



WHITEPAPER

The rise of Africa's digital economy

Tackling the 'usage gap' to create a thriving market for mobile services

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Introduction

All over the world, digital services are moving closer to the mainstream. COVID-19 lockdowns played their part. For nearly two years, stay-at-home orders forced people to seek out digital alternatives to physical activities. The impact was profound. According to a [study from Juniper Research](#) global ecommerce payment transactions hit \$4.9 trillion in 2021 and will rise to \$7.5 trillion by 2026. That's a growth rate of 55 percent.

Now, as the COVID era recedes, consumers, companies and governments are wondering how to consolidate this digital switchover – and even accelerate it where necessary.

In this, Africa has an advantage. Across the continent, the primary tool for accessing new digital services is the phone. For millions of its citizens, the connected handset is the only gateway to the digital world. The option to go online via desktop PCs and wired internet connections does not yet exist for a substantial proportion of the population.

Thus, Africa is mobile-first – and this has much to recommend it. Self-evidently, the mobile is personal, flexible and location-aware. Most of all, it is much more affordable for low-income consumers. As such, Africa can develop forward-looking mobile services in entertainment, education, health, finance and more without the 'baggage' of legacy desktop methodologies.

The big challenges will be access and adoption. Africa has many remote regions without coverage. And even where progress has been made on network connectivity, simply being within reach of 3G/4G is not always enough to guarantee adoption. There are many factors that prevent people from embracing mobile digital services even when they possess the handsets and the data to do so. These barriers include affordability, digital education and the lack of properly localised content products.

The UK's public and private sector is committed to working in partnership with stakeholders across Africa to overcome these challenges.

We see adoption of mobile devices and data as essential in order to give people better access to health, education and trade. The continent is already home to many digital champions, and over the years, UK based organisations have played their part to support them. In fact, one of the world's most impactful mobile innovations – M-PESA – was originally funded by the UK's Department for International Development (DFID).

Today, the UK government works directly with the mobile industry and support its efforts to improve network coverage, affordability and accessibility. For example, since 2013 we have partnered with GSMA and its Mobile 4 Development (M4D) foundation.

Its projects include the GSMA Innovation Fund for Mobile Internet Adoption and Digital Inclusion. The was set up to address and tackle the barriers preventing 3.4 billion people from adopting mobile internet services. It received 598 applications from start-ups and SMEs in 44 countries across Africa and Asia in its first round. These start-ups will be hoping to follow the African success stories such as Flutterwave, Interswitch and Jumia – all of which have achieved \$1 billion valuations.

Addressing the remaining digital divide will require cooperation from all stakeholders. But it will deliver huge benefits. It will improve the economic prospects and wellbeing of millions of citizens. In addition, of course, it will generate wealth and employment.

The UK is committed to working with its African counterparts to grow their own digital ecosystems so that consumers can benefit socially and economically – and companies can access m-commerce platforms through which they can reach new markets. We believe this will pave the way for mobile-driven cross border trade and increased prosperity for all.

In this report, we will assess the progress of the key mobile digital services markets across Africa. We will address the challenges facing these sectors and we will share the views of some of the continent's foremost industry innovators and leaders in a series of exclusive interviews.

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Executive Summary

The UK's Department for International Trade supports the African-led effort for 100% digital inclusion across the continent. By reducing the digital divide citizens from across Africa can secure better access to services that can help deliver economic growth.

Across Africa, innovators are launching breakthrough mobile-first services. In Kenya, for example, a water supply company called Davis and Shirtliff is working on a project to help 35,000 farmers replace inefficient hand and diesel pumps with solar-based systems.

There's strong demand for this solar alternative. Sun-powered pumps are far cheaper to run. The problem? They are much more expensive to buy – and most farmers can't afford the upfront payment. They can't borrow since most traditional finance providers believe farmers to be a high credit risk.

Davis and Shirtliff solved this problem with mobile money. It teamed up with digital finance specialist 4R Digital to build a platform that [embeds M-PESA payments into its systems](#). This gives farmers the option to avoid the upfront fee and pay by usage instead.

It's a fine example of how mobile innovation can change individual

lives – and stimulate wider economic activity too (and you can read more in our interview with 4R Digital in Chapter 5).

But Davis and is one of many. In the field of education, Ubongo is producing cartoon content for mobile phones. Since 2014, its content has reached 27 million families. Meanwhile companies such as Showmax and iROKOTV are challenging US-based streaming giants by producing localised programming largely designed for the small screen.

The entire continent can benefit from these innovations. According to the “e-Economy Africa 2020” report by Google and IFC, internet business in Africa [could add US \\$180 billion](#) to the continent's GDP by 2025.

It's clear that the African digital economy is making great strides. Yet there is work to be done. There are many factors preventing Africans from fully embracing mobile digital

services. We can summarise them as follows:

- Lack of internet access caused by network coverage gaps
- Social and cultural exclusion
- Lack of digital know-how
- Lack of relevant localised content
- Inefficient or inaccessible payment channels
- High cost of smartphones and data

Let's briefly review each of these challenges in turn.

Lack of internet access caused by network coverage gaps

Globally, the 'reach' situation is improving. The GSMA believes that just six percent of the world's population are currently [unable to access mobile broadband](#). But Africa lags behind. Sub-Saharan

Africa has the most severe coverage gap of all regions. It is home to 47 percent of the world's uncovered population – an estimated 210 million people in 2020. Recognising this, MNOs are investing in large scale 3G and 4G rollouts in West and East Africa, including Nigeria, Mali and Tanzania. And new tech such as low orbit satellites promises to bring fast connectivity to even the most remote regions.

Social and cultural exclusion

According to a [2020 GSMA Consumer Survey](#), 'reading and writing difficulty' is one of the barriers preventing African consumers from using the mobile internet. Content providers should factor this into their product user experience (UX).

Lack of digital know-how

Many users are simply unaware of how to discover, access and engage with mobile digital services. Many just stick with the three or four products they know. The GSMA is addressing the skills gap via its [GSMA Mobile Internet Skills Training Toolkit \(MISTT\)](#). It uses a 'train the trainer' approach and consists of short lessons available in PDF and video format that can be easily adapted to local needs and languages.

Lack of relevant localised content

Self-evidently there is a need to tailor services for the African consumer. The success of Showmax in TV proves it. However, this is not purely a question of taste. Smart developers are factoring in language diversity and literacy issues. They are also aware of the need to limit data consumption and provide offline access.

Inefficient or inaccessible payment channels

How can you monetise digital content in a market where there are millions of unbanked people? It's a critical question. Mobile provides the answer. Mobile Money services such as M-PESA and Orange Pay make it feasible to sell digital services to users without bank cards. The GSMA's Mobile Money API is making it easier for developers to access these systems. There's also the option of digital carrier billing (DCB), which is growing fast across the continent.

High cost of smartphones and data

The African digital economy has achieved wonders with services based on basic feature phones, USSD and SMS. To go to the next level, it needs to build an ecosystem around smartphones and mobile data. The mobile industry accepts that it can do more to reduce the cost of both. But it is making progress. Firms such as KaiOS and Opera have targeted African markets with their data-saving platforms. Safaricom and Google are working on new credit ideas. MNOs are zero-rating key services.

The industry is making progress on all of the above. And as the barriers tumble, it will be incumbent on content providers – both local and international – to build products that compel African consumers to join the digital economy.

Dr Mike Short, Chief Scientific Adviser at the UK's Department for International Trade and former GSMA Chairman believes this is key to the next phase of Africa's digital economy. He says: "It's about user-pull. I think demand will depend on relevant content more and more. I realise there is still a

coverage gap in Africa, and I think what the GSMA and others are doing there is very important. But there is also a usage divide. We have to ask: how can the web catch on? It's really a matter of developing the right content in the right languages – in things like education, health and entertainment."

Happily, there are some very positive signs already. In our chapter on the m-learning space, we showcase a range of products that are improving 'user pull' by carefully considering the needs of African consumers. The Worldreader app, for example, gives readers access to free ebooks mostly via the Opera Mini browser which is installed on budget feature and smart feature phones. Around one million Africans read them.

At the same time, the options for distribution and discovery are also improving. The above-mentioned Opera Mini browser in one option. The KaiOS store is another. And now Africa has its own 'super app' to compare with China's all-powerful WeChat. This is the M-PESA super app. M-PESA says it represents the next era for its platform by giving users access to light-on-data mini apps for ticketing, insurance and more. In time it wants to add streaming music, TV and games. After a year, it already has eight million downloads.

Evidently, African's digital stakeholders are facing down the above challenges with great creativity. The UK's Department for International Trade is committed to supporting their efforts so that African citizens can access the mobile channels that lead to more trade with each other – and to increased business opportunities with partners in the UK and the rest of the world.



Chapter 1

Mobile digital services in Africa

The market opportunity

African mobile content markets are thriving. Millions use their devices as the primary channel for learning, health, entertainment and more. Content providers must understand the structure of the marketplace, and the unique demands of African consumers in terms of language, culture and income...

The migration to mobile lifestyles has happened incredibly fast. According to app market analysis company data.ai users in 13 regions now [average more than 4 hours per day](#) 'in apps'.

Africans are no different from consumers in other parts of the world. They also want to embrace digital lifestyles – to access education and health services or engage with music, sports or gaming. However, they are doing this in unique ways.

Across more developed regions, the mobile app is the dominant mobile content form factor. This makes sense in the context of blanket smartphone ownership and affordable data packages.

But in low-income countries, where feature phones and pre-pay contracts are still the norm, the app store model works only for the most affluent users. This makes the African content ecosystem fragmented. Content providers need to configure their

products for a diverse handset market and find channels through which to reach end users.

These options include:

1. MNO portals

The most obvious content distribution channel is the MNO. Carriers offer a logical destination for mobile subscribers. MNOs can offer content products via their own portals, and they can zero rate the data charges. They can also pre-load content onto their own handsets.

2. Direct to consumer short codes

Another option is to go direct to consumer (D2C) and offer content products via a short code. Here, the consumer texts the 5 digit code to buy or subscribe to a basic mobile service (a game or a text alert for example). They might pay using a premium SMS. This is an 'old school' channel, which has on occasion hooked customers into unwanted payments. For this reason, it has been curtailed by regulation in many markets and is now in decline.

3. Third party portals

Clearly, any service that has a large addressable audience has the potential to be a destination for content. In Africa, where users struggle with affordability and connectivity limitations, a number of interesting options have emerged.

One is the browser firm Opera. Its [Opera Mini product](#) specialises in reducing data consumption. The company has partnerships in place with more than 10 MNOs in Sub-Saharan Africa, and is pre-loaded on 40 million devices. It now offers a number of services that users can discover from inside the browser. Many of them are zero-rated for data. An example is the Worldreader library, which gives free access to thousands of e-books optimised for low-end phones.

In a similar vein to Opera Mini is the [KaiStore](#). This is the official app store of handsets that are based on the stripped down KaiOS operating system (see chapter 2)

Another third-party destination is the mobile money wallet. For example, [M-PESA's Super App](#), which launched in 2021. It provides access to a range of mini apps accessible via the "Discover" option.

Market data

Evidence of growth in the African mobile digital content space

Digital subscriptions in South Africa: a \$530 million market

The subscription-based economic model in South Africa is currently worth \$530 million and is set to grow 14 percent a year to reach \$820m in 2025. South Africa accounts for 11 percent of the market for subscriptions in Africa and the Middle East. South Africans' subscriptions are for digital content. Video, music and podcasts are the top three services at 67 percent, 19 percent and 4 percent respectively.

Subscription video on demand (SVOD) in Africa: 13.72 million users by 2027

Africa has a flourishing market for premium digital content services. Netflix is available in all 54 countries, and recently pledged \$62 million to fund original South African film and TV productions. The company has also launched mobile-only subscription plans to cater for the mobile-first population.

According to [Digital TV Research](#), Africa had 4.89 million subscription video-on-demand users in 2021 – and this could rise to 13.72 million

by 2027.

However, the market is still wide open. Local services such as Showmax and iROKOTV are prospering. MNOs are entering the market too. In May 2021, Kenyan mobile operator Safaricom launched its own mobile streaming service, Baze. In the same year, Nigerian multinational telco Globacom introduced its Glo TV mobile app. Airtel, Globacom, MTN, Orange, Safaricom and Vodacom are also active in the space.

The Africa e-learning market: \$4.71 Billion by 2027

E-learning moved from the periphery to the mainstream during the COVID pandemic. In Africa, the market reached a value of \$2.47 billion in 2021 according to IMARC Group. It expects the market to reach \$4.71 billion by 2027.

IMARC argues that e-learning is gaining prominence in African countries as classroom teaching is unable to meet the growing need to impart quality education. It says mobile services can solve the problem of remote isolation and the scarcity of qualified teaching staff.

M-PESA is not the only company experimenting with the super app concept. In Gambia, for example, mobile aggregator Alchemy is preparing to launch its Alcophony app. It will let users communicate by

voice or text, but also to find and pay for all kinds of digital services.

The above services are all attempting to re-define the mobile content experience for uniquely African market conditions. They're

making progress. But some barriers require more creative thinking.

Africa is home to thousands of languages. How can content providers accommodate them all? Voice (IVR) recognition offers one option. Another is to design away the language factor by using graphics and images. Meanwhile some publishers are doing their best to let users modify their language option. Content provider Telecoming launched a feature that lets viewers switch languages while playing an educational video.

Language and cultural factors exist alongside more familiar challenges such as digital exclusion and

affordability. But observers believe market innovation will eventually solve these problems.

Summary and considerations

Africa's digital services market is booming. Its mobile-first users are enthusiastic users of 'basic' products, such as text alerts and bite-sized learning services. However, the rise of smartphone ownership and data allowances has created a flourishing market for premium rich media services too: Africa had 4.89 million subscription video-on-demand users in 2021.

This is an excellent foundation for local and overseas companies to address. That said, they cannot simply replicate the smartphone/app store model that dominates most global regions.

Developers must be aware that Africa is a fragmented market in terms of device types (feature phones, smart feature phones, smartphones), user know-how, payment channels and disposable income. They should take care to understand the distribution/discovery landscape – investigating MNO portals and third-party storefronts run by Opera, KaiOS, M-PESA and others.





Chapter 2

Mobile digital services: the barriers

Reach, affordability and the usage gap

The number of African consumers living outside of network reach is declining fast. But being able to connect does not guarantee engagement with mobile services. There's still a 'usage gap' to overcome.

With every year that goes by, the world's mobile population grows. According to GSMA, more than half the planet's inhabitants are now using the mobile internet. That's just over four billion people. Moreover, 94 per cent now live in an area covered by mobile broadband network.

Sub-Saharan Africa has a higher 'coverage gap' than most regions. It is home to 47 per cent of the world's uncovered population. This

represented an estimated 210 million people in 2020. However, the region is on a fast upwards curve. 28 percent of the population in the region are now using mobile internet – more than twice the usage level in 2014.

Where coverage is no longer the main challenge to digital inclusion, there are other barriers. These relate to the cost of access and the education of users.

GSMA's [State of Mobile Internet Connectivity](#) report makes clear the scale of this 'usage gap'. It says there are 3.4 billion people who live within the footprint of a mobile broadband network but don't use it – and 93 per cent of these people live in low- and middle-income countries.

Below is the key data on mobile connectivity across MENA and Sub-Saharan Africa.

Mobile digital services

Key regional data

North Africa

North Africa is relatively advanced in mobile terms (when compared with its Sub-Saharan neighbour). There were 307 million mobile internet users in MENA (Middle East and North Africa) in 2021, with penetration due to reach 50 percent of the population by the

end of 2022. Almost 270 million of its connections are 4G.

However, 322 million people remain offline. Although only 6 percent of the population are not physically within reach of a mobile broadband network, 44 percent do

not use mobile internet services due to various non-infrastructure limitations. These include affordability, knowledge and digital skills, relevance, safety and security, and access to enablers (such as electricity and formal ID).

MENA mobile connectivity

Unique mobile subscribers	
2020	2025
412m	456m
79% of population	82% of population

Network type	% of subscribers
2021	
2g	23
3g	35
4g	41
5g	1

Network type	% of subscribers
2025	
2g	8
3g	31
4g	44
5g	17

North Africa mobile connectivity

Subscriber penetration	
2021	2025
70% of population	73% of population

Smartphone penetration	
2021	2025
79% of population	88% of population

Network type	% of subscribers
2021	
2g	21
3g	41
4g	38
5g	-

Network type	% of subscribers
2025	
2g	7
3g	33
4g	53
5g	8

Source: [GSMA State of Mobile Internet Connectivity Report](#)

Sub-Saharan Africa

By the end of 2020, 495 million people subscribed to mobile services in Sub-Saharan Africa, representing 46 percent of the region's population. GSMA expects this total to jump to 615 million by 2025, with 4G adoption doubling to 28 per cent of subscribers. This compares with a global average of 57 per cent, which reflects the

challenge facing the region. 5G is even more elusive. As of June 2021, there were just seven commercial 5G networks in five markets across the region.

Unfortunately, Sub-Saharan Africa has the most severe coverage gap of all regions. It is home to 47 percent of the world's uncovered population –

an estimated 210 million people in 2020. That's more than three times the global average. However, the region has continued to increase coverage, with major 3G and 4G rollouts in West and East Africa, including Nigeria, Mali and Tanzania.

Sub-Saharan Africa mobile connectivity

Unique mobile subscribers	
2022	2025
495m	615m
46% of population	50% of population

Smartphone penetration	
2021	2025
64% of population	75% of population

Network type	% of subscribers
2021	
2g	26% of population
3g	57% of population
4g	16% of population
5g	-

Network type	% of subscribers
2025	
2g	10% of population
3g	57% of population
4g	29% of population
5g	4% of population

Mobile digital services

The affordability gap

For mobile users in the world's poorer regions, affordability remains a key hurdle to the adoption of digital services. Specifically, the affordability challenge relates to two areas:

- the cost of data
- the cost of internet-enabled handsets

The good news is that market forces and innovation continue to drive down these costs. Here, for example, is a breakdown of the situation in sub-Saharan Africa.

The changing cost of mobile services in sub-Saharan Africa

% monthly GDP per capita	
2016	
1Mb	6.3
5Mb	24.5
Cheapest internet-enabled device	39.2

% monthly GDP per capita	
2020	
1Mb	4
5Mb	10.2
Cheapest internet-enabled device	26.5

Source: [GSMA State of Mobile Internet Connectivity Report](#) | Source: GSMA

Tackling affordability: Innovation in handset design and financing

While MNOs continue to reduce the cost of mobile data, the handset companies are also working hard to make internet-enabled devices affordable to the broadest base.

Two main innovations are making a significant difference: the development of lightweight operating systems (OS), remote handset locking technologies and a growing market for refurbished phones.

Lightweight OSs strip handset features to the minimum and consequently reduce the cost of manufacture. This has narrowed the price differential between a basic 2G phone and a 3G/4G handset. Today, there are two options for first-time African mobile internet users:

Smart feature phone: A feature phone that has an operating system that supports a range of applications created by third-party developers and that are formatted to work on a smaller screen and accessed via a 9 key layout rather than not a touch screen.

Smartphone: A budget mobile handset enabling advanced access to internet-based services and other digital functions.

Perhaps the most visible example of smartphone innovation in Africa comes from Transsion and KaiOS (see box). The China based mobile phone manufacturer Transsion has targeted Africa through its Itel, Tecno, and Infinix brands. It currently accounts for 47 percent of the continent's smartphone market.

Its innovations include offering dual SIM card support, modifying the camera for better exposure on darker skin tones, and becoming the first major phone brand in the country to offer a keyboard in local languages such as Amharic.

Most of all, though, Transsion has slashed prices. It pioneered the smart feature phone, which costs from \$20 and allows users to text, call, but also access apps such as Facebook and Opera's data-limiting internet browser.

While the cost of devices is coming down, many consumers still require the option to pay over time. Again, African innovators are working to solve this finance puzzle.

Remote handset locking technology is a case in point. It makes it possible for MNOs and handset companies to offer financing with no or limited credit scoring by using the handset as collateral. If the buyer defaults, the smartphone can be remotely disabled by the seller.

Examples of innovation in finance include the partnership between Safaricom and Google called [Lipa Mdogo Mdogo](#). It gives customers the ability to use a Neon Ray Pro

4G enabled smartphone for 20 KES (Kenyan Shillings) a day for almost a year.

Similarly, M-Kopa (the lending scheme based on financed M-PESA repayments) launched a programme for buying phones via a micropayment plan linked to an active M-PESA account. It used the remote locking technology described above and targeted users in Kenya, Uganda, Nigeria and Ghana.

Meanwhile, the emergence of refurbished phone business models gives users the ability to upgrade to a smartphone at drastically reduced prices – from 10 per cent to 80 per cent discounts compared to buying new.



KaiOS: the affordable smart feature phone platform designed for Africa

Many efforts have been made to bring mobile services to people on low incomes and/or without access to mobile broadband networks. Among the more high profile is KaiOS, a platform that puts apps and internet connectivity onto affordable feature phones, which start at around \$20.

KaiOS devices incorporate HTML5 and other open web technologies to reduce the memory required to access and run games, apps and social channels such as WhatsApp, Facebook and more. The built-in

KaiStore currently hosts more than 1200 apps.

KaiOS also offers its own flagship app: Life. Its aim is to equip first-time internet users with tools and resources in digital skills, health, education, gender equality, agriculture, finances, and more. It comprises articles, audio and video content published daily by over 30 global and local partners such as Audiopedia, Worldreader, Justdigg, Cherie Blair Foundation for Women, Girl Effect, wikiHow and Mosabi.

Mobile digital services

The usage gap

The above analysis shows that much progress has been made in mobile internet coverage and affordability.

Despite this, there are 3.4 billion people who have access to a mobile broadband network but don't use it. This is the usage gap, and it remains a barrier to developing economies that want to help their citizens access the many benefits of a digital lifestyle.

According to GSMA, there are five key factors behind the usage gap.

Affordability

People cannot afford devices, data plans or other service fees.

Knowledge and skills

People lack awareness and understanding of mobile internet and its benefits or have low levels of literacy and digital skills.

Relevance

Relevant content, services and products that meet users' needs and capabilities are unavailable.

Safety and security

People are concerned about the negative aspects and risks of the internet, such as harmful content, harassment, fraud and online security.

Access

People do not have access to networks and enablers, such as electricity and formal IDs, or devices and services are not sufficiently accessible.

Melle Tiel Groenestege, Director of Digital Inclusion Policy & Advocacy at GSMA, says: "Once people get connected in developing markets, there's always the issue of awareness. Around a quarter of Africans are completely unaware of the mobile internet. So there's an educational need here. Next, when people do

become aware of digital services, there are barriers around skills and literacy. And finally, there is the question of relevance. Is the content on offer catering for people's needs? Is it available in local languages? And for varying levels of literacy?"

Tackling the usage gap: GSMA's MISTT programme

GSMA is working hard on the knowledge and skills factor through its [Mobile Internet Skills Training Toolkit \(MISTT\)](#) scheme, which was funded by the UK government.

MISTT is a set of free resources that teaches people the basic skills they need to access and use mobile internet. It uses a 'train the trainer' approach and consists of short lessons available in PDF and video format that can be easily adapted to local needs and languages. MISTT uses WhatsApp, YouTube, Google Search, Wikipedia, Facebook, KaiOS and Android to introduce people to the mobile internet. It also

provides a general introduction to the internet, mobile money, safety and cost. To date, the scheme has helped more than 50 million people.

Summary and considerations

Africa's digital future rests on extending the reach and affordability of its cellular networks. While reach is improving, there are still gaps – especially in Sub-Saharan countries. For this reason, MNOs must continue to invest in their network build out.

Meanwhile the wider mobile ecosystem – handset makers, OS platforms, even government tax departments – should explore ways to address the second key barrier: making devices more affordable.

Finally, they must also work together to give reticent consumers

the confidence to navigate the digital world. For millions of Africans digital exclusion is not about connectivity or cost. It is a knowledge gap. The mobile industry has launched many initiatives to improve digital skills and also to make technology easier to use. Content providers can contribute by investing in localised products in local languages, and which cater to device with limited memory and processing speed.

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Chapter 3

Mobile digital services

The importance of payment channels

In a market comprising so many unbanked consumers, how can mobile content providers get paid? If Africa wants to embrace digital services, reliable payment channels are essential.

It's self-evident that the market for digital services cannot exist without a reliable and widely available payment channel. This is a major challenge in developing markets where many economies are cash-based and most people are unbanked.

But necessity is the mother of invention. Which is why Africa leads the world in mobile money services. It's also a leader in direct carrier billing (DCB).

Both channels offer mobile content providers with a relatively friction-free channel through which they can monetise their products.

The African payments landscape: Mobile Money

What is mobile money? Simply, it describes the creation of a wallet, managed by an MNO, into which users can add or withdraw funds.

Here's how the mobile money process works. A mobile subscriber

Mobile Money services in Africa

	Sub-Saharan Africa	MENA	All Africa
Live services	161	28	171
Registered accounts	605 million	59 million	621 million
Active accounts	183 million	5 million	184 million
Transaction volume	36.36 billion	242 million	36.7 billion
Transaction value	\$697.7 billion	\$13.7 billion	\$701.4 billion

Source: GSMA [State of the Industry Report on Mobile Money 2022](#)

creates an account, typically by purchasing a scratch card. He or she can then top up the account by paying cash at an authorised agent. With funds loaded on the phone, the user can then send money to a friend or merchant. After a transaction both the recipient and the sender receive a confirmation message.

Usually, this is sent by [USSD message](#). USSD is the channel through which mobile operators send simple alerts to their customers – typically to confirm a top-up or show remaining minutes etc. USSD is preferred because it is real-time and doesn't require an internet connection. It works on any handset.

Globally, mobile money is transforming the lives of millions. Today there are 1.35 billion registered mobile money accounts. In 2021 \$1 trillion in mobile money transactions were processed, as people paid for groceries and school fees, received their salaries, took out loans or sent money home from abroad.

Although mobile money was initially designed to help people pay bills and friends, it has (in some regions) become an important channel for merchant payments.

Indeed, in 2021 the value of merchant payments, including

proximity and online payments, almost doubled, reaching an average of \$5.5 billion in transactions per month, up from \$2.8 billion on average in 2020.

It helps that some mobile money providers are improving features such as remote on-boarding processes. Safaricom's M-PESA now supports self-registration. It says more than 18 per cent of new merchants are on-boarding this way.

However, according to the [GSMA's Global Adoption Survey](#), more than 90 per cent of providers do not offer this facility. Clearly, there is still lots of room for mobile money-enabled merchant payments to grow. It also found the vast majority of merchant payments in the region are still offline.

Plenty of companies and organisations are working to change this.

The [GSMA's Mobile Money API](#) was developed in collaboration with the mobile money industry. It seeks to simplify and accelerate third-party integrations with providers, alleviating costs and difficulties of integration.

Meanwhile a number of intermediaries have emerged to make it easier for merchants to accept mobile money payments. They include Dublin-based Tola. Its

Tola Wallet integrates with 23 platforms across 12 countries and has supported 650 million transactions to date. Then there's Nigeria's B2B payments specialist Flutterwave. It serves more than 290,000 businesses in over 33 African countries and supports most mobile money platforms.

Flutterwave recently launched a mobile app that lets physical retailers take in-store payments but also enables all merchants to manage their business digitally – checking balance overview, monitoring daily transactions, storing customer's details.

The African payments landscape: Direct Carrier Billing

DCB is what happens when a consumer buys something and pays for it using their mobile phone bill. The methodology first emerged in the early 2000s when people wanted to buy new content products such as text alerts and ringtones. This was before the mobile internet, so there was no user interface through which to 'click to buy'. In its absence, content providers devised the 'reverse billed SMS'. Here, the customer was sent a premium SMS that they paid for. This was effectively the billing method and the receipt.

Content discovery in mobile money: the M-PESA Super App

Safaricom's M-PESA is unquestionably the most successful mobile money service in the world. It has transformed the financial lives of millions by simplifying and speeding up person-to-person transfers as well as utility payments.

A logical next step for M-PESA, given its wide reach, is discovery. The logic is as follows: if millions of people are using the channel to pay for services, perhaps they could also use it to find those services in the first place.

This was the thinking behind the launch of M-PESA's consumer 'super app' for smartphone owners. The product gives users smarter ways to authenticate their identity through fingerprint and facial recognition, and to track their spending, much like a bank app.

But the "Discover" functionality is the big innovation. It lets people find mini apps that provide access third-party products and services.

Today, the M-PESA app had been downloaded by more than eight million users and supported 30 mini-apps, such as the National Hospital Insurance Fund (public health insurance), BuuPass (public transport) and mGas (liquefied petroleum gas for cooking and heating).

Later carrier billing changed. Premium texts disappeared and, in their place, came one click 'charge to bill' buttons on mobile web sites. This reduced a lot of friction from the process and made digital payment available to the millions of mobile users without bank accounts.

Today, DCB is widely used to bill for content across Africa.

According to [analysis carried out by content specialist Telecoming](#), South Africans alone will pay \$89 million for digital content and services in 2022 through DCB. It estimates YoY growth of 16 percent over the next four years to reach \$159 million in 2026. It says South Africans currently spend an average of \$4.2 per month on digital content. By 2026, this average figure will reach \$5.5/month/user.

While video games, videos and music dominate DCB spending, the channel is also impacting other markets such as ticketing and even physical goods. Telecoming expects DCB to generate \$7m in ticket sales in Africa and the Middle East region this year.

Summary and considerations

Digital services demand digital payment methods. You cannot build robust and enduring markets for mobile learning, health and entertainment without them. In developed countries though, this is not an issue. Simply link a bank card to your purchase. But in largely cash-based developing countries, this is not an option for the majority.

Into this vacuum comes mobile money. Services such as M-PESA, Orange Money and others who have changed lives in Africa, and given merchants a channel through which to monetise.

Africa leads the world in mobile money. Its 171 live services host 184 million active accounts transacting \$701.4 billion a year. Still, the variation between countries in terms of adoption is striking. Government regulation is one of the factors responsible for this.

In countries where mobile money is less prevalent, content providers should consider direct carrier billing (DCB). The margins are higher, but the channel is universal, and many specialist companies can assist with set-up and outpayments.



Chapter 4

Mobile digital services

Spotlight on Africa's mobile learning market

Can edtech play its part in solving the problem of remote isolation and the scarcity of qualified teaching staff across Africa? Maybe. There is now a growing cohort of specialists experimenting with ideas for mobile learning across the continent.

Education Technology (EdTech) is having an impact in Africa. According to IMARC Group, the market reached a value of \$2.47 billion in 2021 and could reach \$4.71 billion by 2027. The global market is predicted to be worth \$404 billion by 2025.

It's easy to see why digital learning holds appeal to African educators and inhabitants. [According to Brookings](#), African governments currently spend on average 5 percent of GDP on education, which makes for the second highest in any region, and on average 16 percent of their national budgets.

But it adds that the region also has the worst education spending efficiency. According to the report, Africa has a 58 percent efficiency score for primary education and 41 percent efficiency for secondary education, both more than 20 percentage points lower than the second-worst performing region (Figure 2).

Brookings, like many other observers, believes EdTech can help and notes the contribution being made by EdTech start-ups across the continent. Their products offer widely available and cost-effective solutions to

countries that lack adequate education tools and resources.

They also give students a fast track to acquiring important digital skills, which can help them find employment in an increasingly digital-oriented business climate.

The [Future of Jobs Survey 2020](#) produced by the World Economic Forum, suggests that 85 million jobs may be displaced by machines, while 97 million new roles may emerge but will require specific digital skills.

Obviously, new ideas – not least those deploying technology – are

needed to enable children to learn key foundational skills. So, m-learning is growing quickly. EdTech Hub, a global organisation that hosts academic research on the sector, keeps a [database of firms active](#) in the space. As of September 2022, its African database listed 210 companies.

However, it also concedes the space can be unstructured and a little incoherent. It says: “Despite the long history of efforts to use technology in education — there has been a conspicuous lack of focus on the detailed, technical questions of how these investments will work, for whom, in what contexts, for how long, and at what cost.”

To illustrate the range of activity taking place across Africa here is a selection of innovative market players.

M-shule

M-Shule – means “mobile school” in Swahili – it is a Kenyan service that combines SMS with artificial intelligence to provide offline or low-income communities with mobile learning tools. The platform analyses student progress to deliver the right lesson at the right time.

Learners register by sending a text message to M-Shule and providing basic demographic details. After completing an entrance survey they are assigned appropriate lessons. Since its inception in 2017, M-Shule has delivered educational services to more than 23,000 students.

Ubongo

Ubongo is Africa’s leading producer of children’s edutainment. Its mostly cartoon programming is available via TV, radio and mobile phones. Since 2014, Ubongo claims its content has reached 27 million families.

Viamo

Viamo’s 3-2-1 service lets people dial in and listen to access important messages that help them make better informed decisions to live healthier lives. Viamo teamed up with WHO during the COVID pandemic to reach 1.3m people on topics such as how COVID-19 spreads and how COVID-19 vaccines work.

It also developed a digital training program with UNICEF to assist front-line health staff in Ghana. Over five weeks, learners received key messages and tips on their phones through IVR short calls.

EdoBEST

The Nigerian state of Edo launched a mobile-based remote learning programme called [Edo-BEST@Home](#). It lets students learn from resources that can be downloaded for free. It includes audio lessons, digital self-study activity packets, digital storybooks, mobile interactive quizzes, learning guides for parents, and virtual classrooms. The delivery methods combine WhatsApp, text messages, and the Edo-BEST@Home web platform. On WhatsApp, users can click Edo SUBEB to be directed to links for virtual classrooms, interactive audio lessons, quizzes and more.

African Story Book

The [African Story Book](#) app is a free product conceived to address the shortage of reading material for young African children who speak ‘minority’ languages. The producers work with local educators to publish books that can be read online or offline, or downloaded and printed. The website is home to thousands of openly licensed free picture storybooks in 1500 languages.

World Reader

The Worldreader app gives readers access to one of the largest catalogues of free eBooks available. Around one million Africans read Worldreader books – mostly via the Opera Mini browser which is installed on budget feature and smart feature phones.

Funzi

Funzi is a Finnish company that specialises in gamified, bite-sized lessons offered via community partners, non-governmental organizations, MNOs and social networks. It recently partnered Africa’s recruitment service AfricaWork to help job seekers improve their chances of finding work.

Summary and considerations

Mobile learning occupies a special place in the African digital services landscape. In mobile-first economies, where many people live in remote regions and on low incomes, phone-based learning can transcend the problems of distance and affordability.

The continent is already home to a number of pioneering products. Many companies work closely with MNOs and governments to ensure their services achieve the widest reach, while conforming to syllabus requirements. Their growth explains why experts believe the market could reach \$4.71 billion by 2027.



Chapter 5

Market insights

Interviews with African market leaders and industry experts...

How is the market for mobile digital services different in Africa from other regions? What can market entrants do to address the challenge of distribution and discovery? How can they overcome the problems of payment and digital exclusion?

In this section we hear the views of industry experts from across the ecosystem.



Dr Mike Short CBE

Chief Scientific Adviser

UK Department for International Trade (DIT)

Mike Short spent 30 years in telecommunications with Telefonica, where he was Vice President. He joined the Department for International Trade (DIT) as the department's first Chief Scientific Adviser in December 2017.

He now advises DIT on the technical aspects of international trade deals, supports inward investment and engineering collaboration and works with the UK's research, innovation and academic communities to boost scientific and engineering exports.

In this interview, Mike discusses the unique African mobile content opportunity, and the ways in which external companies can work with domestic innovators.

Africa has made great strides in terms of its transition to digital. How can it accelerate this to the next stage?

It is about user-pull. I think demand will depend on relevant content more and more. I realise there is still a coverage gap in Africa, and I think what the GSMA is doing there is very important. But there is also a usage divide. We have to ask: how can the web catch on? It's really a matter of developing the right content in the right languages – in things like education, health and entertainment.

What would Africans like to see? And from a UK perspective, what scope is there for collaboration and partnerships in both directions? I think there is an opportunity in sport for example. Millions of Africans follow their favourite players playing in Europe, but I'm not sure it works the other way. I'm sure there's an opportunity to bring African football to other markets. And the same goes for music and other creative industries.

What's the key to reaching users? App stores are the default in other regions. But Africa is different...

The app stores are not really relevant for the majority of the population. Language is a barrier. But just generally the app stores are not geared up for African users. Instead, content creators have to think locally. Sport and gaming and maybe even gambling are leading the way in terms of user adoption. But there can be so much more done on, say, education. The mobile offers the chance to do bite-size learning or even more ambitious ideas. Why not have an Open University for Africa? It's all possible given the right conditions of reach and affordability.

Health too. There must be an opportunity to solve the 'distance' gap by offering mobile consultations with medical experts. We're seeing examples of this already. I think MNOs have a central role, but they will need to partner up with specialists to get this moving.

COVID has undoubtedly created new digital ways of working and

living. We've seen more home-based learning across Africa. And it's probably helped specialists such as WeFarm, which helps farmers share information on crops and animal stock and so on.

Obviously, Africa is the home of mobile money services. What role will they play in closing the usage gap?

Well, the mobile money providers are key. They have the ability to help content providers to monetise premium SMS and USSD products, which I think will continue to grow. But I also think they can extend help with content discovery too. They have important basics in place – identity, trust – and they are using this to build other services on top: health insurance, funeral fees, education that kind of thing.

How can governments help with the growth of digital services?

They can play a part. But in general we can't wait for the right regulation or laws to be put in place. If you think about data protection or online safety, we're

struggling to get those right even in more mature markets. It's up to Africans to make those decisions. But none of it should stop the innovation from flowing. And it is flowing. There are incubators and digital funds doing excellent work right across Africa. They're just not that visible. We could do more on that.

So what help can external entities like DIT do to help the market grow?

We need to keep talking and exploring. We have some experience here which can prove useful I think. On the health side, for example, [we have a database of 150 medical providers who are approved for use with the UK](#)

[National Health Service](#). Now, they won't all have skills that are transferable to the African context. But some might. For example, there are companies that know how to transfer mobile data to electronic patient records and there are others that understand digital queuing systems. I'm sure there's scope to share some of this insight.



Sitoyo Lopokoit *Managing Director* **M-PESA Africa**

Sitoyo joined Safaricom in 2011 as head of M-PESA Strategy and Business Development, before moving to Vodacom Tanzania to become Director of M-Commerce in 2015. He re-joined Safaricom in 2018, and three years later assumed the role of MD for M-PESA Africa.

Safaricom's M-PESA is Africa's most successful mobile money service. It gives 51 million customers across seven countries a convenient channel for making payments to people and merchants, borrowing, saving and more. It transacts more than \$314 a year.

In 2021, M-PESA entered a new phase with the launch of the M-PESA Super App and M-PESA Business Super App. These products move the platform into the smartphone age, and offer a virtual storefront to a range of mini-apps.

In this interview, Sitoyo talks about the impact of the super apps and the impact they will have on the e-commerce market across Africa.

What was the thinking behind re-inventing M-PESA as a super app?

It's 15 years old now, and it's had an incredible impact. But we are always looking at how we can help customers do more. So in 2018 we went to China to look at Alipay and Tencent and see what they were doing with their mini-app framework. At that time, Alipay alone had 40,000 apps on its super app. These two companies had created a completely new e-commerce marketplace.

We thought we could do the same with M-PESA. We asked Alipay if we could integrate their Alipay Connect tech. It took a while to convince them. But I think they could understand the potential. We created our new super app from scratch and we see it as the future of the M-PESA platform.

How is it performing?

We launched it in June 2021 and it now has eight million downloads and three million active customers. There are around 30 mini apps for services like ticketing, insurance, various

government functions and so on. It's really been a phenomenal success.

And the business super app?

If anything, it's doing even better. The products help businesses to manage their stock and revenue and even to order from other businesses using M-PESA. In Kenya, we think there are around 500,000 merchants and that half of them use it. Meanwhile engagement rates are at 89 per cent. That's up there with the most popular consumer apps like WhatsApp.

**Why choose a super app platform?
What makes this a good fit for the
African mobile user?**

Well, a large proportion have smartphones that cost around \$30. These devices have limited capacity – only enough for three or four apps. They will have WhatsApp and TikTok and YouTube and they will have to delete one if they want to add something new. That's a problem for businesses that want to do mobile commerce. We designed the mini apps to be extremely light on memory. They're also zero rated for data. This opens up a massive new market for merchants and is also a great experience for customers.

Obviously the launch has been a success. But what barriers still remain?

There's smartphone adoption. It's improving all the time – growing by about three million a year in Kenya alone. But cost is still a problem. Governments can do more; they still tax smartphones heavily. We're trying to help by bringing in new pay

as you go and micro-lending models.

Another issue is behaviour change. We find that there's a section of the population that prefers the old way of doing things – with USSD and text – even when they have a smartphone and data allowance. Younger people are different of course.

**What impact are the mini-apps
having on merchants?**

We have ticketing businesses on the platform that are selling 10,000 tickets a month, and insurance companies acquiring 21,000 new customers. They couldn't do anything like that before. They are happy to give us a three to four percent revenue share – and we can use that margin to fund cash backs and other deals to give customers back some value.

**What are you doing to expand the
offering of mini-apps?**

We currently have an Open API platform through which anyone can access the M-PESA payment layer. We have 52,000 developers using it.

Currently our mini-app framework is different, but we want to open it up to those 52,000 developers. Once we do that, our team will look at the mini-apps for UX and quality control but it will essentially become an open platform.

**Are you also planning to add rich
media digital services too?**

Yes, we are talking to Spotify and Apple Music and Netflix and so on. These companies know they need a shopfront and a payment channel if they want to reach millions of African customers.

**What are your expectations for
the next year?**

I'd like us to have 10 million downloads of the super app across our African footprint in a year's time, and a million businesses using the business super app. I think we can aim for 200 to 300 mini-apps. Once we open up the API, we can really accelerate that, and with that unlock true potential of e-commerce across the continent.



Shameel Joosub
Group CEO
Vodacom

Shameel Joosub joined Vodafone in 1994 and has served as CEO of Vodacom Group since 2012. The group operates across seven countries in Africa and has 130 million customers.

Vodacom is deeply committed to digital and financial inclusion and has launched a range of schemes to help its customers migrate to digital lifestyles. They include Vodacom Live, ConnectU, Digifarm and of course M-PESA. In 2021 the group announced two ground-breaking 'super app' products – one based on M-PESA, the other a partnership with Alipay.

In this interview, Shameel discusses the role of the mobile operator in bringing digital services to African customers.

Vodacom provides access to vast range of digital services from entertainment to health to agri-tech. What is the strategic goal that links all of these activities?

It all starts with purpose. Our intention is to drive digital inclusion and also financial inclusion. We want to create platforms that work for people. And as a mobile operator we are in a unique position to be able to do this.

To give an example of digital inclusion, we have a service called ConnectU, which now has 34 million users. At Vodacom we believe every South African should be able to access essential services on the internet for free. So organisations such as schools, universities, colleges, hospitals and clinics can request to join ConnectU and have their websites zero-rated.

In terms of financial inclusion, we obviously have M-PESA, which is transacting \$314 billion a year. And while it started at a service that helped people send P2P payments it is now powering a huge market for savings, insurance, credit and so on.

The mission you've described here reflects the central position that MNOs play in people's lives in Africa in terms of digital services. What explains this?

I think a lot of it comes back to money, payments and the need to offer services in accessible 'bite-sized' increments. If you think about operator mobile money services, they not only give people access to digital payment they also make these payments flexible. It means we can give people access to digital services on a daily or weekly basis. This makes a big difference.

It helps that, through these platforms, we can dive into the data analytics to make better decisions. So in the case of micro-lending we can look at markers such as how often a person re-charges or even what time they get up in the morning. All of these things indicate risk.

This ability means we can help all kinds of sectors to digitise – with all the benefits that brings. We have a subsidiary called Mezzanine that's doing a lot of work in this area. It runs a programme called Connected Farmer, for example, which helps

smallholder farmers bring digital technology to their processes and stock levels and so on.

Vodacom is obviously working hard to bring digital services to customers. But how do they find them? What role does Vodacom play in terms of discovery.

Well, we have launched two very important services in the last year or so. The first is a super-app that we developed with Alipay. Obviously, China is the home of the super app. But we think it has potential in African markets. So our super app is a zero-rated destination for e-commerce. It lets customers take out loans and shop online and make payments through our mobile money service Vodapay.

We also have the M-PESA super app, which is helping our M-PESA customers to migrate over to e-commerce. We have millions of users who have graduated from a USSD experience to a smartphone experience on M-PESA. The super app gives them an easy way to discover new services. And from our point of view, we can use data analytics to personalise and improve their experience.



Dr Nick Hughes OBE

Co-founder and MD

4R Digital Ltd

Nick Hughes is a mobile money specialist. He developed and led M-PESA from origination to mass-market deployment in multiple territories. He later co-founded M-KOPA, which uses mobile money platforms to extend micro-financing to millions of people for the first time.

Now, Nick leads 4R Digital (www.4digital.com). Its mission is to embed mobile money into specific business use cases. The company has already launched a number of ground-breaking projects in Africa.

In this interview, Nick expands on the concept of embedded finance and how it can change lives for people and businesses across the continent.

Why do you think mobile money is ready to move into this new phase of 'embedded finance'?

In my experience with M-PESA I have seen the difference it has made to millions of people. After more than a decade, it's very well-established now as a channel through which users can move small sums around, pay salaries, settle bills and so on.

But I think we are at the stage where we can start to think about what else we can use these payments for. Yes, we have built basic savings and credit services on top of mobile money, but I think we can do better than that.

More specifically, how can we take that simple ability to move money around and embedded in it into specific value chains? Digital financial solutions are not really being developed with particular needs in mind. So I think this is a huge opportunity. Basically, in any scenario where cash creates friction we should be looking at using mobile money to take that friction out.

Can you give an example that shows how this 'embedded finance' concept works in real life?

We are currently working with a company called Davis & Shirliff. It's been around since 1946, and specialises in solutions for provision of water – pumping, treatment, heating and so on. It's very well-established in Africa, but it recognises there are customers there it is not reaching. This is where we can help.

Davis & Shirliff sells solar irrigation pumps that are more expensive than diesel pumps, but they last longer and have no running costs. There's strong demand for these products, but that upfront cost is a hurdle for some customers. So we are working with Davis & Shirliff to build a platform that lets customers pay as they use the pumps – with mobile money.

It's like putting a coin in the meter, but it's a digital coin. With this model, there's no need to pay the whole amount upfront, which means Davis & Shirliff can now target a large number of customers who they could not

previously serve. In effect, the customer pays per litre of water pumped or per unit of power used.

I think it's a really good example of what mobile money can do. Once you have the connectivity and the payments layer in place, you can unlock the next wave of business models.

What work does 4R Digital do to make this possible?

We build the platform that makes it all work. We use data from equipment that is digitally connected and use cloud services to scale up and down cost-effectively. We build-in the secure messaging layer so that companies can track the data being consumed, and ensure the balance of the customer account is managed using best practice digital accounting. We also monitor transactions and usage to perform credit analysis and build accurate profiles of users.

Where else can you see this embedded finance model making a difference?

There is massive potential in e-commerce. We are currently working with Unilever's Transform team to see how we can help micro-retailers for example. Micro-retailers play such an important role in Sub-Saharan African countries. They handle up

to 90 percent of all retail transactions in Nigeria and Uganda. But they also supply many customers with their most important and accessible form of credit (sometimes called shop credit). However, doing this means they have to manage the cash-squeeze related to paying wholesalers, while also managing the repayment of these informal loans to customers.

This isn't easy when you keep limited records of their business transactions and lack access to formal financial services. So we think we a digital finance application targeting these needs can complement their traditional ways of working – while also enabling them to sell more.



Melle Tiel Groenestege

Director of Digital Inclusion Policy & Advocacy
GSMA

Melle leads the policy and advocacy work of the Digital Inclusion programmes at GSMA, the trade association representing the interests of more than 750 MNOs. His focus is on policy and regulatory barriers to mobile broadband coverage, mobile internet adoption as well as gender equality.

In this interview, he outlines the extent of Africa's 'usage gap' and the GSMA's efforts to track and tackle this on-going challenge.

What does GSMA believe are the main barriers to address digital inclusion in developing markets?

We focus on three areas. The first is expanding network coverage in rural areas. Then there's the adoption challenge which is less about infrastructure gap and more about tackling the reasons why people who can connect to a network don't. Lastly, there's the gender divide. Progress here has stalled. Women are 16 percent less likely than men to use mobile internet, and the gap is significantly larger in Sub Saharan Africa, at 37 percent.

GSMA's Connected Women programme works on addressing the barriers that women face to go online together with mobile operators, governments, donor partners and others.

How do you acquire your insights?

We do in-country consumer surveys to better understand the challenges people face. Typically, we talk to 1000 people in 28 countries – though for the last survey it was 10 countries. For the purpose of this report, we are interested in the usage gap especially.

How would you describe the biggest challenges here?

We try to look at the journey of a consumer as they move towards adopting digital habits. This starts with device ownership, which is ideally a smart feature phone or a smartphone. Affordability is the biggest barrier here – both for handsets and data. But it's getting better. Data costs have fallen by 40 percent in five years. You also have to factor in average incomes of course.

Then there's awareness. Around a quarter are completely unaware of the mobile internet. So, there's an educational need. Next, when people do become aware of digital services, there are barriers of mobile internet adoption. The most important is digital skills and literacy. Other barriers include affordability of data, lack of relevant content and services, safety and security concerns, as well as other barriers to access such as lack of formal identification to register for SIM or access to sales agents for example.

And finally, there's the question of relevance. Is the content on offer catering for people's needs? Is it available in local languages? And for varying levels of literacy?

What is the GSMA doing to tackle these issues?

In terms of digital skills, we find that people get stuck on application islands. They become familiar with three of four apps and are nervous about trying new products. We have a programme called MISTT, which consists of 12 modules that coach people on how to find and use the most popular apps.

MNOs can train their sales agents to pass on these lessons, which are about how to download an app or browse YouTube or understand what the OS can do. We have implemented MISTT in 27 countries and it has impacted 50 million people.

Relevance is more tricky. The local language factor is a major challenge, but we can look into design and how to deploy graphics rather than text. Encouraging local content ecosystems is super important.

In terms of female inclusion, since 2016, more than 40 mobile

operators have made formal [Connected Women commitments](#) to reduce the gender gap in their mobile internet and mobile money customer bases. So far, they have collectively reached over 55 million women this way.

One example is Safaricom's Maisha Ni Digital Campaign. It took a holistic approach to address the barriers preventing Kenyan women from using mobile internet. In partnership with Google Safaricom introduced more affordable handsets, combined with customer support – both face-to-face and in-print. They also simplified internet activation, and relevant content and use cases.

What about the handset challenge?

The market is helping. We have seen many interesting examples of innovation in handsets. The costs are coming down, and there are new financing models emerging where people pay a few cents a day to buy a device over a certain period.

What has your research revealed about the demand for mobile content?

Well, unsurprisingly, communication and messaging are by far the most popular activities. Streaming video and other data heavy services are also growing fast. And it's interesting that there's not much difference between rural and urban areas when it comes to consuming these high-end services.

What role can governments play in pushing out relevant customer content?

They can play a part. But possibly it's a more indirect role, one where they help to create the market. Some people think 'e-government' will be the holy grail to get people on the internet. It won't. Digital inclusion will start somewhere else. We always try to approach our research by thinking about the user first. And ultimately if we can help, that will unlock significant economic growth.



Adia Sowho

Chief Marketing Officer for Marketing & Strategy
MTN Nigeria

Adia became CMO of MTN Nigeria in 2021 after a long career spanning different sectors of Nigeria's digital content space.

Previously, she had run one of Nigeria's largest Agri-Tech start-ups and held a C-level role at an instant credit platform. She was also Director of Digital Business at 9mobile (formerly Etisalat Nigeria) where she partnered with start-ups to deliver mobile content, advertising, financial, and API services.

In this interview Adia explore the evolving position of the MNO in the African content market

How would you characterise the role of MNOs in the African context?

It's very central. The technology we provide drives all other sectors of the economy. For instance, in

Nigeria MTN provides a network that connects over 70 million Nigerians in over 3,200 cities, towns and villages every day. The network facilitates the creation of

new platforms for outreach, interaction, collaboration, connection and participation. It also expands access to employment, education,

healthcare, electricity and financial services.

Everything revolves around the operators' ability to enable the development of a vibrant digital economy. These are all direct outcomes of network roll-outs and coverage.

In Africa, I'd even suggest that the role of a mobile phone has gone further, becoming a vehicle for trust for many people connecting virtually everything they do in their lives.

Mobile content is obviously very important to Nigerian consumers. How are you approaching the market?

We are exploring partnerships with big OTT firms on what we can do to help each other. It's early stages, but I expect it will be very much like the OTT plays that other telcos are making around the world.

We are also keeping an eye on local OTT content firms. There are a lot of them, and the market is fragmented, but we are excited about the potential they represent. That is probably why the big global OTTs are looking to acquire relevant local programmes: they

are scooping a lot of them up. It's interesting. We are monitoring things. But is content a massive revenue centre for MTN? Not yet.

What happened to the market for more basic direct-to-consumer content products in Nigeria? Text alerts and so on?

People's interests have changed. They've moved on to social media with most content creators using social channels to share their ideas. Also, subscription levels fell dramatically after the double opt-in rules were put in place. Don't get me wrong, the introduction of double opt-ins was important, to protect customers from inadvertent subscriptions and exploitation. However, it also added friction to the content consumption process and so aggregators struggled. This has happened everywhere, of course, not just in Africa.

You mentioned trust earlier. Can you elaborate on how MTN might leverage that?

Apart from ensuring connection and interactions, we have a phrase we use that sums it all up: 'leading the delivery of a modern connected life.' We think we can

do more to help people with issues of access, efficiency and ease. Things like password keepers for auto-filling forms. I think there's an opportunity to build out our digital offerings in this way. We have a lifestyle app, Ayoba, which we believe can be the central vehicle for that.

I think more broadly we want to get people to see MTN as a company that can help them have a digital lifestyle. We want people to think less about merely buying megabytes from us and more about buying a service or a utility. We're building this proposition into our Ambition 2025 strategy.

Nigeria doesn't have a mobile money tradition. Is this changing?

Nigeria is still a heavily cash-based economy. There's airtime, but that's not quite the same as money and it's regulated to be separate. Because of this we see big potential in digital payments. It's important to remember that every country is different, with its own context and solutions. What happened in Kenya was unique to their policy context and Nigeria will follow its own path.



Malick Dibba
Founder and CEO
Alchemy Telco

Alchemy is a leading aggregator of mobile voice and messaging for the West African region. It has direct connections to all the mobile networks across Gambia, Senegal and Sierra Leone. Its tools let any business or government department create, launch and pay for mobile campaigns, notices and alerts.

In 2023, Alchemy will launch a direct-to-consumer service called Alcophony. It is a 'super-app' designed to give users a one-stop product through which they can talk, chat and access multiple third party mini-apps.

In this interview, Malick gives his views on the African content market and explains why the market needs Alcophony.

You are preparing to launch the Alcophony app across Gambia, Senegal and Sierra Leone. Can you explain the proposition?

We like to think of Alcophony as a super app that will link consumers to all kinds of businesses in a 360 way. They can use it to communicate with each other by voice or text, but they can also use it to find and pay for all kinds of digital services.

Why did you build it?

There is a really big gap for e-commerce in this part of the world. The network can be unreliable and the electricity supply is unpredictable. Also, most people are unbanked. But there is demand. So we figured that SMEs need help. We started our company as a B2B voice and message provider. That gave us the market insight to see the need for a super app type of product. And we had the technical ability to develop it.

The main thing Alcophony does is solve the interoperability challenge with mobile money. We have four

mobile networks in Gambia, and two have mobile money products. But they are not compatible with each other. And they are not too user-friendly. We solve all those problems, and give users a single app where they can pay with whatever service they or the merchant belongs to. For the merchant, Alcophony acts as a kind of 'bring your own device' for accepting any kind of payment.

I know there is a need for this. I recently had a meeting with an internet provider to talk about integrating his service into the app. He ended up saying he would even pay his staff's wages on the platform.

But Alcophony is not a wallet?

No, it is an app with a wallet component. The wallet is important, but it's not the product.

And it's also a destination for third party content?

Yes, we have an API that any partner can integrate with. We want providers to have their own

mini-apps in Alcophony so customers can find and pay easily for all kinds of content. We're focusing on the top tier use cases first: transport, grocery, government/tax, electricity top up, school fees. We are currently working with a partner to support pharmacy bookings and telephone conversations.

How can users with basic handsets engage with it?

With a feature phone, there's a limit to the wallet functionality in Alcophony. You can only receive money and then convert that token into cash. That said, we are developing an IVR function so that a user can call a short code and access most of the key functions using USSD.

Voice is an important interface because it's universal. Even USSD is not understood by everyone. With IVR, most users instantly know what to do and can always call in their own language.



Patricia Peiró

Chief Communications Officer

Telecoming

Telecoming is a global content publisher operating in 21 countries around the world. It develops products for entertainment brands such as Real Madrid, PSG and Gameloft, and partners with MNOs to distribute these mobile services to customers.

The company has a strong presence in African markets, where it works closely with operators and also with local content providers such as Maliyo Games and Ubungo.

In this interview, Patricia Peiró, Chief Communications Officer of Telecoming, reflects on the unique market opportunity presented by the African content market.

Why is Telecoming so focused on the African market?

We've been active in Africa since 2015. The potential is amazing. Obviously, every country is different. That said, there are some similarities across the whole continent. It's mobile-first, which is a huge advantage. And the content market is all based around mobile payment as opposed to bank cards. That means the MNOs are playing the role of a bank in many countries. For a company like Telecoming, whose model is all based around carrier billing, that is key.

The operators know that data and voice will become a commodity. It happened across Europe, and it will happen in Africa. So, they are looking to offer new experiences beyond the network if they want to keep their customers.

Can you give an example of how this plays out for you?

Real Madrid is a good case in point. They wanted to reach African fans but they had no idea how. We told them mobile was the only way because of the reach and the ability to monetise in a region

where most people use their phones to pay for services. And obviously MNOs offer the best channel to do this.

With Real Madrid, we created a range of products from video on demand to highlights, news updates and wallpapers. So now we work with nine telco groups across the continent on this. We also have an AdTech team that works across Google and so on to drive customers to the operator portals.

What makes DCB such a useful tool?

Payment is the key to solving problems on the user and the merchant side. If they both know and trust the channel, it's very powerful. The consumers are very familiar with DCB. It's not always a pure one-click flow. But it works. Also, operators are very open to it. They are looking for good products they can promote with carrier billing.

On the downside, the rev shares vary depending on what products you have. With a brand like Real Madrid, you are in a good bargaining position.

But overall, the DCB market in Africa is expanding fast. We have done research that says it will grow at a year-on-year rate of 19 percent, exceeding \$1 billion by 2026.

DCB also supports subscriptions. How significant are recurring payments now for the content market across Africa?

They are growing. We did some research recently that revealed the subscription economy is currently worth \$11bn and will grow 11 percent a year. South Africa alone currently has 7.2m active subscriptions.

It shows that recurring payment is not just a factor in developed markets. Subscription-based business models have become global and they are changing the relationship between brands and their customers.

How much work do you do on modifying content for local markets?

A lot. User experience is a big factor for us. We adjust cultural models in each market that serve as a reference for the audience. In

the case of children's services, for example, we also modify the user experience with larger and more coloured buttons. We recently updated out tech features for kids so that, when users are watching a video, they can shift the language at any moment instantly.

We also have amazing partners who know their local markets. We trust them to deliver quality content. In the education space we work with Ubongo and Bino and Fino. They develop original programming that is highly regarded. We have created

services for them that comprise colouring books, stories, cartoons, short videos – and we build in parental controls too.



Anzelle Robertson

Director Business Development Sub-Saharan Africa
Sam Media

Sam Media is a global mobile content provider, which specialises in educational and entertainment services. The company is active across the African continent. Anzelle looks after key relationships with local content providers, aggregators and MNOs in the Sub-Saharan region.

In this interview, she discusses the flourishing market for premium products and the part played by direct carrier billing in making these services viable.

Sam Media publishes mobile content all over the world. What is different about Africa?

We are a publisher that distributes mobile content right across Africa. We work with different MNOs in 46 countries. The carriers are imperative to the digital content market in Africa. In other regions, companies like Sam Media might spend a lot of money on targeted digital advertising, which is very expensive. But in a market with a lot of feature phones and where they are swapping SIMs and so on, this doesn't work. So we rely on the carrier partnerships instead for reach. And also with payment providers who have local knowledge and connections.

What kind of content are you working on now?

We developed a product called XR Academy that puts users into a virtual classroom they can walk round. It offers an immersive form

of learning where consumers can take virtual field trips from the comfort and safety of their homes. Now, obviously, we know that hardly anyone has a VR headset. So we have modified it for use with just a smartphone, and we are also distributing flat packed cardboard headsets.

It sounds like a high-end proposition for a developing market audience. What's the thinking behind this? Are you also focused on 'simpler' products for feature phone users?

We haven't given up on these products. If a partner comes to us with an interesting text or USSD product we might support it. But as a brand it's not where we are looking to go. And at the same time I think carriers are looking at this high-end market too. I know that an exec at one of the South African carriers called us after he saw one of his own ads for 5G featuring a VR headset and

realised the company didn't even have a VR product to offer.

How do you navigate the data consumption requirements of a product like XR academy?

We have created it as a browser based product rather than an app. We find that you can't modify for the internet speed and so on with an app, whereas you can in a browser. And also we can zero rate it on the browser. Some MNOs are interested in doing this especially for educational products.

How important are local partners?

Extremely. Take Ghana for example. We work with a company called HubTel, which started in SMS but is now an e-commerce destination with its own wallet capability. We work with them to bundle digital products to physical items. So if someone buys a smartphone on the platform for example, we can offer them a

subscription to XR Academy or whatever as an add-on.

And it works the other way. With HubTel we can send out physical products free with digital purchases. We have a football prediction game called striker and we send out footballs or shirts to subscribers, which people don't expect and really love. We have to be careful as gambling regulations prevent you from doing 'win campaigns' as but as long as your product is skill-based you can do that.

Billing is obviously key to the content market. How do you approach it?

80 per cent of what we sell is via direct carrier billing. And we like to offer lots a payment options – to give the consumer the choice to pay monthly or pay a little more to pay weekly. We also support mobile money wallets where

available. The margins are so different. DCB pay outs can be as low as 20 per cent to us. Wallets are 85 per cent at worse. But obviously mobile money is limited in terms of reach.

What are the pros and cons of working as a digital content provider with mobile money services?

Well, as I said, the margins are great. I'd say the challenge is the checkout process. In a physical setting, it's straightforward. I am standing at the till and I enter the USSD string followed by the merchant's number, and I immediately get a pop up to confirm. It's all very transparent. But on a web page I don't want them to leave my site to go to the wallet provider's page. And how can consumers remember the merchant's number when they get there? It's chaos from a conversion

point of view. A better solution is to push the payment request to people. In this scenario, they press 'pay' at checkout and we push them a pre-filled payment screen and all they do is click 'buy.' But it's not widely available because it's open to abuse.

Are you seeing signs that mobile money adoption is growing?

Yes, I am. Mobile wallet growth all depends on growing the base of brick-and-mortar agents. So, it relies on the commitment of the carriers. If you look at Ghana, MTN has invested a huge amount in training and it's really paid off with more than 30 million wallets now. And what Ghana did five years ago, South Africa has done in the last year. So if I had to predict I would expect mobile money to take off here soon. The signs are there.

Conclusion

When physical products and services go mobile, they have the power to transform societies. Mobile eradicates problems of distance and time. This is particularly obvious in the field of mobile learning, which can change lives by bringing education to people in remote areas.

But mobile content doesn't have to promote a social 'good'. It can simply bring pleasure and entertainment in the form of games, music, short-form video and more. This increases choice for millions of Africans. It also generates revenue and provides employment.

The United Nations says internet business in Africa could add US \$180 billion to the continent's GDP by 2025.

In order to grow the market, stakeholders need to work together to overcome structural barriers. This starts with reach. But once that is achieved, they should focus on the 'usage gap' – the factors that prevent connected mobile subscribers from engaging with rich media services. They can do this by providing education, delivering affordable products and – just as important – by developing localised products targeted at the African consumer.

These are real challenges. Nevertheless, the GSMA and the UK government believes that Africa's MNOs, regulators and mobile content community can overcome them.

The UK's Department for International Trade understands the incredible potential of mobile to transform lives and livelihoods across the world. We also recognise that mobile-first African nations in particular are well placed to lead this evolution.

This is why the UK is committed to working with its counterparts across the continent to stimulate digital innovation. With a developed digital economy, African companies and citizens will be able to access mobile channels that lead to increased trade – and ultimately to robust economic growth.

If you would like to discuss any of the areas covered in the paper or partner with DIT, please contact the department's Digital Commerce & Ecommerce team (see next for details).



Department for International Trade

Department for International Trade

The UK's Department for International Trade (DIT) is a UK Government department that aims to secure UK and global prosperity by promoting and financing international trade and investment, and championing free trade. It works with businesses based in the UK to ensure their success in international markets, and encourages overseas companies to look to the UK as their global partner of choice. DIT offers expertise and contacts through its extensive network of specialists in the UK, British embassies, and other diplomatic offices in over 100 markets around the world. The DIT network helps overseas businesses to source UK goods and services and connects them with the right UK partners.

Digital Commerce & Ecommerce Team

The Department's Digital Commerce & Ecommerce team is a group of dedicated professionals and industry experts providing tailored trade and investment advice to UK and international companies on digital commerce. The team also works with international organisations to create mutually beneficial initiatives that help businesses benefit from the opportunities that digital trade offers.

For more information on how DIT can help your organisation or to discuss strategic partnership opportunities, please contact digital-exporting@trade.gov.uk

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