The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with almost 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series of conferences.

For more information, please visit the GSMA corporate website at www.gsma.com

Follow the GSMA on Twitter: @GSMA

GSMA Intelligence is the definitive source of global mobile operator data, analysis and forecasts, and publisher of authoritative industry reports and research. Our data covers every operator group, network and MVNO in every country worldwide – from Afghanistan to Zimbabwe. It is the most accurate and complete set of industry metrics available, comprising tens of millions of individual data points, updated daily. GSMA Intelligence is relied on by leading operators, vendors, regulators, financial institutions and third-party industry players, to support strategic decision-making and long-term investment planning. The data is used as an industry reference point and is frequently cited by the media and by the industry itself. Our team of analysts and experts produce regular thought-leading research reports across a range of industry topics.

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By the end of 2016, there were 172 million unique subscribers in West Africa, accounting for 320 million mobile connections. The sub-region’s subscriber penetration rate now stands at 49%, slightly higher than the 47% penetration rate across the wider Sub-Saharan Africa region. Over the next four years, West Africa will see average subscriber growth of 6%, one of the fastest rates globally, resulting in an additional 45 million subscribers by 2020. The biggest market in the sub-region – Nigeria – will account for two-thirds of this growth, with another quarter coming from Benin, Côte d’Ivoire, Mali, Niger and Senegal.

Macroeconomic headwinds across the sub-region affected mobile revenues in 2016. These will continue in 2017, with total revenues expected to decline as a result of continued downward pressure from key markets such as Nigeria and weaker growth in other countries in the sub-region. Despite these challenges, capex on networks and services will remain stable; mobile operators invested $2.7 billion in 2016 and are expected to invest a cumulative $12.6 billion between 2017 and 2020. Operators’ investments in high-speed networks (with 14 4G network launches in the sub-region since the start of 2016) and the declining cost of smartphones are together driving the transition to mobile broadband. 3G and 4G connections will overtake 2G by mid-2019 and account for two-thirds of the total connections base by the end of 2020.
Mobile supporting innovation and helping address socioeconomic challenges

Mobile technology continues to play a central role in addressing a range of social and economic challenges in West Africa, building on the wide reach of mobile networks and the rapid take-up of mobile internet services. Mobile internet penetration in the sub-region will nearly double over the next four years to reach 43%. The mobile industry and the broader ecosystem are supporting this trend through various initiatives that foster mobile-based innovation, such as the GSMA Ecosystem Accelerator Innovation Fund and the opening up of operator APIs to third-party developers. These and other initiatives will help the industry develop new services and achieve the UN Sustainable Development Goals (SDGs).

For the mobile industry to achieve the goal of delivering connectivity to individuals and businesses, and continue contributing to economic growth in the sub-region, governments and policymakers have a role to play in helping maintain the right levels of investment and innovation. For example, with only half the population currently accessing mobile services, there is a need for policies that help improve network coverage and bring new services to unconnected populations across the sub-region. There has been considerable focus in recent years from policymakers in the sub-region on delivering a more supportive regulatory environment, particularly in areas such as spectrum management, taxation and mobile money services.

A region-wide, multilateral approach is also essential to address the regulatory and policy issues of the ICT industry. To further improve the region’s regulatory framework and address new and emerging issues, the Economic Community of West African States (ECOWAS) formally adopted its 2016–20 ICT strategic plan in mid-2016. This identifies a number of action and implementation plans in focus areas such as an enabling policy and regulatory environment; infrastructure development; affordable internet access; the development of innovative services and content; and cybersecurity.
WEST AFRICA

Unique mobile subscribers

2016 172 million
6% CAGR 2016–20
2020 220 million

SIM connections

2016 320 million
6.5% CAGR 2016–20
2020 411 million

Operator total revenues

2016 $15.6 billion
1.5% CAGR 2016–20
2020 $16.5 billion

Accelerating moves to mobile broadband networks and smartphone adoption

226m SMARTPHONES BY 2020
Growth of 139m from the end of 2016

Mobile delivering greater inclusion across the sub-region

Digital Inclusion
Delivering digital inclusion to the still unconnected populations.

Financial Inclusion
Delivering financial inclusion to the unbanked populations.

Operator CAPEX of up to $12.6 billion for the period 2017–20

Mobile Internet Penetration

30% 2016
43% 2020

As of March 2017:

56 live mobile money services in 14 countries

*Excluding M2M

Unique mobile subscribers

SIM connections

Operator total revenues

Accelerating moves to mobile broadband networks and smartphone adoption

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30% 2016
43% 2020

As of March 2017:

56 live mobile money services in 14 countries

*Excluding M2M
1
West African mobile market overview
The Mobile Economy West Africa 2017
West African mobile market overview
<table>
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<th>Country</th>
<th>Unique Subscribers</th>
<th>Penetration</th>
<th>Smartphone Adoption</th>
</tr>
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<tr>
<td>West Africa</td>
<td>172m</td>
<td>49.0%</td>
<td>28.0%</td>
</tr>
<tr>
<td>Benin</td>
<td>5.3m</td>
<td>47.0%</td>
<td>28.5%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>7.5m</td>
<td>39.6%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Cabo Verde</td>
<td>359,000</td>
<td>66.0%</td>
<td>44.2%</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>12.5m</td>
<td>52.9%</td>
<td>27.1%</td>
</tr>
<tr>
<td>Gambia</td>
<td>1.4m</td>
<td>66.6%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Ghana</td>
<td>18.9m</td>
<td>66.8%</td>
<td>23.4%</td>
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<tr>
<td>Guinea</td>
<td>6.0m</td>
<td>45.8%</td>
<td>22.5%</td>
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<tr>
<td>Guinea-Bissau</td>
<td>743,000</td>
<td>38.9%</td>
<td>29.7%</td>
</tr>
<tr>
<td>Liberia</td>
<td>1.7m</td>
<td>37.2%</td>
<td>26.2%</td>
</tr>
<tr>
<td>Mali</td>
<td>11.1m</td>
<td>60.5%</td>
<td>26.5%</td>
</tr>
<tr>
<td>Niger</td>
<td>5.3m</td>
<td>24.9%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>86.0m</td>
<td>45.4%</td>
<td>29.9%</td>
</tr>
<tr>
<td>Senegal</td>
<td>9.6m</td>
<td>60.5%</td>
<td>35.6%</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>2.9m</td>
<td>43.3%</td>
<td>28.5%</td>
</tr>
<tr>
<td>Togo</td>
<td>2.9m</td>
<td>38.2%</td>
<td>25.5%</td>
</tr>
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2016 figures. Source: GSMA Intelligence
1.1 West Africa: one of the world’s fastest growing regions

At the end of 2016, half the population in West Africa had a mobile subscription – some 172 million unique subscribers. The total number of connections reached 320 million, a penetration rate of 92%. Over the four years to 2020, an additional 45 million people will be connected by mobile services across West Africa, taking the total number of unique subscribers and the penetration rate to 220 million and 54% respectively. In comparison, the wider Sub-Saharan Africa region will have a penetration of 49% at the end of the same period.

West Africa is one of the fastest growing mobile markets globally, with an average annual growth rate between 2016 and 2020 of 6.0% compared to the global average of 4.2%. Nigeria – the biggest market in the sub-region with half the total connections and revenues in 2016 – will also account for two-thirds of new subscribers between 2016 and 2020. Five other countries – Benin, Côte d’Ivoire, Mali, Niger and Senegal – will account for a quarter of the growth, equivalent to 11.6 million subscribers, over the same period.

Unique subscriber levels and penetration

(Million)

![Diagram showing unique subscriber levels and penetration for West Africa regions.]

Source: GSMA Intelligence

Figure 1

West African mobile market overview
1.2 Challenging operating outlook prompting consolidation

Mobile revenues grew by 2.8% in 2016 to $15.6 billion, despite a 5.5% decline in Nigeria, largely due to the effects of rising inflation and economic recession on consumer spending in the country. There will be a dip in total revenues in 2017 from continued downward pressure in Nigeria and weaker growth in many other countries in the sub-region, but positive growth will return the following year on economic recovery. Despite the difficult operating environment, mobile operators continue to invest in their networks and services. Capex will remain stable between 2017 and 2020, reaching a cumulative $12.6 billion.

The challenging macroeconomic environment and intense competitive pressure are also stimulating consolidation in some markets in the sub-region. For example, Orange acquired Airtel’s operations in Burkina Faso and Sierra Leone in 2016, and in February 2017 Airtel and Tigo announced plans to merge their operations in Ghana. Consolidation and market rationalisation will likely continue in the coming years as the sub-region’s highly fragmented markets, some with more than five operators and licensees, move towards an optimal and sustainable structure.
Mobile industry supporting innovation and the UN SDGs in the region
2.1 Mobile enabling innovation

Mobile has emerged as the platform of choice for creating, distributing and consuming innovative digital solutions and services across West Africa. This trend is driven by the rapid expansion of mobile networks across the sub-region and the growing adoption of smartphones. More than a quarter of the population now subscribe to mobile internet services, a figure that will nearly double to 43% by 2020.

The mobile industry in the sub-region supports innovation in multiple ways. Examples include the GSMA Innovation Fund and mobile operators opening up their APIs to third-party developers:

- The GSMA Ecosystem Accelerator Innovation Fund aims to build synergies between start-ups and mobile operators. The fund, launched in 2016, provides successful applicants with grants ranging from £100,000 to £250,000, mobile-focused mentoring and bespoke technical assistance, and opportunities to build partnerships with mobile operators. The first round of funding was completed in 2016, with Nigeria-based Prepclass, an online hyperlocal marketplace that allows learners to connect with independent tutors, selected for funding in West Africa. The next funding round will open for applications in June 2017 and will focus on start-ups providing services for SMEs and/or working on the sharing economy.

- Mobile operator APIs such as messaging, billing, location and mobile money provide a significant opportunity for start-ups to scale and extend their services to a broader customer base. Vodafone has opened its mobile money API to third-party developers in Ghana while Orange opened its SMS API in 2015 (available via self-service in Côte d’Ivoire, Guinea, Niger and Senegal) and its billing API across most of its footprint. The operator now offers a standardised USSD API to developers and start-ups.

MLouma is a Senegalese start-up that has developed a web portal to connect buyers and sellers of agricultural products. In 2015, it integrated Orange APIs to build a USSD version of its web portal, which allows users without smartphones and internet connectivity to access the service. It also adopted the Orange billing API to offer users an alternative payment solution for the service. When it launched in 2013 and was only available on the web platform, MLouma saw only one or two new users per day and could not offer a paid service. However, the USSD and billing API integration, together with an Orange marketing campaign, took MLouma’s user base from 1,000 to 75,000 within six months.

1. For more information see gsma.com/innovationfund
2.2 Addressing the SDGs

Mobile technology is also helping achieve the UN Sustainable Development Goals (SDGs) in the sub-region, providing access to tools and applications that address a range of socioeconomic challenges. Mobile has been used, for example, to spread awareness of disease outbreak, such as the Ebola virus in 2014/15, and by the World Food Programme to provide humanitarian assistance to refugees and displaced persons in Mali and Nigeria.

The GSMA and mobile operators are united in support for helping achieve the SDGs across the world, leveraging the power of mobile networks to accelerate this journey in a way that no other technology can. Table 1 highlights some GSMA-backed initiatives addressing specific SDGs across West Africa.
Selected GSMA-backed initiatives supporting specific SDGs

Financial inclusion
End poverty in all its forms everywhere

With over 400 million registered users, mobile money facilitates access to financial services, many of which contribute to building the resilience of the poor by reducing their vulnerability to economic, social and environmental shocks and disasters.

More than 99% of Côte d’Ivoire’s 1.7 million secondary school students now pay their annual school registration fees via mobile money. This has resulted in significant benefits for stakeholders. For example, parents no longer need to spend time away from work to stand in long queues to make cash payments.

Agriculture
End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Agriculture is the main contributor to GDP in emerging markets and the largest employer. Mobile is uniquely positioned to deliver the critical information quickly that rural smallholder farmers need, enabling them to make better decisions and investments that boost their productivity and profit.

Sènêkèla is an agricultural value-added service from Orange Mali aimed at helping Malian farmers improve their productivity. The service offers farming advice and market price information in local languages via USSD and a helpline. Sènêkèla has reached more than 200,000 subscribers since launch in 2014. In 2016 Orange Mali launched a new service called Sandji to provide smallholder farmers with highly localised daily, monthly and seasonal rain forecasts.

Health
Ensure healthy lives and promote well-being for all

Mobile can increase the quality, reduce the cost and extend the reach of healthcare to benefit millions. There are currently more than 1,000 mobile health services in developing countries targeting families through the provision of health content and diagnostics services.

Audrey packs provide bags of free samples and information for expectant mothers with the primary aim of creating healthy behaviours. Audrey has recently partnered with MTN Nigeria, Etisalat Nigeria and MTN Ghana to provide operator-branded Audrey packs as part of an aggregated pregnancy health service by SMS. Since launch in 2015, the service has reached 2 million women.
Women empowerment

Achieve gender equality and empower all women and girls

Mobile can help empower women, helping them feel more connected, safer, and with access to information and life-enhancing opportunities, such as health information, education opportunities and financial services.

In 2016, Orange Senegal launched the second edition of its Female Digital Entrepreneurship initiative, which aims to reduce the digital gap among female entrepreneurs in the country.

Water and sanitation

Ensure access to water and sanitation for all

Mobile-enabled solutions can improve the efficiency of water and sanitation services and extend their reach, bridging the gap in universal access to water and safe sanitation.

In The Gambia, eWATERtap tackles the inefficient collection of payments for rural water and the resultant failure to maintain water systems. The tap, a low-power solar device that turns on a water supply, is connected to eWATERpay’s cloud-based dashboard using M2M technology. This allows Africa Water Enterprises and other NGOs to remotely assess network status.
Energy
Revitalise the global partnership for sustainable development

In the off-grid energy sector, the mobile-enabled solar pay-as-you-go model has been enabling access to clean energy solutions since the early 2010s. Over 800,000 solar home systems use mobile payments and M2M technology to provide reliable, clean energy.

The GSMA M4D Utilities Programme awarded PEG Ghana a grant in 2013 for its solar-as-a-service business model in Ghana. PEG Africa now offers rent-to-own financing for solar products in Côte d’Ivoire and Ghana. PEG has installed over 20,000 solar home systems in Ghana and aims to electrify 500,000 households in West Africa by 2020. In order to encourage timely repayment, PEG recently arranged to offer approved customers no-cost insurance cover for hospital admission via Bima, a mobile micro-insurance service.

Enhance inclusion
Reduce inequality within and among countries

For many marginalised groups around the world, mobile is the first step to inclusive participation in a connected society. Mobile has a key transformational role in providing formal identity and access to various essential services, including banking.

Addressing the over 60 million people who are forcibly displaced worldwide, approximately 21.3 million of whom are refugees, would go a long way to reducing inequalities. The GSMA Disaster Response programme has launched the Refugees and Connectivity portal to demonstrate how mobile technology is making a difference to the lives of refugees.
Realising the full potential of mobile across West Africa
Africa is heavily dependent on mobile networks to deliver the connectivity that its citizens and companies need. The mobile industry makes an important contribution to the economy across the West Africa region, driving economic growth and jobs while helping to fund public services. Governments and the mobile industry have a shared interest in connecting everyone and everything to a better future, which will require continued investment and innovation from the private sector. Investor willingness to fund the rollout of advanced mobile broadband networks by mobile operators depends in part on the presence of an enabling and predictable regulatory framework.

Governments also have a role to play in encouraging innovation, and policymakers can help the mobile industry build the necessary trust and confidence in the digital economy. If policymakers and regulators encourage investment, competition and innovation, both the mobile sector and the wider digital economy will expand, creating prosperity and jobs. Realising the full transformative potential of mobile will require collaboration between all players: between mobile operators and the broader mobile ecosystem; as well as collaboration among governments, regulators and other industry stakeholders.

There has been considerable focus from policymakers over recent years on delivering a more supportive regulatory environment, particularly in areas such as regulatory modernisation, spectrum management, taxation and mobile money services.

### 3.1 Spectrum management

The fundamental building block of any mobile network is radio spectrum. For operators, the amount, type and conditions of use of spectrum directly impact the reach, speed and quality of mobile services. Several countries in the region have made moves to either improve the management of spectrum resources or increase the amount of spectrum available to operators:

- The Nigerian Communications Commission (NCC) is developing a framework and guidelines that will allow a secondary market for spectrum trading in the country. All interested stakeholders were invited to attend and participate in a consultative forum. Liberalising the spectrum management policy will enable more efficient and economic transfer of spectrum to users who value it most, and reduce barriers to market entry by allowing flexible access to spectrum.
- Togo, one of several markets in the region yet to see the commercial launch of 4G services, is considering awarding 4G licences by the end of 2017. The government recently awarded a second 3G licence, with the focus now shifting to the potential for 4G to further improve the availability of mobile internet services across the country.
- Senegal is on its way to completing the digital switchover undertaken by EXCAF Telecom, the company that won the tender for the work. EXCAF has transferred a number of the new digital terrestrial transmitters to the government, but will retain the commercial right to use two of the four multiplexers for a 10-year period.
3.2 Taxation

The industry is investing heavily to improve network coverage and bring new services to the population across the region. However, this effort is impeded when governments increase the cost of ownership and network rollout through excessive sector-specific taxes and fees. The GSMA supports a best-practice taxation approach that strikes the right balance between encouraging the growth of the digital economy and fair revenue collection for governments. There have been a number of moves to reduce sector-specific taxes and fees across West Africa, which in turn can help affordability and increase the adoption of mobile services, particularly in rural and remote areas:

- The Council of Ministers in Togo in April 2016 gave the Minister of Posts and the Digital Economy a mandate to exempt mobile phones and other consumer computer equipment from import duties. The measures became effective in December 2016, with the goal of having more affordable devices to allow the local population to access mobile broadband services.

- A similar measure to reduce import duties was adopted at the end of 2016 in Côte D’Ivoire, with duties on mobile phones reduced from 35% to 3% until the end of 2018.

- In Benin, following consultation with the country’s mobile operators, the government adopted tax measures to lower the cost of mobile services in the country.

3.3 Regulatory modernisation and ICT frameworks

Rapid innovation in both technology and business models is blurring the boundaries between once distinct markets and regulatory regimes. As a result, policymakers all over the world are working to implement reforms that will protect competition and consumers without impeding social and economic progress and innovation. In most markets, regulatory policies and institutions need to be reviewed and potentially overhauled.

There are several examples from across the region of how regulators are addressing these issues, particularly with regards to OTT players. In early 2016, the NCC published an overview of the provision of OTT services in Nigeria and indicated the need to hold a ‘stakeholder consultative forum’ to see if further regulation is required. In Ghana, the National Communications Authority held a public forum to discuss several issues, including the regulation of OTT providers.

In order to further improve the region’s regulatory framework and to address emerging issues, ECOWAS formally adopted its 2016–20 ICT strategic plan in mid-2016. This identifies a number of action and implementation plans in focus areas such as an enabling policy and regulatory environment; infrastructure development; affordable internet access; aiding the development of innovative services and content; and cybersecurity. There are many examples from across the world demonstrating what can be achieved when policymakers set a clear path for a country’s or regional ICT industry, supplemented by clear actions and goals.
3.4 Mobile money and enabling regulation

Regulators from regions across the world are recognising the importance of creating an open and level playing field for mobile money services, but policy improvements are still required to ensure mobile financial services reach the full addressable market and achieve financial inclusion. In 2016, 52 out of 92 countries with mobile money services had an enabling regulatory framework.2

The Central Bank of West African States in 2006 became one of the first regulators to allow the issuance of e-money by non-bank providers. The regulatory framework was subsequently updated in 2015 to best meet the goals of financial inclusion, stability and integrity. There have been several recent moves and developments to improve the regulatory environment for mobile money in the region:

• The Central Bank of Nigeria is expected to start licensing the subsidiaries of mobile operators as super agents under The Regulatory Framework for Licensing Super Agents. The framework was issued in 2015 and so far only two super agents have been licensed. This development comes after a recent stakeholders meeting at which operators assured the NCC that the quality of their mobile service would not fall on account of involvement in mobile money business as super agents. It is anticipated that mobile money uptake in Nigeria will scale significantly as the licensed mobile money operators leverage the vast distribution networks of the operators.

• The Bank of Ghana has published a ‘Schedule for Payment of Mobile Money Interest to Customers’ outlining the dates scheduled for the transmission of the accumulated trust account interest to mobile money users. This approach to distributing interest among users of the mobile money service deepens financial inclusion by attracting more customers and encouraging greater usage.
