSMA research finds that higher energy costs results in higher mobile prices, conversely where operators have lower costs, for example by access to the national grid energy, this results in improved affordability of services (Figure 38).

Figure 38

Relationship between energy costs and data affordability in selected African countries



Note: The GSMA Mobile Connectivity Index data affordability score (0–100) is based on data costs as a percentage of monthly income.
Source: GSMA Mobile Connectivity Index, International Energy Agency

Source : GSMA[73]

73/ GSMA Rural renewal: telcos and sustainable energy in Africa, 2024.

2D.1.4.3
Cooperation on Senegal's energy supply objectives

Senegal is working with international partners to accelerate energy supply, notably the Mission300 National Energy Compact which sets targets including 100% population energy access, renewable energy share increased from 29% to 40%, total production capacity multiplied by ~1,7x by 2030. This is being supported by international funding programmes including the World Bank Expand Energy Access (PADAES).[74]

The energy and telecom sectors already cooperate in several areas, such as the use of medium-voltage pylons, the deployment of optical fibre, and renewable energy programmes (as summarised in Figure 39).

Figure 39

Case studies on mobile operators' renewable energy programmes

Orange	Orange Sonatel Group is aiming to achieve 50% use of green energy (including solarisation) by the end of 2025. In 2024, Sonatel Senegal had achieved 42%.[75] Orange sets strong environmental commitments through the Engage 2025 strategic plan, targeting net zero carbon by 2040 with an intermediate goal of 30% CO2 emissions reduction by 2025 and achieving an energy mix with over 50% renewable energy.[76] Progress in site solarization has been made with approximately 20% of Orange Sonotel Group sites powered by solar energy by the end of 2024.

The GSMA has developed a coverage geospatial analysis tool to identify energy supply requirements for existing and planned mobile networks (please see Senegal analysis results in Figure 35).

74/ Mission300 Africa, Senegal National Energy Compact. World Bank Energy Scale-Up Project (PADAES), Project Appraisal Document, 2022.

75/ Sonatel Group Annual Report 2024.

76/ Cf. Orange, Green Operator.

Interviews for this report indicate that there are a number of areas where this cooperation can be enhanced:

- The need for greater synergy between the Ministries of Energy and Telecommunications (and relevant agencies). For example, the areas most in need of telecom coverage are often those already prioritized for electrification, which creates an opportunity to coordinate planning and share the list of localities to be covered. The authorities have also underlined the importance of better assessing the energy demand of the telecom sector, including operators and data centres, in order to improve predictability in energy planning and align with the targets of the national strategy. The GSMA coverage geospatial analysis can be used to support this.
- The government has introduced a number of measures to reduce energy costs, including subsidies and VAT exemptions (18%) on photovoltaic equipment that meets national and international standards. In August 2020, the government issued a decree that exempts 22 renewable-energy equipment types from value-added tax. The exemption covers 22 items that are necessary for solar, wind, or water-power generation, which would otherwise be subject to the headline 18%.[77]
- Continue exploring co-investment programmes for energy supply for telecoms. Several international partners support Senegal in its energy transition. The African Development Bank (AfDB) and the World Bank finance projects within the M300 initiative, including universal access for 2,000 localities and energy efficiency measures. The AfDB has financed generation projects in the past, such as the 150 MW coal-fired power plant, while the IFC has also supported production projects.
- Cooperation to accelerate renewable energy Senegal has set itself a target of 15% renewable energy by 2025. In the meantime, some telecoms infrastructure companies have set targets of 20% solarization of sites by next year, with 40% as a longer-term objective.
- The existing regulatory framework also promotes decentralized rural electrification, supporting the development of autonomous mini-grid and off-grid systems. MNOs already deploying solar or independent solutions in rural areas could therefore play a role as rural electrification actors, sharing infrastructure in the future with the community through Senelec or the Senegalese Rural Electrification Agency. This framework could also provide an opportunity to revisit previous initiatives to build solar plants for the sector's needs.

77/ Climatescope – Senegal market information (2021).

2D.1.4.4 Energy Supply Recommendations

The mobile sector is committed to work with the government, ARTP and other stakeholders on energy supply programmes.

If Senegal's National Compact 100% population energy access objective by 2030 is achieved and energy supply at lower costs is provided to telecommunications infrastructure, it is estimated that USD 10 million investment (compared to USD 20 million if no changes are made) would be required to achieve 99.7% population 4G mobile network coverage according to GSMA analysis. GSMA analysis, including geospatial planning, is available to be utilised by Senegal energy and telecoms access and expansion planning initiatives.

The following recommendations to provide energy supply for digital infrastructure and the broader digital economy are proposed for Senegal's National Compact and energy access and expansion programmes:

- As part of the National Energy Compact Pillar 1, establish a one-stop shop for private sector participation to strengthen and formalise the joint planning and co-designing of energy and telecommunications infrastructure between the energy and telecommunications government ministries, regulatory authorities, and operators.[78]
- Support the provision and extension of energy supply for telecommunications infrastructure under the National Energy Compact funding and other programs such as World Bank Project to Expand Access to Energy in Senegal (PADAES) 2022 – 2027 (with projected funding of USD 30 million in 2026 and 2027) and the African Development Bank Desert-to-Power initiative to provide 10 gigawatts of solar generation capacity via public, private, on-grid and off-grid projects by 2030.[79]
- Accelerate rural energy access in tandem with digital access through a joint initiative between the Senegalese Rural Electrification Agency (ASER) and Telecommunications and Posts Regulatory Authority (ARTP), similar to an initiative project being undertaken by Nigeria's Rural Electrification Agency and Communication Commission to develop frameworks for deploying renewable energy solutions to power telecommunications infrastructure.[80]
- In line with the World Bank PADAES, item 19 (geospatial planning analysis) for energy access and expansion planning, the GSMA and MNO telecommunications network coverage and energy supply geospatial analysis could be utilised for the joint planning and co-designing of energy and telecommunications infrastructure.

78/ Mission300africa Senegal National Energy Compact, Pillar 1, Page 4.

79/ World Bank Energy Scale-Up Project (PADAES), Project Appraisal Document, Item 28, Page 16, 2022. African Development Bank website, article "desert-power initiative" accessed November 2025.

80/ The Electricity Hub article, NCC, REA Partner to Cut Telecom Diesel Use with Renewables, July 2025.

- As part of the National Energy Compact, including Pillars IV (Encourage the participation of the private sector to mobilize additional resources) and V (Ensure a financially viable national electricity company that provides reliable and affordable services),[81] consider:

    1. Lowering energy charges for the telecommunications sector, with a specific industrial energy tariff for the telecom sector, possibly with peak/off-peak differentiation.
    2. Increased transparency and predictability in energy taxation and subsidies, and modernize the regulatory framework for greater efficiency. For example, a diesel tax relief for mobile operators and tower companies to lower costs of energy supply to achieve quality of service and coverage obligations.
    3. Reducing the regulatory burden for licensees, particularly for ARTP regulations (e.g. coverage, QoS) and for USF requirements, whose compliance depends on a consistent power supply for optimal network connectivity.
    4. Providing incentives for alternative energy supply/renewable energy sources used by the sector, recognising the telecoms sector's contribution to energy supply and digital infrastructure.

2D.1.5 Infrastructure damage, theft, and vandalism

High rates of theft and vandalism of telecoms network infrastructure are raising costs and affecting network performance in Senegal . This requires operators to invest in additional security and the replacement of affected infrastructure and constrains operators' ability to expand coverage and improve quality of service.

Criminalizing these acts could bring them in line with penalties for similar offenses against water and electricity infrastructure, where state action is stronger, and therefore it is recommended that the government consider the following:

- Telecommunications is designated as priority national infrastructure status in applicable legislation and regulations, similar to other countries such as Nigeria's Critical National Information Infrastructure Order in 2024.[82]
- Penalties for vandalism and theft by organised crime and individuals to be increased to provide a harder sanctions and deterrent.
- Government, regulator, police and security authorities work together with mobile operators to coordinate activities to protect infrastructure security.

81/ Mission300africa Senegal National Energy Compact, Page 5.
82/ Further Africa article, December 2024.

2D.1.6
Universal Service Policy

The Universal Service Development Fund for Telecommunications (FDSUT), through the Universal Digital Access Program (PANU), is implementing several flagship initiatives aimed at expanding connectivity and promoting digital inclusion across Senegal by 2028.

The main components of the program include the Universal Access Project (PAU), focus on extending mobile broadband coverage to underserved areas; the Geographic Information System (GIS) for infrastructure mapping and planning; digital equipment projects for public and educational institutions; and capacity-building and inclusion programs such as Handi Connect, Digital School Kits, Digital Educ, and the Living Labs initiative.

The PAU, supported by the World Bank, is the cornerstone of Senegal's universal access strategy. It targets the coverage of 1,550 localities by 2028, at a total estimated cost of FCFA 70 billion, in line with the priorities set by His Excellency the President of the Republic. A pilot phase is already underway, with 10 sites deployed by Orange (3G+ upgraded to 4G), 5 planned by Free, and 4 by Expresso. A survey of 250 localities has informed the techno-economic model and the roadmap for subsequent rollouts: 200 localities in 2026, 495 in 2027, and 275 in 2028, all using 4G technology. The targeted areas—known as Zone 0—are those without any operator presence, identified through an economic, demographic, and technical modelling exercise validated by ministerial decree. To stimulate investment, several incentives have been introduced, including mandatory national roaming and infrastructure sharing, as well as a 50% reduction in frequency fees for rural deployments.

In parallel, the GIS platform provides a modern tool for monitoring and decision-making by mapping telecom infrastructure nationwide. Equipment projects have already resulted in 44 multimedia classrooms installed in public institutions, digital facilities for people with disabilities under the Handi Connect initiative, and the deployment of 23 digital school kits to promote digital education. The FDSUT has also advanced digital skills and innovation through Digital Educ, which has trained over 2,000 individuals and introduced 1,800 children to STEM subjects, as well as through Living Labs that foster co-creation of digital solutions in the primary sector. Collectively, these initiatives reflect a coherent, inclusive, and results-driven strategy positioning Senegal on the path toward universal, sustainable connectivity underpinned by stronger collaboration among the government, operators, and technical and financial partners.

Since the establishment of the FDSUT, Orange has contributed approximately FCFA 150 billion, demonstrating the operators' active participation in financing universal service initiatives. In interviews for this report, operators are now advocating for a shift toward a "Pay-or-Play" model, which would allow them to invest directly in connectivity projects rather than relying solely on mandatory financial contributions. This evolution, coupled with greater operator involvement in project planning and implementation, would enhance private-sector investment and accelerate broadband coverage in underserved regions.

As part of the New Deal Technologique 2034 and Masterplan, it is recommended that the FDSUT undertakes a new USF policy review including:

- Development of a clear process and methodology to determine USF projects (including priority underserved regions), project financing (including USF fees, pay or play models, and other investment models (e.g. as being piloted with PAU Universal Access Programme), and implementation, monitoring, reporting, and other governance of the projects. It is recommended that USF contributors (including MNOs and infrastructure providers). participate in each stage, and for the process and methodology to be fair and transparent.
- Provide specific exemptions in USF areas from frequency and infrastructure fees or diesel fuel taxes to provide a sustainable investment model with USF projects, rural and underserved areas.
- Increase subsidies for mobile broadband coverage in rural, remote and low populated areas to provide capex and opex for towers (e.g. energy, backhaul transmission, access roads, and other utilities). A good example is the Tanzania Universal Communications Service and Access Fund subsidy programme, supported by the World Bank, which has resulted in 4G mobile broadband coverage of 1,643 towers, covering 4,250 villages and reaching 18.5 million people.
- The use of shared infrastructure by operators and effective infrastructure sharing regulation for USF projects, rural and underserved areas.
- The development of regulation and standards for use by MNOs of LEO satellites to extend coverage in remote and low populated areas (noting GSMA recommendations in Figure 60).
- Undertake USF audited annual reports to enhance transparency and public awareness.

Further, the GSMA and African Telecommunications Union policy recommendations on universal service funds may be instructive:

Figure 40

GSMA & ATU Universal Service Fund Policy Recommendations[83]

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 USF fee 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, and seek to minimise or eliminate red tape and political interference in the management of funds and the implementation of USF projects.

83/ GSMA and ATU report, Universal service funds in Africa Policy reforms to enhance effectiveness, October 2023.

2D.1.7
Impact of "Sustainable Infrastructure Investment"

policy recommendations to address Policy Challenge 1 - costs and operational conditions of providing digital infrastructure and services

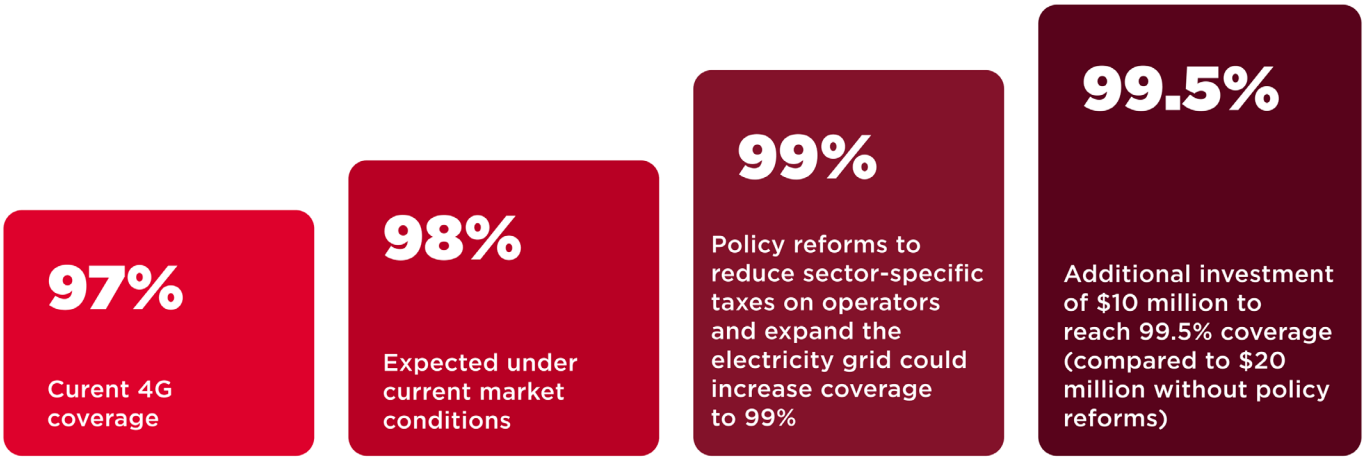
GSMA analysis for this report finds that Senegal mobile operators collectively have achieved 97% 4G population coverage (2025), which is contributing to the New Deal Technologique 2034 objective of 95% connectivity (see Figures 12 - 13).

GSMA analysis estimates that expanding 4G coverage from the current 97% total population and 92% rural population to 99.5% total population will require at least USD 20 million additional investment, which could be lowered to USD 10 million if the proposed policy recommendations to address the challenges outlined above (including increasing national grid energy supply and reducing energy costs) to increase digital adoption and usage are adopted.

The remaining 0.5% of the population, the GSMA finds, are in very remote and sparsely populated areas and will require alternative technology, such LEO satellite technology, to provide 4G coverage. Figure 41 provides a summary of the GSMA analysis and findings.

Figure 41

GSMA analysis - Expanding 4G population coverage - summary of findings

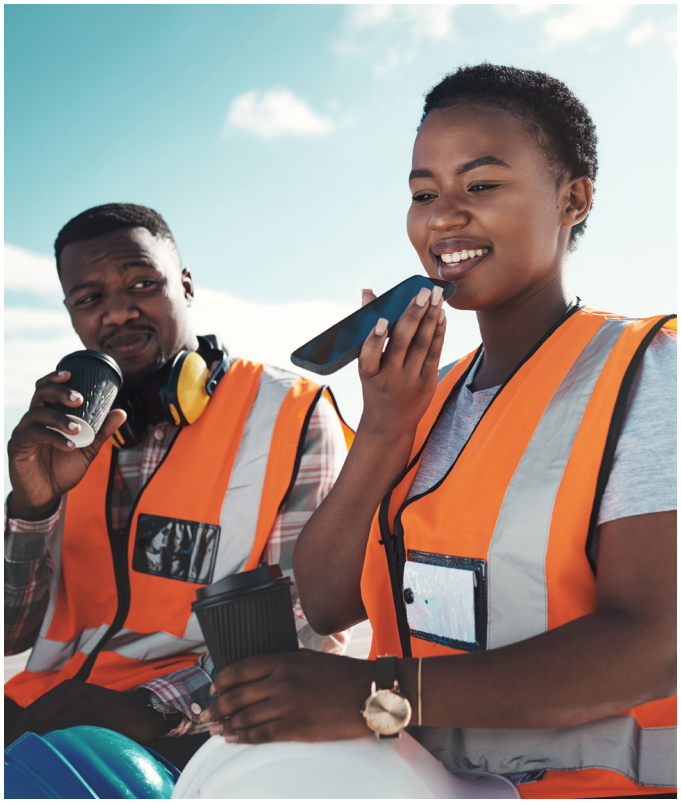


Source : GSMA Intelligence

GSMA analysis also finds that in 2025 there are 43% population unique internet mobile users and 54% population are living within mobile internet coverage, but are not using it ("Usage Gap").

As described in Section 1D, this report provides a quantitative model of Senegal's mobile sector to evaluate the impacts on the wider economy of the proposed policy recommendations to address the challenges and to maximise the digital economy potential to contribute to New Deal Technologique 2034 objective.

Outputs from the report quantitative model find that if the proposed policy recommendations are adopted to address Policy Challenge 1 (using the GSMA Intelligence analysis that the recommendations would reduce the investment required from USD 20 million to USD 10 million to expand 4G population coverage from current 97% to 99.5%.



In addition, there will be cost savings from the reduction of regulatory fees such as spectrum (notably microwave backhaul) fees, and USF contributions, 85% of which would be passed through to consumer prices. This would result in an increase of 300,000 unique internet users (+1.4% of the population) (Figure 43).

It is understood that there are potential savings of up to USD 1 million per annum (up to FCFA 600 million) from spectrum pricing reform. We further assume that savings of an additional USD 1 million per annum can be secured from other reforms affecting the costs of infrastructure deployment.

Figure 42

Mobile broadband uptake in Senegal with reforms to stimulate sustainable investment in mobile infrastructure

MOBILE INTERNET USERS (M)	2025	2026	2027	2028	2029	2030
BAU	8.16	8.6	9.06	9.55	10.06	10.53
Sustainable investment measures	8.16	8.72	9.32	9.83	10.36	10.86
Y-on-Y difference to BAU	0	1.4%	2.9%	3.0%	3.1%	3.1%
Increase in growth vs BAU	0	1.5%	3.2%	3.5%	3.8%	4%

2D.2 Policy challenge 2

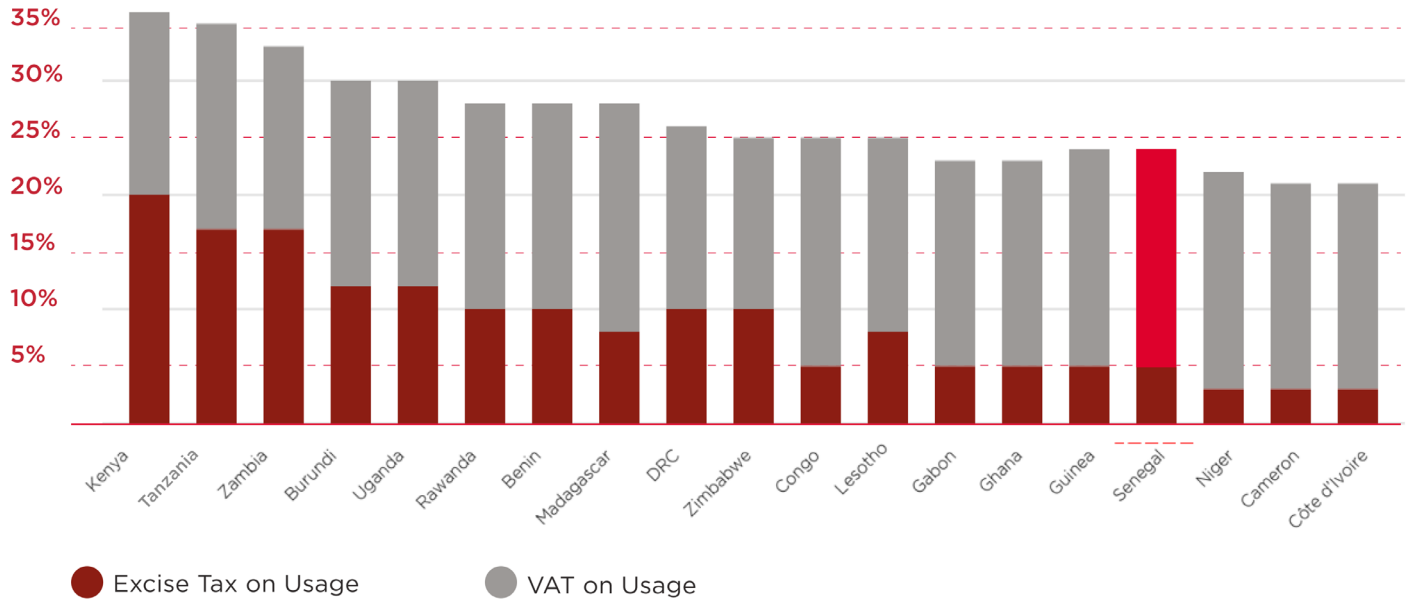
High and complex taxes on mobile telecoms services and mobile money

2D.2.1
Sector taxation

Senegal's mobile sector is subject to VAT at 18% and a 5% tax on telecoms access and usage (Figure 43). Although the total of these two taxes is not high when compared to other Sub-Saharan African countries (Figure 44), Figure 45 shows that Senegal has amongst the highest Average Effective Tax Rate (AETR) across SSA and MENA regions for total taxation (including license fees, sector taxes, corporate taxes and other general taxes and fees).

Figure 43

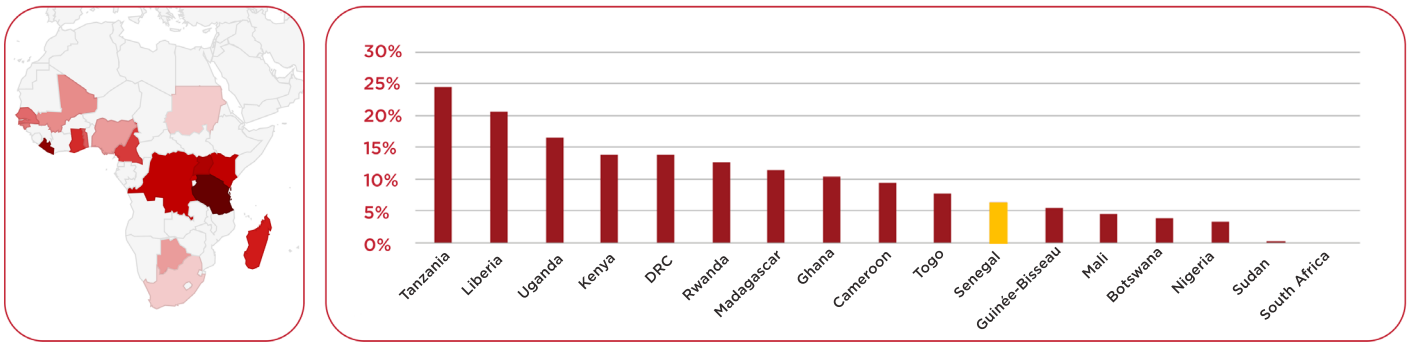
Combined taxes on mobile sector usage for selected countries in SSA (2021)



Source: GSMA Tax Database, data for 2021

Figure 44

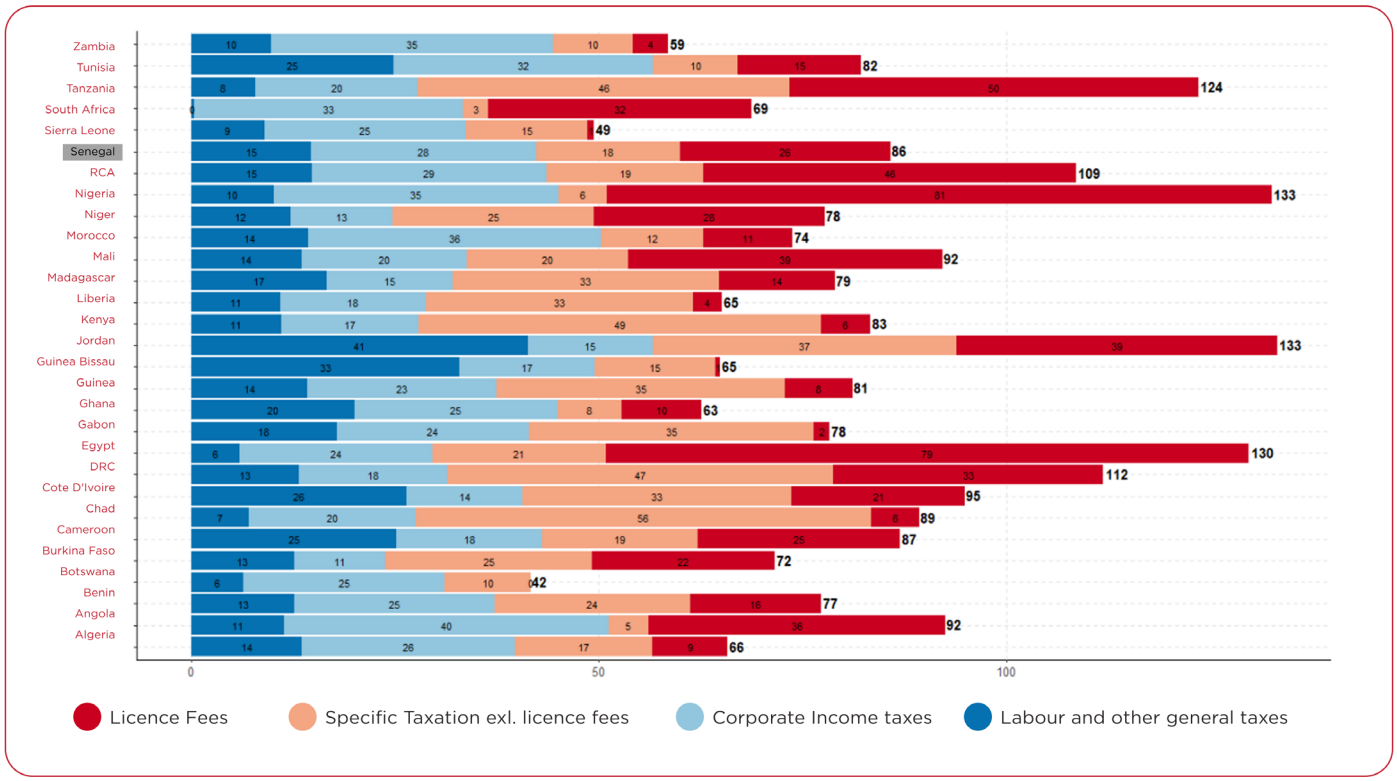
Sector-specific taxes and fee payments as a proportion of market revenue for selected countries in SSA (2021)



Source: GSMA Tax Database, data for 2021

Figure 45

Average effective tax rate (AETR) breakdown by taxation type (excluding Ethiopia)[84]



84/ Effective Tax Burden on Mobile Network Operators in Africa, Daouda Bamba, Alou Adessé Dama, Grégoire Rota-Graziosi, FERDI.

Taxation of the sector may be seen by governments as an effective tax collection channel, however high and complex taxation and fees results in reducing sector revenues due to higher prices to consumers, as the taxation cost is passed on by operators to consumers, and lowers all revenue-based taxes and fees.

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.[85] Studies also show that higher mobile data and handset prices lowers mobile broadband adoption.[86]

85/ World Bank 2022, "Using Geospatial Analysis to Overhaul Connectivity Policies", Table A.2.

86/ See separate methodological document for details on the elasticities used.

UNECA has recently published its ICT Tax Impact Calculator for African countries, and found that sector excise duty directly reduces the net revenue a telco receives and lowers all revenue-based taxes and fees - an increase of 10% for an excise duty results in an overall tax increase of less than 10%, and in some cases may actually reduce tax revenues due to its chilling effect of mobile broadband growth. UNECA finds that simplifying the tax regime and reducing sector-specific taxes will not only enhance broadband penetration but also lead to a significant increase in revenues due to enhanced productivity and growth as well as widening of the tax base.[87]

Using the UNCEA's calculator shows the following results for Senegal of removing 5% of consumption taxes from telecoms services, in terms of tax revenues, GDP and jobs:

Figure 46

UNECA calculator removing 5% consumption telecoms taxes impact in Senegal

	Full pass-through	No pass-through
Change in mobile broadband demand	6.00%	0.0%
Increase in mobile broadband penetration due to greater coverage investment	4.85%	1.99%
Change in tax revenues	$ 335 million	$ 296 million
Additional jobs generated	50,000	20,000

Source: UNECA ICT Tax Impact Calculator

87/ UNECA Presentation "Optimizing Africa's ICT Tax Regimes Towards Economic Growth and Job Creation" dated 18 March 2025.

The ICT Tax Impact Calculator presents results for two scenarios:

- "Full pass-through" of the tax reduction into consumer prices. Under this assumption mobile demand is directly stimulated through lower prices.
- "No pass-through" of the tax reduction into consumer prices. Under this assumption, whilst there is no direct impact on consumer demand, MNOs respond to the higher margins by investing in additional network coverage as more areas become economic.

Previous research has found that the actual rate of pass-through into prices of a consumer tax reduction is of the order of 90%.[88] Therefore, we would expect the impacts to be closer to the "Full pass-through" case shown in the table above, under which reducing the rate of VAT on telecommunications services results in only a small 0.05% reduction in tax revenues (because of higher demand) and generates a substantial amount of new employment.

> There are many taxes and fees applying to the telecom and mobile money sectors (Figure 47), including several sector-specific fees and a number of general taxes.

This includes recent tax reforms with the new provisions of the laws promulgated on 27 September 2025 and which came into force on 4 October 2025 (No. 17/2025 on the General Tax Code and No. 18/2025 for the fee on access to or use of the public telecommunications network, including:

- A 0.5% tax on mobile money and electronic money transfers, capped at FCFA 2,000 per transaction.
- A 0,5% tax on merchant payments.
- A 0,5% tax on withdrawals exceeding FCFA 20,000 in a single day.
- The reintroduction of customs duties and VAT on the import of fixed and mobile telephones.
- The application of a 1% stamp duty on all cash payments regardless of their amount (for all sectors of activity).

88/ World Bank: Using Geospatial Analysis to Overhaul Connectivity Policies. Page 59 and Table A.2.

Figure 47

Taxes and fees applicable to the mobile sector in Senegal[89]

TAX NAME	TAX RATE AND DETAILS	TAX TYPE OR BASE
Corporate taxes		
Corporate income tax (CIT)	30% of taxable income less allowable deductions	Profit
Minimum CIT	0.5% of revenue as minimum CIT, if minimum tax is greater than actual tax liability (N/A)	Revenue
Employment taxes		
Payroll tax	3% of wages	Labour costs
Pension Contributions	8.4% (general regime) 3.6% (additional contributions regime)	Labour costs
Family benefits contribution	7% of wages	Labour costs
Accident at work and illness contri-butions	1%/ 3%/ 5% for work-related accidents/illness 2% - 7.5% for non-work-related illness	Labour costs
Consumption taxes		
Service taxes	Contribution spéciale du secteur des télécommuni cations (CST): 4.5% RUTEL (“Redevance d’Utilisation des télécommunications”) on pre-tax sales: 5% Tax on mobile money transfers, capped at FCFA 2,000 per transac-tion: 0.5% Tax on merchant payments: 0.5% Tax on withdrawals exceeding FCFA 20,000 in a single day: 0.5%	Cost of services
Customs duty	Mobile phones: 5% duty + 2.7% other fees Base stations: 10% Towers, masts, computers, and laptops: 5% SIM cards: 20%	Cost of goods / services
Statistical charge	1% on imported good/services from third countries	Cost of goods

89/ GSMA Mobile Sector Taxation - Comparative Fiscal Burden in Senegal, October 2025. Finance Law 2013.

TAX NAME	TAX RATE AND DETAILS	TAX TYPE OR BASE
Consumption taxes		
Community Solidarity Tax	0.8% on the imports value	Cost of goods
Economic Community of West African States	0.5% on the imported good/services from non-ECOWAS countries	Cost of goods
Senegalese Shippers Council (COSEC) royalty	0.4% on imported goods via sea freight	Cost of goods
Customs Modernisation Programme	A 1.5% levy is applicable to the customs value of eligible goods, excluding those placed under customs and tax regimes promoting investment.	Cost of goods / services
Fees for commercial overtime and IT customs services	A 0.5% levy is added to fees for commercial operations carried out outside the legally prescribed hours and for customs computer services (Not included in the model as we assume no commercial operations carried out outside the legally prescribed hours)	Cost of goods / services
Industrial Energy Tax	2.5%	Price of electricity consumed
Value added tax (VAT)	18% on mobile services and devices	Price of goods / service

The October 2025 taxation changes on the mobile telecoms and mobile money sectors risks impacting on the progress being made towards the New Deal Technologique 2034 objectives.

As a result of the October 2025 tax changes, the GSMA Digital Policy and Regulatory Index (DPRI) 2025 tax policy score reduces from 65 (one of the best scores in Africa) to 31, and the overall DPRI score would reduce by 7 points (69 to 62 score).[90]

The changes to taxes on mobile money transfers, merchant payments and withdrawals risks impacting financial inclusion and New Deal Technologique 2034 objectives. Mobile money, together with the use of digital technology, enhances productivity in small and micro enterprises and public services delivery.

90/ GSMA Intelligence.

Examples are provided in Figure 48 below and in more detail in Annexure 3.

Figure 48

Case studies on the use of digital public services and digital payments in Senegal and other countries

Senegal e-government government services	Senegal Services portal, operated by SENUM, recorded more than 1.5 million visits in 2023, allowing citizens to access over 100 e-government services such as registering businesses, paying taxes, and requesting administrative documents.[91]
Senegal "Townpay" digital taxation collection by municipalities	TownPay is a solution developed by SudPay (receiving a grant from the GSMA Ecosystem Accelerator Innovation Fund in February 2018) in collaboration with the Direction Générale des Impôts and the Public Treasury to allow municipalities to automate, and digitise the collection of local taxes from merchants to reduce fraud and improve collection rates. The solution equips municipal tax collectors with proprietary mobile terminals and municipalities with digital dashboards to track tax collection. To date, 34 municipalities have been onboarded, with 86,530 merchants enrolled and over 30,000 actively using the platform, and FCFA 76,000,000 taxes are collected per month.[92]
Fuel subsidy in Ethiopia	Ethiopia has used digital payment channels to pay with coupons for subsidised fuel mandated by the government to prevent illegal activities, fuel wastage and promoted digital payments adoption. As of October 2024, more than 1,600 gas stations were participating in the scheme with 141,000 vehicles paying through Telebirr with the subsidy transaction and 1.1 million vehicles paying without the subsidy. The total transaction value through the scheme was ETB 255 million, of which 52% were transactions with the subsidy. It is estimated that this has generated a saving for the government on the monthly cost of fuel subsidies from ETB 7 billion to ETB 188 million, a reduction of over 95% of the cost of the subsidy to the government.[93]
Digital government services and revenue mobilisation in Ghana and Kenya	Ghana.Gov provides 1,500 government agency services and has collected GHC 210 billion between launch in 2020 to 2024.[94] Kenya e-citizen provides over 22,000 government and public services digitally, collects KSH 700 million to 1 billion daily, and has collected over KSH 550 billion in the last three years prior to 2025.[95]
Taxation collection and compliance in South Africa	The South African Revenue Service reported in FY 2023/24 that 77% of taxation payments were made through e-filing and is investing in digital platforms (including AI and machine learning) to increase tax efficiency and compliance.[96]

91/ Senegal Services portal.

92/ Provided by the GSMA Ecosystem Accelerator Innovation Fund, November 2025.

93/ GSMA report - Driving Digital Transformation of the Economy in Ethiopia Opportunities, policy reforms and the role of mobile, October 2024, Page 28.

94/ BusinessGhana article, " Ghana.gov revenue platforms: Govt bags GHC210bn... as revenue since introduction in 2020", February 2024.

95/ The Star Newspaper Kenya article, "E-Citizen now collects up to Sch 1 billion daily", September 2025.

96/ South Africa Revenue Service Tax Statistics 2024, Page 1. TechCentral Article, "Advanced' data analytics, AI to help Sars reach 'tougher' collections target", May 2025.

The introduction of taxes on mobile money payments, similar October 2025 taxes applied in Senegal, have had a significant negative impact on both uptake and usage of mobile money services in other countries.

For example, in Ghana, a 2023 GSMA paper found that the introduction of a 1.5% mobile money levy had a strong negative impact on the number of users (5% fewer at end of 2023 than if pre-levy uptake trends continued), value and volume of person-to-person transactions, a negative impact on mobile operator revenue, and a net negative effect on government tax revenue.[97]

Ghanaian governments have since reduced the levy, and it was removed completely in April 2025.

Further, Senegal's mobile operators are subject to one of the highest tax levels when compared with other sectors in the country. A recent GSMA report[98] compared the Average Effective Tax Rate (AETR) of the mobile telecoms, retail finance and gold mining sectors. This report found that:

- The Average Effective Tax Rate (AETR)[99] as % of pre-tax profit in the mobile telecoms sector is higher at 82% when compared with the retail finance sector (71%) and the gold mining sector (65%) (Figure 49). This elevated burden is largely driven by sector-specific fees based on operator turnover rather than profit, as well as fixed upfront regulatory charges.
- Only 13% of the mobile sector's tax burden is profit-based, with most taxes derived from sector-specific fees either fixed or as % of revenues. The mobile telecoms sector shares several similarities with the gold mining and retail finance industries. Like mining, it relies on limited public resources and requires substantial upfront capital investment. Like retail finance, it operates in concentrated markets and primarily serves consumers. All three sectors also tend to have comparable operating margins. However, despite these commonalities—and the mobile sector's critical role in socioeconomic development, it is subject to a significantly heavier tax burden than either mining or retail finance (Figure 50).

Figure 49

Comparison of effective tax rates in mobile, retail finance, and gold mining sectors in Senegal

	Mobile Telecoms	Retail Finance	Gold Mining
AETR as a share of pre-tax profit	82%	71%	65%
AETR as a share of revenue	20%	24%	40%
EBITDA margin (EBITDA/revenue)	48%	53%	71%

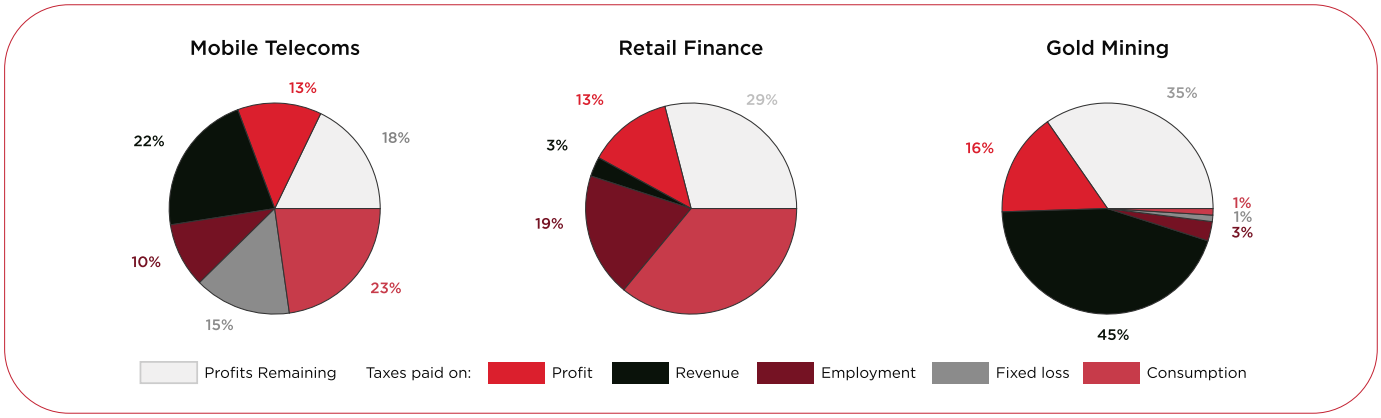
Source: GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Senegal, October 2025

97/ GSMA, The E-levy in Ghana: Economic Impact Assessment, 2023.

98/ GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Senegal, October 2025.

Figure 50

Share of total tax base – mobile telecoms, retail finance, and gold mining sectors in Senegal



Source: GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Senegal, October 2025

The current tax framework for the mobile telecoms and mobile money sector is complex and increases the cost of providing telecoms services in Senegal. For operators, the multiple taxes and differing government levels increase compliance costs, diverting resources from investment in infrastructure and service innovation to support the growth of the digital economy. For the government, the various taxes create higher costs for tax collection and auditing (albeit as examined in Annexure 3 of this report, the Tax Authority is using digital technology to progress efficiencies and effectiveness to broaden tax collection and base).

99/ To ensure a fair comparison between the sectors, the following approach was used when measuring the effective tax rate: 1. These calculations used revenue, capex, and opex profiles specific to each sector over the modelling period of 15 years, along with the applicable tax regimes. 2 AETR as a share of revenue: NPV of total tax payable / NPV of revenue (10% discount rate). 3. AETR as a share of pre-tax profit: NPV of total tax payable / NPV of pre-tax profit (10% discount rate).

2D.2.2
Taxation recommendations

It is recommended that the government and regulatory authorities conduct a review of taxation on mobile telecoms and mobile money sectors, balancing the objectives of raising government revenues, broadening tax base, and enabling digital economy envisaged under the New Deal Technologique 2034. This includes the following recommended reforms, which the economic impact is modelled for this report:

- Reduce both 4.5% Contribution spéciale du secteur des télécommuni cations (CST) and 5% Redevance d'Utilisation des télécommunications (RUTEL) to 3%.
- Remove the 18% VAT and import duties (7.7% in total) on entry-level smartphones.
- Remove 0.5% taxes on mobile money transfers, withdrawals, and merchant payments and ensure harmonised regulatory taxes and fees for all mobile money and electronic money providers.

These recommendations are consistent with the general tax policy recommendations developed by the GSMA (and in line with international organisations such as the World Bank and IMF) set out below:

Figure 51

GSMA recommendations on tax policy for digital economy[100]

Enhancing Affordability:	• Eliminate or reduce sector-specific excise taxes on mobile services. • Lower or remove import duties on mobile handsets and avoid imposing higher VAT rates than standard. • Remove fixed-rate taxes like activation and numbering taxes, which disproportionately affect low-income individuals.
Encouraging Investment:	• Remove sector-specific taxes and fees on mobile operators, especially those on revenues irrespective of profitability. • Eliminate import duties on network equipment to reduce investment costs. • Streamline and stabilize taxes to reduce compliance costs and provide predictability for operators. • Consider tax incentives for operators investing in underserved and rural areas.
Promoting Mobile Money and Digital Services:	• Avoid imposing taxes on mobile money services to enhance accessibility and usage. • Integrate mobile money into government payment systems to improve transparency, service delivery, and revenue mobilization.

100/ GSMA Mobile Tax Policy and Digital Development A study of markets in Sub-Saharan Africa October 2023.

2D.2.3
Impact of "Use of digital technology for domestic revenue mobilisation and optimise sector taxation"

policy recommendations to address Policy Challenge 2 – high and complex taxes on mobile telecoms and mobile money services

As described in Section 1D, this report provides a quantitative model of Senegal's mobile sector to evaluate the impacts on the wider economy of the proposed tax policy recommendations to address the challenges and to maximise the digital economy potential to contribute to the New Deal Technologique 2034 objectives.

2D.2.3.1
Reduction in taxation on the telecoms sector

The modelled the impact of reducing both 4.5% Contribution spéciale du secteur des télécommunications (CST) and 5% Redevance d'Utilisation des télécommunications (RUTEL) to 3% each. In doing this, the model assumes that 85% to 90% of the tax reductions will be passed on to consumers which will increase adoption of mobile broadband by the existing base.

Figure 52

Mobile broadband uptake in Senegal with reduction in taxes on telecoms services

Mobile internet users (million)	2025	2026	2027	2028	2029	2030
BAU	8.16	8.60	9.06	9.55	10.06	10.53
Reduction of taxation on the telecoms sector	8.16	8.61	9.09	9.58	10.10	10.59
Y-on-Y difference to BAU	0	0.1%	0.2%	0.4%	0.5%	0.5%
Increase in growth vs BAU	0	0.1%	0.3%	0.4%	0.6%	0.7%

2D.2.3.2
Reduction of import costs on entry-level smartphones

The impact of removing VAT (18%) and other import duties (totalling 7.7%) from imported entry level smartphones. In doing this, it is assumed that 90% of the reduction will be passed on to consumers and so increase adoption of mobile broadband by the existing base.

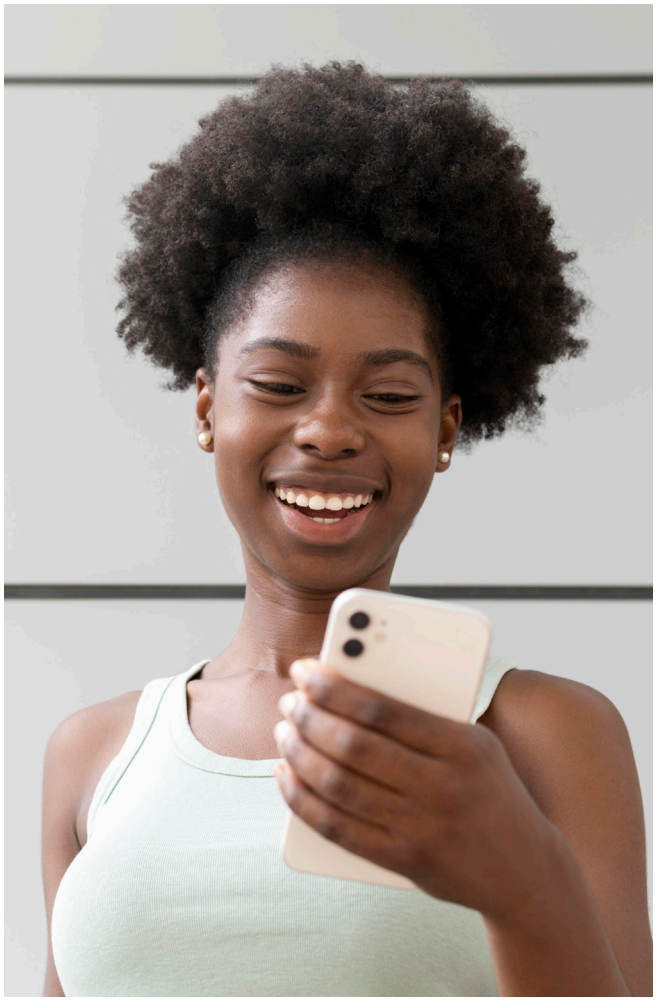


Figure 53

Mobile broadband uptake with removal of VAT on entry-level smartphones

Mobile internet users (million)	2025	2026	2027	2028	2029	2030
BAU	8.16	8.60	9.06	9.55	10.06	10.53
Reduction of costs on smartphone importation	8.6	8.76	9.40	10.06	10.76	11.42
Y-on-Y difference to BAU	0	1.9%	3.7%	5.4%	7.0%	8.4%
Increase in growth vs BAU	0	2.0%	4.1%	6.3%	8.6%	10.8%

2D.2.3.3
Removing levies on mobile money transactions

This models the impact of removing the 0.5% levy on mobile money transfers, withdrawals and merchant payments. This estimates the impact in Senegal of removing these levies from reductions of similar magnitude in other African countries (e.g. the 0.5% levy on mobile money cash withdrawals in Uganda). It is estimated that removing the levies in Senegal will avoid a 26% reduction on mobile money transactions which, over time, will reduce economic activity by 3.5%.

2D.2.3.4
Impact of tax policy (and other) recommendations on economic growth and tax revenue

Should the proposed sector tax policy recommendations be adopted, combined with the other policy recommendations, economic growth generated by increased mobile digital usage across all sectors of the economy will have a FCFA 417 billion net tax impact (including an estimated gross additional tax revenue of FCFA 319 billion from stimulated economic growth, a further FCFA 174 billion from digitalisation of tax collection,[101] and a net loss of FCFA 75 billion in taxes from the mobile sector) by 2030. Contributing to government revenue mobilization and tax collection objectives (please see Section 3, Figures 66 and 67 for further detail).

101/ Authors calculate the impact using the results of the IMF study "Exploring the Adoption of Selected Digital Technologies in Tax Administration, A Cross-Country Perspective", Manabu Nose and Andualem Mengistu, NOTE/2023/008. See Table 1, parameter for "TADAT: Use of electronic payment methods".

2D.3 Policy challenge 3

Smartphone affordability, digital skills, and other demand barriers

Affordability of smartphones is one of the greatest barriers to the digital economy and inclusion. Others include literacy and digital skills, safety and security concerns.

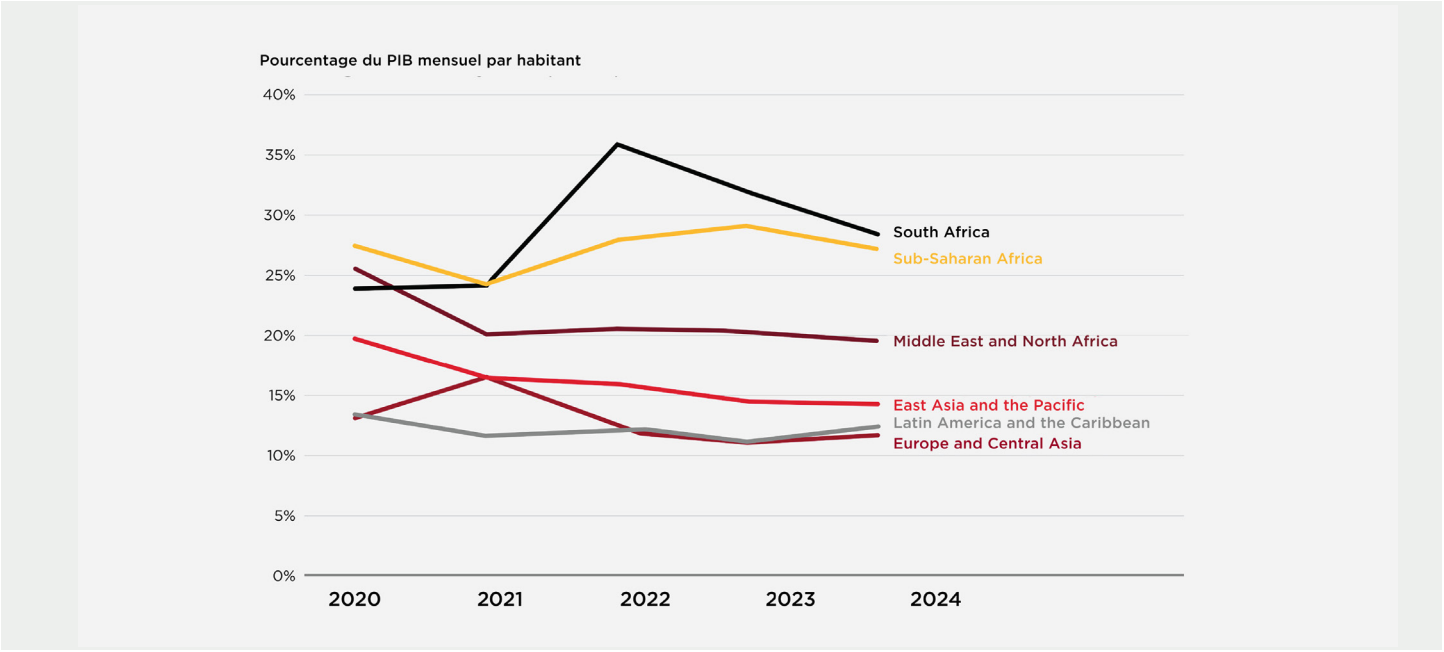
2D.3.1 Smartphone affordability

Access to smartphones – especially entry-level smartphones – and their affordability is one of the key barriers to digital transformation and inclusion – and the mobile internet usage gap – in Senegal and other African countries. GSMA analysis is that only 2 in 5 mobile internet subscribers in Sub-Saharan Africa access the internet on a 4G or 5G smartphone.[102]

Prices for internet-enabled phones for Sub-Saharan African consumers are amongst the highest when compared with low-and middle-income regions (Figure 54).

Figure 54

Affordability of an internet-enabled handset across low- and middle-income countries by region[103]



102/ GSMA Intelligence - Accelerating Smartphone Affordability in Africa, November 2025.

103/ GSMA, The Mobile Economy Africa 2025, Page 40.

To address this, the GSMA Handset Affordability Coalition was recently launched by the GSMA in collaboration with six of Africa's mobile operators, including Orange.

This includes:

- Engagement with the Original Equipment Manufacturers (OEMs) and technology companies on the development of reduced cost entry-level smartphones, using baseline minimum requirements including memory, RAM, camera quality, display size, battery performance and other features.
- A call to action for governments to remove taxes on entry-level smartphone prices below USD 100.

Such action could reduce the cost of entry-level smartphones by around 50% in many African countries. GSMA Intelligence estimates that USD 40 and USD 30 priced smartphones could bring mobile internet within reach for additional 20 and 50 million people in Sub-Saharan Africa respectively.[104]

In Senegal, GSMA analysis originally conducted in 2024, and adjusted to account of the recent tax reforms introduced from 4 October 2025 on customs and VAT on imported phones, finds:

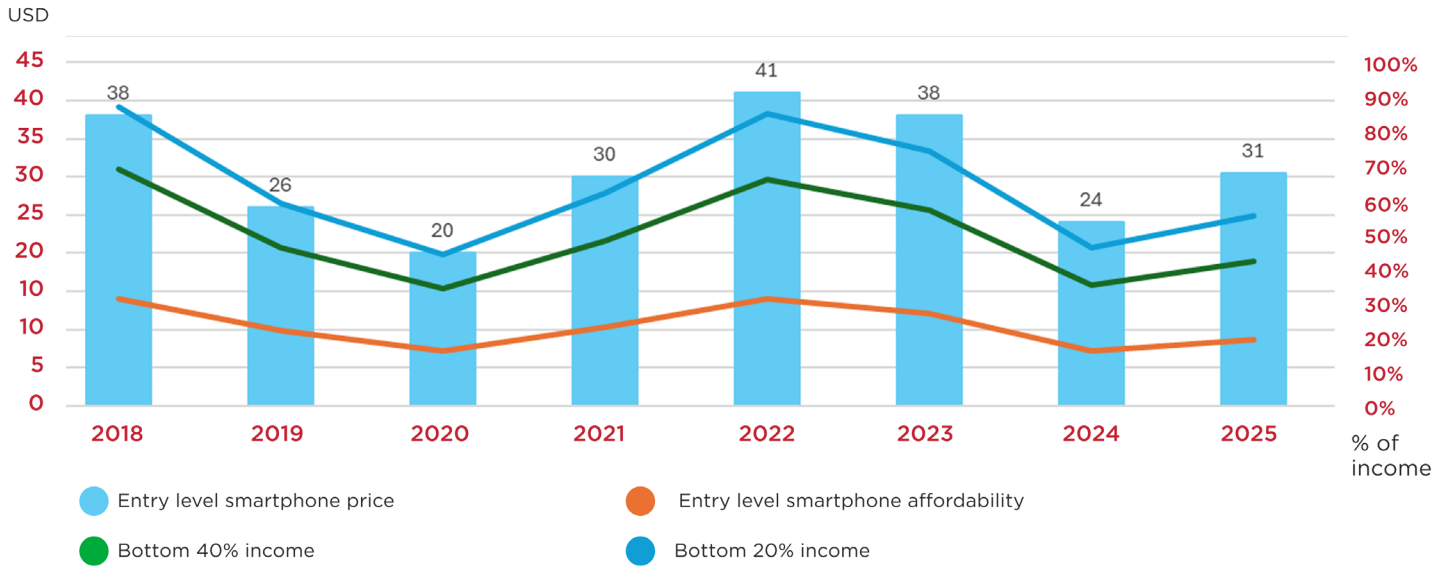
1. Entry-level internet enabled smartphone price was at USD 31;
2. Which equated to 19% of monthly GDP per capita, and 42% of monthly GDP per capita for the poorest 40% of the population; and
3. That taxation contributes to 21% of smartphone cost.

Figure 55 shows the changes in prices of entry-level smartphones measured with income levels in Senegal between 2018 and 2025 (including October 2025 tax changes).

104/ GSMA press release - GSMA and Leading African operators propose minimum requirements for affordable 4G smartphones, October 2025. GSMA Intelligence report - Accelerating smartphone adoption in Africa, November 2025.

Figure 55

Entry-level smartphones prices measured with income levels in Senegal, 2018 - 2025

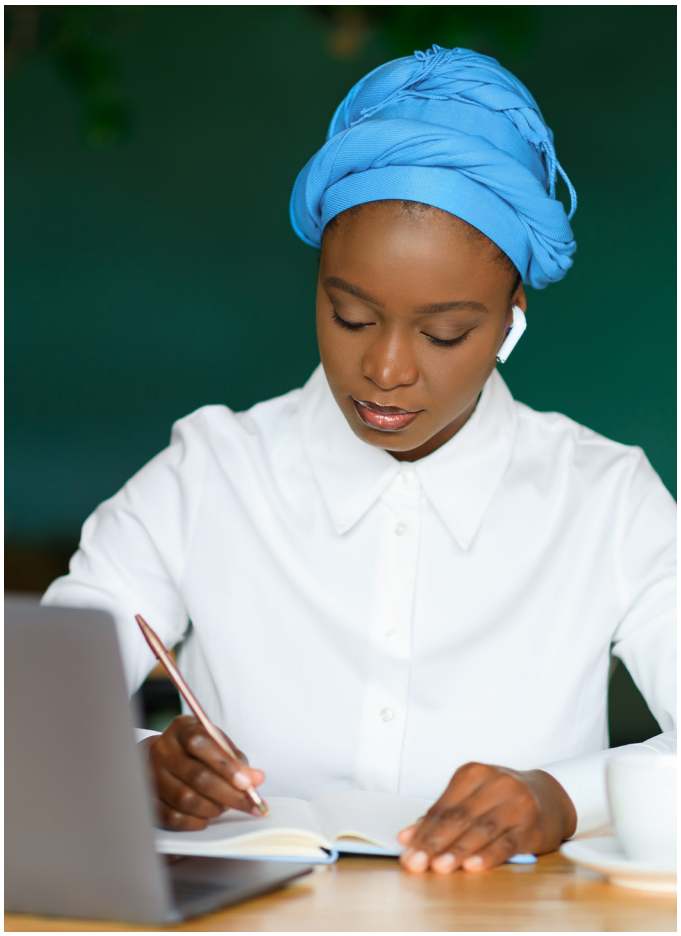


Source: GSMA Intelligence and authors calculations for 2025

Further, consumer research conducted by the GSMA in 2024 found that 57% rural respondents identified mobile handset cost as the single most important barrier to using the mobile internet.[105]

The GSMA has recently published a report on Accelerating Smartphone Adoption in Africa (including surveys conducted in Senegal, DRC, Kenya, Nigeria, Rwanda, South Africa, Togo, and Zambia).

> Provided the following analysis of key factors and recommendations, which may be instructive for the development of a Senegal affordability programme for entry-level smartphones.



105/ GSMA Affordability of Internet-Enabled Handsets and Data, The State of Mobile Internet Connectivity, October 2025.

Figure 56

GSMA analysis and recommendations on accelerating smartphone adoption in Africa[106]

FACTORS	ANALYSIS - SENEGAL	RECOMMENDATIONS
Domestic production	No local production. Senegal imports most of its smartphones from countries in Asia and Europe, with China, France and India being significant sources.	Assess the long-term sustainability of local assembly before initiating domestic production programmes. Key considerations include economies of scale, global competitiveness, and supply chain resilience.
Device customisation	There are several examples of smartphone customisations specifically designed for users in Senegal. These adaptations often address local challenges such as linguistic diversity, including Wolof, French, and regional dialects, and limited literacy. Transsion is a major smartphone OEM in Senegal, mainly through its brands TECNO, Infinix, and itel. These brands are recognised for offering affordable devices with features such as long battery life, dual SIM support, durability, and camera functions optimised for darker skin tones.	Encourage user feedback and iterative localisation to improve features based on ongoing input. This process helps address changing user requirements, such as adjusting storage for high media consumption in urban youth demographics while avoiding allocation of resources to less relevant features.
Pre-owned smartphones	Most pre-owned smartphones in Senegal enter the market through informal channels, such as local shops and peer-to-peer exchanges, which adversely affects how potential users perceive their value. Only 8% of non-smartphone owners in the GSMA survey said they would consider purchasing a pre-owned smartphone, in contrast to 60% who would prefer an entry-level device and 25% who would consider a financing solution.	Formalise the pre-owned smartphone market, recirculating already imported devices. This can be achieved by introducing trade-in schemes, establishing dedicated refurbishment and repair centres, and providing both online and offline sales channels complete with after-sales support.
Distribution and supply chain	Smartphone distribution begins at the Port of Dakar, with virtually all imported devices entering the country there before passing through major distributors and operator retail networks.	Utilise existing agent networks for smartphone distribution and incorporate smartphones into existing rural and multi-product delivery systems.

106/ GSMA Intelligence - Accelerating Smartphone Adoption in Africa, November 2025.

FACTORS	ANALYSIS - SENEGAL	RECOMMENDATIONS
Distribution and supply chain	Sales are concentrated in urban centres, where mobile operators play a central role in last-mile distribution to end users, providing warranties and after-sales support. However, distribution to remote rural communities is more challenging due to the limited availability of formal retail outlets, resulting in potential smartphone buyers in these locations often relying on informal sellers and market day visitors. Survey participants from rural areas reported frequent incidents of faulty phones and emphasised that rural consumers are often faced with a choice between expensive formal options, which usually require travelling to towns or cities at additional expense to purchase a smartphone, or riskier informal alternatives.	Governments have a vital role in facilitating smartphone distribution, particularly in addressing challenging customs procedures.
Financing and bundling schemes	25% of non-smartphone users in the survey indicated that they would consider purchasing a smartphone through financing. Respondents demonstrated a willingness to engage with flexible payment schemes, ranging from modest monthly contributions to larger, multi-month plans. Vulnerable groups, such as students, women, and informal workers, face additional barriers to accessing formal financing, largely due to income instability and mistrust.	Targeted schemes for individuals and micro entrepreneurs with irregular income streams, including market women, students, farmers, and informal workers are essential. Innovative approaches are required to reach consumers in lower income brackets, who tend to be more risk averse.
Disposable income	Three-quarters of non-smartphone owners in the survey cited cost as the primary barrier to adoption, whereas only 16% mention cultural or religious restrictions, and 7% cited digital illiteracy.	Smartphone subsidies and bundled airtime for vulnerable individuals within this category and community-based strategies, such as utilising women's savings groups or cooperative lending structures.

FACTORS	ANALYSIS - SENEGAL	RECOMMENDATIONS
Awareness and literacy	36% of survey respondents cited a lack of technical skills and 28% a lack of support mechanisms as barriers to effective smartphone use. First-time users typically learn smartphone functions informally through family, peers, or community members, while younger users tend to rely on online tutorials and YouTube videos. Many older adults often limit their usage to voice calls and SMS, highlighting a generational digital divide.	Adopt a multipronged approach with solutions tailored to various consumer categories, based on their unique circumstances and social factors. Pair device purchases with practical digital skills training, covering essentials such as using the phone, installing apps, and staying safe online, to help lower the intimidation barrier for first-time users.
Social and cultural norms	Insights from survey participants suggest that smartphones in Senegal possess significant social relevance, being regarded as essential tools for communication, business, education, and community engagement. 64% of respondents identified broadcasting community events, and 29% mentioned disseminating information related to agriculture, education, or health as key uses for communities and households. Over 30% of respondents reported sharing devices. Shared use can result in device damage, potential data misuse, privacy concerns, and quicker battery depletion. Nearly half of respondents who shared smartphones expressed concerns about social media scams, closely followed by worries regarding unauthorised access to sensitive information, hacking and account takeovers, as well as fraud.	Understand the specific social norms present within any given context. Implement trust-based strategies, such as engaging female retail agents, local champions, or implementing community-driven campaigns that emphasise the social and economic advantages of smartphone ownership, especially for women and young people.
Individual behaviours and preferences	Survey respondents identified battery life, durability, storage capacity, camera quality, and dual SIM capability as the smartphone features they value most, reflecting both their literacy levels and everyday requirements.	Adopt flexible and customisable approaches to bridging the smartphone access gap.

FACTORS	ANALYSIS - SENEGAL	RECOMMENDATIONS
Individual behaviours and preferences	These preferences demonstrate a keen awareness of cost management (through SIM-switching), resilience in environments with limited electricity, and the significance of social communication.	Targeting market segments most ready to adopt smartphones, such as college-age students currently using featurephones but who could benefit from educational data plans, or high-volume mobile money users on featurephones who could take advantage of advanced financial products offered through smartphones, will be essential.
Fiscal policies	Senegal adheres to the Common External Tariff (CET) set by the West African Economic and Monetary Union (WAEMU) and the Economic Community of West African States (ECOWAS), which classifies goods into bands depending on their economic function. Smartphones are generally placed in the 20% customs duty band, as they are regarded as consumer electronics that are either locally produced or have locally available equivalents. This rate is applicable to imports originating from outside the WAEMU/ECOWAS region. Furthermore, an 18% VAT is imposed on the cost, insurance, and freight (CIF) value of the shipment, in addition to other fees such as a 1% statistical import charge, a 0.8% Community Solidarity Levy, and a 0.5% ECOWAS levy. Consequently, the total effective rate for smartphones can be as high as 40–45%. This substantially affects the affordability of smartphones, particularly for those in the lowest income brackets.	Governments across Africa should remove taxes on entry-level smartphones priced below USD 100. Such action could reduce the cost of entry-level devices by around 50% in many African countries, increasing the prospects of achieving the sub-USD 40 target for affordable 4G smartphones. For example, in South Africa, the Government exempted handsets priced below ZAR 2,500 (USD 143) from a luxury handset tax in April 2025. GSMA analysis from March to July 2025 found: • Exempted handset sales were 49% higher. • Market share of exempted handsets increased from 23% to 31%. • Consumers purchased entry-level smartphones instead of featurephones, with a 30% decline in featurephone sales. See Section 2D Policy Challenge 2 and Section 3 for this report's recommendations.

FACTORS	ANALYSIS - SENEGAL	RECOMMENDATIONS
Mobile network coverage	See Section 2A of this report for GSMA mobile network coverage analysis conducted in 2025, and Section 2D Policy Challenge 1 which outlines key infrastructure challenges.	See Section 2D Policy Challenge 1 and Section 3 for this report's recommendations.
Enabling infrastructure	In rural Senegal, where approximately half of households lack reliable electricity and 30% of communities are entirely off-grid, smartphone adoption is hampered by difficulties with charging. Users frequently depend on shared charging stations, such as solar-powered kiosks or local shops, which typically cost between FCFA 100 (USD 0.2) and FCFA 500 (USD 0.9) per charge. These financial and logistical obstacles limit daily usage and encourage the preference for basic feature phones over power-hungry smartphones.	Facilitate cross-sector collaboration between the energy and telecoms sectors to bridge the energy gap in Africa. See Section 2D Policy Challenge 1 and Section 3 for this report's recommendations.

Current initiatives to build on and to address smartphone affordability in Senegal, include:

Figure 57

Initiatives on smartphone and device affordability in Senegal

The FDSUT plans to distribute 10,000 smartphones at a rate of 2,000 per year in designated localities.[107]
Yas provides Samsung smartphones, including: A04e (32GB) at FCFA 55,000 (~USD 90), A05 (64GB) at FCFA 59,000 (~USD 96), and A15 (128GB) at FCFA 90,000 (~USD 146).[108]
Orange launched a subsidized 5G-compatible smartphone, the Samsung A15, priced at FCFA 75,000 (~USD 120) in 2024 to increase affordability and adoption of 5G services. Also Orange, in partnership with Les Ateliers du Bocage, collects used mobile phones from Senegal and across Orange's footprint in theMiddle East and Africa. Phones in working condition are refurbished and resold at reduced prices, while those beyond repair are dismantled for certified recycling.[109]
In addition, Orange, in partnership with Les Ateliers du Bocage, collects used phones in Senegal and throughout its Middle East and Africa area. Devices that are still functional are reconditioned and resold at a reduced price, while those that cannot be repaired are disassembled for certified recycling. By offering reliable and affordable refurbished phones, this program facilitates access for low-income users while helping to reduce electronic waste.[110]
The "Moon" initiative in the Kolda region provides solar home kits that include a specially designed "MoonPhone" smartphone. Customers can acquire both the solar kit and the phone through mobile money PAYG payments. This system enables rural households to access clean electricity and a connected device, while gradually repaying the cost over time. The Moon kit is supported by French funding from the SolInAE programme and targets low-income, off-grid communities.[111]

107/ FDSUT.

108/ Free Senegal website, accessed 1 July 2025.

109/ Sonatel Press release - Sonatel launches its 5G mobile offers and unveils a new range of more advantageous Internet access offers for its customers, June 2024.

110/ Ibid.

111/ GSMA - Accelerating Smartphones Adoption in Africa - Senegal case study, November 2025.

2D.3.2
Digital literacy and skills

The importance of advancing digital literacy and literacy is widely accepted as being critical for digital and economic development, noting that GSMA research finds that underserved population groups (such as women, rural communities, older people, and persons with disabilities) are more likely to report literacy and digital skills as a barrier to mobile internet adoption and use.[112]

Senegal is also prioritising making more government and public services available digitally in the New Deal Technologique 2034.

The AI Talent Readiness Index, ranked Senegal with a digital skills score of 12.6, placing it 20th out of 54 African countries[113] indicating the Government's New Deal Technologique 2034 (and the previous Digital Strategy 2025) is correct in setting out digital masterplan priority programme No 7 "training and development of digital skills" with targets to achieve 50 African e-Champions, 100,000 Digital graduates, and 5,000 per year Certified Digital Experts by 2034 (see Annexure 1, Figure 1).

As described in more detail in Annexure 3 of this report, digital government can drive demand by citizens to develop digital skills and use the internet and mobile broadband services.

112/ GSMA Digital Inclusion Policy Brief - Advancing digital skills for great digital inclusion, November 2025.

113/ Quita Hub - AI Talent Readiness Index for Africa, Page 109, April 2025.

The mobile operators, in Senegal, are partnering with government on improving digital literacy and skills, for example:

Figure 58

Example initiatives on digital literacy and skills

National Digital Training Program	National Digital Training Program targets training of 100,000 by 2025, with 20,000 achieved by 2023.[114]
FDSUT multimedia rooms in colleges	Through the FDSUT, the government plans to deploy several multimedia rooms in 100 colleges.[115]
Yas	Initiatives have been launched to position the country as a technology hub through education and innovation. These include the opening of École 42, support to startups and the broader tech ecosystem, financing of the Association within a Public-Private Partnership framework, and CSR actions designed to accompany and strengthen startups.
Orange	Orange Sonatel together with Orange Digital Center - including a flagship centre in Dakar - provide the Sonatel Academy (which offers intensive training in web development, cybersecurity, and AI to prepare young people for digital careers), Orange Fab (a startup accelerator that helps early-stage companies scale through mentorship, funding, and access to Orange's global network), and 5G Lab (research for developing next-gen applications in health, mobility, and industry using 5G technology). The center has trained over 3,500 individuals and supported 92 startups, helping bridge the digital divide and promote entrepreneurship.[117] Orange Digital House, in partnership with the Institution of Formation and Education for Women (IFEF), provides courses on digital tools, business development, and financial literacy. 22 houses had been established by 2024, training over 6,000 women across the country.[118] During FY24, Orange provided digital skills training for 10,000 students in public schools.[119]

114/ World Bank Congo Digital Acceleration Project Implementation Status and Results Report, 2024.

115/ FDSUT.

116/ Sonatel press release - Orange Digital Center: A technological innovation hub in the heart of Dakar, March 2024.

117/ Orange Developer article - Orange Digital Center: a key driver in Senegal, January 2025.

118/ Orange press release, January 2024.

119/ Orange Financial Results press release 2024.

An emerging area for Senegal to consider, as part of its Senegal Digital Factory and Digital Skills projects under the Digital Masterplan, is the use of digital technologies to advance digital skills and digital services adoption.

Increasingly embedded solutions and APIs are being used in online services and apps to integrate digital skills and how to use training, and to tailor content based on user location, device type, and local language requirements in accordance with applicable cyber security, data protection and privacy regulations. The GSMA Open Gateway initiative, launched in 2023, aims to harness the capabilities of mobile network operators worldwide by providing access through standardised APIs. As of September 2025, there are 60 APIs available for development and 14 mobile network operators across 12 countries have adopted this initiative in Africa. This includes Orange.[120]

It is recommended that Senegal works in partnership with local and international technology companies, mobile operators, and app developers to use embedded solutions and APIs in government public services and commercial services.

2D.3.3
Safety and security

The New Deal Technologique 2034 includes a priority programme to develop and implement a new national cyber security strategy, amongst other safety and security actions.
(Annexure 1, Figure 1)

As part of this, it is recommended that the country continues to participate in international and regional Cyber security and data protection frameworks, notably the African Union Convention on Cybersecurity and Personal Data Protection (Malabo Convention) which criminalises a broad range of cyber activities, including hacking, cyber fraud, and identity theft. It also establishes procedures for investigating and prosecuting cybercrime, including international cooperation between African countries.

Mobile sector are working closely with the government, regulators, and partners to ensure safety and security of users. For example, in March 2025, Orange Sonatel signed a major partnership with SENUM, Senegal's national digital infrastructure agency, to enhance digital sovereignty and infrastructure security. This includes joint efforts on data center interconnection, cybersecurity protocols, and digital skills development.[121]

120/ GSMA, The Mobile Economy Africa 2025, Pages 25 - 26.

121/ SENUM SA article, March 2025.

2D.3.4
Impact of demand-side policy recommendations to address Policy Challenge 3

As described in Section 1D, the report quantitative model measures the impact of the proposed demand-side policy recommendations including entry-level smartphone affordability programme, increase digital literacy and skills for educational, commercial, social and financial purposes, embedding solutions and APIs into online services and apps to increase digital adoption and usage, and building trust in the safety and security of digital technology.

These policy recommendations would contribute to an increase of 1.34 million unique mobile internet users by 2030 (+6.3% of population) (Figure 59).

Figure 59

Mobile internet uptake with demand side measures

Mobile internet users (millions)	2025	2026	2027	2028	2029	2030
BAU	8.16	8.60	9.06	9.55	10.06	10.53
Demand side measures	8.16	8.82	9.52	10.27	11.08	11.87
Y-on-Y difference to BAU	0	2.5%	5.1%	7.6%	10.2%	12.7%
Increase in growth vs BAU	0	2.7%	5.6%	8.9%	12.5%	16.4%

2D.4 Policy challenge 4

Regulatory reforms required to enable the digital economy

2D.4.1 Prioritisation of most important projects of New Deal Technologique 2034

The New Deal Technologique 2034 is one of the most ambitious and comprehensive strategies on the Continent and beyond, and if implemented successfully will catapult Senegal's digital transformation. As recognised in the New Deal and the Digital Masterplan, effective and efficient coordination across government and close collaboration with sector companies, local and international partners will be critical to the implementation and delivery of the projects and objectives.

As part of this, it is recommended that the government undertake a phased approach, prioritising the most important New Deal and Digital Masterplan projects, notably:

- Addressing barriers to digital infrastructure network and universal connectivity (as outlined previously under policy challenges 1 and 2);
- Partnering to address digital skills and demand side barriers to increase use of digital services and technologies by citizens, government and public services, and businesses (as outlined under policy challenge 3); and
- Digital Regulatory and Governance Framework (as described next).

2D.4.2 Modernisation of the Digital regulatory and governance framework

The continual and rapid evolution of technology and business models means that the regulation of the sector also needs to continually change to ensure that it reflects current market realities. Many other countries are moving forward on this, evolving their regulatory frameworks to both reflect the way the market is changing and also to support further digitalisation of the economy.

This is recognised by both the New Deal Technologique 2034 which outlines priority programme number 1 to review and update the Digital Regulatory and Governance Framework (see Annexure 1, Figure 1). This for the sector is one of the most important priority New Deal and Digital Masterplan projects.

As part of the New Deal Technologique 2034, the first program identified concerns updating the legal framework, with the objective of creating a robust, inclusive, and adaptable digital framework to stimulate innovation, protect citizens' rights, secure data, and foster effective collaboration between government and the private sector.

2D.4.2.1
Provide a simplified, harmonised, and transparent unified and technology neutral license regime

Providing certainty to licensees (notably license renewal, license duration, and reasonable fees) to continue investment and innovation to achieve New Deal Technologique 2034 objectives (see Section 2D.1.1 - licensing and spectrum).

2D.4.2.2
Regulatory framework for emerging electronic communications infrastructure services.

The competitive landscape in Senegal's digital economy is evolving rapidly with the entry of new technologies and new business models, which presents new policy and regulatory issues for the government and regulators to carefully assess, consult with stakeholders, and make evidence-based and transparent decisions to provide a clear regulatory framework for all players of the digital ecosystem ensuring continued investment in infrastructure and service innovation to contribute to the New Deal Technologique 2034 objectives.

For example, an area for updating the regulatory framework is the development of an enabling regulatory framework for the advancements in non-terrestrial and Low-Earth Orbit (LEO) satellite network communications and evolving Direct-2-Device (D2D) technologies, and increasing commercial partnerships between mobile operators and satellite providers to extend broadband coverage to sparsely populated or inaccessible areas (e.g. Orange partnership with Eutelsat[122]).

This would be achieved by maintaining clear, consistent and transparent regulatory regimes for the cases where satellite services are being directly provided to consumers and ensuring regulatory parity is critical for fair competition. The GSMA has recently published positions for consideration of the national telecommunications regulators (Figure 60).

Figure 60

GSMA positions spectrum for D2D and the use of satellite to supplement mobile coverage[123]

D2D in IMT Spectrum	1. D2D using mobile spectrum should be provided through MNO licenses • D2D operating in IMT spectrum bands provides a supplemental service to terrestrial networks and enables MNOs to collaborate, under commercial arrangements with satellite network operators (SNO), to extend the MNO's coverage. • With the regulator's permission, this should be done through the spectrum licence of the MNO; i.e., the rights of use by satellite for any given terrestrial band should derive from the exclusive rights on MNO licences, through lease agreements or other authorisation tools as applicable in each country. • Authorising the utilisation of an MNO's licensed spectrum with a D2D satellite provider may mean the MNO remains responsible for ensuring the mitigation and management of interference under the terms of its original licence, depending on how the authorisation of satellite use of the mobile spectrum is framed.

122/ Eutelsat and Orange reinforce partnership with new multi-year LEO agreement, June 2025.
123/ GSMA Public Policy Paper - Spectrum for D2D - The use of satellite to supplement mobile coverage, September 2025.

D2D in IMT Spectrum	• In this case, the MNO may also remain responsible for compliance with other regulations. This approach will allow MNOs to decide how best to use their licensed mobile spectrum bands to enable satellite connectivity for subscribers. • Such market-led choices will support the most efficient and optimal use of mobile licensed spectrum as MNOs are best positioned to determine how to leverage spectrum to better-support customers in remote, rural, suburban or urban settings. This includes determining which licences or portions of licences might be best used to extend their network coverage via satellite. 2. When using IMT spectrum, D2D must protect IMT networks in accordance with the ITU Radio Regulations • Noting that the ITU World Radiocommunications Conference 2027 (WRC-27) is looking at establishing an international framework to facilitate the development of D2D services, where regulators plan to introduce D2D services soon they may need to define cautious national regulatory frameworks for D2D in IMT spectrum. As such, regulators could create a regulatory framework based on one of the following options: ☐ D2D operations should protect existing services in accordance with the ITU Radio Regulations. As there is no satellite allocation in some of the mobile bands being used at present, D2D should thus operate on a no interference / no protection basis. ☐ Create secondary allocations in certain mobile bands along with some conditions, in order to make sure that D2D operations do not cause harmful interference to the services it is designed to supplement.Any approach to D2D introduction should be based on regulatory and technical conditions which ensure coexistence with mobile terrestrial networks. This means managing the risk of harmful interference with an operator's own terrestrial network, with mobile operators licensed to operate in the same band in adjacent areas (including neighbouring countries), and with users licensed to operate in adjacent frequency bands. 3. Standard handsets may be used for D2D using IMT spectrum • As D2D services using IMT mobile bands share the frequencies already licensed to MNOs for terrestrial mobile services, standard mobile handsets should be able to work seamlessly between both systems, and no tailoring should be required. • Economies of scale through the use of mobile handsets benefit both forms of D2D to some extent, but while D2D using MSS spectrum requires either proprietary standards or 3GPP Release 17+ handsets that are also designed to tune to specific satellite bands, D2D using mobile spectrum can use standard handsets. This will allow for D2D using IMT spectrum to become available both in recycled and second-hand handsets, as well as all new handsets including the most affordable ones. 4. Agreement with MNOs must be in place to use their licensed spectrum in the licensed area • Regulators should not grant separate licences to D2D operators for the same frequencies and areas as existing terrestrial licences. This would undermine the regulatory ecosystem currently supporting mobile terrestrial infrastructure investment and services for billions of consumers. • Access to MNO spectrum for D2D should derive from the MNO licence rights, not any separate licence from the regulator. • The MNO licensee must provide consent to the satellite operator via a lease agreement or similar commercial transaction. • The D2D satellite entity will need satellite authorisations to operate their constellations but its rights of use of terrestrial MNO spectrum licences should derive from the rights of the MNO. 5. Ahead of WRC-27, interference needs to be managed through domestic regulations • WRC-27 will endeavour to agree internationally harmonised parameters to ensure coexistence between terrestrial mobile and D2D services when using adjacent frequencies or using the same frequencies in adjacent areas. • Where regulators plan to introduce D2D services soon, they may need to define specific national arrangements to authorise MNOs to share their spectrum with D2D satellite providers. Various schemes are available for authorising use of mobile devices to transmit to the satellites, including a licence exemption option, but authorisation of transmissions from satellite space stations to user devices may not currently be in scope of some national regulatory frameworks. • Where countries wish to provide a framework, regulations should ensure both the compatible operation of D2D in one spectrum block next to terrestrial mobile in the adjacent spectrum block, and that terrestrial mobile operating in one licensed geographic location is protected from D2D in a neighbouring licensed geographic location.

	6. Any new Mobile Satellite Service (MSS) allocations at WRC-27 must protect IMT networks • WRC-27 aims to define internationally harmonised technical and regulatory provisions for D2D services operating in IMT bands under Agenda Item 1.13. Any new allocations to MSS that come about in bands identified for IMT must be on a secondary basis, so that MSS does not cause harmful interference to IMT networks, nor claim protection from them, in accordance with the ITU Radio Regulations. • Local regulations developed ahead of WRC-27 may be revised in order to ensure that D2D services using mobile spectrum are harmonised as widely as possible
D2D in Mobile Satellite Spectrum	7. Existing MSS regulations may allow D2D using MSS spectrum • Where in-country regulations allow the operation of D2D using MSS spectrum, technical and regulatory provisions to address possible interference already exist in the ITU Radio Regulations. In this case, satellite service providers must meet all eligibility and any other legal requirements of the national legislation of a given country. Some regulations may require updating (e.g. to include low-earth orbit satellite constellations) and "same services, same rules regulation" principle must always apply. • When using MSS spectrum, the licence holder will typically be an entity separate from the MNO (e.g. a specialised MSS satellite network operator (SNO)). The service will then operate under the technical requirements of the MSS spectrum licence. • As a result of this separate licensing regime, it may not be necessary for the SNO to enter into any partnership with the MNO. However, users may adopt services more seamlessly where SNOs enter into commercial partnerships with MNOs at a wholesale level rather than trying to compete with them in the retail market.
	8. 3GPP specification is in place but handset availability remains low • 3GPP completed the standardisation of several mobile satellite bands including the 1610-1626.5 x 2483-2500 MHz as band n254, 1626.5-1660.5 x 1525-1559 MHz band as n255, and 1980-2010 x 2170-2200 MHz as n256. 3GPP standardisation of the MSS bands was an important step forwards but does not guarantee that they will be included in mobile handsets (over 60 terrestrial 5G bands have been standardised by 3GPP, only a portion of which are commonly used in handsets). • As D2D develops, handsets may increasingly make use of n254, n255 and n256 in the future. As of today, these are limited to a small number of high-end models and handset availability is one of the issues that D2D using MSS spectrum needs to overcome before it is successful.
D2D in Mobile Satellite Spectrum	9. Any new MSS allocations at WRC-27 must protect IMT networks • WRC-27 will assess other bands for MSS. It contains two Agenda Items (1.12 and 1.14) that will consider additional allocations of spectrum to the mobile satellite service. The bands being considered under these two Agenda Items are: — 1427-1432 MHz, 1645.5-1646.5 MHz, 1800-1920 MHz, 2010-2025 MHz, and 2120-2170 MHz. • All these bands except the 1645.5-1646.5 MHz band (i.e. all bands in bold) hold an IMT identification. As such any introduction of new mobile satellite services including D2D must protect the existing IMT identification in accordance with the Radio Regulations.

2D.4.2.3 Artificial Intelligence

The New Deal Technologique 2034 masterplan identifies AI as an emerging technology to promote and support, and the requirement to develop a national AI policy. It is recommended that this is prioritised.

AI is a rapidly evolving technology, an enabler of digital transformation, and a policy priority for governments across the continent.

Recent estimates suggest that AI could boost Africa's economy by USD 2.9 trillion, equivalent to increasing annual GDP by 3% by 2030.[124]

Mobile operators, global technology companies, and local start up technology companies are scaling up investment in AI for smart solution services to businesses and enhanced services for consumers.

124/ AI in Africa – The state and needs of the ecosystem, AI4D Africa, 2024.

For example, Safaricom in Kenya is partnering with IX Africa to deliver East Africa's first AI-ready data centre services for enterprise and cloud-solution clients, MTN Nigeria has launched Tier III data centre to support AI and cloud services, Google is investing USD 37 million to expand AI development in Africa supporting start-ups and education institutions to accelerate AI talent and local solutions, local tech companies are using AI solutions in agriculture, healthcare, and credit-rating analysis.

Mobile operators are also using AI to enhance their network operations and to improve customer experience. Orange Sonatel has recently completed a Tier III data centre in Dakar to provide cloud and big data capacity for its operations and to provide services to enterprise customers.

Policymakers globally and in Africa are responding by developing AI strategies at a continental and country level for Uganda to consider when developing its national AI strategy, policy and regulatory framework. The African Union has launched a Continental AI Strategy (Figure 61) and several Africa countries have developed (or are under development) their national AI strategies, including Benin, Egypt, Kenya, Mauritius, Nigeria, Rwanda, and South Africa. A critical requirement to be addressed in these strategies is for AI development in local languages to increase adoption.[125]

Figure 61

Focus areas for African Union Continental AI Strategy[126]

FOCUS AREA	DESCRIPTION
Maximising AI's benefit	Ensuring AI technologies contribute to economic growth, social inclusion and improved public services across the continent.
Minimising AI's risk	Putting in place safeguards to manage ethical, security and privacy risks while preventing misuse of AI systems.
Enabling infrastructure and skills that underpin AI development	Building digital infrastructure, investing in data ecosystems and equipping the workforce with the skills needed to develop and use AI responsibly.
Fostering co-operation and part-nerships	Promoting collaboration between governments, the private sector, academia and international partners to accelerate AI adoption and governance.
Stimulating investment	Encouraging public and private investment in AI research, innovation and startups to drive sustainable growth and competitiveness.
Creating an inclusive governance and regulatory framework	Establishing clear, inclusive and adaptive governance structures to ensure AI deployment aligns with societal values. Policies must balance innovation with accountability, promoting transparency, fairness and equitable access to AI benefits.

125/ GSMA – The Mobile Economy Africa 2025, Pages 13 – 16.

126/ GSMA Intelligence based on the Continental Artificial Intelligence Strategy, GSMA The Mobile Economy Africa 2025, Page 13.

2D.4.2.4
Consultative approach for digitalisation and regulatory modernisation

It is important that the review of the current regulatory framework should be conducted in comprehensive and transparent consultation, including an evidence-based impact assessment, and in accordance with the applicable law. This will ensure that sector regulation provides stability and transparency of the regulatory framework which encourages investment and evidence-based policies, decisions, and regulations to enable the country's national development plan and New Deal Technologique 2035 objectives.

2D.4.3
Mobile money regulation

As described in Section 2B, electronic money and mobile money are making a significant contribution to financial inclusion and the digital economy in the country. This has been based on investment and innovation by the sector, and an enabling policy and regulatory framework including:

- The National Financial Inclusion Strategy.
- Decision No. 2018-001 specifying the terms and conditions for opening USSD codes to value-added service providers.
- The BCEAO has authorized QR code payments and announced the implementation of payment interoperability during 2024.[127]

Similar to the competitive landscape in telecoms, the electronic money sector is evolving rapidly with the entry of new technologies and new business models, which presents new policy and regulatory issues for the government and regulators to carefully assess, consult with stakeholders, and make evidence-based and transparent decisions.

The GSMA Mobile Money Regulatory Index 2025 ranks Senegal with an overall score of 82, which is behind Ghana, Africa's leading ranked country with 96 score, and similar to other leading African mobile money countries such as Kenya (88), Tanzania (87), Nigeria (86), and Ivory Coast (81). Key issues identified by this Index to improve the regulatory framework are international remittances and policy enablement such as regulatory sandboxes for piloting innovation.

127/ BCEAO 2024.

The GSMA Mobile Money Regulatory Index and the GSMA Mobile Money Policy and Regulatory Handbook provide best practice guidance for consideration to further improve the mobile money regulatory framework.[128]

Interviews for this report identified (besides the October 2025 taxation changes) that a key issue to address is to resolve the level of regulatory complexity that mobile money providers are subject to due to the multiple regulatory authorities (e.g.ARTP, the BCEAO and the Personal Data Commission) for the mobile money and electronic money sector. It is recommended that a memorandum of understanding or similar regulatory instrument, in consultation with stakeholders, be developed to provide harmonisation of the regulatory framework and closer cooperation to provide regulatory certainty and transparency, and minimise regulatory overlap.

Another issue is the recent Instruction No. 001-01-2024[129] on Payment Services in the West African Monetary Union for fintechs. This has been put on hold because of concerns about compliance of the new legal requirements by industry players, and is under review by the BCEAO.

Progressing the update of policies, laws, regulations, strategies and guidelines is critical to the achievement of the New Deal Technologique 2034 and provides a key process to address the policy challenges outlined in this report. Section 3 provides a summary of all the policy recommendations and the modelled impact of these recommendations.

128/ GSMA Mobile Money Regulatory Index 2025. GSMA Mobile Money Regulatory Index - Methodology Document.

129/ Instruction No. 001-01-2024 on Payment Services in the West African Monetary Union.

3. Policy Recommendations

The following policy recommendations balance short-term objectives with long-term investment and development to realise the full potential of the digital economy and transformation in Senegal.

Achieving the wide-ranging benefits of the digital economy and transformation will require bold actions to support demand, reduce the cost of supply and promote a policy environment that supports investment.

The economic and social value of digital and emerging technologies relies on mobile networks as the backbone of digitalisation of the economy. The mobile sector is a committed partner with the government to achieve Senegal's digital transformation objectives across the economy and delivery of public services.

The following proposed policy recommendations will accelerate the mobile sector's contribution to the Vision Senegal 2050 and the New Deal Technologique 2034 objectives (Figure 62), including:

- Extending 4G mobile network coverage from 97% to 99.5% population (policy recommendations would result in lower USD 10 million investment cost compared to USD 20 million cost if no policy recommendations. Remaining 0.5% remote areas covered by alternative technologies), contributing to the New Deal Technologique 2034 objective of 95% quality connectivity.
- Adding an additional 2.6 million unique mobile internet (broadband) subscribers by 2030, totalling 13.1 million (61% population, 94% adult population). This would reduce the mobile internet usage gap by 12%. By 2030 the number of unique mobile subscribers will be 61% greater than in 2025, contributing to the New Deal Technologique 2034 objective of +80% digital service usage rate.

Figure 62

Proposed policy recommendations and contribution to New Deal Technologique 2034

POLICY AREA	DESCRIPTION AND DETAILED RECOMMENDATIONS	POLICY RECOMMENDATION IMPACT BY 2030 (COMPARED WITH BASE CASE) - CONTRIBUTING TO NEW DEAL TECHNOLOGIQUE 2034 OBJECTIVES
Infrastructure investment environment	Building on the current 97% 4G population coverage and 39% 5G[130] population coverage which is contributing to the New Deal Technologique 2034 objective of 95% connectivity. Ensure that policies and decisions create a sustainable digital infrastructure investment environment to provide high-quality, high-performance and low cost connectivity. These include: • New spectrum policy and roadmap, following sector consultation, that promotes efficient assignment and investment in digital infrastructure for all licensees, including the assignment of 5G and future spectrum, license renewals and longer duration periods (at least 20 years), and the setting of spectrum and microwave backhaul fees aligned with international benchmarks adjusted for Senegal's economic conditions and investment requirements to achieve New Deal Technologique objectives. • ARTP to update market competition market review using an independent competition and cost study and public consultation to determine, implement, and enforce specific and effective regulatory remedies (in accordance with Articles 14 - 16 of the Electronic Communications Code 2018) at wholesale (including the implementation of effective infrastructure sharing regulation (under Article 103, ARTP 2022 Decree and ARTP 2023 Decision) and retail markets, considering sustainable investment infrastructure and services requirements. • Ensure telecoms energy supply requirements and costs are lowered through Senegal's Mission300 Energy National Compact, World Bank Expand Energy Access (PADAES), and the African Development Bank Desert to Power and other programmes. If Senegal's National Compact 100% population energy access objective by 2030 is achieved and energy supply at lower costs is provided to telecommunications infrastructure, it is estimated that USD 10 million investment (compared to USD 20 million if no changes are made) would be required to achieve 99.7% population 4G mobile network coverage according to GSMA analysis. GSMA analysis, including geospatial planning, is available to be utilised for these programmes.	Building on the current 97% 4G population coverage and 39% 5G population coverage which is contributing to the New Deal Technologique 2034 objective of 95% connectivity. These infrastructure policy recommendations would result in: • An increase to 99.5% 4G population coverage with a required USD 10 million investment (at least USD 20 million without the policy recommendations). • An additional 330,000 unique mobile internet users by 2030 (+1.5% of population). This would generate an estimated FCFA 110 billion of value added, 28,000 jobs and FCFA 38 billion of tax revenue in key economic sectors.

130/ GSMA Intelligence - 4G Coverage and Investment in Senegal, October 2025. See Figure 12 for analysis, including 4G population coverage total (97%), urban (100%), rural (92%), and 5G coverage total (39%), urban (58%), peri-urban (39%), and rural (4%). Please note that population 4G coverage is calculated from combined MNO network coverage data and mapped against Global Human Settlement Layer (GHSL) population estimates for 2025. This is used to calculate the state of coverage for each population settlement in the country, and the average geographic and population coverage for each administrative area in the country.

POLICY AREA	DESCRIPTION AND DETAILED RECOMMENDATIONS	POLICY RECOMMENDATION IMPACT BY 2030 (COMPARED WITH BASE CASE) - CONTRIBUTING TO NEW DEAL TECHNOLOGIQUE 2034 OBJECTIVES
	Designate telecoms infrastructure as constituting Critical National Infrastructure and measures to provide more effective deployment and protection against criminal damage. • Develop Quality of Service regulation in line with international standards and an action plan to address barriers. • FDSUT policy review including: USF contributors to participate in fair and transparent FDSUT decision-making and programmes; use of infrastructure sharing with effective regulation; rural connectivity subsidy programme including CAPEX and OPEX costs; tax relief and incentives; and published audited funds reports for transparency. Noting that recent GSMA analysis finds that: • Expanding 4G coverage from the current 97% total population and 92% rural population to 99.5% total population will require at least USD 20 million additional investment, which could be lowered to USD 10 million if policy recommendations are adopted. • GSMA analysis finds that 35% of existing 4G mobile network sites are outside of 1 kilometre and more than 98% of new sites potentially required to expand from 97% to 99.5% population 4G coverage are outside of 1 kilometre of the national electricity grid. In order to support New Deal Technologique 2034 objectives, telecoms must be included as a priority sector for energy supply in Senegal's Mission300 National Energy Compact. • The remaining 0.5% of the population is in very remote and sparsely populated areas and will require alternative technology (e.g. LEO satellite) to provide coverage.[131]	
Use of digital technology for government revenue & tax collection AND Optimise Sector Taxation	Increase government revenue mobilisation through accelerating the use of digital technology for cashless payments, to improve accuracy in filed tax returns and tax compliance, and public service delivery.	These taxation policy recommendations would result in an increase of 940,000 unique mobile internet users by 2030 (+ 4.4% of population).

131/ GSMA Intelligence - 4G coverage and investment in Senegal, October 2025.

POLICY AREA	DESCRIPTION AND DETAILED RECOMMENDATIONS	POLICY RECOMMENDATION IMPACT BY 2030 (COMPARED WITH BASE CASE) - CONTRIBUTING TO NEW DEAL TECHNOLOGIQUE 2034 OBJECTIVES
	Optimise sector specific taxation on telecoms, mobile money and entry-level smartphone devices to enhance broadening the tax base, thereby increasing affordability and promoting digital inclusion, including: • Reduce both 4.5% Contribution spéciale du secteur des télécommunications (CST) and 5% Redevance d'Utilisation des télécommunications (RUTEL) to 3%. • Remove 18% VAT and import duties (totalling 7.7%) on entry-level smartphones priced below FCFA 17,500. GSMA analysis finds that entry-level internet enabled phones are priced at ~USD 31 in Senegal. This equates to 19% of monthly GDP per capita and 42% of monthly GDP per capita for the poorest 40% of the population. Taxation contributes to 21% of phone costs. • Remove 0.5% taxes on mobile money transfers, withdrawals, and merchant payments and ensure harmonised regulatory taxes and fees for all mobile money and electronic money providers.	This would generate an estimated FCFA 540 billion of value added, 137,000 jobs and FCFA 196 billion of tax revenue in key economic sectors and a further FCFA 174 billion from digitalisation of tax receipts.
Entry-level smartphone affordability, digital skills & other demand side reforms.	Increase digital adoption through demand side reforms and programmes including: • Establish entry-level smartphone affordability programme, considering GSMA Handset Affordability Coalition and Accelerating Smartphone Affordability in Africa Report recommendations.[132] • Accelerate National Digital Training Program and other digital skills and digital literacy initiatives (e.g. SENUM - Orange partnership). • As part of the Senegal Digital Factory, use embedded solutions and APIs in commercial and public service delivery to address digital skills and increase digital adoption. • Implement updated national cyber security strategy and data protection to build digital trust. • Fast track the use of digital technology for public service delivery (e.g. national digital masterplan implementation, national single window, one stop shop).	These demand-side policy recommendations would result in an increase of 1.34 million unique mobile internet users by 2030 (+ 6,3% of population). This would generate an estimated FCFA 450 billion of value added, 115,000 jobs and FCFA 154 billion of tax revenue in key economic sectors.

132/ See Section 2D.3.1 of this report for entry-level smartphone affordability programme recommendations.

POLICY AREA	DESCRIPTION AND DETAILED RECOMMENDATIONS	POLICY RECOMMENDATION IMPACT BY 2030 (COMPARED WITH BASE CASE) - CONTRIBUTING TO NEW DEAL TECHNOLOGIQUE 2034 OBJECTIVES
Prioritize most important New Deal Technologique 2034 initiatives AND modernise regulatory framework	Prioritise the most important initiatives under the New Deal Technologique 2034 and the Digital Masterplan, with phasing for other initiatives, to enable delivery with impact. Upgrade and modernise the digital regulatory and governance framework, with key areas being: • A simplified, harmonised, and transparent licensing regulatory framework which implements technology neutrality and provides certainty to licensees (license renewal, +20 year duration, and reasonable fees) to enable continued investment and innovation to achieve New Deal Technologique 2034 objectives. • Regulatory framework for emerging technologies (e.g. partnerships between mobile operators and LEO satellites to extend broadband coverage to sparsely populated or inaccessible areas and the use of Direct-to-Device connectivity). • National AI Strategy informed by African Union Continental AI Strategy and addresses local languages. • Enhance mobile money regulation with a memorandum of understanding (or similar instrument) between regulatory authorities to improve coordination, provide regulatory certainty and transparency, and minimise regulatory overlap.	Total combined impact of policy recommendations by 2030: +2.61 million unique mobile internet users (+12.2% population), totalling 13.1 million, closing the Usage Gap by 12%. By 2030 the number of unique mobile subscribers will be 61% greater than in 2025, and contribute to the New Deal Technologique 2034 objective of +80% digital service usage rate. FCFA 1,100 billion value add to key economic sectors and public services. 5% GDP, contributing to New Deal Technologique 2034 15% GDP objective. 280,000 jobs across key economic sectors and public services. This contributes to the New Deal Technologique 2034 350,000 jobs objective. Economic growth generated by increased mobile digital usage across all sectors of the economy will have a FCFA 417 billion net tax impact.

If these proposed policy recommendations are adopted, it would have a material impact on the mobile broadband (internet) adoption. It is estimated that they could result in higher adoption by up to 32% over the period to 2030 (Figure 63) and contribute to the closing of the usage gap by 12% (Figure 64).

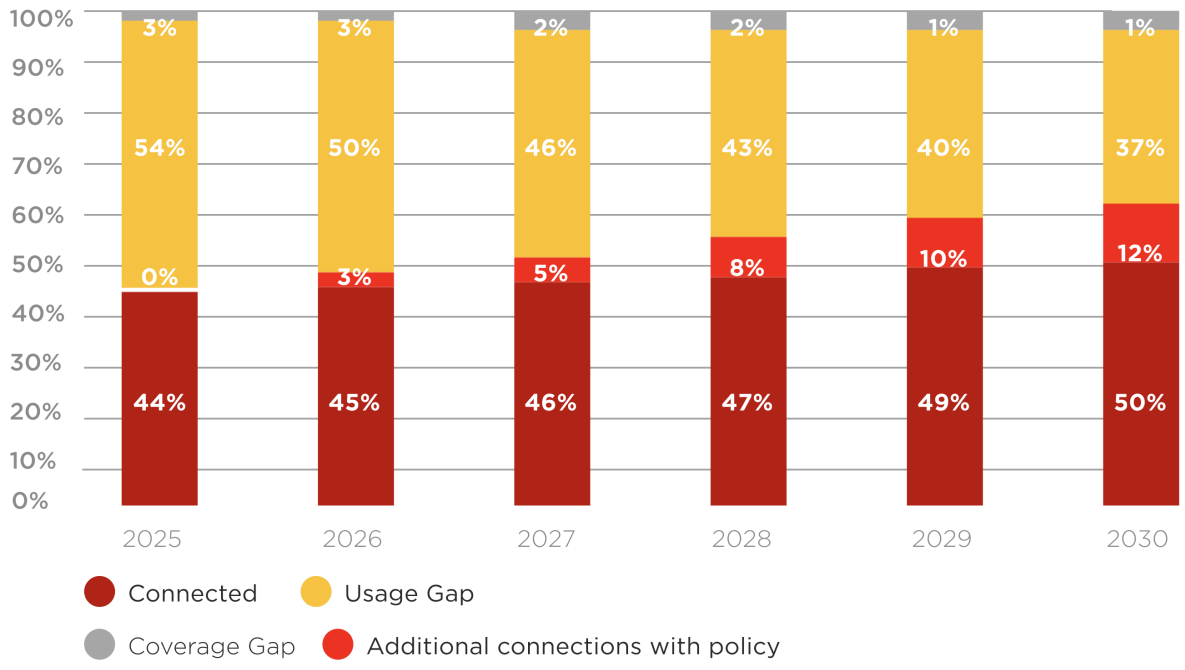
Figure 63

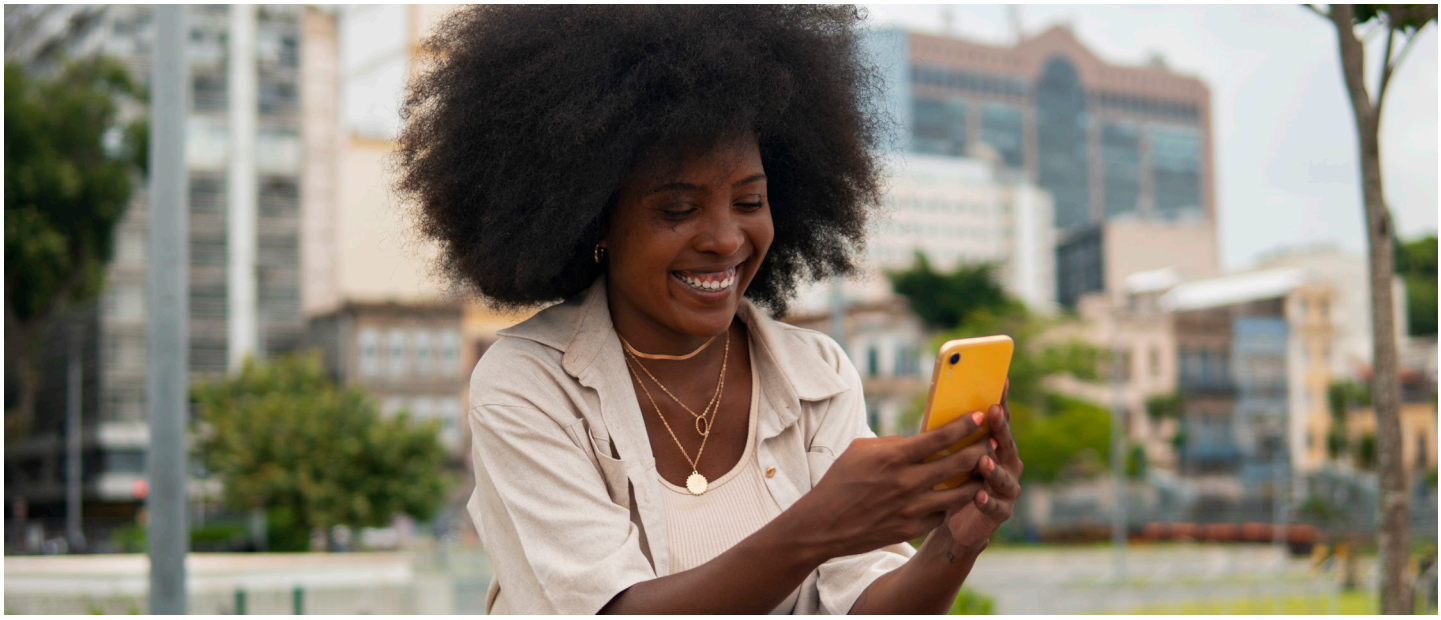
Combined impact of policy recommendations on internet uptake in the Senegal

Mobile internet users (millions)	2025	2026	2027	2028	2029	2030
BAU	8.16	8.60	9.06	9.55	10.06	10.53
Combined Policies	8.16	9.11	10.04	11.11	12.13	13.14
Y-on-Y difference to BAU	0	6%	11.9%	16.3%	20.7%	24.7%
Increase in growth vs BAU	0	6.3%	13.2%	19.1%	25.5%	31.9%

Figure 64

Combined policy impact of the mobile internet usage gap in Senegal





Increasing digitalisation across important sectors and in public services. The potential macroeconomic impacts on agriculture, manufacturing, transport, trade, healthcare sectors and government public services, implying additional FCFA 1,100 billion value add, 280,000 jobs, and FCFA 375 billion tax revenues.

Contributing to New Deal Technologique 2034 objectives of creating 350,000 direct and indirect jobs, and 15% GDP contribution (Figure 65).

Annexure 3 provides further information about the estimated potential economic impact of digitalisation for these sectors and government public services, together with qualitative case studies.

Figure 65

Sectoral impact of increased digitalisation following telecommunications policy reforms

	Agriculture	Manufacturing	Transport	Trade	Healthcare	Government
Value Added from digitalisation (billion FCFA)	290	370	70	100	30	240
% of sector GDP	5.3%	6.2%	7.8%	2.5%	9.3%	3.7%
% of total GDP	1.0%	1.3%	0.3%	0.4%	0.1%	0.9%
Employment	83,000	101,000	19,000	27,000	10,000	40,000
Tax revenue (billion FCFA)	67	86	17	25	6	174

For methodology: GSMA Driving digital transformation of African economies Evidence and methodology document, 2024. (*) sum of tax revenue raised from digitalisation of sectors

Should the proposed sector tax policy recommendations be adopted, combined with the other policy recommendations, the economic growth generated by increased mobile digital usage across all sectors of the economy will have a FCFA 417 billion net tax impact (including an estimated gross additional tax revenue of FCFA 319 billion, an additional gain of FCFA 174 billion from digitalisation of tax receipts, and a net loss of FCFA 75 billion in taxes from the mobile sector) by 2030 (Figure 66 - methodology used, Figure 67 - results). Contributing to government revenue mobilization and tax collection objectives.

Figure 66

Overall tax impact of combined scenarios - methodology

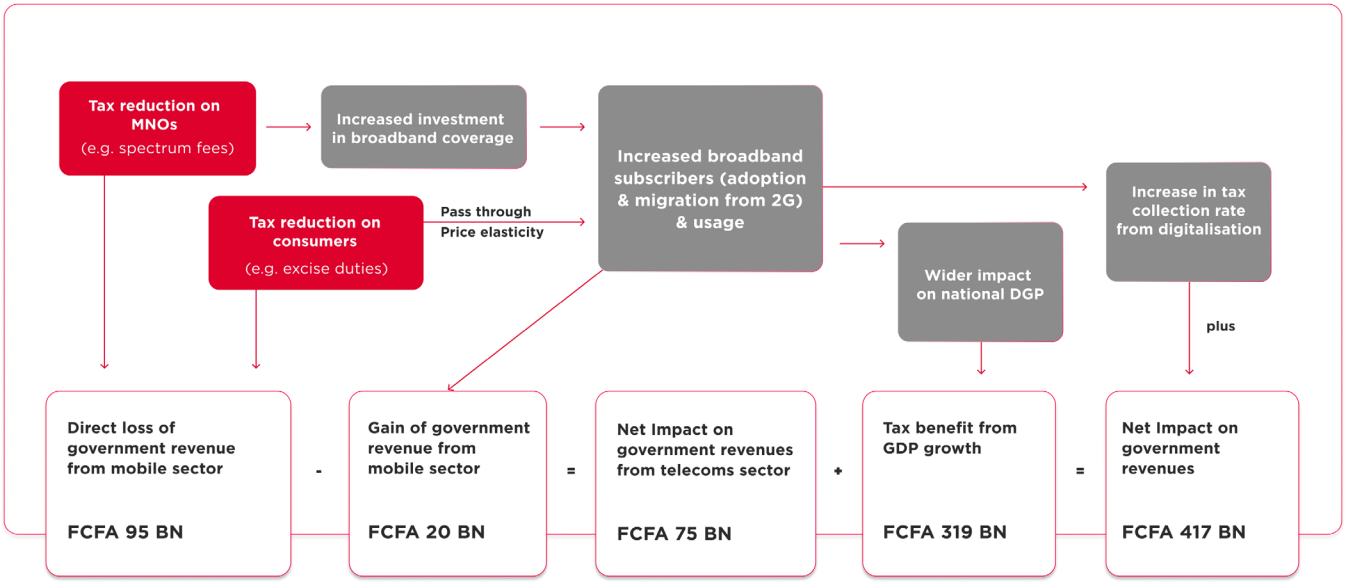


Figure 67

Overall tax impact of combined scenarios - results

Combined scenario	2026	2027	2028	2029	2030
Tax change from mobile sector (billion FCFA)	-99	-92	-87	-81	-75
Tax increase from wider economy (billion FCFA)	58	125	186	249	319
Additional tax collected from digitalisation (billion FCFA)	32	68	101	136	174
Net tax impact (billion FCFA)	-9	101	199	304	414

ANNEXURE

Annexure 1: New Deal Technologique 2034 and other strategies summary

Figure 1

New Deal Technologique 2034 and Digital Masterplan summary[133]

NEW DEAL TECHNOLOGIQUE 2034 AXES	
Objectives	• 95% Quality connectivity rate, at a lower cost • +80% Digital service usage rate • +90% Senegalese with a digital identity • +80% Land with a digital identity • +90% Dematerialized administrative procedures • +95% Companies that have reached digital maturity • 100% Sensitive data hosted in Senegal • 500+ Tech start-ups labelled • 50 African e-Champions • 100,000 Digital graduates • 5,000 per year Certified Digital Experts • +30 UNCTAD B2C E-Commerce Index • 150k Direct jobs • 200k Indirect jobs • 15% Contribution to GDP
Digital Sovereignty	• Digital infrastructure – Strengthen digital telecommunications and storage infrastructures, and control data flows. • Technological mastery - Promote the development of local solutions and reduce dependence on foreign technologies. • Digital skills - Promote digital awareness and literacy, and develop digital skills and expertise. • Digital trust and resilience - Implement policies for the protection of sensitive data, critical services and infrastructures.
Digital Public Services	• Digital infrastructure - Establish a robust and scalable governance framework that can adapt to the challenges of technology. • Technological mastery - Strengthen the skills of staff and recruit new talent within the administration. • Digital skills - Promote digital awareness and literacy, and develop digital skills and expertise. • Digital trust and resilience - Promote the interconnection, interoperability and resilience of the administration's infrastructure and services.
Digital Economy	• Digital infrastructure - Deploy high-speed connectivity and improve affordable inter-net access across the country. • Technological mastery - To put in place a robust and agile regulatory framework, promoting the emergence of an innovative ecosystem capable of offering solutions adapted to local needs and in the continent. • Digital skills - Make artificial intelligence a key driver of the digital economy, making it possible to automate tasks, analyse big data and create innovative solutions to improve services and processes. • Digital trust and resilience - Accelerate the spread of digital technology in society and the economy in order to facilitate electronic transactions.

133/ New Deal Technologique 2034.

NEW DEAL TECHNOLOGIQUE 2034 AXES	
African digital technology leader	• Digital infrastructure - Strengthen synergies between SMEs, Startups, universities, engineering schools and research centers with state-of-the-art digital infrastructure, adequate financial support and appropriate regulations. • Technological mastery - Adopt specific and attractive incentives to welcome investors, large technology groups and the offshoring market. • Digital skills - Combining the sharp increase in the number of graduates with guidance in digital skills. Promoting expertise in digital professions to export local know-how • Digital trust and resilience - Support mergers and mergers to build a partnership with local and regional companies on the State's major digital projects.
Digital Masterplan with 12 priority programmes and 50 key projects	
01. Digital Regulatory and Governance Framework	Strengthening the legal and institutional framework to ensure the development of the digital economy while guaranteeing digital trust: • Creating a strong national digital governance framework • Upgrading the legislative, regulatory and normative framework for digital technology • Creating a Digital Strategy Monitoring and Evaluation Framework • Establishment of an independent national authority in charge of digital identity
02. Infrastructure, Networks and Universal Connectivity	Ensuring universal access to high-quality, high-performance and low-cost connectivity: • Extension and reinforcement of the national backbone and coverage of the territory by a quality and resilient fibre optic network (pooling and interconnection of telecom operators, Last mile) • Universal coverage of the territory through the use of satellite networks in white areas • Strengthening the quality and performance of the network and alignment with international standards (bandwidth, submarine cable, QoS, redundancy, security, etc.) • Deploying a National IoT Infrastructure for Industry Applications • Upgrading and rationalization of data storage and hosting infrastructures, applications and services
03. Digital Sovereignty and Cyber Resilience	Ensure the protection of critical infrastructures, services and data, for the administration and users (companies and citizens): • Updating and implementation of the National Cybersecurity Strategy • Creation of a structure in charge of Cybersecurity & Artificial Intelligence • Implementation of a Sovereign National Cloud • Implementation of a key management and electronic signature infrastructure for civil purposes • Establishment of a national SOC and CERT/CSIRT

NEW DEAL TECHNOLOGIQUE 2034 AXES	
04. Digital Public Infrastructure (e-ID, e-Sign, e-Payment, Interoperability)	To provide a basic digital foundation, providing shared services with a transversal and central vocation: • Biometric census and implementation of the foundational identity of natural and legal persons (e-ID) • Establishment of a Digital Public Platform providing basic services (authentication, signature, payment, interoperability) • Implementation of an efficient National Digital Addressing system
05. Modernization of the State Information System (IS)	Ensure the urbanization and rationalization of the State IS, ensuring the coherence, interoperability and security of applications and services for the administration and users: • Developing the State's National Digital Master Plan • Define and implement a Government Enterprise Architecture • Implementation of a government intranet integrating messaging, collaboration, storage, archiving, etc. • Establishment of a data warehouse and a national digital archive centre
06. Dematerialization of administrative procedures	Building a simple, efficient, service-oriented and user-centric administration • Simplification and standardization of administrative processes and procedures • Establishment of a one-stop shop and public service proximity spaces with a dedicated service center • Dematerialization of the administration's internal processes • Dematerialization of services to users
07. Training and development of digital skills	Develop expertise in digital professions and promote the digital culture of populations: • Change Management and Digital Acculturation • Continuous training programme for civil servants and State IT resources • Training and development of digital skills in school and university curricula • Strengthening basic and intermediate digital skills of populations (informal sector, daaras, out-of-school populations, elderly people, etc.) • Promotion and support of the ecosystem for a better mastery of emerging technologies (AI, Cloud, Blockchain, Cyber, Big Data, etc.)
08. Senegal Digital Factory: From Idea to Product	Supporting startups, SMIs and SMEs in order to promote technological innovation and the emergence of digital champions: • Provision of infrastructure and resources for the digital ecosystem (Datacenter, Super Computer, Development Environment, etc.) • Creation of a digital manufacturing industry (assembly, production of electronic components and equipment) • Pooling and coherence of initiatives to accelerate the digital economy • Updating and implementing Data and AI policies
09. Investment Funds and Digital Banks	Promote an attractive framework for digital investments and mobilize financing adapted to the digital sector through co-financing instruments involving the funds of FONSIS, the new public financial institutions division, as well as capital markets and regional investment funds • Update of the decree setting the rate of operators' contribution to the universal service development fund (FDSUT) • Support for ecosystem actors to benefit from the investment code, public procurement and tax and social measures • Strengthening and pooling of financing mechanisms for the digital industry

NEW DEAL TECHNOLOGIQUE 2034 AXES	
10. Senegal Smart, Safe & Secure Cities	Promote the use of smart technologies to improve public service, safety and well-being • Support for the administration for Energy Efficiency and Carbon Footprint Reduction (smart building, etc.) • Strengthening and coordinating public safety (video surveillance, ticketing, emergency services, etc.) • Support in the optimisation of port and airport processes
11. Sectoral Variation of Digital (e-Health, e-Education, e-Finance, e-Agri, e-Commerce, etc.)	Ensure the performance of the different sectors of activity by integrating digital technology into the various business processes: • Mapping and Digital Identification of Built Heritage (Public and Private) • Extension and generalization of the digitalization of land at the national level (e-Cadastre) • Upgrading and integration of sector platforms and solutions with the National Single Window • Deployment of local networks (LAN) and equipment for public institutions (administration, town halls, health, schools, etc.)
12. Digitalization of the informal sector	Ensuring universal access to high-quality, high-performance and low-cost connectivity: • Extension and reinforcement of the national backbone and coverage of the territory by a quality and resilient fibre optic network (pooling and interconnection of telecom operators, Last mile) • Universal coverage of the territory through the use of satellite networks in white areas • Strengthening network quality and performance and alignment with international standards (bandwidth, submarine cable, QoS, redundancy, security, etc.)

Figure 2

Summary of other Senegal digital strategies and programmes

National Data Economy Strategy 2028[134]	Vision: Making data a driver of socio-economic growth, inclusiveness, innovation and international openness by 2028. 3 Pillars: • Enable the digital ecosystem to leverage the potential of data for economic growth. • Promote innovation and the use of emerging technologies with the reinforcement of skills and the development of a data culture. • Foster cross-border collaboration in terms of commerce and data in Africa, all while respecting privacy and human rights. Targets for 2028: Creating one-stop shops like "Espaces Senegal Services," promoting interoperability of information systems, and improving e-governance.
National Strategy for the Development of Artificial Intelligence (SNDIA)[135]	Vision: To position Senegal as a leader in AI in West Africa and utilize AI to drive socio-economic development and improve the lives of its citizens. 4 Key Pillars: • Human Capital Development: Training and retaining young talent in AI through research and innovation initiatives. • Ethical AI Governance: Ensuring responsible AI development with a focus on ethical principles, human rights, and democratic values. • Infrastructure Development: Investing in digital infrastructure, including data centers, internet connectivity, and supercomputing capabilities. • Ecosystem Building: Fostering collaboration between public, private, and civil society stakeholders to create a thriving AI ecosystem. Implementation: The strategy is coordinated by the Ministry of Communication, Telecommunications and the Digital Economy (MCTEN) and builds on existing digital strategies like the Digital Strategy 2025 and the National Data Strategy. International Collaboration: Senegal is working with partners like Expertise France to develop and operationalize the strategy, promoting regional synergies and aiming to become a regional AI hub.

134/ https://datapopalliance.org/projects/development-of-senegals-national-data-strategy/

135/ https://www.senenews.com/en/senegal/senegal-advances-in-ai-launch-of-afrikia-and-national-artificial-intelligence-strategy-1401.html.

National Financial Inclusion Strategy-NFIS (2022-2026)[136]	Vision: to ensure that individuals and businesses have access to and utilize affordable and responsible financial products and services that meet their needs. 4 Strategic pillars: • Developing appropriate financial products, particularly for vulnerable groups. • Developing digital financial service infrastructure. • Improving financial literacy and consumer protection. • Establishing a conducive regulatory and institutional framework. Targets for 2024: to achieve a 65% financial inclusion rate for adults and 90% for Mi-cro, Small, and Medium Enterprises (MSMEs) by 2026.
National Cybersecu-rity Strategy 2022 (SNC2022)[137]	Vision: In Senegal, a cyberspace of confidence, secure and robust for all. 5 Strategic Aims: • Emphasising legal and institutional strengthening. • Critical information infrastructure protection. • Cybersecurity culture promotion. • Resource enhancement. • Active participation in regional and international cybersecurity efforts. Targets: Establish a national cybersecurity structure to lead and coordinate initiatives.

136/ https://www.afi-global.org/publication/senegals-2022-2026-national-financial-inclusion-strategy/.

137/ https://dig.watch/resource/senegalese-national-cybersecurity-strategy-snc2022.

Annexure 2: Summary of applicable regulatory framework

The current telecoms sector regulatory framework is Law No. 2018-28 of 28 November 2018 (Code of Electronic Communications). The key reforms are summarised below.

Figure 1

Summary of key reforms in Code of Electronic Communications 2018

• Replacing "Telecommunications" with "Electronic Communications" to accommodate technological evolutions and the transmission of all types of signals over networks.
• Introduction of technology neutrality: The granting of licenses and authorizations provided for by this law shall be carried out in accordance with the principle of technological neutrality. That means license and authorization holders are free to use different technologies according to their needs to provide the services covered by said licenses and authorizations.
• In terms of form: The new law highlights the main aspects of telecommunications regulation, including competition, interconnection, universal access/service, scarce resources, and pricing. Each aspect has been elaborated on, focusing on the main principles that govern it. Where necessary, the conditions of application will be specified by decree.
• Universal access/service Fund: Pooling the resources of this fund, which should also contribute to financing the energy sector, with a view to helping address the current energy crisis and, consequently, promoting the development of the universal telecommunications service itself.
Terms Definitions: The technical-legal definitions of the terms used have been updated; new areas of regulation have been considered, these include: ☐ The affirmation of the principle of technological neutrality of telecommunications and ICT regulation; ☐ The choice of a more coherent typology of legal regimes applicable to telecommunications activities; provides greater flexibility to the legal framework governing network and service licencing and approval; ☐ The emergence of notions of relevant markets and dominant operators; strengthens the ARTP's powers to impose measures on operators with significant market power (SMP) and sanction anticompetitive practices; ☐ The highlighting of regulatory tools such as unbundling of the local loop, carrier selection and number portability; ☐ Management of scarce resources and the ".SN" domain; clarifies radio spectrum management rules, particularly the role played by the ARTP; and ☐ Clarification provided on the respective roles of the institutions responsible for legislation and regulation.
• Reinforced powers for the Regulatory Authority (ARTP) through the introduction of important reforms concerning the legal status, missions as well as the organisation and functioning of the ARTP.
• Authorises operators to share infrastructure.

Other applicable sector legislation and regulations include:

- ☐ Law No. 2008-41 of August 20, 2008, on cryptology.
- ☐ Law No. 2008-12 of January 25, 2008, on the protection of personal data.
- ☐ Law No. 2008-11 of January 25, 2008, relating to Cybercrime.
- ☐ Law No. 2008-08 of January 25, 2008, on electronic transactions.

To fill the gaps in legislation and further strengthen the legal framework following the introduction of the Code of Electronic Communications, several new decrees and decisions were introduced. These include:

- Decision No. 2018-06 of 17 December 2018, adopting guidelines for access and interconnection fees;
- Decree No. 2019-591 of 14 February 2019 on the organisation and functioning of the ARTP;
- Decree No. 2019-592 of 14 February 2019, specifying the rules applicable to operators with SMP in the electronic communications sector;
- Decree No. 2019-593 of 14 February 2019, relating to universal access and service;
- Decision No. 2019-007 of 29 May 2019, establishing the list of operators with SMP in the electronic communications sector;
- Decision No. 2019-008 of 29 May 2019, establishing a framework for promotions relating to the supply of telecommunications products and services;
- Decree No. 2019-1877 of 11 November 2019, relating to transparency, non-discrimination and fair access regarding radio frequencies;
- Joint Decision No. 025982 of 18 November 2019, fixing the costs and fees for radio frequencies;
- Decision No. 2020-001, establishing guidelines for the use of the 868MHz-870MHz band for M2M and IoT services;
- Decision No.2021-002 establishing the conditions and methodology for monitoring the coverage and quality of voice, data and SMS services on mobile networks;
- Decision No. 2021-001 setting the general conditions of operation of the aforementioned 868MHz-870MHz frequency band;
- Decision No.2021-010 setting the levels of exposure to non-ionising radiation; and
- Decision No. 2021-011 defining the conditions for prior approval of terminal equipment and radio installations.

The following decrees and decisions have been taken to complement the electronic communications code in the field of spectrum management.

- Decree No. 2019-1877 of 11 November 2019, relating to transparency, non-discrimination and fair access regarding radio frequencies;
- Joint Decision No. 025982 of 18 November 2019, fixing the costs and fees for radio frequencies and reducing by 50% the price of spectrum fees in rural areas determined by decree.
- Decision No. 2020-001, establishing guidelines for the use of the 868MHz-870MHz band for M2M and IoT services;
- Decision No. 2021-001 setting the general conditions of operation of the aforementioned 868MHz-870MHz frequency band;
- Ministerial decision No. 025733 of July 31, 2023, specifying the areas eligible for the universal service and to which the 50% reduction in spectrum fees also applies.

Decree No. 2019-1877, issued on 11 November 11, 2019, focuses on ensuring transparency, non-discrimination, and fair access to radio frequencies.

This decree likely aims to establish clear guidelines and procedures for the allocation and management of radio spectrum, promoting equitable access for all eligible users and preventing unfair advantage.

This decree also addresses the broader aspects of radio frequency management, including technical standards, interference management, and compliance with international regulations.

It also covers the responsibilities of the relevant regulatory authority in overseeing the use of radio frequencies.

Article 99 of this decree established a frequency spectrum rearrangement fund managed by the ARTP. This fund is intended to ensure the pre-financing of part of the expenses incurred by frequency authorization holders during the rearrangement of the frequency spectrum decided and implemented by the ARTP.

Annexure 3: Potential economic impact of digitalisation in Senegal

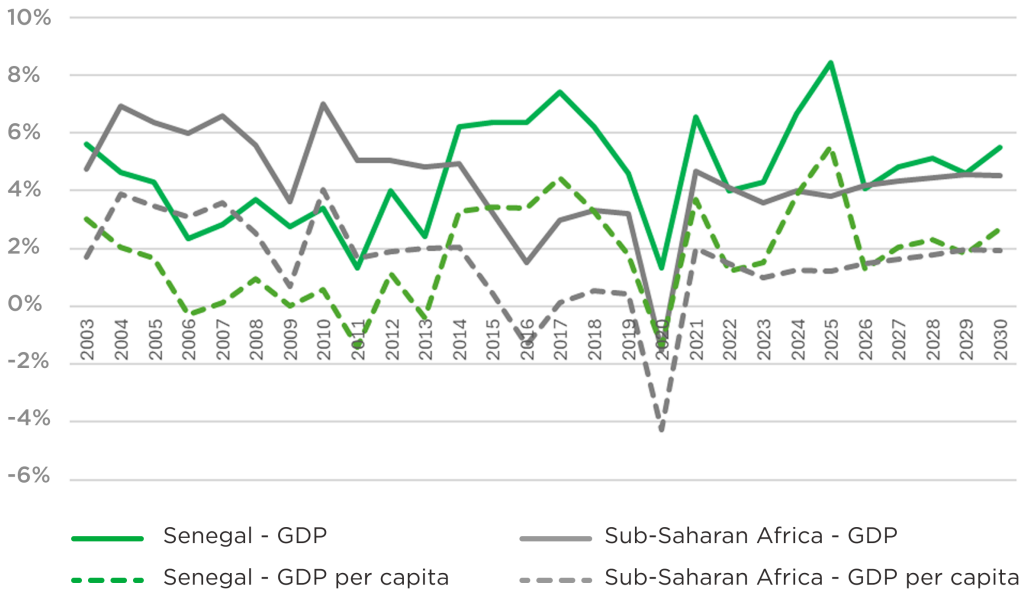
A.
Structure of the economy and policy objectives

Since 2014, Senegal has maintained economic growth of at least 4% in each year apart from the height of the Covid-19 pandemic (2020), also exceeding the Sub-Saharan Africa average in each year - see Figure 1. The higher rate of growth has been achieved by a shifting structure of the economy from the low-productivity agricultural sector, where the share of employment has fallen from 50% to 20% between 2000 and 2022, towards the services sector, where the share of employment has risen from 38% to 56%.[138]

However, the transition to a more diversified economy with a broader industrial base remains limited, with the economy still heavily reliant on agriculture, which remains the main driver of growth, along with services.[139]

Figure 1

GDP growth (constant prices)



Source: World Bank Economic Outlook, October 2024.

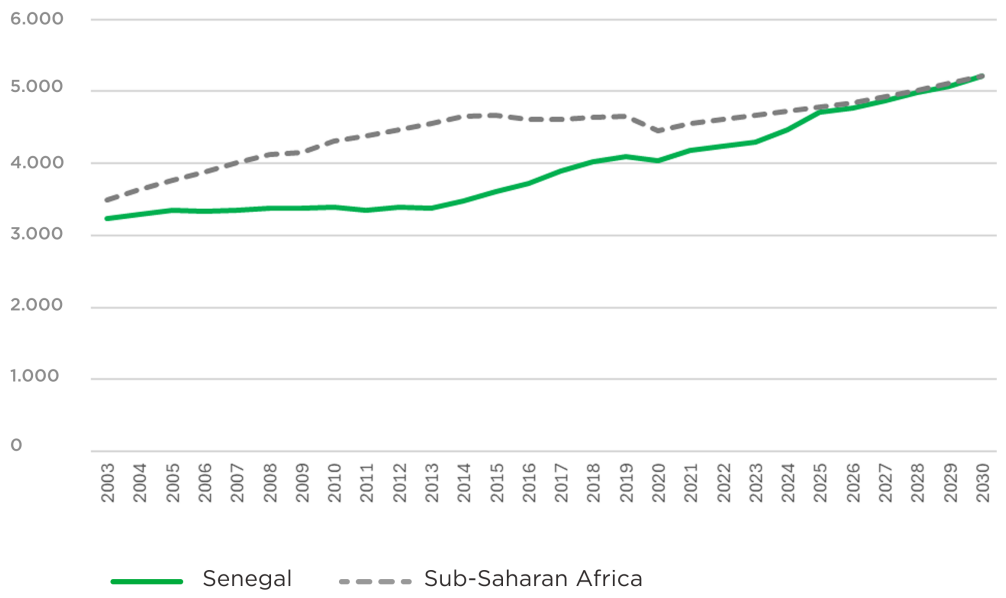
138/ Macroeconomic outlook: African Development Bank Group.

139/ Senegal Overview: Development news, research, data: World Bank.

This growth since 2014 has allowed GDP per capita to converge back to the Sub-Saharan average in recent years, after falling behind in the first 15 years of the 21st century (see Figure 2).

Figure 2

GDP per capita (constant prices)

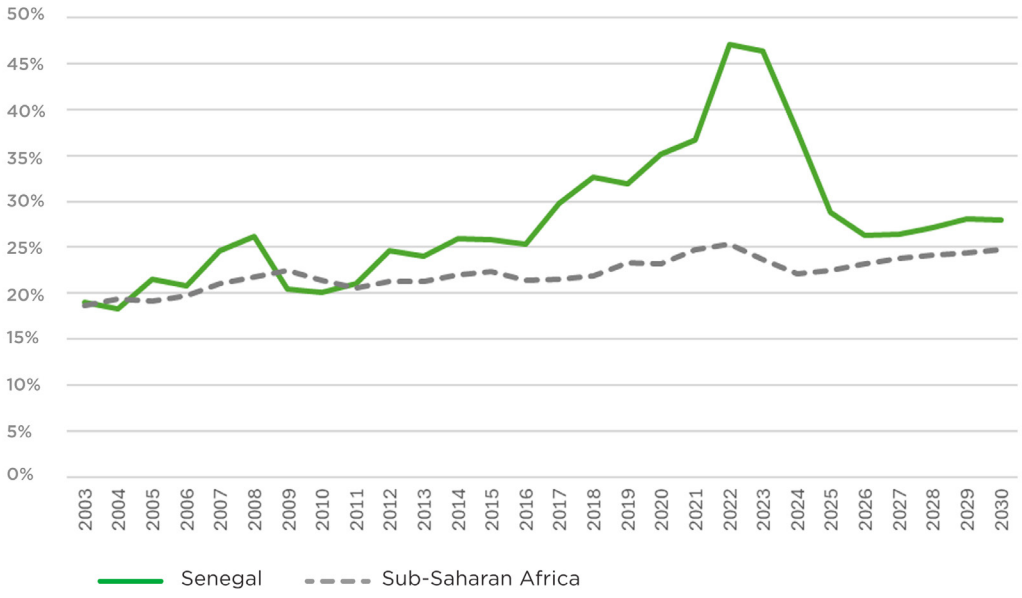


Source: World Bank Economic Outlook, October 2024.

Investment is above the Sub-Saharan average (Figure 3), supported by Senegal's emerging offshore oil and gas extraction sector.[140]

Figure 3

Investment share of GDP



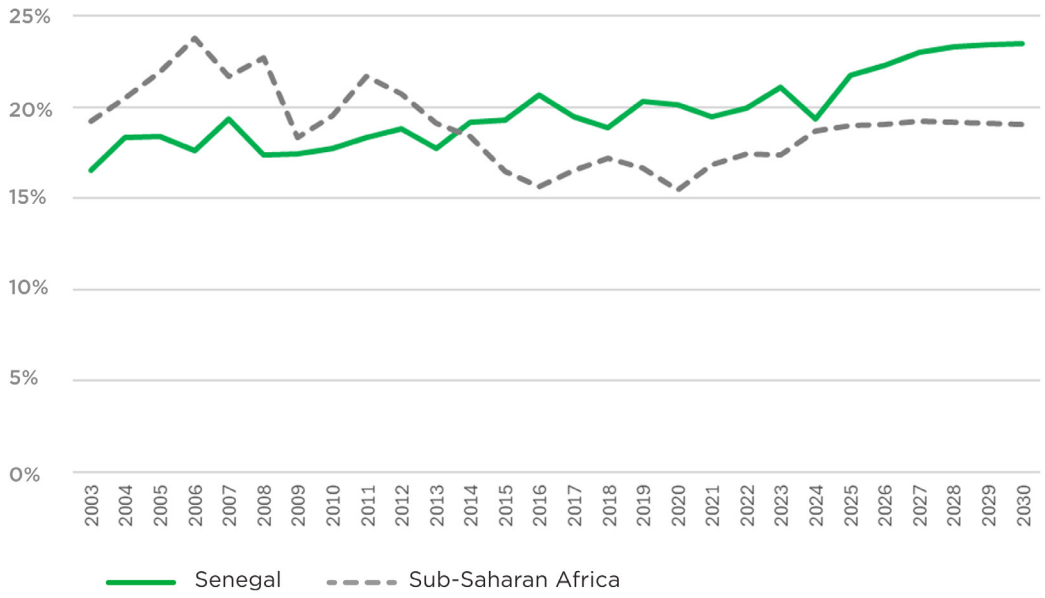
Source: World Bank Economic Outlook, October 2024

140/ Senegal's Energy Minister to Open New Doors for Strategic Investment at AEW 2025 - African Energy Week Cape Town | AEC Week Senegal's Energy Minister to Open New Doors for Strategic Investment at AEW 2025.

Government revenues as a proportion of GDP have exceeded the Sub-Saharan average since 2014.

Figure 4

Government revenue as percentage of GDP



Source: World Bank Economic Outlook, October 2024.

Despite Senegal's strong economic performance in recent years, and the promise of an emerging offshore oil and gas extraction industry, structural vulnerabilities such as low productivity, limited human capital, high levels of informality, and youth emigration remain. According to the World Bank:

Digitalisation will play an important role in stimulating productivity in both services and agricultural sectors, raising human capital and stemming the incentives for youth emigration.

Addressing this will require

- Strengthening resilience to macro-fiscal, environmental, climate, and social risks;
- Improving human capital to stimulate productivity;
- Increasing competitiveness and job creation through better digital and physical connectivity, as well as more efficient labor markets;
- Reducing energy costs, lowering the carbon footprint, and optimizing the energy mix; and
- Promoting the tertiary sector and stimulating the productivity and competitiveness of agriculture and related value chains.[141]

141/ Senegal Overview: Development news, research, data: World Bank.

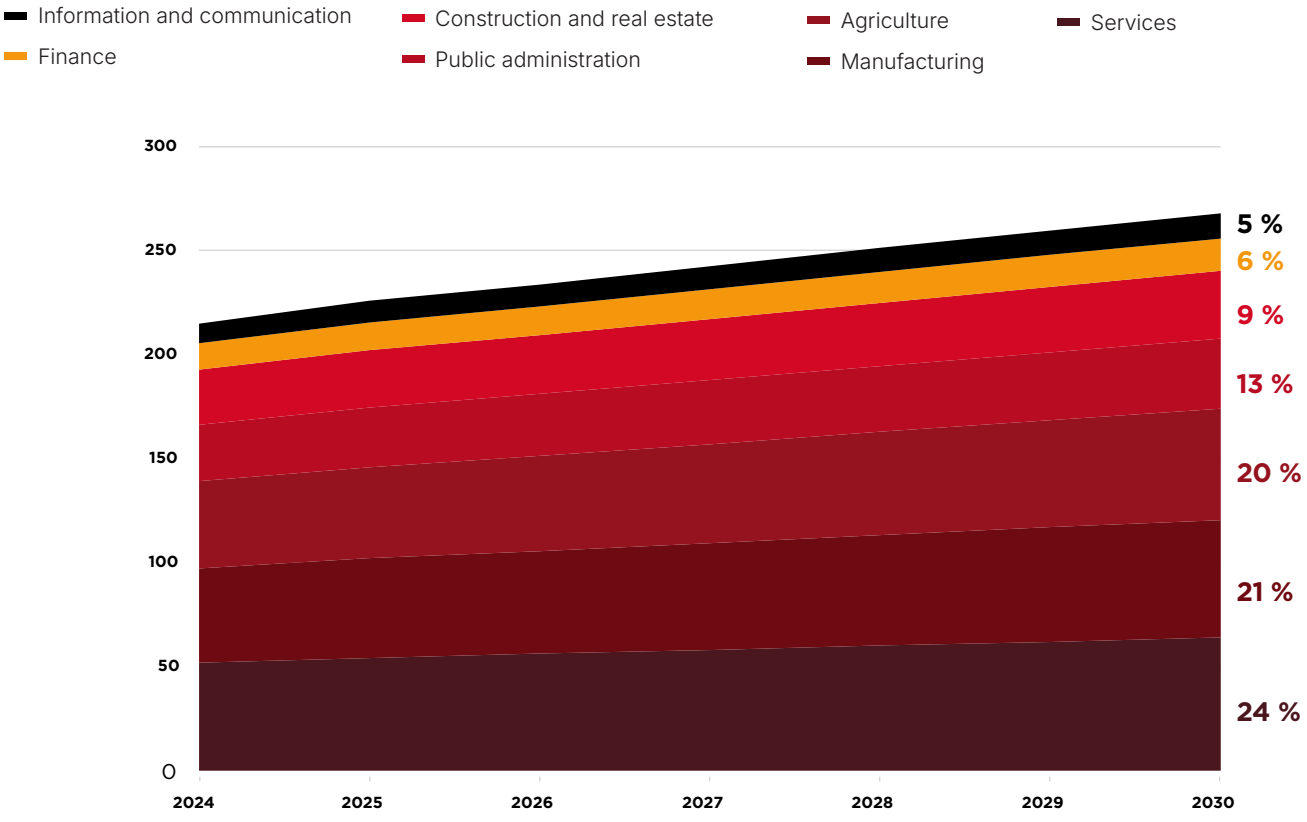
B.
The potential economic impact of digitalisation in Senegal

> Mobile technologies are expected to drive growth across all sectors of the economy in the Senegal and Africa.

The mobile sector contributed USD 220 billion, representing 7.7% of GDP, in Sub-Saharan Africa in 2024 and is expected to increase to USD 270 billion (7.4% of GDP) by 2030 (Figure 5).

Figure 5

Africa - mobile contribution to GDP by industry



Source: GSMA Intelligence

This Annexure 3 estimates the macroeconomic impacts of increased digitalisation in Senegal for each key sector of the economy based on academic and policy research together with data on the economy of Senegal.

The policy objectives, impacts of digitalisation by sector and their relationships are shown in Figure 6, as well as the evidence used to quantify them. The separate methodological document accompanying this report contains more details on the methodology and evidence review.[142]

> These impacts reflect digital pathways to economic transformation and are mapped onto the government's strategic objectives, as articulated in the National Vision 2050 and the New Deal Technologique 2034.

Figure 6

Mapping digitalisation to policy objectives and estimating the impact

SECTOR	POLICY OBJECTIVES	OUTCOMES OF DIGITALISATION	IMPACT RELATIONSHIP	EVIDENCE RULE
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 productivity, profits	Access to technology and precision agriculture increase crop yields between 10.5% and 20%, and profits up to 23%
Manufacturing	Diversify and develop manufacturing, attract FDI, increase technology exports	Expand manufacturing capabilities, diversify production, increase FDI and exports	Adoption of new technologies by firms productivity, GDP, exports	Application of industrial IoT and Industry 4.0 increases value add between 15-25%

142/ GSMA Driving digital transformation of African economies Evidence and methodology document, 2024.

SECTOR	POLICY OBJECTIVES	OUTCOMES OF DIGITALISATION	IMPACT RELATIONSHIP	EVIDENCE RULE
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 increase 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 deliv-ered 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
Healthcare	Increase access to healthcare, improve wellbeing, increase productivity of healthcare sector	Telemedicine, digital health records, digital payments for insurance contributions increase access to health services and productivity	Digital health increased access to health services and productivity	Digital health solutions enable doctors to increase visits by 30%
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, P2G, G2P adoption increase GDP, tax revenue, reduce leakage	Mobile money adoption increases tax revenue by 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 report.

C.
Impact of digitalisation on the agricultural sector

The role of ICT and digital technologies in facilitating economic productivity and growth in Senegal, particularly in agriculture, is recognised under the New Deal Technologique 2034's priority programme Number 11.

The transformative role of digitalisation of agricultural sector includes the availability of information platforms for farmers and livestock keepers and associated mobile apps would enable them to access market prices, weather forecasts, and agricultural advice; enabling better decisions about what to plant or animals to keep, when to harvest, and where to sell produce.

According to the government, agriculture accounts for approximately 15% of GDP and 77% of the working population in Senegal, and the government sees digital tools as important to improve productivity and reduce losses.[143]

Case studies of digitalisation of agriculture in Senegal include:

Figure 7

Digital agriculture case studies in Senegal[144]

National Agency for Agricultural and Rural Council mobile app	National Agency for Agricultural and Rural Council (ANCAR) mobile app for weather forecasts, crop calendars, market prices, and livestock care had over 300,000 farmers registered in 2022, and resulted in improved yields and reduced post-harvest losses.
Afrikamart	Afrikamart provides services to smallholder farmers and retailers through enhanced data capture, data management, pricing, transaction, stock management, transportation, logistics and financial risk management. Targets set in 2022, included 39,000 smallholder farmers using the service by the end of 2025, facilitate the product distribution of 9,500 small retailers in Senegal, 80% of whom are women, by the end of 2023, and produce 14 essential locally produced vegetables in the Senegalese diet, contributing to food security.

143/ Senegal annual agricultural sector survey 2022 – 2023.

144/ Yenkasa article - Digitalizing agriculture in rural Senegal, August 2023. Smallholder Safety Net Upscaling Programme article - Strengthening a digital platform to facilitate the trading of fresh fruits and vegetables in Senegal, 2022. UNCDF article - Bridging the financing gap for agriculture cooperatives through data-driven decision-making in Senegal, 2020. We are tech article -Senegal: Mouhamadou Kebe Harnesses AI to Empower Farmers with Real-time Crop Data, April 2024.

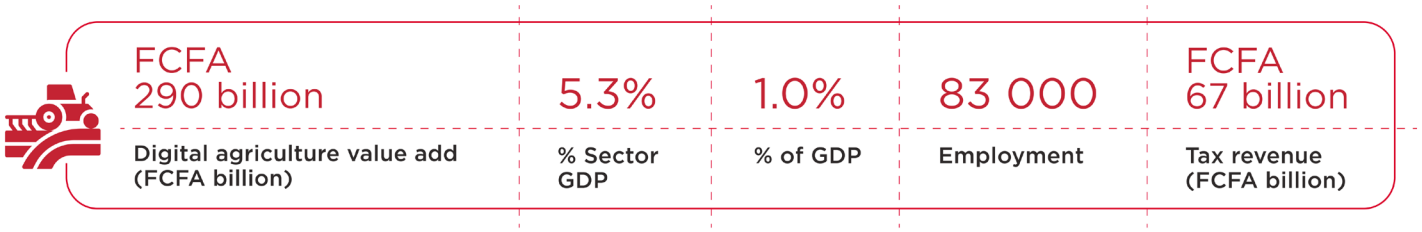
CommBanane	CommBanane is a digital platform to support banana cooperatives in the Tambacounda region, which produces 80% of the country's bananas. Developed by Dimagi in partnership with UNCDF, SIDA, and Baobab Senegal, the platform aims to improve access to financial services and business management tools for smallholder farmers. During a pilot phase, over 472 farmers accessed credit and there are plans to scale to 2,250 farmers across 45 cooperatives.
e-Tolbi	e-Tolbi is a digital platform to support precision agriculture using AI, satellite imagery, and mobile technology to monitor crop health, optimize inputs, and improve yields.

The telecom policy recommendations in Section 3 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the agriculture sector. This has the potential to add FCFA 290 billion value add, equivalent to 5.3% of the sector's value add by 2030.

This would result in additional employment of 83,000 people by 2029 and FCFA 67 billion in additional tax revenues.

Figure 8

Potential impacts of increased digitalisation of agriculture in Senegal in 2030[145]



145/ GSMA Driving digital transformation of African economies Evidence and methodology document, 2024.

D.
Impact of digitalisation on industry

Digital technologies, such as cloud computing, 3D-printing, big data analytics and AI, have the potential to transform industry in Senegal, including manufacturing, and mining. Research indicates that:

- Factory automation with cellular IoT technology optimizes manufacturing processes with increased efficiency, fewer human errors, increased reliability and safety and reduced wastage and downtime. Expanded manufacturing capabilities can lead to greater integration into GVCs and further increases in outputs, reduced concentration in products and markets and enhanced links to specialised markets.[146]
- Industry 4,0 technologies have been shown to achieve 30% - 50% reductions in machine downtime, 10% - 30% increases in throughput, 15% - 30% improvements in labour productivity and an 85% improvement in the accuracy of forecasting.[147]
- The application of IoT devices in the manufacturing context alone could increase manufacturing productivity by 10% - 25% and value added by 20%.[148]
- IoT devices can be used in mining to improve safety through monitoring air quality, tracking structural stability, and environmental impact.[149]

The New Deal Technologique 2034 (notably priority programmes 8 (Senegal Digital Factory) and 11 (Sectorial Digitalisation) recognises the value of the integration of automation, data analytics, IoT, machine learning, and AI technologies into production processes. This enables the digitization of manufacturing operations, predictive maintenance, real-time monitoring, and customization of products. The result is increased productivity, improved quality control, operational efficiency and reduced costs.

146/ World Bank, World Development report, 2020.

147/ McKinsey & Co. Capturing the True Value of Industry Four Point Zero.

148/ European Parliament Member's Research Service, September 2015, Industry 4.0 Digitalisation for Productivity and Growth.

149/ Moshood Onifade et al. August 2023. Challenges and applications of digital technology in the mineral industry; Resources Policy Volume 85, Part B.

Digital technology programmes contributing to digitalisation of industrial sectors in Senegal include:

Figure 9

Digital industry case studies in Senegal

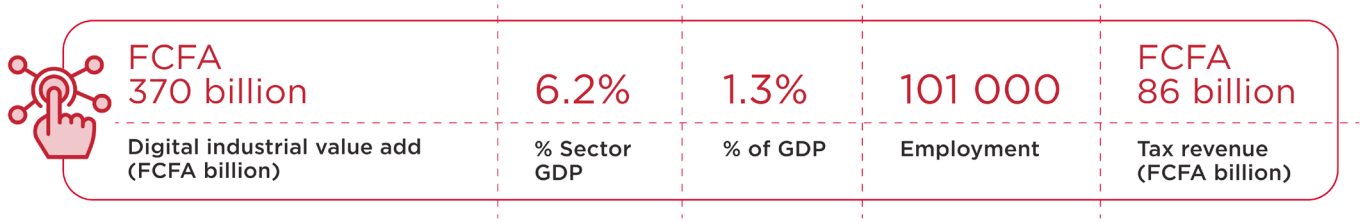
Industrial zones	The Agency for the Development and Promotion of Industrial Sites (APROSI) and Orange Business Senegal, the business-to-business arm of Sonatel, has entered into a strategic partnership to equip the nation's industrial hubs with next-generation digital services. The partnership seeks to transform industrial sites into smart, connected, sustainable, and competitive platforms capable of meeting the demands of Industry 4.0. Orange Business will contribute its expertise in critical areas such as fibre optics, private networks, cloud services, and cybersecurity. The agreement extends further to include the deployment of intelligent energy management solutions, connected public lighting, security, and mobility within industrial sites.[150]
Mining sector	Eramet has worked closely with Capgemini to leverage AI for the transformation of the mining operations of its subsidiary "Grande Côte Opérations" (GCO), that specializes in mineralized sands, with the aim to facilitate revegetation and land rehabilitation. Using a drone imagery system, the Connected Concession application provides a complete map of the mining area designated by GCO. The solution allows Eramet to rehabilitate the areas concerned in two ways: either by replanting the soil or by identifying areas suitable for the introduction of food crops that respect biodiversity and are then used by local communities.[151]

The telecom policy recommendations in Section 3 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the industrial sector. This has the potential to add FCFA 370 billion value add, equivalent to 6.2% of the sector's value add by 2030.

This would result in additional employment of 101,000 people by 2030 and FCFA 86 billion in additional tax revenues.

Figure 10

Potential impacts of increased digitalisation of manufacturing in Senegal in 2030[152]



150/ We are Tech Africa article -Senegal's Industrial Zones Set for Digital Overhaul with Orange Business Alliance, April 2025.

151/ Capgemini press release - Capgemini applies geospatial artificial intelligence to support Eramet in the rehabilitation of its mining site in Senegal, April 2023.

152/ GSMA Driving digital transformation of African economies Evidence and methodology document, 2024.

E.
Impact of digitalisation on the transport sector

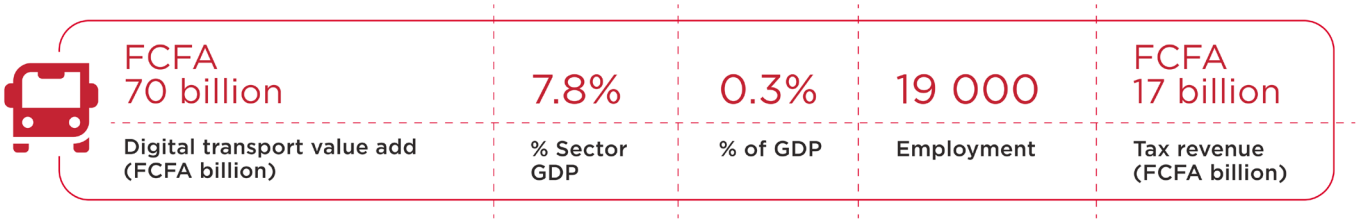
Digitalisation is having a transformative impact on improving efficiency and safety of transport, logistics and supply chain, which is critical domestically and internationally. For example:

- Mobile-enabled technologies, such as pay-as-you-go models, big data, geographic information systems, and IoT, are being used to address road and public transportation issues, such as congestion, high travel costs, safety concerns, and pollution. For example, in Dakar, the implementation of the Bus Rapid Transit system provides GPS tracking, automated fare collection, and passenger information technologies.[153]
- Digital customs systems are being used to reduce clearance times and improve trade facilitation, through paperless customs declarations, electronic payment systems, and automated risk management tools. For example, GUDE is a Single Dematerialized Collection Desk portal for the Port of Dakar providing customs clearance, fee collection, and logistics coordination.[154]
- Postal services in Senegal are using digital solutions to improve service delivery accuracy and operational efficiencies.[155]
- Digital platforms such as Tiak-Tiak, Paps, and JotnaCi in Senegal illustrate how ICT is transforming mobility and logistics by improving accessibility, efficiency, and transparency of transport and delivery services.

The telecom policy recommendations s in Section 3 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the transport and logistics sector. This has the potential to add FCFA 70 billion value-add, equivalent to 7.8% of the sector's value-add by 2030. This would result in additional employment of 19,000 people by 2030 and FCFA 17 billion in additional tax revenues.

Figure 11

Potential impacts of digitalisation of transport sector in Senegal in 2030[156]



153/ Telecom Review Africa article - Transforming Senegal's Urban Transport with Intelligent Transportation Systems, December 2024.
154/ We are Tech Africa article - Senegal expands digital customs platform to boost port efficiency, January 2024.
155/ GSMA report - Powering Mobility: The rise of digital transportation in Africa, 2023.
156/ GSMA Driving digital transformation of African economies Evidence and methodology document, 2024.

F.
Impact of digitalisation on trade and services (including e-commence, payments, SMEs)

Digitalisation of trade, services and commerce is driving growth, efficiency, accessibility, innovation, and opportunities for businesses of all sizes, including Small and Medium Enterprises (SMEs), in Senegal and across Africa.

GSMA estimated, in 2023, that digital wallets and mobile money services will process over USD 500 billion transactions across Africa by this year and UNCTAD estimates that over half a billion people on the continent are becoming e-commerce users, which could potentially add up to USD 180bn in GDP.[157] The IFC estimates that more than 600,000 formal businesses and 40 million microbusinesses in Africa could benefit from digital transformation, citing the need to remove barriers to entry such as higher costs of software and equipment and regulations.[158] Importantly, the African Continental Free Trade Area (AfCFTA) has introduced a Digital Trade Protocol to create a harmonized framework for digital trade, including market access, data governance, and digital payments, which Senegal is a signatory to.[159]

Addressing barriers to digital participation for SMEs is critical in Senegal, and is confirmed in interviews with SMEs for this report, including:

- SENStartup advocates for access to public procurement in order to facilitate maintainability problems with local rather than international developers and create partnerships with Senegal's digital and technology companies, including MNOs.
- OPTIC states that tax exemptions and incentives should be provided to digital and technology SMEs, as well as opportunities to participate and increased transparency in New Deal Technologique tenders and other public procurement programmes.
- Jokkolabs recommends that digital programmes should adopt a common regional approach which would make it possible for SMEs to expand the market and not just be limited to local markets.

157/ GSMA article - what is the opportunity for e-commerce in Africa? March 2023.

158/ IFC report - Digital Opportunities in African Businesses, May 2024.

159/ Ministers of Justice Adopt AfCFTA Protocol on Digital Trade Annexes in Zanzibar - AfCFTA.

It is welcome that the New Deal Technologique 2034 outlines the priority programme "Senegal Digital Factory: From Idea to Product". This will build on current initiatives in the sector, including:

Figure 12

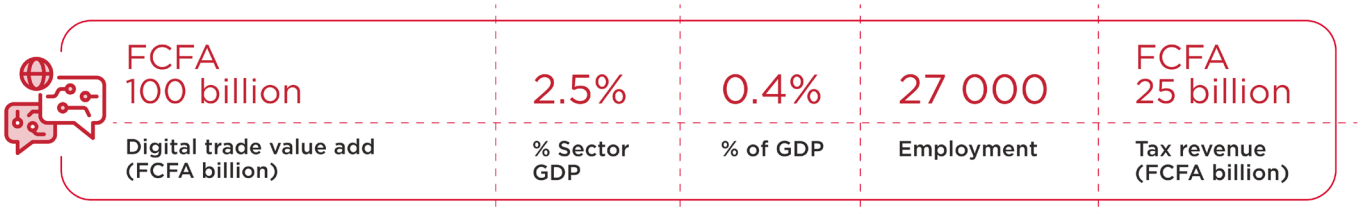
Case studies supporting digital e-commerce and payments

Sonatel and Orange Business	Orange Business has launched Digicaisse, a mobile app, developed in partnership with Senegalese startup Proboutik, tailored for small merchants and informal sector workers, including real-time sales and inventory tracking, automated credit & payment monitoring, audio interface for non-literate users, and financial reporting for loan applications.[160]
YAS	YAS is supporting the transformation of value chains by promoting financial inclusion and the digitalization of the informal sector, through dedicated offers for SMEs, cooperatives and associations, complemented by strategic partnerships and a catalog of innovative products and services, including Cloud and ICT solutions.[161]
MaTontine	MaTontine, which received a grant from the GSMA Ecosystem Accelerator Innovation Fund in 2018, offers a mobile-based automated platform for tontines using SMS, USSD and mobile money technologies. By allowing users to build their credit scores over time, MaTontine makes it possible for them to access financial services, such as small loans and insurance. The community focused platform is deployed and run by tontine managers who generate some revenue through this activity As of January 2020, MaTontine had a community of over 5,150 active members – over 90 per cent of whom are women – across twelve regions of Senegal, and over quarter of million dollars had been saved through MaTontine services.[162]

The telecom policy recommendations in Section 3 would increase access and adoption of mobile technology and positively affect the level of digitalisation of trade and services (including e-commerce) sector. This has the potential to add FCFA 100 billion value add, equivalent to 2.5% of the sector's value-add by 2030. This would result in additional employment of 27,000 people by 2030 and FCFA 25 billion in additional tax revenues.

Figure 13

Potential impacts of digitalisation of trade in Senegal in 2030[163]



160/ Sonatel press release - Orange Business launches Digicaisse: an inclusive digital solution to transform the daily lives of merchants in Senegal, May 2025.

161/ YAS response to author's information request for this report.

162/ Information provided by GSMA Ecosystem Accelerator Innovation Fund.

163/ GSMA Driving digital transformation of African economies Evidence and methodology document, 2024.

G.
Impact of digital government

International organisations and governments are prioritising digital government (often referred to as e-government and increasingly referred to as digital public infrastructure) and public services (including education and healthcare) to use digital infrastructure and services to deliver enhanced and inclusive public services, reduce costs and improve efficiencies, contribute to economic growth, improve transparency, increase fiscal revenue, and increased data to inform government policies and decisions.[164] Examples include:

- The World Bank Digital Transformation Programme partners with national governments, countries, including Senegal Digital Acceleration Project 2023 - 2028, to invest in inclusive and safe digital public infrastructure.
- African Union Digital Transformation strategy 2020 - 2030 identifies digital governance, digital education, and digital health as critical sectors.
- Governments are using digital technology to enhance public service delivery, to improve government administrative and cost efficiencies, and to increase revenue in Senegal and other countries (see examples in Section 2D.2.1, Figure 48).

164/ World Bank briefing - digital transformation drives development in Africa, January 2024. UN E-Government Development Index 2024.

The United Nations e-Government Index (EGDI) conducted most recently in 2024, ranks Senegal 135th out of 193 countries. This is part of the "lower" EGDI group and is ranked after countries such as South Africa (40), Ghana (108), Ivory Coast (122), and Nigeria (132).[165]

Accelerating digital public services is a key priority programme of the New Deal Technologique 2034. Figure 14 provides a selection of case studies on successful digital government initiatives in the country to date, including those in partnership with the mobile operators and other organisations (noting, please see Section 2D.3.2 for case studies on digital skills), showing the potential for digital government in the country.

Figure 14

Digital government and public services case studies

E-government portal	Senegal Services portal, operated by SENUM, recorded more than 1.5 million visits in 2023, allowing citizens to access over 100 e-government services such as registering businesses, paying taxes, and requesting administrative documents.[166]
E-taxation	Direction Générale des Impôts et des Domaines (DGID)'s eTax portal provides for filing and payment of taxes. DGID is using digital services to improve tax efficiency, transparency and compliance.[167]
Digital ID	Senegal's primary digital ID is the Carte d'Identité Biométrique, issued by the Direction de l'Automatisation des Fichiers (DAF). It is required for most administrative services and is a national ID and voter card. It can be used throughout the ECOWAS region.[168] MCTN is commencing a new National Digital Identity, also known as SenIN, programme as part of the New Deal Technologique 2034.[169]
One Stop Shop	New Deal Technologique 2034 programme to deploy one stop shops across the country for citizens to access digital public services online and digital skills programmes.
Digital healthcare	In April 2025, Senegal officially adopted a National Digital Health Policy to coordinate fragmented digital initiatives and improve service delivery. A draft digital health law is being finalized to regulate the use, security, and confidentiality of medical data. This is part of the World Bank funded Digital Economy Acceleration Project 2023 - 2028. An example of the new digital healthcare programme is the expansion of electronic patient records which has been piloted in Dakar and is now being expanded to 6 regions.[170]

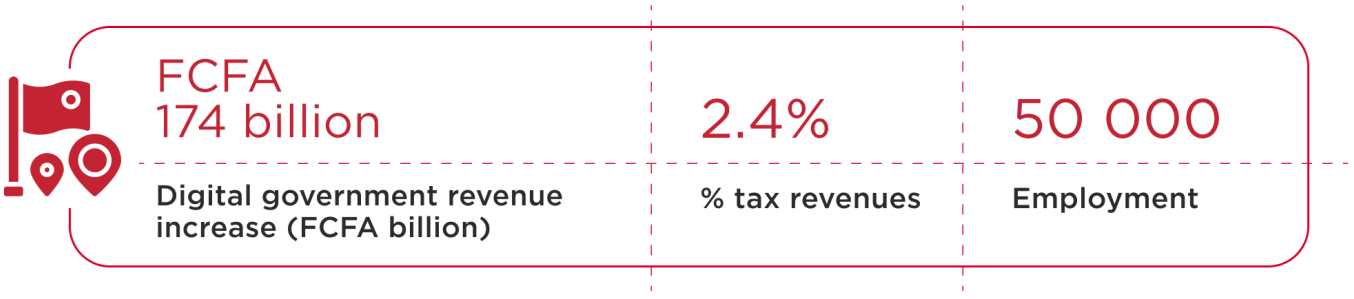
165/ UN E-Government Development Index 2024.
166/ Senegal Services portal.
167/ DGID e-services portal.
168/ Direction de l'Automatisation des Fichiers portal.
169/ MCTN website - Digital Identity (SenIN), published 23 January 2025.
170/ We are Tech Africa article - Senegal Adopts Digital Health Policy, Drafts Data Law, April 2025.

Sovereign cloud infrastructure	In October 2024, the Ministry of Communication, Telecommunications, and Digital Economy signed a strategic agreement with Google to develop a sovereign cloud infrastructure for government systems and services.[171]
Tourism	Senegal is adopting an integrated digital approach to transform its tourism sector, through the dematerialization of procedures (visas, permits, etc.), digital promotion and e-commerce, enhanced network and cloud infrastructure, support for digital innovation and startups, and targeted training programs to strengthen sector-specific skills.

The policy recommendations in Section 3 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the government sector. This has the potential to add FCFA 270 billion value, equivalent to 4.3% of the sector's value-add by 2030. This would result in additional employment of 50,000 people by 2030 and FCFA 180 billion in tax revenue including FCFA 174 billion in additional tax revenues raised by digitalisation of tax revenue collection (2.4% of tax revenues in 2030).

Figure 15

Potential impacts of increased adoption of digital government on tax revenue in Senegal in 2030[172]



171/ Ecofin Agency article - Senegal Launches Sovereign Cloud Initiative with Google, October 2024.

172/ GSMA Driving digital transformation of African economies Evidence and methodology document, 2024.

Annexure 4: Quality of service obligations Q2 2025 national campaign results

Figure 1

ARTP QoS & coverage obligations – National level

SERVICE	KPI	THRESHOLD	EXPRESSO	YAS (FREE)	ORANGE
Voice	CALL-SETUP RATE (<15 S)	≥ 98 %	56.37 %	87.29 %	93.25 %
	CALL BLOCKING RATE	< 2 %	30.56 %	10.14 %	4.38 %
	SUCCESSFUL CALL RATE	≥ 98 %	98.53 %	98.84 %	99.62 %
	VOICE QUALITY (MOS)	≥ 3	3.47	4.07	4.20
SMS	SMS RECEIVED < 15 S	≥ 98 %	44.07 %	72.68 %	87.84 %
DATA	WEB-BROWSING SUC-CESS < 10 S	≥ 98 %	66.55 %	91.95 %	99.12 %
	FILE DOWNLOAD 10 MB < 120 S	≥ 97 %	59.58 %	87.53 %	97.83 %
	FILE UPLOAD 2 MB < 120 S	≥ 97 %	61.89 %	90.25 %	99.00 %

Figure 1

ARTP QoS & coverage obligations – roads

SERVICE	KPI	THRESHOLD	EXPRESSO	YAS (FREE)	ORANGE
Voice	Call-setup rate (<15 s)	≥ 98 %	51.75 %	89.85 %	90.34 %
	Call blocking rate	< 2 %	35.69 %	9.00 %	3.05 %
	Successful call rate	≥ 98 %	98.37 %	99.02 %	99.80 %
	Voice quality (MOS)	≥ 3	3.55	4.08	4.18
SMS	SMS received < 15 s	≥ 98 %	33.12 %	73.41 %	90.95 %
Data	Web-browsing success < 10 s	≥ 98 %	59.75 %	91.67 %	99.49 %
	File download 10 MB < 120 s	≥ 97 %	47.91 %	83.18 %	97.90 %
	File upload 2 MB < 120 s	≥ 97 %	51.53 %	88.27 %	99.08 %

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