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Communications Africa Afrique

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AFRICA'S 5G FUTURE

Satellite communications
VSATs: adaptable, efficient and evolving

Data centres
Dealing with a data deluge

PMR
Why TETRA still matters

Rural coverage: Innovative business models

FEATURES: ● Network upgrades in Morocco ● Internet uncertainty in Nigeria ● Power issues in the 5G future
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A note from the Editor

THINGS ARE CHANGING – for the better. In the middle of a global pandemic that may seem a strange statement. But in this issue, you will read about what 5G can do to enhance African communications, how OTT can inspire new broadcast business models and how the arrival of data centres can boost industries across the continent. Even established technologies, such as TETRA, VSATs and satellites, are gaining new capabilities to serve Africa's fast-changing needs. Telecommunications continues to inspire new industries, aid economic growth and offer new ways of bringing people closer together. We can take some comfort, and pride, in these difficult times, that we are part of an industry that really is changing things for the better.

Sebastien Codeville: "With faster internet, more business cases can emerge"

5G and its connection with power.

Rising demand for local content and short videos.

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Global IT spending on enterprise software to reach US$426bn in 2020

GLOBAL IT SPENDING on enterprise software is set to reach US$426bn in 2020, with many businesses in the IT sector keen on implementing innovative measures to keep entitites running during this pandemic, according to data obtained by Buyshares.co.uk.

Spending reached an all-time high of US$458bn in 2019, translating to a drop of about 6.98 per cent when compared to the projected figures for 2020. Spending for 2020 will reach US$426bn, the first drop in 10 years, breaking an upward trajectory that began in 2009.

Photo: Adobe Stock

Many businesses in the IT sector are keen on implementing measures to keep their entities running during this pandemic.

Between 2009 and the estimates for 2020, spending stands at US$3.94 trillion. The lowest spending in the sector was in 2009 when the figure stood at US$225.51bn.

In 2018, spending was US$419bn, an increase of 13.55 per cent from 2017's figure of US$369bn. Between 2014 and 2015, the spending stagnated at US$310bn before a slight increase to US$316bn in 2016.

The Buyshares.co.uk research attributes the projected decline in spending to coronavirus. According to the report, "The coronavirus crisis has forced many sectors of the economy to prioritise important aspects of their operations, explaining the drop in enterprise software spending. Many businesses in the IT sector are keen on implementing measures that can keep their entities running during this pandemic. This strategy is replicated across the various businesses for 2020."

Buyshares.co.uk's research has further overviewed the estimated revenue of the US software publishers between 2005 and 2019. Last year had the highest revenue at US$284.66bn, a growth of 144.05 per cent from 2005 when the amount stood at US$116.64bn. During the period under review, the total revenue was US$2.6 trillion.

Revenue has been growing steadily but there was a slight drop in 2009 when the figure stood at US$138.98bn, a decline of about 2.62 per cent from the previous year. The growth has been fuelled by increasing investment in the IT sector alongside the popularity of mobile devices.

LoRaWAN World Expo dates announced

THE ASSOCIATION OF companies that supports the open LoRaWAN standard for the Internet of Things (IoT) low-power wide-area networks (LPWANs), has announced its comprehensive agenda for the LoRaWAN World Expo taking place at the Palais des Congrès in Paris, France, 3-4 Dec.

Donna Moore, CEO and chairwoman of the LoRa Alliance, said, "Sessions will explore how IoT is improving the way we live and work, and showcase the value LoRaWAN provides in applications like sustainability, safety and achieving efficiencies."

The multifaceted live programme will feature a wide range of industry leaders on sustainability-related topics, vertical market applications among others.

South Africa's Mama Money partners with Western Union for global expansion

WESTERN UNION, A provider in cross-border, cross-currency money movement and payments, has partnered with Mama Money, an international money transfer company, to expand its reach globally.

Photo: Adobe Stock

Many businesses in the IT sector are keen on implementing measures to keep their entities running during this pandemic.

The partnership enables Mama Money customers to send money to their families around the world through Western Union's Global Network.

This collaboration will equip Mama Money's more than 500,000 South African customers to send money from their smartphones for payout to billions of bank accounts in over 100 countries around the world or cash at Western Union Agent locations across more than 200 countries and territories.

With the Mama Money app, customers can pay for transactions through direct transfers from their bank accounts or through a vast cash-in network at all major retailers in South Africa.

The open platform strategy of Western Union empowers other brands to move money and enable cross-border international money movement in minutes by leveraging their core cross-border assets - including global settlement capabilities, compliance, operations, network, and technology systems.

The mobile application from Mama Money enables customers to register quickly using their phones and submit their ID, passport, refugee status or asylum documents via the app. Once registered in the app, customers can then start sending money to their family abroad, which takes 24 hours to get approved.

Mama Money has partnered with every major South African retailer, making it easy for customers to pay at more than 60,000 cash-in points such as any national Shoprite or Pick N Pay. Mama Money payments can also be accepted by small business owners with a Flash or Selpal device, making it even easier for customers who may not have access to a major retailer.

MainOne to provide broadband access in Burkina Faso

MAINONE, WEST AFRICA'S connectivity and data centre solution provider, has been selected by the State of Burkina Faso, backed by the World Bank, to provide bulk connectivity solutions to a consortium of operators through the PAV-Burkina Cooperative for the next three years.

The PRICAO Initiative was created by the Burkina Faso government, in collaboration with a consortium of internet service providers and mobile operators. The purpose of the initiative is to facilitate the creation of virtual landing points as a platform for the extension of broadband network coverage in the country, with a view to improving the quality of connectivity in the region; increase internet penetration; and improve the performance of ICT services.

To set up an independent and competitive framework for connectivity services, the Ministry of Digital Economy and Postal Services (MDENP) with the support of the World Bank, created a cooperative consortium (SCOOP PAV-BURKINA). The consortium brings together major electronic service stakeholders to deliver a turnkey project that will provide fibre optic transmission infrastructure between Ouagadougou and Dakola, to be delivered in two phases within a three-year period. This cooperative has been tasked with managing and administering the infrastructure judiciously in order to ensure a fair distribution for the various marker players.

The World Bank's more than US$20mn support of the PRICAO initiative has enabled the Burkinabe state to set up a 200km fibre optic transmission link from Ouagadougou to Dakola. The first phase of the project commenced in 2018, with the initial stage providing capacity in Ouagadougou over three years. Phase two of the project was scheduled to commence in quarter two of 2020 and will lead to the provision of additional internet capacity in Ouagadougou and Bobo Dioulasso within another three-year period. MainOne, which has been selected to deliver Phase two, will provide 10 Gbps broadband capacity in Ouagadougou, together with five Gbps in Bobo Dioulasso.

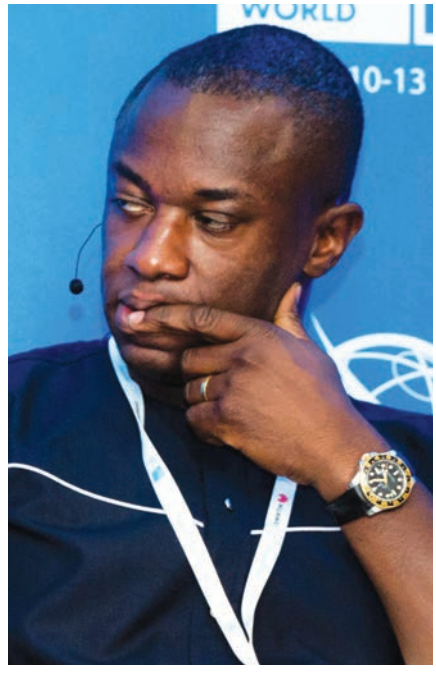
"We needed to put the right structure in place to deliver on our ambition of becoming a leading pan-African technology company. This includes the decoupling of Vodacom South Africa as a standalone business."

- Shameel Joosub
CEO
Vodacom Group

"We are pleased with the development of our strategic partnership with Telecom Egypt. Agreements like the ones we have signed today will be reflected in the products and services that we will offer our customers for the first time in the Egyptian market."

- Hazem Metwally
CEO
Etisalat Misr

"We are happy to provide nearly every country in sub-Saharan Africa with its own Information Centre so people across the continent have a central place to find authoritative information around COVID-19."



- Kojo Boakye
Director of Public Policy, Africa
Facebook

"The N100 billion issued is the largest commercial paper issuance by a Nigerian corporate. It allows us to broaden our sources for funding and combines our established lines of credit with access to capital market funding, which will lower our overall cost of borrowing."

- Ferdinand Moolman
CEO
MTN Nigeria

"MTN GlobalConnect is delighted to participate in this bold 2Africa subsea cable project. This initiative complements MTN GlobalConnect's terrestrial fibre strategy to connect African countries to each other and to the rest of the world."

- Frédéric Schepens
CEO
MTN GlobalConnect

"These [March-end financial] results demonstrate the strength and resilience of our business and the effectiveness of our strategy – with all three business services, voice, data and mobile money, contributing to revenue growth."

- Raghu Mandava
CEO
Airtel Africa

AAE-1 consortium deploys Infinera to double capacity on intercontinental cable system

TELECOM EQUIPMENT COMPANY Infinera has announced that Asia-Africa-Europe-1 Consortium (AAE-1), one of the world's largest consortium cable systems, has completed a major upgrade with Infinera to boost capacity in its subsea network connecting East Asia to Europe via Egypt.

Based on Infinera's fourth-generation Infinite Capacity Engine (ICE4) technology and Instant Bandwidth capability, the Infinera solution enabled AAE-1 to double its intercontinental network capacity, while reducing overall ownership costs and increasing service agility and network reliability.

AAE-1's cable system spans 25,000 km of subsea and terrestrial network. Unlike any other cable system in the world, AAE-1 terminates at two points of presence in Singapore and is the only next-generation cable that continues further into Asia through diverse terrestrial routes across Thailand, providing connectivity to Vietnam, Cambodia, and Hong Kong.

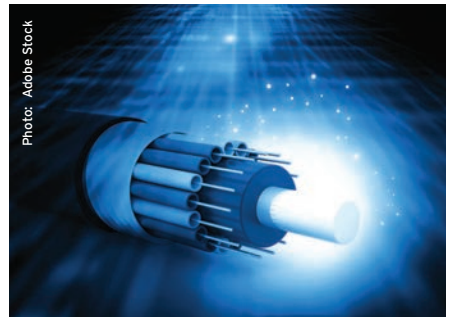


Photo: Adobe Stock

This routing enables AAE-1 to deliver one of the lowest-latency routes between Hong Kong, India, the Middle East, and Europe.

This routing enables AAE-1 to deliver one of the lowest-latency routes between Hong Kong, India, the Middle East, and Europe.

Loucas Balis, chairman, AAE-1 Management Committee, said, "AAE-1 is an important subsea cable asset for carriers globally, with bandwidth needs growing rapidly, particularly during this very difficult and deeply sad global crisis. After a rigorous evaluation, we selected Infinera for its superior reach, optical transmission performance, and reliability."

Giuseppe Sini, vice chairman, AAE-1 Management Committee, said, "When selecting a solution for AAE-1, it was critical to select a vendor with a seamless scalable solution for the entire network, with great economics. Infinera gave AAE-1 the ability to activate capacity quickly and really differentiate our services. Infinera has been an excellent choice."

Nick Walden, senior vice-president, Worldwide Sales at Infinera, commented, "We are pleased to support AAE-1's network upgrade, delivering the benefits of Infinera's photonic integrated circuit-based ICE4 solution, featuring industry-leading spectral efficiency, Nyquist subcarriers, SD-FEC gain sharing, and Smart Optimise. The deployed solution also delivered extended C-band open line system terrestrial crossings that are expandable in-service to L-band."

Vodacom to provide students with 30GB data per month for online learning

MOBILE NETWORK OPERATOR Vodacom has partnered with the University of the Witwatersrand (WITS) in Johannesburg to keep students connected to higher learning activities.

WITS is one of the most iconic and long-standing universities within South Africa and is internationally recognised for its research and high academic standards.

To ensure that all students at WITS have an opportunity to complete the 2020 academic year, Vodacom has committed to providing a 30GB data bundle for each student to stay connected and continue their education while away from campus.

William Mzimba, CEO for Vodacom Business, said, "We can all agree that success begins with education. For many students, remote learning is a challenge as they do not have the means to access online learning materials.

"As remote learning becomes a necessity due to the COVID-19 pandemic, Vodacom Business is proud to partner with WITS to support education and the development of tomorrow's future business leaders by keeping students connected. Investing in education and improving connectivity plays a key role in fast-tracking our country into the Fourth Industrial Revolution."

Shirona Patel, WITS spokesperson, commented, "WITS University is committed to ensuring that its students can access online teaching and learning through the provision of devices and data. This partnership with Vodacom provides our students with the data required to continue with their education and to move forward with their studies."

The recurring data bundle provides WITS students with access to learning sites for up to a maximum of 30GB per month. Non-Vodacom WITS students were given the option to purchase a R5 Vodacom SIM card and then register it at any Vodacom-accredited outlet. Students needed to update their new Vodacom phone number to receive this data allocation as part of their student record with the university. As part of the university package and agreement, Vodacom agreed to reimburse students for the SIM card's cost with air time up to the R5 value.

Cobham EXPLORER terminals receive Inmarsat type approval

COBHAM SATCOM AND Inmarsat have announced the type approval of two new land satellite terminals. The low-profile vehicular Cobham EXPLORER 323 BGAN terminal and the auto-point 'fly-away' Cobham EXPLORER 6075LX VSAT terminal are now fully operational on the Inmarsat network, with commercial shipments of each beginning immediately.

The new EXPLORER 323 terminal represents the first class 12, electronically steerable terminal for use on Inmarsat's L-band Broadband Global Area Network (BGAN). In conjunction with Inmarsat's network, the terminal promises a new standard in mobile communications in remote locations.

The class 12 terminal features speeds of up to 384kbps, support for BGAN (data and voice) and BGAN M2M (data) operations, and an integrated antenna and receiver, meaning only a rooftop unit is needed. Additionally, the EXPLORER 323 has an integrated Wi-Fi hotspot for setup, management and data access. Developed to integrate seamlessly with Cobham's PRISM PTT+ offering, the EXPLORER 323 will enable telemetry and voice communications as well as other uses in remote rail operations, utilities, mining, aid and NGO operations, agriculture, public safety and emergency response.

Inmarsat has approved the new auto-point 'fly-away' 0.75m Cobham EXPLORER 6075LX VSAT terminal for its high-speed Ka-band Global Xpress service.

With a dynamic auto-pointing correction, the terminal maintains its connection even in windy conditions or when pushed or moved, optimising its connection constantly.

Mike Carter, president of Inmarsat Enterprise, commented, "With the EXPLORER 323 ideal for vehicular tracking and communications and the EXPLORER 6075 optimised for high-bandwidth operations, both terminals improve upon their predecessors and are set to make ultra-reliable connectivity easier to access in the remotest areas." wherever it is needed most."

MTC selects CSG to lead business transformation

MOBILE TELECOMMUNICATIONS LTD (MTC), Namibia's leading mobile operator, has selected CSG to lead its business transformation efforts.

As a transformation business partner for MTC, CSG will deliver an agile, future-proof technology stack that delivers personalised customer experiences across multiple devices and channels.

CSG will support MTC's customer management, billing, product catalogue, order management, inventory, resource management, enterprise service bus (ESB), activation, roaming and document management.

Additionally, CSG will provide a comprehensive solution that includes real-time charge.

SES delivers more than 8,300 TV channels to 367mn homes worldwide

SATELLITE TELECOMS COMPANY SES has announced that the number of global TV households it reaches directly or indirectly via satellite has increased by 12 million, reaching 367 million in 2019.

Findings from the company's annual Satellite Monitor market research showed that SES's technical reach has increased across several continents, including Europe, Africa, Asia-Pacific (APAC), and Latin America (LATAM). The research also found that SES delivers digital television to 13 million households in the Middle East and 35 million homes in Africa. Altogether, SES has observed a combined growth of almost five million households across APAC and Africa.

SES's TV market research sheds light on several key trends behind the relevance of satellite broadcasting, including the transition from analogue to digital TV and the rise of HD broadcast.

End consumers in Ghana and Nigeria are choosing satellite TV for its better

Telefónica tests Telesat's Phase 1 LEOsatellite

SATELLITE OPERATOR TELESAT and Telefónica International Wholesale Services (TIWS), Telefónica Group's international wholesale service provider, have completed live in-orbit testing across a wide range of applications on Telesat's Low Earth Orbit (LEO) Phase 1 satellite.

TIWS partnered with Telesat on a rigorous test campaign to explore the performance and feasibility of leveraging LEO satellites for high-end services, with a mission to increase agility and improve operational efficiencies. Testing showed that Telesat LEO could be a viable option for wireless backhaul and present a substantial improvement in performance over geostationary orbit (GEO) connections, without the use of compression or TCP acceleration techniques that are typically required in GEO environments with 650ms latency.

Erwin Hudson, vice-president, Telesat LEO, said, "With its high-throughput links, ultra-low latency, and disruptive economics, Telesat LEO offers an unparalleled value proposition to expand the reach of 4G and 5G networks."

Applications tested over Telesat LEO resulted in observed round trip latency of 30-60 msec without any packet loss.

Photo: Adobe Stock

Akili Network launches Kenya's first children's TV channel

NAIROBI-BASED AKILI NETWORK has launched Akili Kids!, Kenya's first and only dedicated free-to-air children's television network with imaginative learning programmes that parents can trust and that will benefit children.

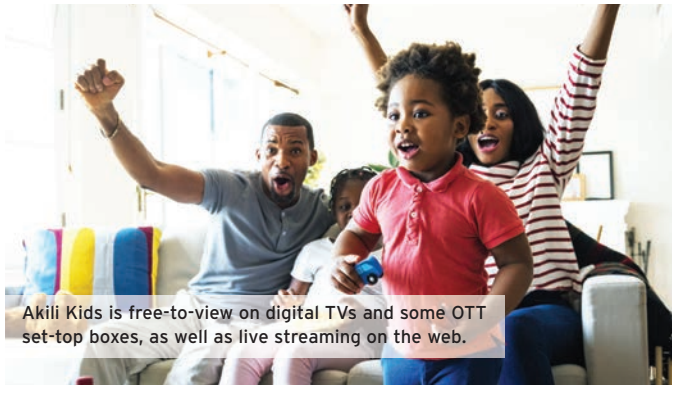
Akili Kids is broadcasting digitally to televisions, mobile devices via the internet.

Jesse Soleil, president and co-founder, said the launch was a culmination of almost eight years of conceptualisation that saw Akili Network venture into the Kenyan broadcast industry.

Akili Kids is a free-to-air channel, available on StarTimes/PANG Channel 105, and is free-to-view on digital TVs and some OTT set-top boxes, as well as live streaming on the web. "Our target is for 40 per cent of our programming to be locally produced over the next three years. We already have some terrific local programmes in development," said Jesse Soleil.

"We have an outstanding team in Nairobi, and as Akili Kids! viewership grows, so will our ability to develop, acquire, and broadcast the most impactful children's programming in Kenya. We are also contributing to the growth of Kenya's creative economy by working with the vast pool of talent to create inspiring and imaginative programmes for children," he added.

Photo: Adobe Stock



Akili Kids is free-to-view on digital TVs and some OTT set-top boxes, as well as live streaming on the web.

Travel Africa Network picks Eutelsat's Hotbird to launch HD African travel channel

EUTELSAT COMMUNICATIONS' HOTBIRD video hotspot has been selected by Travel Africa Network for the broadcast of its first HD African travel channel, with 100 per cent African content dedicated to promoting tourism and hospitality in Africa.

The multi-year contract will allow Travel Africa Network to broadcast high-quality content across Europe and MENA, covering African gastronomy, culture, the best places to travel and stay, and documentaries on destinations.

Photo: Adobe Stock

The Multi-year contract enables Travel Africa Network to broadcast content to Europe and MENA.

With its unique pan-European coverage, the 13° East Hotbird satellites form one of EMEA's largest broadcasting systems, delivering content to more than 135 million TV homes in Europe, North Africa and the Middle East.

Nicolas Baravalle, regional vice-president, sub-Saharan Africa of Eutelsat, said, "We are proud to welcome Travel Africa Network to the HOTBIRD line-up. Their confidence reflects the unparalleled reach of our 13° East for both installed households and luxury hotels, and we hope it will lead the way for more African channels targeting Europe and MENA."

Maggie Mutangiri, CEO of Travel Africa Network, said, "We are delighted to launch the first dedicated African travel channel on HOTBIRD, enabling us to broadcast high-quality content to the widest possible audience to promote African travel experiences."

Events/Événements 2020

SEPTEMBER/SEPTEMBRE			
23-24	**Cloud + Datacenter**	Paris, France	https://www.datacenter-cloud.com/
OCTOBER/OCTOBRE			
30 Sep - 1 Oct	**DTX Europe**	London, UK	https://dt-x.io/europe/en/page/dtx-europe
13-15	**Broadband World Forum**	Amsterdam, Netherlands	https://tmt.knect365.com/bbwf/
21-22	**NABSHOW New York**	New York, USA	https://www.nabshowny.com/
26-28	**CABSAT**	Dubai, UAE	https://www.cabsat.com/
NOVEMBER/NOVEMBRE			
10-11	**SECUREXPO EAST AFRICA**	Nairobi, Kenya	https://www.securexpoeastafrica.com/
10-12	**AfricaCom and AfricaTech**	South Africa	https://tmt.knect365.com/africacom/
16-17	**Seamless Middle East**	Dubai, UAE	https://www.terrapinn.com/exhibition/seamless-middle-east/index.stm
22-25	**CAIRO ICT**	Cairo, Egypt	https://cairoict.com/
MARCH/MARS 2021			
16-17	**SECUREX WEST AFRICA**	Lagos, Nigeria	https://www.securexwestafrica.com/
18-19	**Blockchain Africa Conference**	Johannesburg, South Africa	https://blockchainafrica.co/
APRIL/AVRIL 2021			
16-17	**AFRICA IT & TELECOM FORUM**	Abidjan, Côte d'Ivoire	https://www.africaittelecomforum.org/

World Bank: Tanzania can boost digital economy to support stronger policy response

THE WORLD BANK'S 14th Tanzania Economic Update (TEU) has highlighted the benefits of investing in Tanzania's digital economy, to support stronger policy responses to the current crisis and boost the recovery in productivity and job creation.

The country has already made good progress in the ICT sector which it can build upon, including the strong network of existing mobile accounts to streamline new cash transfer schemes and widen the coverage of existing social programs. Tanzania also is currently connected to three international undersea cables and, working with the private sector, could harness greater internet capacity to ensure continuity of government and education.

According to the report, economic growth will slow sharply in 2020, to 2.5 per cent from the 6.9 per cent growth the government reported in 2019, although the report also recognises significant uncertainty as the pandemic continues to unfold.

The report recognises mitigating steps government has already taken, and this forecast assumes the authorities will take additional health and economic policy measures to mitigate negative impacts. However, there are downside risks for even slower growth if any additional policy response is delayed or not well-targeted or the external environment does not markedly improve this year.

The TEU analyses the major transmission channels of the global crisis to the Tanzanian economy, including lower export demand, supply chain disruptions for domestic producers and suppressed private consumption. International travel bans and caution against contracting the virus have severely hurt the tourism sector, which had been one of the fastest-growing sectors in the economy. Tourism operators in the country are now forecasting revenue contractions of 80 per cent or more this year, and only a mild recovery next year, conditional on how well global demand rebounds.

Photo: Adobe Stock

Beyond the macro numbers, the analysis says the pandemic is impacting lives and livelihoods. Simulations using the recent Household Budget Survey data released in December 2019 show that the crisis could push 500,000 more citizens below the poverty line, particularly those in urban settings relying on self-employment and informal/micro enterprises.

"The vulnerable people especially those employed in the informal economy are likely to bear the most severe impacts," said Mara Warwick, World Bank country director for Tanzania, Malawi, Zambia and Zimbabwe. "They tend to live in congested settlements with limited access to basic services and they also lack adequate safety nets and have limited savings. Women and women-headed families will be more significantly impacted."

"If the digital economy is to rapidly expand to support the government's response to the pandemic, there are a number of interventions that need to be considered, including making mobile money and low-value data packages affordable for the poor and removing barriers that currently prevent competitive mobile operators from investing in their own infrastructure," said Tim Kelly, World Bank lead digital development specialist.

Data kit solution tracks COVID-19 cases


Photo: World Health Organization

Data is helping Somalian regions.

SOMALIAN HEALTH WORKERS who identify suspected COVID-19 cases are automatically relaying information on location to rapid response teams using open data kit – an open source software for collecting, managing and using data in resource-constrained environments. This has been used in Somalia for polio and cholera surveillance using mobile devices.

The submission of data to a server is performed when internet connectivity is available so rapid action can be taken.

Nine firms partner up on mega subsea cable project for Africa and Middle East

CHINA MOBILE INTERNATIONAL, Facebook, MTN GlobalConnect, Orange, stc, Telecom Egypt, Vodafone and WIOCC will partner to build 2Africa, which is slated to be the most comprehensive subsea cable to serve the African continent and Middle East region. Alcatel Submarine Networks (ASN) has been appointed by the stakeholders to build the cable in a fully funded project to enhance connectivity across Africa and the Middle East.

At 37,000km long, 2Africa will be one of the world's largest subsea cable projects and will interconnect Europe (eastward via Egypt), the Middle East (via Saudi Arabia), and have 21 landings in 16 countries in Africa. The system is planned to go live in 2023-24, delivering more than the total combined capacity of all subsea cables serving Africa today, with a design capacity of up to 180Tbps on strategic parts of the system.

2Africa is expected to deliver much-needed internet capacity and reliability across large parts of Africa, supplement the fast-growing capacity demand in the Middle East and underpin the further growth of 4G, 5G and fixed broadband access for hundreds of millions of people.

Photo: 2Africa

A map of the ambitious 37,000km subsea cable project for Africa and the Middle East.

In countries where the cable will land, service providers will obtain capacity in carrier-neutral data centres or open-access cable landing stations on a fair and equitable basis. The aim is to support healthy internet ecosystem development by facilitating accessibility for businesses and consumers.

The 2Africa cable will implement a new technology, SDM1 from ASN, allowing deployment of up to 16 fibre pairs instead of the eight fibre pairs supported by older technologies, bringing much greater and more cost-effective capacity. The cable will incorporate optical switching technology.

Global service providers partner with Fortinet for secure SD-WAN services

FORTINET, A BROAD, integrated and automated cybersecurity solutions provider, has announced continued momentum with network service providers that have chosen to leverage Fortinet Secure SD-WAN to scale and expand their business, deliver new value-added services and limit overhead.

Photo: Adobe Stock

Fortinet allows service providers to customise highly scalable, secure SD-WAN services.

Network service providers are facing unprecedented demand for highly scalable VPN service offerings with the recent rise in remote workforce.

Moreover, as the SD-WAN market has matured, these same SPs are beginning to offer security services in response to new customer demands and a call for advanced and integrated security to deploy efficiency.

In fact, in a recent MEF (Metro Ethernet Forum) survey, all participating service providers identified security as an essential value-added service they either planned to offer or had already begun offering in addition to their SD-WAN solution.

Fortinet allows service providers to customise highly scalable, secure SD-WAN services that can be quickly added and easily deployed on customer sites. Fortinet's security-driven approach to SD-WAN networking empowers service providers to deliver highly scalable VPN services for continuity of business. This approach gives SPs the ability to build a complete security services platform with next-generation firewall capabilities such as web filtering, anti-malware, and threat protection, including deep SSL inspection.

Genesys and Zoom join the same room

GENESYS, THE CLOUD customer experience and contact centre solutions company, will be joining forces with Zoom Video Communications to make it easier for teams to work together more efficiently.

New integrations for Genesys Cloud with Zoom Phone and Zoom Meetings will enable organisations to power their entire enterprise communications strategy and improve collaboration across the business. Genesys is the first partner to provide integrations to both Zoom solutions.

Genesys and Zoom customers, Company Nurse and Sentinel Benefits and Financial Group, have sppken about the benefits they expect from this collaboration.

Henry Svendblad, chief technology officer for Company Nurse, a triage and injury reporting service for workplace injuries, said, "Our employees already use both solutions today, and a closer integration means they'll be able to work together easier, such as initiating a Zoom video meeting from within their Genesys Cloud. As we expand our tele-triage capabilities, we are excited to be one of the first to take advantage of these new features."

Douglas Walker, vice-president and director of infrastructure services at Sentinel, a provider of financial planning and investment products and solutions, said, "Our employees are constantly flipping from one application to another to communicate and collaborate. Integrating the solutions will give our call centre agents the ability to use all Genesys Cloud features while connecting more easily with the rest of the company that uses Zoom technology. We believe this will help us resolve customer issues faster and on the first contact."

To accelerate adoption, the companies have a joint go-to-market strategy. Full availability for the integrations is expected during the second quarter of 2020.

Sudan embraces digital payments to build an inclusive economy

SUDAN HAS JOINED the United Nations-based "Better Than Cash Alliance" and announced the commitment to accelerate the transition from cash to digital payments.

Moving from cash to responsible digital payments is central to the government's economic recovery and reform strategy. In particular, digital payments will be critical to the success of the recently announced Sudan Family Support Program, which will provide monthly direct digital transfers to around 80 per cent of Sudanese families. The program seeks to spur economic growth, reduce poverty, and improve food security and health throughout the country.

Photo: Ministry of Finance & Economic Planning, Republic of Sudan

The transition to digital payments is in line with the Government of Sudan's intention to establish the multi-ministerial Digital Transformation Agency.

"Digital payments will improve financial inclusion and transparency throughout Sudan's vast territory, especially in conflict-affected regions, help stem corruption, and build a more direct link between citizens and the state," said Dr Ibrahim Elbadawi, minister of finance and economic planning. "This digital transition will ensure equitable access to resources and government services, and revitalise the private sector, which are central to our efforts to achieve a just and lasting peace and revive the national economy," Dr Elbadawi added.

The transition to digital payments is in line with the government of Sudan's intention to establish the multi-ministerial Digital Transformation Agency, which will spearhead the modernization of government services, including the Family Support Programme.

"Joining the digital economy is the natural progression for Sudan, whose young men and women innovatively used technology during the December Revolution to usher in a new era in our nation's history," Dr Elbadawi said.

"Over 30 million Sudanese men and women will benefit from getting government assistance in a speedy, safe and transparent way, giving them new economic opportunities. We celebrate the Government of Sudan's membership to our Alliance as a clear statement about their commitment to building a dynamic economy that will work for everyone," said Dr Ruth Goodwin-Groen, managing director of the Better Than Cash Alliance.

Digital solutions for African SMEs

ECOBANK GROUP, THE pan-African Bank, in collaboration with Google, is helping to equip African SMEs with the necessary digital skills to navigate the rapidly evolving business world.

The aim is to assist African businesses to remain relevant and fulfil their potential by embracing digital capabilities.

It will ensure comprehensive engagement between SMEs and their customers as well as potential new customers. Ecobank's digital banking suite, coupled with its collaboration with Google, will empower SMEs to win.

Ecobank's eBanking product suite is increasingly relevant in this era of lockdowns and physical distancing due to the COVID-19 pandemic.

Ecobank provides 24/7 access to customers, conveniently meeting the evolving cash management, payment, and collection needs of businesses.

DBSA, CSIR collaborate to accelerate technology and infrastructure in South Africa

THE DEVELOPMENT BANK of Southern Africa (DBSA) and the Council for Scientific and Industrial Research (CSIR) are set to work together to develop technologies and infrastructure to support socio-economic development in South Africa and Southern Africa.

Recently, the parties signed a framework agreement to collaborate on projects of mutual interest in areas such as water, energy including bioethanol production, development of infrastructure, emerging and small-scale support, and DBSA's Development Labs, known as D-Labs.

D-Labs are development precincts designed to create economic development spaces within communities where all local participants are connected and have access to digital presence, technologies and information.

It is expected that the partnership will pave the way for the commercialisation of CSIR technologies in an effort to boost the competitiveness of local industries and regional economies.

This is consistent with the strategy of the CSIR, which aims to use science, technology, and innovation to reinforce industrial development and to create a capable state.

The DBSA plays a critical role in supporting the government to leverage skills and capabilities to accelerate the implementation of infrastructure programmes in the major priority sectors of the economy, such as energy, information and communication technology, water and sanitation, education and health, as well as various municipal infrastructure programmes.

Welcoming the partnership, CSIR CEO Dr Thulani Dlamini, said, "This partnership brings together complimentary capabilities in innovation and development which could see us make a significant impact in South Africa and also the region."

DBSA CEO Patrick Dlamini said, "The DBSA recognises that technology is key in helping us achieve our mandate of promoting economic development and inclusive growth. As a result, we are excited about this partnership as it will enable both organisations to unlock growth in our economy."

Safaricom to offer affordable YouTube data bundle

MOBILE OPERATOR SAFARICOM and Google have announced plans to leverage their digital and data capabilities to enable Kenyans to access a wide range of content on YouTube including entertainment, education, sports and news.

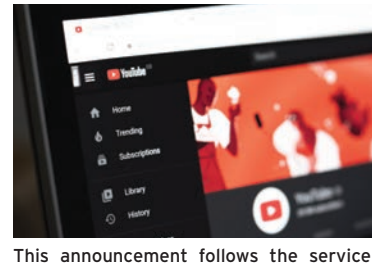


Photo: Adobe Stock

This announcement follows the service provider's partnership with Google to provide a US$0.19 (KES 20) a day 4G smartphone package.

The initiative will see Safaricom draw on an affordable data bundle of US$0.094 (KES 10) to ensure that no one is left behind by the accelerated digital transformation caused by social distancing in the midst of the ongoing pandemic.

The new daily bundle, free for first-time subscribers on the first day, will offer 80MBs for use on YouTube, equivalent to up to 30 minutes of standard definition streaming, and up to an hour of low definition streaming. From 15-13 August 2020, the bundle will be made available for 90 days.

Safaricom CEO Peter Ndegwa, said, "Through this proposition, we want to leverage our extensive 4G coverage to ensure that customers who could not previously enjoy the power of the internet can access a new world of content in an affordable manner from the comfort of their phones. With as little as 10 shillings, customers can now learn a new skill, attend virtual concerts or keep up with their favorite local content."

This announcement follows the service provider's partnership with Google to provide a US$0.19 (KES 20) a day 4G smartphone package to empower customers currently on 2G devices to upgrade and enjoy high-speed Internet connectivity.

Mariam Abdullahi, director, android and platforms partnerships for Africa, said, "We are excited about this partnership with Safaricom that will make data more affordable to users in Kenya."

Airtel Africa celebrates 10-year anniversary

AIRTEL AFRICA, A telecommunications and mobile money services provider in 14 countries across sub-Saharan Africa, celebrates its 10-year anniversary this month.

The anniversary follows another recent milestone for Airtel Africa, when the company was listed on the London and Nigerian stock exchanges. Airtel Africa employs more than 3,300 people across Africa, with another 1.6 million people earning through working with Airtel Africa as entrepreneurs and in its distribution network.

Airtel Africa said it has expanded its network footprint enabling millions of people to access telecommunications services and took the lead in robust 4G network deployment, helping drive digitisation. It launched a virtual card to further boost financial inclusion.

Vertiv releases new report on edge opportunity for telecom operators

VERTIV, A POWER management and IT solutions provider, and technology analyst firm Omdia have released a new report on the implications of the shift to edge computing for telecom operators and the best tactics and strategies for capitalising on edge growth.

The report – Telcos and edge computing: opportunity, threat or distraction? – has revealed that growth in edge computing could generate new revenue opportunities for operators.

Omdia, formerly Ovum, specifically said that mobile and wireline operators could build a platform for edge services development, while saving massively on costs by combining existing cell tower networks with central offices and aggregation points such as edge data centres.

Gary Niederpruem, chief strategy and development officer of Vertiv, said, "The growth at the edge opens opportunities for telecom providers to develop new services related to 5G, IoT and other innovative technologies. Operators will need partners with international reach and a breadth of solutions and services to support them on their edge journey."

The Omdia report also revealed that edge growth should open up new areas of competition; 36 per cent of those surveyed believe network operators will be most important in creating new revenue services from edge. Application developers (30 per cent) and public cloud providers (25 per cent) are also seen as key edge players.

Julian Bright, senior telecoms analyst, Omdia, and author of the research, said, "Communications service providers (CSPs) believe they see a clear opportunity in the emerging edge computing market, but other potential players, including public cloud providers and over-the-top (OTT) content players, are equally attracted by the prospect of delivering the edge.

"The size of share that service providers can expect to capture in the market for edge computing will depend on several factors. These include how successfully they can evolve their networks to support edge computing paradigms and avoid becoming mere connectivity providers."

The Omdia report addresses the role prefabricated modular data centres (PFM) will likely play in helping telecom operators deliver future edge infrastructure, with the PFM market forecast to grow from US$1.2bn in 2018 to US$4.3bn in 2023. This projected growth is driven by telecoms and the growth of edge computing, as well as overall growth by cloud service providers, the report highlights.

Alongside rapid deployment, energy efficiency is also a major concern for network operators. In a published update to a landmark 2019 survey commissioned by Vertiv – 2020: Same Hopes, More Fears– technology analyst firm 451 Research identified that the energy costs associated with edge and 5G connectivity remain a serious concern for operators.

'Technology can help MEA organisations create new economies'

MORE THAN 2,000 technology leaders from across the Middle East and Africa came together online in early June to discuss how to use technology to help organisations adapt and grow in today's economies during Schneider Electric's first Digital Innovation Day.

Telecom firms are ramping up 5G investments to bolster broadband capacity.

Experts from across the globe shared insights on how organisations can best use technology to survive disruption and create opportunities for growth. According to the latest predictions revealed by International Data Corporation (IDC), manufacturing is estimated to invest US$6bn in digital transformation by 2023, while government enterprise IT will top spending at US$8bn in 2021, and annual security spending will top US$3.6mn by 2023 as digital trust becomes a priority.

Ziad Youssef, vice-president secure power Middle East and Africa at Schneider, said, "What we are living through is changing how we approach technology.

"Those organisations that will thrive have a clear understanding of technology innovation, an ability to develop a single, integrated strategy that is built around using IT to transform, and have a clear understanding of the value of digital investments to employees, customers and growth. We've often talked about what IT can do for business growth."

IT spending is forecast to increase due to the accelerated shift to digital driven by the COVID-19 pandemic. Indeed, it is estimated that investments in digital transformation and innovation will account for 30 per cent of all IT spending in the Middle East, Turkey, and Africa (META) by 2024.

WorldRemit partners with Mukuru to expand cash pick-up network in Zimbabwe

WORLDREMIT, AN ONLINE money transfer service, has announced a partnership with Mukuru, one of the largest remittance providers in Africa, to broaden cash pick-up options in Zimbabwe.

The partnership is aimed at providing financial services to Zimbabweans and generating new synergies for financial inclusion in Africa. Pardon Mujakachi, head of sub-Saharan Africa and country director for Zimbabwe at WorldRemit, said, "We have witnessed an increasing demand as more Zimbabweans are using our digital app to send money to their loved ones.

"Through this partnership we are able to drive our service further and wider, providing access to remittances even in small towns and growth points across the country. We want to ensure that everyone, everywhere has access to our service, which offers a fast and convenient user experience, affordability and easy access to cash."

Andy Jury, CEO at Mukuru commented, "These types of synergies bring immediate value to our customers, and alleviate their day-to day-challenges with user-friendly solutions."

With many families in dire need of financial resources during the coronavirus pandemic, the partnership enables WorldRemit customers in more than 50 countries including the UK, US, Australia, New Zealand, Canada and Europe to send money to their loved ones in Zimbabwe.

Recipients can now collect their WorldRemit remittance at any of Mukuru's 120 orange booths and branches, located across the country in both rural and peri-urban areas. The money transfer service operates six days a week, and provides cash in US dollars.

"Our extensive cash collection network, flexible cash collection hours and lower fees offer value for money to our customers," concluded Mujakachi.

Why Africa needs to get closer to data

Why is now a good time to be investing in data centre infrastructure in Africa? What challenges are there for companies moving into the African market? And how can Africa benefit? Phil Desmond asks Robert Mullins of First Brick Holdings what is driving the data centre boom in Africa.

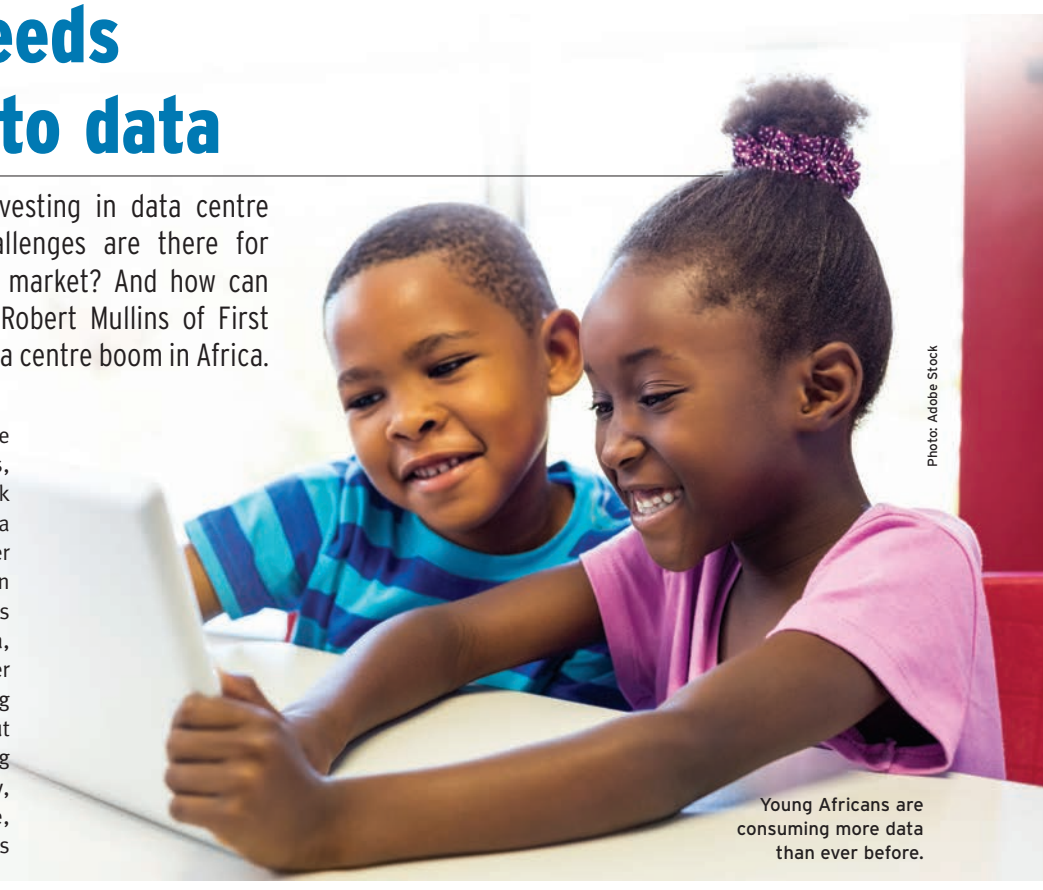


Photo: Adobe Stock

Young Africans are consuming more data than ever before.

AFRICA NEEDS DATA centre infrastructure. Robert Mullins, executive director of First Brick Holdings (FBH) and Raxio Data Centre, which is investing in and building Tier III data centres across Eastern and Southern Africa, says, "Mobile penetration has reached 44 per cent of sub-Saharan Africa, while 41 per cent of the population is under 15 years old. This means Africa's growing population of digital natives is seeking out modern online services and is consuming more data than ever before. Consequently, demand for data will continue to rise, particularly as smartphones and data plans become more affordable."

Latency is another driver for data centre development. "For enterprises to deliver the ever-increasing number of sophisticated digital services that consumers demand, data centres must be built locally. When someone in Uganda tries to access a site hosted in Europe, messages travel through cables to Kenya, then under oceans to Europe, then back again. This slows down the speed and increases costs." The key to making the internet more affordable therefore is to bring content closer to the user.

In addition, digital services, when delivered by servers far away, are subject to similar latency constraints. "Services such as online gaming, and video conferencing are particularly susceptible to high latency."

> **"Wider digital transformation in Africa has been stymied by a lack of adequate data centre infrastructure"**

But that's not all. Deregulation across several markets has encouraged the development of technology infrastructure and liberalisation of previously state-owned sectors, such as telecoms and financial services. The coronavirus outbreak is reinforcing a shift towards remote working and digitisation. Also, Mullins says, "Local enterprises are realising that their business models are IT-driven and that they need to invest in their technology infrastructure – data storage, data processing, business continuity and disaster recovery systems – to ensure their operations run smoothly."

Regulatory authorities across the region have a favourable position on investments in the space, he suggests. "Data centres are part of a wider category of digital infrastructure. By and large, governments across the region view digital infrastructure as a critical factor in driving the continued transformation of their economies and societies."

Other regulators benefit too. "A new breed of localised, state-of-the-art data centres allows regulators across different sectors to do their job better. For example, in financial services or other regulated industries, data centres allow for an environment where critical data is properly backed up and easily accessible. This ensures proper business continuity, ultimately benefiting consumers, enterprises and the society at large."

Africa's growing number of IT-driven businesses are another sector that needs IT infrastructure. A burgeoning start-up ecosystem has to deliver high-quality digital services, which requires stable connectivity and IT platforms. In addition, regulations around business continuity and uptime are becoming more stringent. But data centre infrastructure in Africa has not always been available – or up to the job.

So, Mullins says, "It's vital to move away from this DIY approach that lacks the in-house expertise and adequate supporting infrastructure, and provide businesses with new, modern data centres, which provide a reliable operating environment." The current pandemic has further highlighted the need for businesses to remain agile and move towards digitisation to stay afloat. "Thus we expect a surge in demand for cloud services in the coming years." He sums up, "It is not just about capacity, but also the quality of solutions that are available in these markets."

And for FBH this isn't just talk. It is currently active in Uganda and Ethiopia, where its carrier-neutral Tier III data centres will go live later this year and early next year.

As the fourth largest economy in East Africa and the region's third largest broadband market, Uganda was a particularly promising prospect for the company, given a vibrant economic ecosystem, excellent terrestrial fibre connectivity, and a competitive wholesale segment where prices have been declining. "Additionally," says Mullins, "liberalised regulation has meant that global internet companies are increasingly attracted to the market, while regulations requiring institutions to maintain primary disaster recovery sites in-country have also helped drive demand for local colocation services."

Ethiopia, meanwhile, has the fifth largest economy in sub-Saharan Africa, and is home to

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90
Network with Direct Connections to over **90 countries**

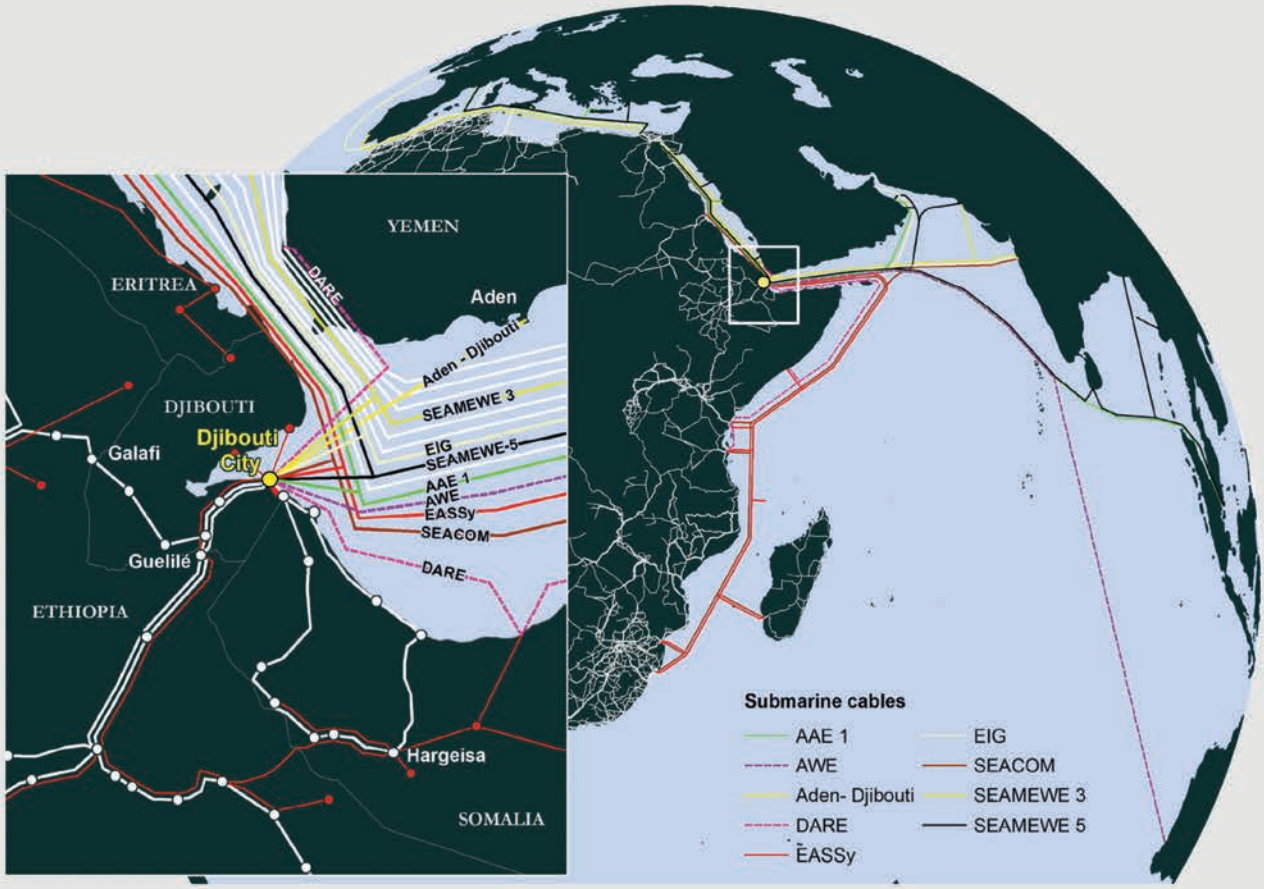
2
1 **Tier3** (and upcoming **Tier 4**) Data Center

100
Work with **100+** Global Partners around the world

SERVICES

- VOICES SERVICES & ROAMING
- IP / DATA & CAPACITY SERVICES
- DATA CENTER HOSTING
- TELEPORT FACILITY

Subsea and Regional connectivity



some of Africa's largest companies, as well as a growing SME and start-up ecosystem. The market has traditionally faced a challenging operating environment due to regulatory constraints, high retail connectivity prices and uneven availability, but, says Mullins, "It presents undeniable potential as broadband penetration continues to increase and the telecom sector becomes increasingly liberalised."

Mozambique and the Democratic Republic of Congo are among the next potential target markets. "We are also considering secondary sites in existing and new markets which will allow businesses with both primary and disaster recovery needs to use Raxio as a one-stop-shop and fully outsourced solution. Secondary sites also allow for broader geographic catchment and address the needs of certain industries that may be concentrated in other parts of the country."

Which sounds promising – but are power supply and connectivity potential hurdles in some markets? "While at a macro level, power may be a problem, at a specific site that is well-served, in close proximity to substations and on a redundant loop, like our site in Uganda, power availability becomes much less of an issue. Beyond this, our data centres are constructed to a Tier III standard, meaning that they are fully redundant and able to operate independent of the power grid for extended periods of time."

Of course, connectivity has improved in Africa in recent years, although, says Mullins, "on the local level, site selection is again important; we ensure that our sites are located along major fibre routes. We work closely with local carriers – for example by constructing and enabling shared ducts, to ensure our facilities are a hub of connectivity in each country."

Power efficiency is, inevitably, a consideration. From the design phase, equipment choices are made to suit the local environmental and climactic conditions, always with a view towards reducing energy consumption. "For example, in Uganda," says Mullins, "where water is plentiful, the cooling system used is based on a very low-consuming evaporative cooling system." He continues, "In terms of power, one of the advantages we are seeing in many African markets is that the majority of power is often generated from hydroelectric plants, not from fossil fuels. We also seek out opportunities to marry our facilities with local renewable generation capabilities where possible."

Of course, power needs will increase, so phased growth is part of the company's planning, in order that the power delivery and cooling equipment can be added as requirements grow. "Also," says Mullins, "we expect power densities to grow within the IT equipment itself, i.e. the same size of equipment having more compute capacity and therefore requiring more power. We have designed our facility electrically to accommodate such developments."

As for the client base, immediate demand (up to 1MW) will primarily be driven by the enterprise market, in particular the financial services, IT and media companies, as well as the broader telecom/cloud industry, including ISPs, regional and international carriers and cloud managed service providers. Mullins explains, "These customers currently lack adequate carrier-neutral facilities to house their equipment and are looking to reduce their costs and offload the end-to-end equipment and data hosting to a specialist facility. Large international firms, including hyperscalers and content delivery networks (CDNs), are increasingly trying to get closer to their customers and, while they typically build their own facilities in more developed markets, we expect them to also be tenants across our African facilities."

"For enterprises to deliver the digital services that consumers demand, data centres must be built locally."

Photo: First Brick Holdings

Robert Mullins: "Demand for data will continue to rise".

Of course, as he points out, a significant majority of digital entrepreneurship in the region is focused on services including mobile payments, digital marketing and cloud services, all of which depend on modern data centre infrastructure for reliable service. But more traditional industries such as manufacturing will also pursue digital transformation, not only to drive operational efficiencies, but also because they want to become more competitive and make their services accessible to a wider market. The existence of reliable data centre infrastructure in-country can facilitate the creation of digital marketplaces and, by extension, prompt further growth of the traditional economy.

There's still some way to go, however. "Research has shown that the internet contributes to 3.7 per cent of developed countries' GDP," says Mullins. "However, in African countries, this lies at just 1.1 per cent. Building local data centres is vital to driving this figure and making content delivery cheaper and more accessible." ✆

First Brick Holdings is focused on investing in and building world-class Tier III data centres across Eastern and Southern Africa. FBH has made its first investment in Uganda by establishing and developing Raxio Data Centre Uganda on the outskirts of Kampala. In September 2019, FBH announced that it will be making its second investment in Raxio Data Centre Ethiopia. www.firstbrick.io

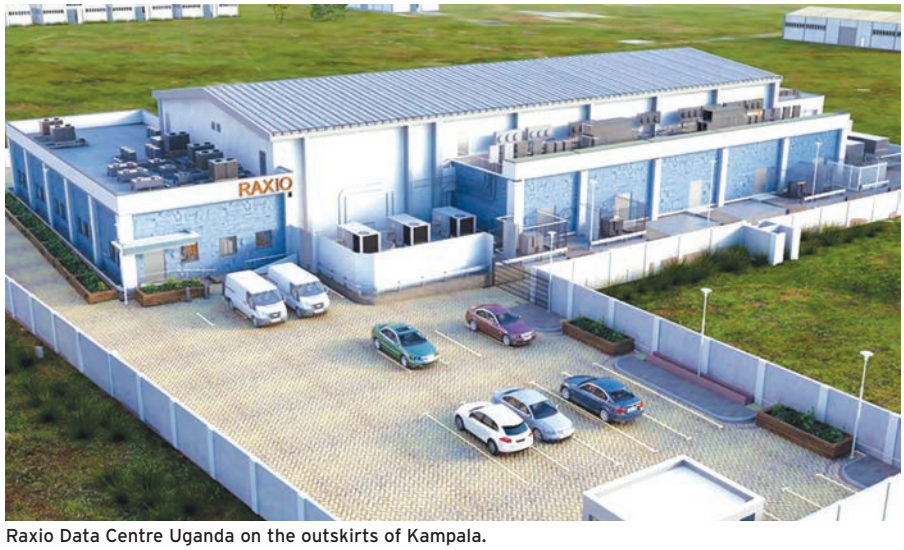


Photo: First Brick Holdings

Raxio Data Centre Uganda on the outskirts of Kampala.

Very small – but still very useful

Despite the growing reach of fibre and cellular, satellite systems in general – and very small aperture terminals (VSATs) in particular – can do a lot to help meet Africa's remote and rural communications needs. Vaughan O'Grady reports.

A VERY SMALL APERTURE terminal (VSAT) is a two-way ground station that transmits and receives data from satellites. Among its uses are for businesses in areas with limited communications infrastructure or with a wide reach that extends to such areas. That could include maritime, mining, retail, banking or oil and gas, for example.

"Mobility is a big focus," says Susan Bull, senior consultant with COMSYS, a specialised telecommunications consultancy company with a core expertise in satellite and VSAT systems. Maritime, mining and onshore oil exploration all benefit from the ease of transport and installation of VSATs.

More recently, there's been growth in the airborne business – transmission by satellite to a VSAT on a plane and then to passengers. Ka-band – plentiful but prone to fading in areas of very high rainfall – is popular here. "Once you get a plane at that height – above the clouds – you're not getting the rain, so your reliability is greater," says Bull.

On the ground, onshore oil and gas recovery in isolated areas remains a good market for satcoms in general and VSATs in particular. "Businesses that need to move from place to place find VSATs particularly useful," says Bull. She adds, "You have to point them in the right direction and that may need a bit of engineering help. But they are becoming much simpler to deploy."

VSATs play a vital role in plugging connectivity gaps.

Photo: SatADSL

In areas beyond the reach of terrestrial mobile services satellite is a critical form of connectivity

Also, the capabilities of VSATs are becoming more sophisticated (see vendor interviews). "VSAT manufacturers have primarily been working on ways to increase their data rates – particularly for the inbound channels – and to increase efficiency," says Bull.

However, as both mobile and fixed communications extend further, some historical markets – retail, petrol stations, car manufacturers and restaurants – are less likely than they once were to see VSATs as an option.

That said, in Africa VSAT still has a strong role in rural areas, Bull suggests. In rural Africa there's an opportunity for local Wi-Fi-based connections – satellite to VSAT and then Wi-Fi on the ground. In addition, "The biggest business in Africa seems to be the cellular backhaul businesses – alongside government programmes."

Overall, she feels that VSATs will remain relevant in Africa but will not be as massive a global business as they once were.

Also, business models will change. "VSAT will still be a manufacturing business but it will get smaller," Bull suggests. "If you look at [major players] Hughes or Viasat, they're just integrating the whole thing: satellite, VSAT manufacturing, VSAT installation, operations."

Thus a business model that's a package rather than just trying to sell separate elements is what many of the big satellite operators are looking at these days. However, you don't necessarily need to own and manage the entire infrastructure: virtual network operators (or VNOs), using somebody else's teleport, for example, are another trend.

Also, Bull says, "I am seeing several companies working towards unifying different VSAT platforms with the aim that a VSAT evolves to be like a smartphone which can operate on any network. Some, like SatADSL, have already been unifying a network management system (NMS) for different VSAT systems, but others, like Aurora Business Networks, are now working on unifying multiple different VSAT platforms. Soon we may end up with a simple platform as a service (PaaS)."

There are also cost-saving initiatives. "iDirect/Newtec Dialog is one of the world's largest-sold efficient, high-rate VSAT platforms and its hub system has been significantly upgraded to allow many more VSATs to be connected via a single demodulator, which reduces costs significantly," she adds.

In fact the good news for end users is, Bull says, "In many instances the cost of the VSAT and the cost of the service has come down significantly. In some places Hughes charges less than $250 for a VSAT."

VSAT manufacturers have been working on ways to increase their data rates – and to increase efficiency

On the other hand, if you're investing in high levels of speed and efficiency for mission-critical or advanced services, you might go for the Comtech Heights platform, which will cost a lot more. Either way, VSATs have something to meet both low-end and high-end requirements if remote coverage is your starting point.

And technological advances are continuing. Martin Jarrold is vice president international programme development of the GVF, which brings together organizations from around the world representing the satellite ecosystem. As he says, the space segment, though high-throughput satellites (HTS) – latest generation HTS networks now being delivered to Africa-based customers – offer

Continued on page 17

A vendor view of the VSAT market

Niger was a testing ground for the Gilat SD-WAN.

Photo: Adobe stock

In Africa, connectivity in difficult-to-reach areas remains a big selling point for vendors and service providers - but the use cases can be surprisingly diverse.

WHY DO VSATS still enjoy a strong market in Africa? Kyle Whitehill, CEO of Avanti Communications, a provider of satellite technology across Europe, the Middle East and Africa, is not alone in pointing out that satellite connectivity has long served a role in delivering reliable service to regions that would otherwise remain isolated.

Now however, he says, "With the arrival of HTS [high-throughput satellite] in Africa, the demand for VSAT satellite services is on the increase and remains critical to unlocking connectivity on the continent where the majority remain unconnected."

He explains that once the satellite network is in place VSAT technology allows for rapid deployment. "Satellite networks can also be easily and cost-effectively scaled with the addition of new sites to the network anywhere in the world."

Michel Dothey, chief commercial officer at SatADSL, which provides professional VSAT and secure private networks via satellite worldwide, agrees that ease of deployment and mobility of VSATs is also important. "VSATs play a vital role in plugging connectivity gaps by providing a low-cost – but effective – method through which we can deliver networks to locations."

And it's not just about basic connectivity. "By utilizing VSATs, we're able to roll out our turnkey offerings, such as our cloud-based service delivery platform (C-SDP) quickly for sectors such as rural banking and microfinance." He adds, "The C-SDP solution allows telcos and MNOs operating in Africa to easily outsource satellite services by providing, via the cloud, a complete OSS/BSS, carrier-grade, fully redundant platform – meaning no investment in physical infrastructure is needed."

Providing VSATs as a part of a wider solution is another potentially effective business model for the African market. Scott Mumford, CEO of Liquid Telecom Satellite Services, says, "In Africa, as in most other parts of the world over the last five to ten years, VSAT services have become a mainstream delivery for broadband and enterprise services." He adds, "Liquid Telecom is in the unique position of being able to provide a true hybrid network solution – satellite, fibre, wireless – all under its own control."

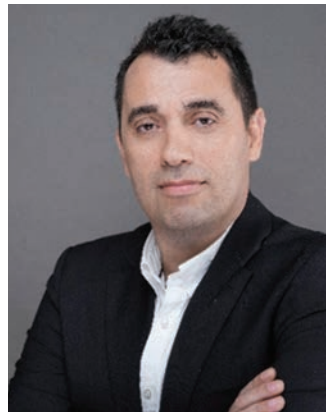
VSATs can also provide backup. Telecom26 is a provider of business-critical connectivity for mobile and IoT applications. Robert Koldys, head of marketing, strategy and business development, says, "We use VSATs as a backup if no terrestrial mobile coverage is available. With a Telecom26 router, the VSAT provides another form of IP connectivity, with the router redistributing the VSAT IP internet connectivity as Wi-Fi. When cellular signals become present again, the router switches back to cellular."

He continues, "If no other connectivity is available (in a compound in the middle of the desert, say), we would use VSAT to provide IP connectivity in order to provide a semi-private network where cellular service would be propped up within the compound in order to enable service to mobile devices."

Of course the technology behind VSATs is constantly evolving. Amir Cohen, vice president of marketing and business development at Gilat Telecom, which offers satellite and fibre-based connectivity solutions, highlights a number of new opportunities and features for VSAT customers including a new self-control portal, which, he says, "gives organisations complete control over their networks and full visibility of all their services including billing, OSS and BSS visible on the same dashboard". The portal was developed specifically for the African market with e-banking, ease of use and availability in mind.

Also focused on the African market's requirements is what is called the world's first SD-WAN solution for satellite traffic, designed specifically to address the needs of African MNOs, ISPs and enterprises and using AI and machine-learning algorithms to improve traffic management and maximise bandwidth. Cohen says, "Gilat Telecom's SD-WAN enables service providers and MNOs to centrally control the route that satellite – and fibre – traffic takes to and from the customer."

Robert Koldys, Telecom26: "We use VSATs as a backup if no terrestrial mobile coverage is available"



Amir Cohen, Gilat: "In Africa we are seeing a move away from DTH broadcasters towards OTT services"

As for sectors these companies serve, there's a lot of diversity. Avanti, for example, has a targeted clear wholesale segment focus on establishing partnerships in supporting system integrators, satellite operators, governments, defence and carrier requirements across Africa.

Liquid Telecom's client list includes supermarket chains, ISPs, banks, mines, MNOs – and other satellite operators. Mumford adds, "We have recently deployed a high-speed internet service to a very interesting start-up in Malawi, with the VSAT terminal located next to a purpose-built community hub with a beautiful view of Lake Malawi in the background." This service supports medical services, agriculture and, of course, access to voice and internet services.

He continues, "We have also had installations with flat panel antennas on vehicles which have high-speed broadband access (over 20Mbps) while travelling at more than 120kmh!"

SatADSL has deployed private networks in Africa for the oil and gas industry, established effective communications between remote sites and corporate offices for mining sites to enable effective expansion, delivered affordable and effective satellite-based communications in instances including urban and rural ATM banking in Ghana, and established e-learning solutions utilizing VNO in remote areas. "Furthermore," says Dothey, "we've enabled the UN to monitor displaced populations in Chad with VSAT-based tracking technology."

Telecom26 has a focus on high wealth individuals, healthcare and maritime with VSAT, but, says, Koldys, "we are currently evaluating potential opportunities in the government, mining and first responder markets."

Gilat customers include NGOs, financial organisations, ISPs, enterprises and MNOs but, Cohen says, there's also a broadcast angle. "In Africa we are seeing a move away from DTH broadcasters towards OTT services. The latter can be provided by VSAT, which is proving to be a popular way to provide a reliable service." ✆

Continued from page 15

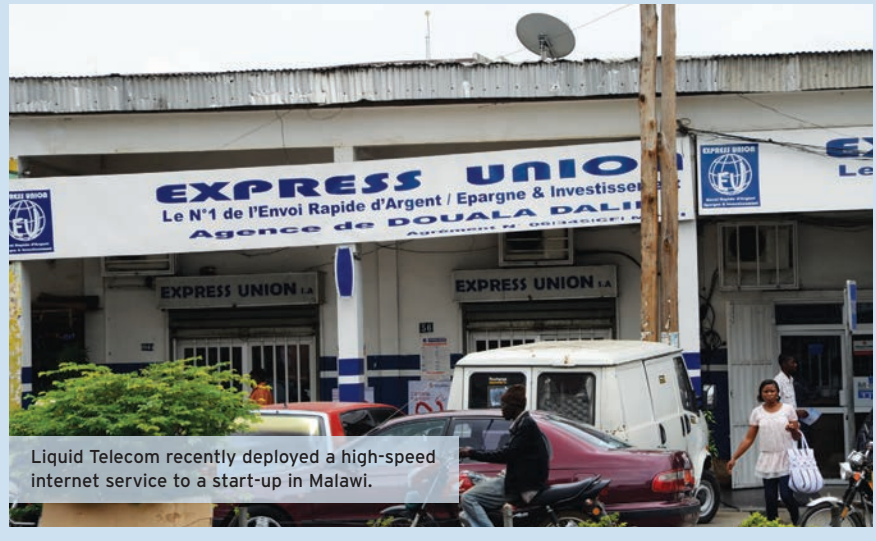
speeds of up to 100 Mbps, and by 2025 will be capable of greater than 1-10 Gbps, reducing the costs of capacity even further.

In the ground segment there are smaller aperture sizes and parabolic antennas with reduced dimensions, thanks in part to Ku-band and Ka-band usage. Jarrold says, "Additionally, new phased array antenna technologies are coming to market, some of these designed with installation procedures enabling end users to 'do it themselves'."

There is still a perception that terrestrial mobile can do the job – but it often can't. As he says, "In areas beyond the reach of terrestrial mobile services satellite is a critical form of connectivity and therefore there is a buoyant market."

In Africa, Jarrold says, "the cost of fixed and mobile broadband increases with geographical coverage – and Africa has a lot of geography!" By contrast, "the cost of satellite broadband is identical in all locations, including for the most rural and remote areas, and, as the price of bandwidth declines – as more HTS capacity comes on stream – and the price of terminals drops – as antennas reduce in size, with greater yet cheaper terminal functionality – the common misconceptions about satellite broadband being comparatively expensive are shown to be false."

There's a choice of bands too, and although C-band requires larger antennas on the ground, "every single satellite procured by operators which has coverage over sub-Saharan Africa carries a C-band payload representing 20-70 per cent of the total capacity. Services in Africa relying on C-band cannot easily be replicated in other satellite bands or via terrestrial means." He adds, however, "Additionally, Ku-band spectrum benefits Africa by providing coverage for live broadcasts, mobile backhaul, and aeronautical connectivity. Ka-band satellite impacts education, entrepreneurship, health services and emergency response in rural areas, as well as connecting the unconnected."



Liquid Telecom recently deployed a high-speed internet service to a start-up in Malawi.

Photo: Liquid Telecom

Nevertheless he feels that the satellite industry still faces certain obstacles to market that could be addressed by regulatory reform – such as easier access to satellite radio spectrum and policies that impose the same requirements or restrictions on the use of both foreign and domestic satellite systems. Simplified equipment licensing and more modest government and regulatory fees would also help, he thinks.

VSATs clearly have a lot to offer, which is perhaps why Jarrold feels that administrations could "better understand the role of satellite connectivity in delivering government services, education, and healthcare online, and increasingly the importance of supporting the drive to the adoption of Internet of things (IoT)" ✆

The 14th Edition of the COMSYS VSAT Report is available. The report contains service information, market shares and segment focus on more than 500 operators and all of the current VSAT system vendors from both the market leaders and the smaller specialized manufacturers. A new edition of the report is expected sometime in the future. www.comsys.co.uk

Critical communications – reliable radio

Wireless communications isn't just about 3G, 4G or 5G mobile communications. Two-way radio, in the form of TETRA, is still going strong and, as Vaughan O'Grady finds out from two companies active in the African market, very relevant in Africa.

SRG3900 mobile TETRA radio.

Photo: Sepura

TETRA (SHORT FOR TErrestrial Trunked RAdio) is a professional mobile radio and two-way transceiver specification. Although it has been around for a long time (the first network was launched in Norway in 1997), TETRA remains a relevant technology for many industries around the world.

It's widely used by government agencies, emergency services and a number of private industries. As for why it is still relevant, Nicolas Hauswald, CEO of Etelm and Tim Mills, sales director – overseas co-ordination, Sepura, are in a better position than most to explain.

Critical communications specialist Etelm is active in the African market, most notably providing TETRA networks in the transport and oil and gas sectors. Sepura is known for the development and supply of radio terminals, accessories and applications for TETRA-based mission-critical and business-critical communications.

Explaining TETRA's continuing popularity, Hauswald says, "TETRA is widely accepted by the users – and this is key. Users will not change easily when they are happy with a solution, especially if change has a heavy cost. The technology remains the answer to many required communication challenges as it offers a level of reliability that no other wireless technology on the market can bring."

Mills adds, "TETRA is trusted as the international standard globally. This means that experience and knowledge can be shared between countries and market sectors. Public safety and sites of critical national infrastructure often rely on vast national networks that take a lot of time, investment and planning to replace."

No new standards have been established for these that would make them suitable for critical communications, and so, Mills, like Hauswald, concludes, "TETRA is an accepted standard, trusted by millions, which delivers on the voice and data requirements of users in the sector."

While critical communications tends to be where TETRA is most relevant, its precise use tends to vary, depending on the region. For instance, while TETRA is used for public safety in Africa, it not as widely used for this purpose as in Europe, where it's a long-established standard for emergency services. However, says Mills, "National forces use the technology in North Africa, and the South African Police Service are large users."

African countries primarily use the platform in transport, airports, utilities, oil and gas and major events. Examples include the new Mauritius Metro (where Sepura partner Consort Digital has just deployed a complete communications solution), the World Cup in South Africa in 2010, and many utilities plants.

"New TETRA networks are being deployed and TETRA still has a long life ahead"

Mills says, "A site that has critical security requirements is typical of those that operate a TETRA network. Hence even some national wildlife reserves employ TETRA and benefit from functionality such as GPS positioning, clear audio and the ability to transfer images and other data across the network."

He continues, "For transport users, the ability to have a flexible network is of huge benefit; maintenance and station staff benefit from the clear audio, which can be crucial when working in a busy or noisy environment, while the mobile radio can integrate with existing systems and share telemetry data over the network."

Transport is certainly one area where Africa stands out. As Hauswald says, "Etelm supports a number of TETRA projects in urban transport, such as tramways, which are mainly located in North and West Africa. We also supply coverage to a number of industrial train lines in these regions too – for example, mine trains."

Etelm, as we have noted, focuses on radio infrastructure. "We provide a core network and the devices are very often purchased by different routes. This includes devices for voice

communications, such as portable radios, as well as small sensors with TETRA modems."

Sepura, by contrast, primarily supplies TETRA terminals for vehicles and for personal use, together with the software that adds specific functionality to the radios. "This can include many different forms, dependent on the user requirements," says Mills. "For example, access to secure databases, sharing of imagery, dispatcher tools, connection to additional devices or similar." He adds: "Together with our sister company Teltronic, Sepura can provide complete, scalable solutions for critical communications users."

As Hauswald points out, use cases – mostly critical communications – are quite similar all around the world. "What differs most," he says, "is the integration of the TETRA system into a wider system – for example mixing technologies such as LTE. Certain regions are more advanced in their use of new communication standards or have chosen to take particular routes, such as the [LTE-based] Emergency Services Network (ESN) project in the UK."

Sectors do differ, however. Outside the UK and one or two other countries, TETRA is less widely used by public safety organisations. But it is used in many different sectors. Mills says, "One of the key reasons is the sheer size of many of these operations – for example a main train line can run for several thousand miles. Here TETRA's advantages come to the fore: resilient devices tested to work in extreme, tough environments; clear audio in noisy environments; scalability – meaning a network can cover a specific facility or work across a long distance; and integration with existing IT systems."

Photo: Sepura

New Mauritius Metro train units. The fleet vehicles are equipped with Sepura SRG3900 TETRA mobile radios.

He adds, "Use around the world can differ for many reasons – availability of spectrum, budget, infrastructure and resources to deliver the product. These can all be sporadic across a region as large as Africa."

So where do these two experts see TETRA going in Africa? Hauswald says, "We see TETRA continuing to have a strong presence, especially in public safety, transport and the utilities and the oil and gas sectors. New TETRA networks are being deployed and TETRA still has a long life ahead."

He suggests, however, that there will be more focus on integration over the coming years as more LTE networks emerge in the region – and this is an important point. The UK is one market where TETRA will eventually give way to LTE (though there is ongoing debate about how and whether this will involve public networks and shared frequencies).

Hauswald explains, "LTE has a lot to bring thanks to its wider bandwidth (video, telemetry, IoT support, etc). But," he continues, "it comes with a cost and hasn't shown the same reliability in the field as TETRA so far. The cost comes with the fact that, quite often, the frequency band is higher than the one of TETRA so it means that you need more radio sites to cover the same area. The cost of a radio site is quite high." Either way, Etelm intends to be ready. "Our portfolio offers the possibility to have a smooth migration from TETRA to LTE as both technologies can work together on a fully integrated network."

"There is no reason to believe that TETRA will not be the leading critical communications platform for many years to come"

Mills says, "TETRA will continue to support users across the key sectors of transport and utilities/oil and gas, as well as public safety in places. As in Europe and around the world, there is no reason to believe that TETRA will not be the leading critical communications platform for many years to come. This is why users in Europe, North America and across Asia are continuing to invest in major systems to support their operations. The [UK's] Metropolitan Police recently confirmed that the reason they chose to invest in Sepura was ultimately because "voice is king"."

But data is now also part of the equation. TETRA radios are tough and reliable with an increasing capability to use data in innovative ways. As Mills points out, "Across the world customers are looking at an intelligent use of data over TETRA networks, including aiding reporting on network coverage, aiding control room understanding of live operations and connecting to additional devices or networks. This is a huge area of growth for the industry, to help organisations operate more efficiently, and keep staff safe and communicating securely."

There might even be a role for TETRA in smart city infrastructure. Hauswald, who recently wrote a blog on the topic (available on the Etelm website) says, "In practice, this could mean a rail operator using a TETRA network for core voice communications across the transport network serving the smart city. This would cover mission-critical operations such as the communication between driver and stations or signalling staff. Then an LTE overlay – to connect with other aspects of smart city infrastructure – could offer high-bandwidth data communications for real-time passenger information apps for example, delivering the high-quality passenger experience expected as part of genuinely smart cities."

Even after more than 20 years, it's clearly too early to write TETRA off just yet. ✆

Photo: Sepura

The Sepura TETRA family.

Getting the strategy right

Should policymakers across Africa worry about falling behind in the transition from 4G to 5G? Probably not as much as you might think. However, it is certainly important to make the most of 4G while also laying the foundations for 5G evolution, as Simon Fletcher, CTO of Real Wireless, explains.

LIKE MOST TECHNOLOGY evolution, particularly in the mobile sector, the path to 5G has never looked especially smooth. Now the global health crisis has delivered another medium-term stumbling block – but perhaps not the most significant. Certainly, there's collective recognition that globally mobile operator finances have been impacted by Covid-19 lockdowns: regulators have delayed auctions, deployment plans and investment have been deferred and, most importantly, supply chains have been disrupted.

Even in developed markets, all this will undoubtedly slow the rollout of technologies that, even in the best of times, were often struggling to find a business case.

Just how lasting the implications of the pandemic are for the fate of 5G in general will depend on the depth of the global recession currently riding the coattails of the crisis and the extent to which national 5G plans are a part of state or corporate strategy. For example, according to Barron's, a leading source of financial news, China has already committed $170 billion over the next five years to build out its 5G network, and investment in essential infrastructure is explicitly characterised by the Chinese state as an essential component of economic stimulus programmes. But this is only part of the story.

China also regards 5G as a critical element that sits alongside AI, big data and cloud computing to deliver industrial internet capabilities that not only power economic growth, but also mitigate the socio-economic impacts of something unexpected – like a global pandemic. Indeed, China has effectively used the health crisis to field-test such solutions in the context of both security and healthcare.

It is the potential of 5G-era technologies to solve real-world problems and drive economic growth that should inform policy and commercial strategy in developing markets like Africa. We certainly shouldn't be overconcerned with the kind of 5G narratives that are the mainstay of industry conferences, where millimetre wave and associated bells and whistles capabilities occupy centre stage.

Perhaps more important than the economic impact of the coronavirus are the implications for 5G of the current trade war between China and the US. The technology has become a battleground, threatening everything from chipsets to interoperability and the implementation of standards. It's a conflict that literally has no upside, slowing innovation globally as both sides and their allies struggle for self-sufficiency – and the associated limitations, inefficiencies and price tags that aiming for self-sufficiency often brings.

Whether these current global trends have long-term consequences for technology paths remains to be seen. In reality, they should not be allowed to impede the buildout of the right kind of networks that meet the real needs of citizens in African markets. Today, these needs can largely be delivered in terrestrial networks via 4G and, if supported by enlightened policy and technical strategy, lay the foundations for 5G evolution if and when required. Non-terrestrial approaches – such as those delivered by high-altitude platforms (HAPs) and satellites – should also play a role, not least in supplementing backhaul and access networking capability across the continent.

Getting the regulatory and technical strategy right has never been more important because mobile broadband has such significant implications for socio-economic inclusion. In most African countries, cellular networks carry an increasingly significant proportion of total broadband data traffic, which travels to large areas where fibre-to-the premises deployment is economically non-viable. In some areas, therefore, cellular networks provide the primary internet connection.

However, while in many developed markets the demand for high-capacity networks is driven by video usage – sometimes up to 80 per cent of data traffic – in many developing markets the balance of usage is quite different. For example, a study by the Boston Consulting Group shows that people in emerging countries are more frequent and active users of online government services than those in developed countries, and that they are particularly heavy users of services with a significant impact on life and livelihood, such as those related to healthcare and education, and those associated with commerce (like M-Pesa). Emerging market consumers are embracing the web as much more than a purveyor of convenience; they are using it to improve their well-being, intellect and earning ability.

In addition, communications strategy in most African countries is also about driving social inclusion and mitigating the growing divide between rural and urban populations. On average, 60 per cent of the population in sub-Saharan Africa live outside cities, and in some countries, like Ethiopia, the figure is 80 per cent. That means rural coverage is essential to reduce the digital divide and support enhancements to agriculture, home-based industries and remote industrial locations.

These requirements have obvious implications for spectrum policy, where the imperative for coverage to have priority over capacity means that

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Many telecommunications needs can largely be delivered in terrestrial networks via 4G.

Photo: Adobe Stock

Will power needs undermine 5G profitability?

5G is not just about finding new business models and making the best use of new spectrum. Power will be a challenge too. Phil Desmond talks to Matt Walker of MTN Consulting about a potential 5G power cost crunch for operators – and how to manage it.

Photo: Adobe Stock

Do lower latency, higher capacity and increased bandwidth mean more power?

"OPERATORS ARE FACING a power cost crunch. As 5G emerges, network operators face rising energy costs in their mobile and data centre networks and must adopt new approaches to thrive." That's the message at the heart of a new report from MTN Consulting*.

Of course, it's difficult to be precise about this, but the report suggests that 5G could double or triple energy consumption in mobile networks. Site power requirements are a particular concern, suggests the report. It says, "5G macro base stations may require several (new) power-hungry components, including microwave or millimetre wave transceivers, field-programmable gate arrays (FPGAs), faster data converters, high-power/low-noise amplifiers, and integrated MIMO antennas."

"All of the RAN vendors are now including power efficiency topics within their marketing pitches"

In addition, the increased power demands of a 5G site will make demands on AC power supply, backup battery capacity, high-power long-distance transmission and, inevitably, electricity bills.

Don't forget that 5G will also introduce hyperdense networks. The density of small cells needs to increase with 5G, especially if deployed on higher frequencies – and these small cells need to be powered.

Then there's edge computing, which will bring applications nearer to the end user or device. It will also play an important part in the development of new IoT services. In turn, the term 'micro data centres' will become current. However, powering these sites will add to the utility bills of operators, and also add a layer of complexity to network operations as edge power costs need to be minimized.

The report also mentions 5G pioneer China Mobile, which has already seen its electricity costs rising fast with 5G. Network design might have some ameliorative effect, but 5G base stations will carry much more traffic and push up power consumption. It's not just about the network, either. Whether the battery life worsens with 5G or not, total device power consumption is expected to increase. That means users who upgrade to 5G handsets will be paying more for the device, more for the service, and more for the power into the device.

There are many areas where power might be better managed. As Matt Walker, chief analyst with MTN, tells Communications Africa, asset sharing, already an operator focus due to likely cost concerns, may help. But how could sharing – not just of towers but of many other assets such as sites, fibre, cloud systems and RAN equipment – enhance power efficiency?

Walker explains, "Operators scale their networks in order to cope with peak capacity, plus a buffer. Unless operators have identical traffic patterns, the pooling of resources can lower the total capacity required. There are other benefits, such as avoiding the cost of constructing or renting real estate assets – and benefiting from the scale and expertise of specialist companies."

He also points out that pooling can lower the

risk of bad forecasts. That is, if an operator expects traffic to grow at a certain rate in a specific cell or city, but actual growth is far less, the cost of this bad forecast is generally higher if you own the resources yourself. "Further," he concludes, "there are benefits to scale, in multiple areas. Buying bulk power, for instance, or installing a larger (and lower cost/unit) generator."

Has Walker seen MNOs trying to learn any useful lessons about managing 5G power consumption based on their experience of LTE rollout?

"LTE rollouts made clear to operators that power costs could quickly hit profitability without changes in the network." This problem created opportunities for vendors, which have developed more sophisticated software tools to aid operators in their network design efforts. The problem also fostered the growth of the independent tower sector.

Speaking of opportunities, the MTN report mentions Huawei's Network Energy product line. Are more hardware, software and consultancy groups moving into the energy efficiency space?

"All of the RAN vendors are now including power efficiency topics within their marketing pitches. They all need to help operators understand not only the initial capex of building the network, but the long-term operating cost implications of their buying decisions. Monthly utility bills are a major component of this opex."

Of course to address power efficiency, network design is a key consideration – and that extends to in-building and campus coverage, where power costs can be significant.

"For instance," says Walker, "Ericsson's Radio Dot product: the (claimed) energy efficiency of this product was a selling point with 4G, and it is a priority for the vendor in the 5G world as well."

"A big part of power efficiency starts at the chip level"

Good news – perhaps. But could energy issues potentially slow 5G rollout – notably to remote areas, a relevant consideration as, and when, 5G begins to roll out across Africa?

"For some operators in areas with very high power costs, or where grid power is unreliable or unavailable, yes – power costs could slow 5G rollout," Walker agrees. Again, however, if vendors do their job in helping operators cope with the problem up front, the slowdown should not be significant. "The bigger issue could be down the road, when operators in such regions (including many African countries) face unexpectedly high power costs that eat into the profitability of serving specific areas."

We've barely reached 4G rollout in much of Africa and yet we're already discussing 6G. What does Walker advise when it comes to powering the generation after next?

"A big part of power efficiency starts at the chip level," says Walker. "As 6G chips are being developed, power is likely to be a key differentiator from the outset. In addition, the frequency that is used for 5G (or 6G) will be a factor. So operators are likely to be more aggressive in lobbying regulators for spectrum allocations that help them deploy services profitably. The ITU will have a role here with, for instance, its WRC event, held once every four years. The next one will be in 2023, and power will certainly come up." ✆

**MTN Consulting is an independent industry analyst firm founded in 2017. Its mission is to provide best-in-class data, insight, and strategic support to network operators and their suppliers. (For more on WRC, see https://www.mtnconsulting.biz/5g-need-for-harmonized-spectrum/) For more information, visit https://www.mtnconsulting.biz/.*

Continued from pg 20

5G bands currently have less to offer than 4G. Obviously 5G on 700Mhz delivers good coverage. However, consolidating sub- and just above 1GHz spectrum for delivering solid and reliable LTE coverage-focused services is a far more urgent priority in most markets. For example, 2600MHz and 2300MHz bands are already available from an ITU perspective; these tend to be under-exploited and are likely to remain neglected as regulators rush for 5G spectrum despite the likelihood that it can only deliver high-capacity hotspots in otherwise patchy coverage.

Despite significant progress in digital infrastructure and enablement in many African countries, most still require considerable improvement in mobile and broadband connectivity to meet all their goals. Thus 4G, with appropriate HAPs and satellite expansion, is likely to be central as a platform for the digitisation of industry. It will also be relevant as part of a coordinated approach to modernisation of all critical infrastructure: roads, electricity and much more.

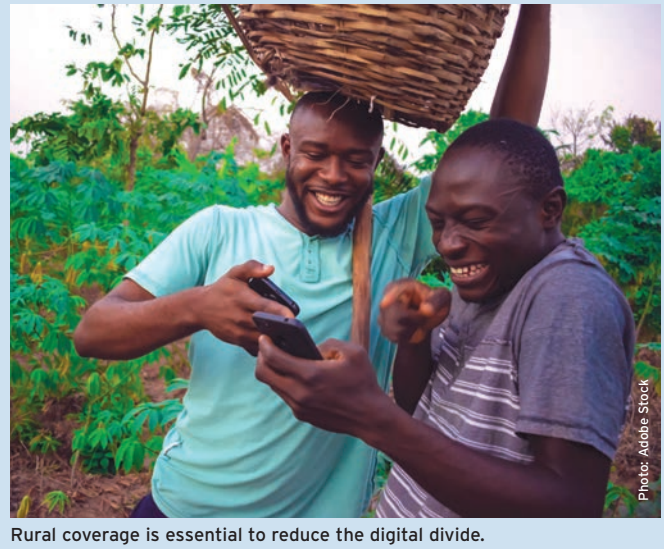
That said, unlike earlier transitions from one radio technology to another, return on investment (ROI) associated with growing and strengthening 4G infrastructure is in no sense threatened by the arrival of 5G.

While 2G, 3G and 4G standards were initially rolled out on dedicated blocks of spectrum, today features like dynamic shared spectrum (DSS) mean operators can reconfigure between 4G and 5G within the same spectrum, enabling a relatively smooth transition between the two technologies via software upgrades.

Once again, this has implications for spectrum policy. Real Wireless advice to regulators is to make allocations that are technology neutral. This enables services providers to tailor services according to commercial and regulatory demand, rather than according to the constraints of the radio technology.

The conclusion here is that while many have their eye on the transition from 4G to 5G, Real Wireless is advising MNOs, governments and regulators that there are other factors currently in flux that are at least as important – if not more so. Ensuring progressive regulation that speeds and cuts the costs of deployment. Policy that enables infrastructure sharing to encourage more investment and ubiquitous coverage. Spectrum policy that best leverages scarce resources to deliver on increasingly ambitious digital transformation plans.

Get all this right and the transition to 5G will take care of itself. Well, almost... ✆



Rural coverage is essential to reduce the digital divide.

Real Wireless is the world's leading independent wireless advisory firm. Its network of experts includes engineers, physicists, economists, security advisors, business strategists and deployment specialists. www.real-wireless.com

Better content from better understanding

KaiOS, the smart feature phone company, recently researched mobile phone use in Nigeria, a country it describes as one of the most exciting frontiers for emerging technology usage. However, it found that many Nigerians fuelling rapid growth in the tech space actually underutilise their technology, as Sebastien Codeville explains to Phil Desmond.

NIGERIANS SHOW GREAT interest in mobile devices and the internet. However, recent research by the smart feature phone company KaiOS shows that they aren't always aware of the ways they can leverage technology to their advantage.

This discovery came about when the company conducted a survey to fill in its knowledge gaps. There were a few surprises. For example, in the 'connected world' it's often assumed that the internet benefits everyone. However, Sebastien Codeville, CEO of KaiOS Technologies, says, "Around half of respondents don't consider the internet as something essentially good. This is because of the barriers that prevent them from using it to solve daily problems." These include relevance of content, device and data affordability, physical constraints, the need for a facilitating environment to gain gradual internet literacy, and not always feeling safe and secure while using the internet.

He explains that while everyone logs on to the same internet, their offline circumstances will differ. "We need to understand people's lives to be able to deliver content and services that are tailored for them," he explains.

Don't forget too that the cost of purchasing tablets and laptops and the reliable fixed broadband they run on means that the majority of Nigerians are priced out of this device market. So a phone using the mobile internet is the main option for people on lower income levels.

> **"We see three areas where companies are making strides in targeting their content and services to rural users: education, agriculture and digital money"**

"We are seeing this play out in real time right now," says Codeville. "Due to the spread of the coronavirus, the communications and physical movements of many communities have been restricted. As a result, mobile internet has become the most crucial channel to gather information, stay connected, be entertained and be educated. We have seen a 10-20 per cent increase in mobile traffic around the world, especially in developing countries, including Nigeria."

Even without the pandemic driving use, mobile internet take-up is strong in Nigeria. "In recent years we have seen big progress in the speed increases of mobile internet and the widening of coverage. As of January 2020, over 128 million Nigerians are connected to the internet, representing a 12.6 per cent increase compared to the previous year, according to data from the Nigerian Communications Commission. As a result 44 per cent of Nigerian subscribers are using 3G, and four per cent of subscribers are using 4G."

Photo: KaiOS Technologies

Phones, not tablets or laptops, are the main option for many Nigerians who wish to access the internet.

If that seems low, we mustn't forget the enormous strides of the past few years. "As recently as 2017, only 21 per cent of Nigerians had 3G/4G internet," says Codeville. He adds, "It is good to see that the Nigerian government has launched a new National Broadband Plan for 2020-2025 targeted at achieving 90 per cent broadband penetration by 2025."

Fast and reliable internet has opened up a lot of opportunities in Nigeria for both businesspeople and those employed in internet-based businesses such as ride-hailing, food delivery and e-commerce, all of which were booming in Nigeria prior to the onset of the coronavirus.

The effect for rural users is likely to be different, however. Adoption and awareness may be slower if rural users cannot see how the internet, and the content available to them, will

Fast and reliable internet has opened up a lot of opportunities in Nigeria.

make their daily lives easier, financially sustainable and more productive.

Nevertheless, says Codeville, "We see three areas where companies are making strides in targeting their content and services to rural users: education, agriculture and digital money. For example, The KaiOS Life app, an in-house app built for first-time internet users, provides resources on digital training, general education and e-books. The app has incorporated resources from WeFarm and iCow to provide farmers with expert crop management, livestock care, and agricultural business advice."

He continues, "Our partner in Nigeria, MTN, has launched the MTN MoMo Agent, which acts in place of a bank account, allowing users to send payments to local shops and receive payments from employers and customers directly through their mobile phones." Such solutions address specific problems faced both in Nigeria and across Africa.

And speaking of products that address the specific needs of the market, the Kaios report notes that using Opera, a major web browser app, is often seen as synonymous with "browsing the internet". Opera was in Africa early, and has used its local knowledge to create the right product and solidify its market share. The company has three different mobile browser products, Opera Mini, Opera for Android, and Opera Touch, each meeting the unique needs of different African populations.

Also, says Codeville, "Opera products offer data-savings mode, which is really important given that the price of data in Africa is still on the higher side and people are price sensitive. Opera products are also known to run on low memory, which allows them to run satisfactorily on low-end spec devices. In many African countries, internet can be unstable, so users do care about the browsing speed, which is conveniently captured by the turbo feature. Opera is one of the known browsers to pay closer attention to the browsing speed for slow connections."

A major challenge to promoting greater internet use will presumably be protecting users from fraud. But Codeville says, "We think greater internet use and protecting users from fraud and disinformation go hand in hand." Kaios research has revealed that some of the biggest internet fears of respondents are security issues – being tracked or hacked, losing money, viewing harmful content and misinformation. "These fears may be exaggerated but they are real and could deter people from using the internet."

One response to this would be to focus more on the 'bright side' of the internet – such as the life-enriching and enhancing use cases mentioned earlier. Codeville explains, "If a mother could be convinced her daughter could learn from reading online, that would mean two more converted users. If a father could learn new carpentry skills from watching YouTube videos, that would be one more family benefitting from the internet."

Getting this right matters. A report by the UN Broadband Commission concluded that mobile internet use is directly correlated with higher economic output, and the evidence is even more emphatic in Africa – for example, a 10 per cent increase in mobile internet penetration will lead to a 2.5 per cent increase in GDP per capita.

"Greater internet use and protecting users from fraud and disinformation go hand in hand"

Codeville explains how this could work in practice. "In the technology sector alone, more internet use will be beneficial to all parties involved. By upgrading users from 2G to 3G or 4G, carriers can free up valuable bandwidth, provide better services, capture more income, and reduce unit cost, which in turn makes the internet even cheaper. With faster internet, more business cases can emerge, such as e-commerce, mobile money, telemedicine and distance learning. Employees will be able to access more tools, gain better skills and become more productive, while potential entrepreneurs may finally decide to embark on the journey as a result of better access to information, helping them understand the market and access resources."

Sebastien Codeville: "With faster internet, more business cases can emerge"

So what about Kaios itself? Have the results of this research changed its own approach to smart feature phone provision and marketing in Nigeria?

"We are currently conducting on-the-ground training with local developers so that they will become more familiar with our platform, and able to develop more locally relevant content and apps," says Codeville. "We also work with one of our partners in Nigeria, Transsion, to train their sales staff, so that they gain more knowledge of our products and understand the positive impact the device and internet can have for their customers."

And as for getting the message right, "We are also working with our telco partners to improve the messaging to the end users, helping them to overcome their perceived fears associated with first-time internet usage and also adding more locally relevant content to Life App."

Internally, based on the research findings, the company's software and design staff have initiated projects to make its operating system more user-friendly and run more efficiently. And research continues. "We are committed to doing more research in the future, to understand more about our target audiences and their internet needs." ✆

KaiOS Technologies is the maker of a leading mobile operating system for smart feature phones You can find and download the Nigeria study at kaiostech.com/company/press-room/

Mobile internet take-up is strong in Nigeria.

Photo: Adobe Stock

Where data demand and steady growth meet affordable access

A new report* from consultancy Analysys Mason offers a comprehensive overview of Morocco's telecoms market, a market that is among the biggest in Africa. Ron Murphy asks report author Olamide Makinde and Analysys Mason lead analyst Karim Yaici to tell us something about the report's findings.

THE NEW MOROCCO Telecoms Market report from consultancy Analysys Mason is no doubt timely. Published in February 2020, it includes data up to the end of 2019.

Among its findings is the (not too surprising) dominance of mobile. As report author and research analyst Olamide Makinde notes, the mobile market dominates the country's telecoms sector – not only in terms of connections (nearly 44 million mobile connections compared to 1.6 million fixed broadband subscribers at the end of 2019) but also in terms of revenue (mobile services revenue represented 77 per cent of total market telecoms revenue in 2019).

Photo: Analysys Mason

The new report underlines the dominance of mobile communications in Morocco.

Mobile is, it seems, in good shape in Morocco. Karim Yaici, a lead analyst for Analysys Mason's Middle East and Africa regional research programme, says, "The mobile penetration of the population exceeded 100 per cent in 2012 and has been steadily growing ever since to reach 119 per cent at the end of 2019. Morocco has one of the largest economies in Africa and the mobile market enjoys a healthy level of competition which contributed to driving the take-up of mobile services. The launch of 4G in 2015 also helped to make data access more affordable and increase data traffic."

In fact, the competition is more evident in the mobile market than it is on the fixed side of things. He says, "Maroc Telecom controls 98 per cent of fixed broadband subscribers while it has a share of 40 per cent of the mobile market. Despite the introduction of local-loop unbundling (LLU) in 2008, Maroc Telecom has failed to publish its wholesale offers and as a result it was fined by the regulator in February 2020 for anti-competitive practices."

And coverage isn't bad either. Makinde says, "Mobile network coverage in the country by the three operators (Maroc Telecom, Orange, inwi) is excellent judging by the figures reported by the regulator. 3G coverage of the population exceeds 96 per cent and 4G coverage is not far behind." She adds, "I do not think that there is a divide between rural and urban areas in terms of coverage."

Mobile money is a fairly recent addition to this market. Mobile money services have recently been launched by inwi and Orange. The first came in September last year, when a new mobile money service called 'inwi money' was launched. It works on mobiquity Money, a platform offered by mobile solutions provider Comviva.

Customers can access the service using any type of mobile phone through the inwi money mobile application or USSD menu. The service is available in French and Arabic. It facilitates multiple levels of registration, ranging from self-registration to agent-supported registration.

Orange followed earlier this year. After securing approval last summer from the Bank Al Maghrib, Orange Morocco announced the launch of Orange Money in the kingdom in March. Orange Money offers every mobile user, regardless of their telecom operator, the option of having a mobile wallet backed by their phone number. The solution allows mobile phone users to carry out financial transactions, pay for phone recharges remotely or withdraw money from their Orange Money wallets at points of sale approved by Orange Money Maroc.

It's certainly an important development. As Orange says, "Mobile money is revolutionising Africa's economy." However it makes Morocco the 18th country in the Africa and Middle East region of Orange to offer the Orange Money solution and there are many non-Orange services in countries like South Africa and Kenya. So why the delay?

Makinde explains, "The delay in the introduction of such services was due to the lack of regulations. It was not until 2018 that the Central Bank and the National Telecommunications Regulatory Agency established a mobile money programme where mobile money licences were granted."

The mobile penetration of the population exceeded 100 per cent in 2012 and has been steadily growing ever since to reach 119 per cent at the end of 2019.

Continued on page 27

Solar power + small cells + satellites = rural connectivity

Brian Jakins, regional vice president, Intelsat, tells Communications Africa about an ongoing partnership with Africa Mobile Networks to enhance rural connectivity: how it works, what services it can enable and the role played by satellite technology in making it happen.

SATELLITE COMMUNICATIONS COMPANY Intelsat and mobile network infrastructure company Africa Mobile Networks (AMN) entered into a partnership in October of 2018 to accelerate the deployment of mobile connectivity to unserved communities across Africa that many thought were impossible to connect.

The mission of AMN is to build mobile network base stations serving rural communities in sub-Saharan Africa that have no existing service. Intelsat describes itself as the operator of the world's largest and most advanced satellite fleet and connectivity infrastructure.

By the end of 2019, over 500 remote sites in Africa had AMN's affordable, solar-powered mobile connectivity solution – powered by over two dozen Intelsat satellites positioned over the continent – and were providing fast, reliable mobile connectivity to people in remote communities. The partnership recently connected its 1,000th remote site, bringing access to 3.5 million people in sub-Saharan Africa.

Communications Africa: What are the component parts that make up this solution?

Brian Jakins, Regional Vice-President, Intelsat: The low-cost solution, developed by AMN, is powered by a highly reliable, small-cell solar-based system that can be rapidly deployed in less than six hours. AMN has combined its solution with the power, performance and efficiencies of three high-throughput Intelsat Epic satellites, along with our 23 other satellites that cover the African continent. The result is a mobile network infrastructure that is a fast, cost-effective, reliable solution that can help mobile network operators (MNOs) easily scale to meet evolving connectivity demands.

Communications Africa: Who sells the service on the ground?

Brian Jakins, Intelsat: Relying on Intelsat's satellite fleet, AMN provides MNOs with a network-as-a-service solution in which AMN builds and operates the ultra-rural network for them. African mobile operators can, as a result, deliver reliable mobile connectivity to communities in sub-Saharan Africa that many previously thought were impossible to connect.

Communications Africa: What challenges did you face in the early stages of this project? How much have you learned to make this a smoother process now?

Brian Jakins, Intelsat: Sub-Saharan Africa is one of the most difficult and challenging regions of the world to connect because of its geographic complexities and number of remote communities. Intelsat has served Africa for decades, and our team's expertise, combined with AMN's deep understanding of the region, has helped us develop optimal solutions that help MNOs grow their subscriber and revenue base, and better serve their customers. Bringing mobile connectivity to the most rural parts of Africa is not straightforward, and we have learned that it requires hybrid networks and innovative business models to truly close the business case.

"Bringing mobile connectivity to the most rural parts of Africa is not straightforward... it requires hybrid networks and innovative business models"

Photo: Intelsat

Reaching for the sky...Rural connectivity is a growing phenomenon.

Communications Africa: Is satellite connectivity much more affordable to launch, supply and roll out on the ground than it would have been, say, 10 years ago? Do you expect this affordability to continue to impact remote connectivity?

Brian Jakins, Intelsat: Over the past few years, the industry has introduced major innovations that have made satellite technology more accessible and more affordable. The power of high-throughput satellites, such as the Intelsat Epic fleet, which delivers 10 times the throughput of a traditional satellite, combined with advances in ground and antenna technology, have lowered the total cost of ownership for mobile operators. Small terminals of less than 10 kg can transmit high throughput, while some antennas can be fitted onto car roofs for communications on the move.

One of our 19-year old satellites recently returned to service with an extra five years of life following its docking with the first-ever Mission Extension Vehicle (MEV-1). This is proving to be an innovative and cost-effective way to better support our customers.

At Intelsat, we are also working on innovative business models, such as the one with AMN, that enable MNOs to extend their coverage with minimal opex and capex risk. Already, Intelsat and AMN have connected 1,000 remote sites, bringing access to 3.5 million people in sub-Saharan Africa, and are on track to connect a total of around 12 million Africans by this time next year. Yet, there is still room for improvement; according to the ITU, in 2019, only 28.2 per cent of the population in Africa had

access to the internet, and Intelsat is committed to advancing the adoption of mobile connectivity throughout the world.

Communications Africa: What sort of satellites are involved and what frequencies?
Brian Jakins, Intelsat: Intelsat has been part of the communications fabric in Africa since 1965, and was the first operator to introduce satellite services, enabling critical communications infrastructure across the continent. Today, we have 23 traditional GEO satellites and four high-throughput Intelsat Epic satellites serving customers around the continent. We have a multi-frequency strategy and our satellites have different frequencies, depending on their use.

Communications Africa: What services is this enabling that weren't possible before?
Brian Jakins, Intelsat: This new connectivity can bolster commerce, deliver critical medical information and care to communities far removed from the nearest hospitals, drive curriculums in schools where teachers may be scarce, steady communities after disasters, and importantly, connect families and bridge divides between different cultures through the distribution of news and entertainment.

Communications Africa: Finally does Intelsat's recent financial restructuring announcement impact its ability to move forward on these types of projects?
Brian Jakins, Intelsat: No. On the contrary, our day-to-day operations, engagement with customers and partners, and capital investments will continue as usual.

It's also important to note that this is a US-based process that companies like General Motors have gone through, 'reset', and emerged stronger. This is a positive development for Intelsat because we're using the financial restructuring process as a mechanism for investment and growth. We have a powerful platform, a talented team of dedicated employees we're retaining, and a compelling business model and plan for future growth. With a strengthened balance sheet, Intelsat will be on stronger financial footing for the future, and better positioned to serve our customers and partners for decades to come. ✆


Photo: Intelsat

A new and welcome addition to the rural landscape.

"This new connectivity can bolster commerce, deliver critical medical information, drive curriculums in schools, steady communities after disasters, and connect families"

Continued from page 25

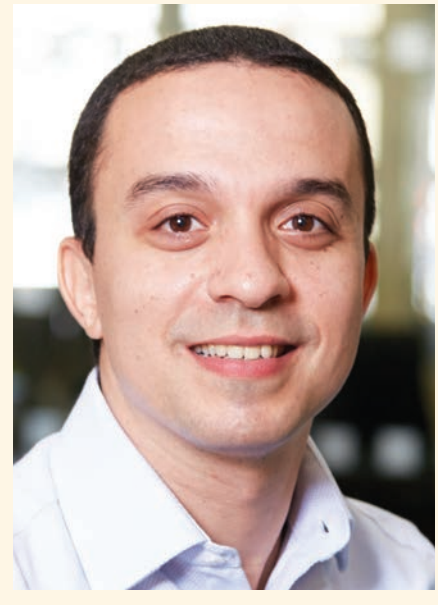
It will certainly be interesting to see how the mobile money offering evolves. And 4G, of course, which has been available since 2015 in Morocco, where adoption has been growing steadily. Makinde estimates that 20 per cent of mobile subscribers were using 4G at the end of 2019 and, she suggests, there is plenty of room for it to grow further.

As for 5G, she says, "All three operators are planning to launch 5G services in 2020/2021. Orange announced that it had started to upgrade its network to 5G in December 2018 and was planning to launch the technology commercially in 2020. Maroc Telecom is collaborating with Ericsson-run demonstrations of 5G. inwi and Huawei also announced plans to begin pre-commercial 5G pilots."

Of course, this will have a limited effect without smartphones and mobile internet connectivity. As Yaici says, "According to the regulator, access to the internet by households increased three-fold over the last eight years and that's largely thanks to wider access to smartphones. The population is relatively young, so there is naturally a lot of demand for internet connectivity."

And it's probably going to grow. "The availability and affordability of 4G services offered by the three operators and the growing variety of low-cost handset models available in the market from Oppo, Huawei, Infinix and Alcatel helped to drive the adoption of smartphones. We estimate that smartphones represented more than half of the connected handsets in Morocco in 2019." ✆

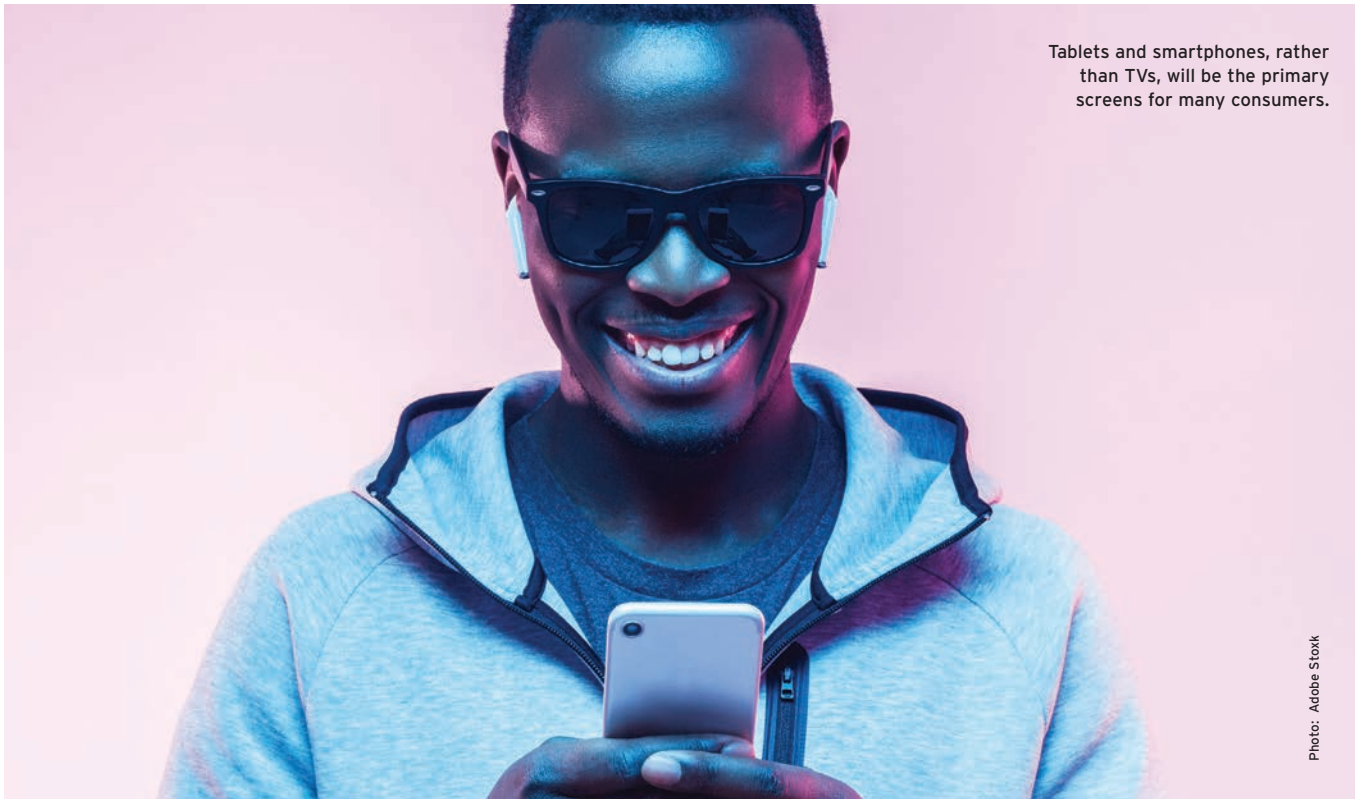

Olamide Makinde: "All three operators are planning to launch 5G services in 2020/2021."


Karim Yaici: "The Moroccan mobile market enjoys a healthy level of competition"

Morocco telecoms market report 2020 includes KPIs and data on subscribers, penetration, revenue and ARPU. The report analyses the strategies of major players in the country's fixed and mobile telecoms markets and includes market share data and operators' infrastructure status. For more information and prices, go to www.analysysmason.com

Streaming content in Africa: the big (and small) picture

Stephen Watson, MD of African OTT and VOD specialist Discover Digital, recently authored a short commentary on key over the top (OTT) and video on demand (VOD) trends affecting the African market. Here, Ron Murphy and Stephen Watson discuss these insights in more detail.



Tablets and smartphones, rather than TVs, will be the primary screens for many consumers.

Photo: Adobe Stoxk

AFRICAN TELECOMMUNICATIONS COMPANIES hoping to succeed in the streaming market must look at the big local picture. That's the message from African OTT and VOD specialist Discover Digital.

Stephen Watson, MD of Discover Digital, in a recent release from the company, says that the African market is significantly different from North American and European markets. Over the top (OTT) and video on demand (VOD) services for the continent cannot simply copy and paste models that have worked in the US and European markets, he argues.

Of course, he adds, streamed content is currently booming across the continent as people in lockdown both produce and consume video content. This, he feels, will encourage a far more digital-savvy consumer than before.

Thus, if you're a market entrant in Africa, he suggests, to succeed you have to take into account key factors that are aligned with an audience's interests, as well as whether they are banked, and what your unique selling point is.

Watson also points out that subscription pricing and payment models are challenges unique to much of the African continent. Africa is also unique in that tablets and smartphones will be the first, and primary, screens for many consumers; high definition (HD) will not be a key requirement of most of the market in the foreseeable future.

With a presence and partnerships across several African markets, Discover Digital has found that local content and short videos are particularly popular among African audiences.

"Local content is crucial, especially music and comedy. Linear TV also still has a place in Africa – more so than elsewhere in the world," Watson says. African operators, he suggests,

Discover Digital has found that local content and short videos are particularly popular among African audiences.

need to be strategic in offering services they and their audiences can afford, and content that resonates with their audiences. For example, service providers should look to an affordable mobile quad play, offering combinations of voice, messaging, data, music and video, bundled along with devices. They could also incentivise the use of off-peak data for streaming, capped by time.

Watson adds that the technologies used should also be designed for the varying conditions throughout Africa. "You need to think what will work best locally – you can't just copy or accept global standards."

These are interesting points, so we invited Watson to tell us more. First of all, there's his suggestion that tablets and smartphones will be the first, and primary screens for many consumers. Does that mean that some content can or should be produced with these screens in mind?

"Absolutely," he says. "The duration and definition standards should be taken into consideration. Pushing HD content to a three-inch screen does not make sense; SD with

good adaptive bitrate profiling works just fine for Africa. HD is predominantly required for a big-screen play. Short-form content is consumed in abundance by mobile users and this should be prioritised on the user interface for ease of content discovery. Personalisation is also key here."

Of course, monetisation is going to be a key issue. This begs the questions of what sort of payment models there are. Relationships with operators in order to enable charge to bill/carrier billing, mobile wallet payments and prepaid wallets are imperative, Watson says, adding, "Enabling cash payment and vouchering is equally as important. You need to research your target consumer: are they banked? Do they even have a credit card? Make sure your commercials factor in micropayment transaction fees."

Are innovations like advertising-led content one way forward? "AVOD and FVOD [advertising video on demand and free video on demand] definitely have a place and appeal on the continent," Watson agrees. "But the content still needs to be aligned to your audience. Just because it is free doesn't mean it will be consumed. The content selection and refresh rates need to retain viewers to offer decent advertising revenue opportunities."

One obvious way forward is bundling. What sort of options does this offer? "Bundling, or multi-play offers as we call it now, is key as consumers are demanding more value and convenience. A good example is an operator offering what we would call a quad-play deal: device + talk time + data + streaming / VOD service."

In this case the video service is included in, or bundled into, the offer. The data consumed for streaming is often priced lower than traditional data used for surfing the net. "Bundling helps the product gain traction and creates a strong USP and consumer retention tool for the operator."

All of which are useful ways to buy and sell content – but an obvious threat to potential earnings is piracy. As Watson puts it, "Policing and guilt campaigns have done little to curb this." And this is where some business models come into their own. "AVOD and lower subscription pricing, combined with consumer convenience, is the only way we can really begin to reduce the appeal or demand for pirated content."

And speaking of content, even before the present health crisis the amount of home-grown content in Africa was growing quickly (as SVOD company Demand Africa made clear in issue 2). Will this continue?

"VOD and OTT will continue to pick up across Africa, particularly as the cost of data drops"

"There is definitely a demand for fresh local content, and in some countries it is really hard to acquire. There are plenty of archive catalogues around but new, not aired or seen before, quality content is not readily available in many markets."

He agrees that original productions and commissioned content will grow in both short and long-form formats but adds that this requires a production lead-time and budget. "So I expect new content choice will grow in time, but in many markets, for now, it is about making sure consumers have free or cheaper access to content they may not have seen previously, as it sat behind a pay-tv subscription fee that was unaffordable to them."

Photo: Discover Digital

Stephen Watson: "Bundling is key as consumers are demanding more value and convenience."

That being the case, what products and services does Discover Digital offer to enable African-produced content and content distribution?

"We are enabling VOD operations or services with strong partnerships in over 18 African markets," Watson says. "If you are a broadcaster, telco or media entrepreneur looking for a VOD platform backed by an experienced team of African professionals, we can help you implement our technology in a more cost-effective way than any of our international competitors. In addition, we add a foundation level of content, both international and local, to add depth to your service. If you are a content producer, short or long-form, our content acquisition team would be keen to understand what you have and if we can help you monetise this locally and internationally. We can assist with the digitisation of your content and we manage the workflows, encoding and encryption and publication to our partner services."

"We are enabling VOD operations or services with strong partnerships in over 18 African markets"

There are, of course, varying conditions throughout Africa. It's not a uniform market. How does this affect Discover Digital's response to the markets it targets?

"We have changed our strategy and approach. We look for the uniqueness in each market, assess who the right partners are and the competitive landscape, and then we look to build a USP on top of the foundation we have from both a technology and content perspective."

Watson concludes that VOD and OTT will continue to pick up across Africa, particularly as the cost of data drops and new innovative mobile payment options pave the way for simpler transactions for services.

And content provision will change too. Entire films have been made on smartphones already. While he is right to highlight the challenges of production lead-time and budget, could production options increase and become cheaper?

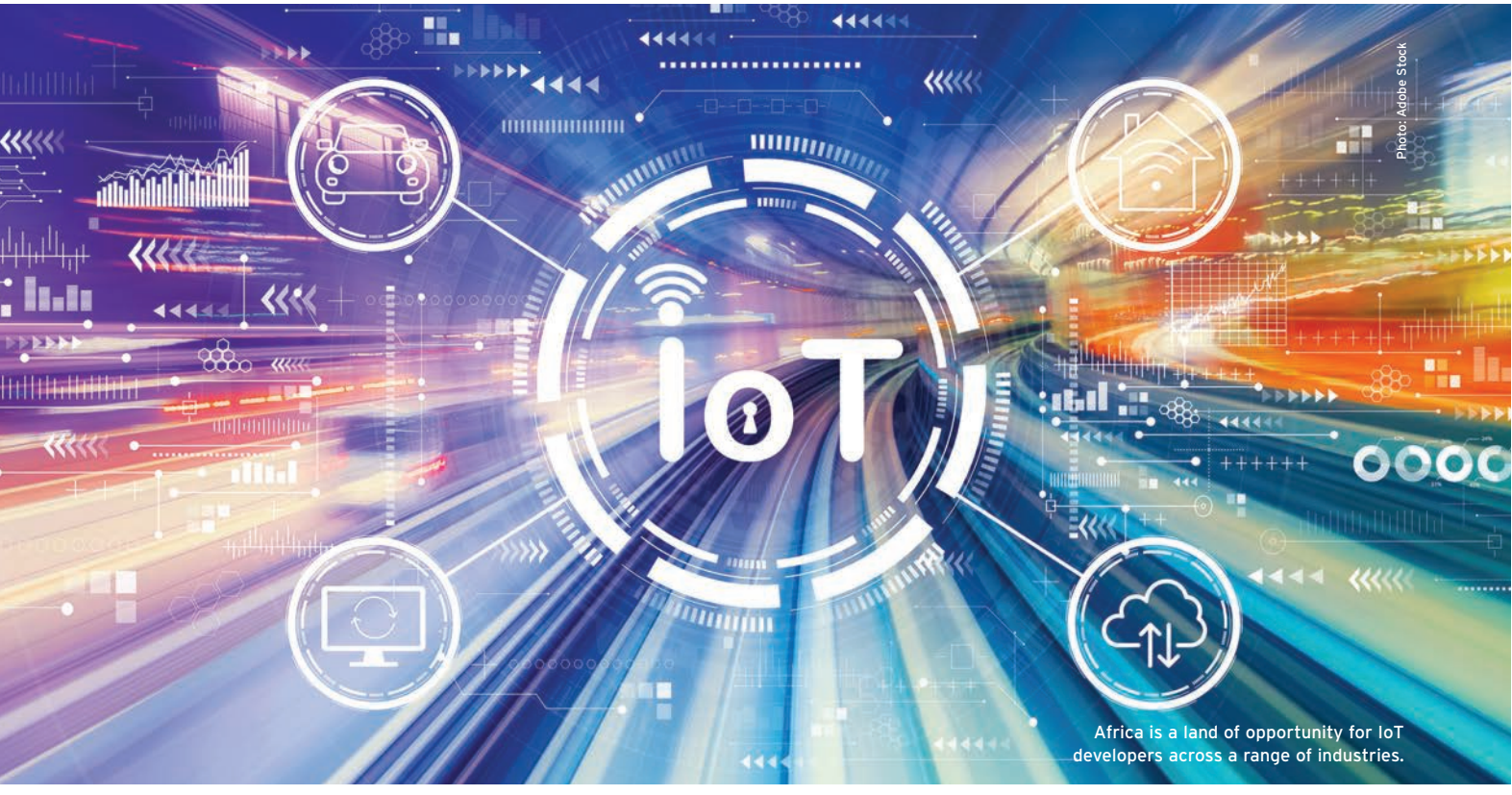
Watson agrees that there is a growing market for this content. "Some of the scripts are topical and the production quality is really good, considering how they are shot. This opens up the creative industry and reduces previous barriers to entry for the youth or less affluent producers. User-generated content (UGC) has massive appeal too, and curation of this will be key in the future."

Continuing in this vein, Watson says of UGC (content that can be shot at home, without studios and production teams): "This has been sitting under our noses for some time on platforms like YouTube, TikTok and Facebook. UGC content has vast appeal, is here to stay and it can be monetised. For Africans this is important; it can put food on the table. There is demand and opportunity to curate this, monetise it differently and catalyse an amateur creative economy. Watch this space..." ✆

Based in South Africa and Mauritius, Discover Digital has developed various innovative technological solutions for clients looking for access to superior products and trusted platforms, methods and industry expertise in the Video On Demand, TV Channel and overall digital media entertainment and ecommerce space.
Visit: www.discoverdigital.co.za for more information and contact details.

IoT applications set to boom in post-COVID era

With applications across a range of industries, and for use by businesses, government and in the home, Africa has the potential to be at the forefront of IoT use. Georgia Lewis looks at some of the possibilities for the continent.



Africa is a land of opportunity for IoT developers across a range of industries.

THE INTERNET OF Things (IoT) revolution has improved lives on a global scale. Now Africa has the potential to develop and utilise IoT across a diverse range of sectors, including water management, mining, and accessibility for disabled people.

Smart meters have become an invaluable piece of IoT technology, especially in water-imperilled areas. In South Africa, Jojo, a water tank manufacturer has linked smart meters to its products to help residents, businesses and municipalities monitor consumption and detect leaks. The meters can be checked via a mobile app by Lesira-Teq and users can receive notifications to their phones with information such as when a tank is full or water levels are running low.

> **"Mining is an industry which was historically slow to adopt radical ideas. It is now beginning to embrace IoT but still working out how to make the most of it."**

"These smart meters transmit their consumption information, which a user can then be able to access through a mobile app on their smartphone ... It is both a monitoring and management device, placing the power of consumption in the hands of the end user," says Edwin Sibiya, Lesira-Teq's CEO.

In the mining industry, there is plenty of scope for growth. Research conducted by Inmarsat found geographical variance in IoT adoption across the mining industry in different regions, with 98 per cent of North American respondents having deployed IoT projects, compared with 50 per cent in Africa and 38 per cent in South America.

There are many challenges to overcome if the mining industry is to fully realise the potential of IoT, particularly in regard to using it as driver for organisational change. A lack of skills, investment and cultural challenges, as well as unreliable connectivity, patchy cybersecurity processes and underdeveloped data management processes were highlighted in the report and will all need to be remedied in the coming years. Despite the challenges being faced, the study found mining companies are looking to increase their investment in IoT and are positive about the value IoT can bring and the benefits it is delivering or will deliver in the future.

Joe Carr, global mining director at Inmarsat, said, "Two years on from our last research, Inmarsat wanted to get a measure of what had changed in the mining industry ... What we discovered was an industry that, historically slow to adopt radical ideas, is now beginning to embrace the use of IoT, but still working out how to make the most of it."

Innovate Now, Africa's first assistive technology accelerator, meanwhile, has launched Cohort 2.0 to fund technology for people with disabilities. One entry is from Toto SCI, a startup that has developed AlexCane. AlexCane is a smart stick that incorporates IoT technology to help blind people share their location, request help or connect with other users at the touch of a button. ✆

Getting better data faster

Cloud technology is helping oil companies to manage and use geophysical data more rapidly and reliably than ever before. Martin Clark reports.

Photo: Adobe Stock

Cloud computing is transforming data management.

GEOPHYSICAL DATA MANAGEMENT is evolving seemingly at breakneck speed. Fast-moving technology gains are helping to keep track of the massive amounts of data churned out daily by the oil and gas industry.

It is a tool that can help upstream operators and contractors better understand oil fields, flow rates, system processes, and most other aspects of the energy chain. Last year, seismic specialist Polarcus introduced to the market its suite of data transfer and cloud processing solutions.

These cloud-based products, known as Polarcus Cirrus, provide clients near real-time access to seismic data, enabling crucial project decisions to be made faster and ultimately shortening the exploration cycle. In its latest annual report, released this March, the company said three projects utilised the power of Cirrus in 2019, enabling clients near real-time access to over 120 terabytes (TB) of seismic data.

This new data management and streaming platform is designed to bring acquired seismic information to clients faster via direct satellite transfer, which allows rapid onshore access to high-fidelity data. The end goal is to facilitate project decisions in near real time, thereby shortening the exploration cycle, and ultimately cutting costs. Polarcus said its total revenues from the combined Africa, Europe and Middle East region amounted to about 30 per cent of total earnings last year. But it is not alone in streamlining the management of big data or drawing on cloud-based solutions for quicker decision-making in the field.

This new data management and streaming platform is designed to bring seismic information to clients faster via direct satellite transfer, which allows rapid onshore access to high-fidelity data.

CGG also unveiled a new collaboration with IT giant Microsoft to deliver its geoscience products, data and services via Microsoft Azure. Similarly, the end goal is to accelerate exploration and development workflow. The platform gives oil and gas companies access to CGG's extensive library of geoscience data, and high-end interpretation, analysis and reservoir characterisation software technologies.

As part of the shift, CGG's GeoSoftware is offering existing applications in the cloud, such as its HampsonRussell and Jason packages, as well as continuing to make them available on supported platforms. This includes computer-intensive GeoSoftware applications used for inversion and AVO analysis not only being multi-CPU enabled, but being able to access cloud computer power. And more is set to come.

CGG said that future GeoSoftware developments include commercialisation with other cloud providers such as Amazon (AWS) and Google (GCP) and software re-design to take full advantage of the cloud and provide a software-as-a-service model. ✆

Antaira expands its industrial networking infrastructure family

ANTAIRA TECHNOLOGIES, A developer and manufacturer of industrial networking devices and communication solutions for harsh environment applications, has announced the expansion of its industrial networking infrastructure family with the introduction of the IMP-C1000-SFP-bt series.

Antaira Technologies' IMP-C1000-SFP-bt series is a compact, IP30 rated, gigabit Ethernet-to-fibre media converter featuring a 10/100/1000Tx Ethernet port.

It supports IEEE 802.3af/at and bt high power PoE that can supply up to 90 watts of power over Ethernet with a dual-rate 100/1000 SFP slot.

This product is designed to fulfill industrial applications that require distance extension and high bandwidth capabilities. This small form factor is ideal for saving space in outdoor applications such as factory automation, security, ITS transportation, power/utility, water /wastewater treatment plants, and any other extreme ambient weather environments.

The IMP-C1000-SFP-bt series has a built-in "Link Fault Pass Through" (LFP) and "Far End Fault" (FEF) function with 48~55VDC redundant power inputs with reverse polarity and overload current protection.

The IMP-C1000-SFP-bt-24 has the same feature set, but can be used in applications where a wider power voltage is required (12~55VDC). This product series supports DIN-rail as well as wall-mountable orientations. There are two operating temperature range models in STD: -10°C to 65°C and EOT: -40°C to 75°C.

It comes with a five-year warranty.

This product series supports DIN-rail as well as wall-mountable orientations.

Huawei launches next-generation mass storage system

HUAWEI HAS ANNOUNCED the launch of the next-generation mass storage system OceanStor Pacific Series.

The series delivers reliable services for AI, HPC, video and other mass data scenarios by breaking architectural, service and performance boundaries, and leveraging uncompromised multi-protocol interworking, next-generation elastic EC algorithm, and a series of dedicated hardware.

Digital production has become the currency of modern business models through the fourth industrial revolution. Digital production transforms data into opportunities, then into services and eventually into profits.

Photo: Huawei

Shang Haifeng, President of Huawei Mass Storage Domain, giving details about the OceanStor Pacific Series.

With this new production factor, enterprises need to find a way to collect and store various types of data cost-effectively, such as structured core services data and mass unstructured 5G, IoT, and UHD data. Companies use AI technologies to analyse and process massive amounts of data to convert data into knowledge and services, enhancing the efficiency of production.

Peter Zhou, president of Huawei Data Storage and Intelligent Vision Product Line, said, "Our OceanStor Pacific Series is designed to answer these pain points, setting a new benchmark for efficient, economical, everlasting mass data storage, and helping us become the trusted choice for mass data."

NEXCOM solves network capacity issues with 100GbE NIC module

COMPUTER MANUFACTURING COMPANY NEXCOM can help telecom and data centres across the world virtualise and expand capacity with its new NC 220FMS3 100GbE NIC module.

The module provides higher bandwidth and throughput for end users and reduces bottleneck problems.

The NC 220FMS3 provides a PCIe3.0 x16 interface and two QSFP28 ports to meet current demands for faster speeds, each supporting 100Gb/s Ethernet connectivity. The module provides connectivity at high speed without any loss of the packets.

The addition of Mellanox ConnectX-5's Accelerated Switching and Packet Processing (ASAP2) technology boosts the offloading of virtual switches and routers, enhancing data transfer performance without overloading the CPU.

Photo: NEXCOM

NEXCOM aims to develop powerful computing and network technology.

NEXCOM aims to develop powerful computing and network technology and to help customers build superior network infrastructure.

Allot BusinessSecure application for protection against cyberattacks

ALLOT, A PROVIDER of innovative network intelligence and security-as-a-service (SECaaS) solutions for communication service providers (CSPs) and enterprises, has launched Allot BusinessSecure.

Allot BusinessSecure is a new solution that CSPs can offer to their SMB and enterprise customers to protect them from emerging cybersecurity threats, including malware, phishing, ransomware and crypto-mining, while increasing revenue.

Allot Secure includes solutions for a unified experience on devices that are on mobile networks (NetworkSecure), fixed home networks (HomeSecure), public Wi-Fi networks (EndpointSecure), and for IoT devices (IoTSecure).

Allot BusinessSecure automatically identifies all devices in the network using machine learning technology and network visibility tools, and applies a customisable security policy to protect them and the network. The solution provides a network-based antivirus service that requires no expertise in security, and does not require installation on business or employee devices.

In addition, Allot BusinessSecure hardens the customer premises equipment (CPE) to further protect against many types of vulnerabilities.

Businesses can assign devices to a device group or branch through the unified BusinessSecure application, and apply content control to the selected branch, device group or individual device to customise 'allowed' content during working hours.

The application also provides unified reporting on all protected devices including on the network IoT devices. BusinessSecure includes a chat bot for self-diagnosis, which greatly reduces the time and effort needed to resolve network issues.

Angel Fernandez, assistant vice-president of security solutions, product management at Allot, said, "Over the last few years, Allot has successfully helped leading communication service providers all over the world deliver network-based cybersecurity solutions to their subscribers. Now, CSPs can generate new revenue from their SOHO, SMB and enterprise customers with similar services that are designed for businesses."

TPAY Mobile, Vodafone Egypt launch digital payment

VODAFONE EGYPT AND TPAY MOBILE, a digital payment enabler in the Middle East and Africa, have announced the launch of Direct Carrier Billing (DCB) on the Google Play store.

Through this partnership TPAY MOBILE, which operates in the UAE, Egypt and Saudi Arabia, in addition to seven other countries, enables Vodafone Egypt subscribers to purchase from Google Play and charge the payments to their mobile phone bill or deduct them from their airtime balance.

Sahar Salama, founder and CEO of TPAY MOBILE, said, "Using TPAY MOBILE's payment platform will help Vodafone Egypt's customers to make payment transactions from the Google Play store and other digital merchants in a secure and safe way.

"We are delighted to be able to offer a safe and convenient payment solution," Sahar said.

DAT's delivery app eases businesses order and delivery process

TELECOM SERVICE PROVIDER Digital Afrique Telecom (DAT) has launched a smart delivery app to enable businesses to simplify their order and delivery processes.

Smart delivery is also geared towards managing the delivery personnel, knowing in real time who is delivering what and calculating the stock depending on each order delivered at the end of the day. When the order is delivered, the delivery person in charge can also notify the customer via the app, and even call him or her when necessary.

DAT has linked its delivery application to a whatsapp chatbot where customers can place an order following the steps dictated by the whatsapp account. At the end of the order, a QR code is generated, and automatically linked to the app to trigger the order.

The app gives every business the opportunity to follow the orders, the stock and most importantly the sales generated by the delivery activity in real time via a back office.

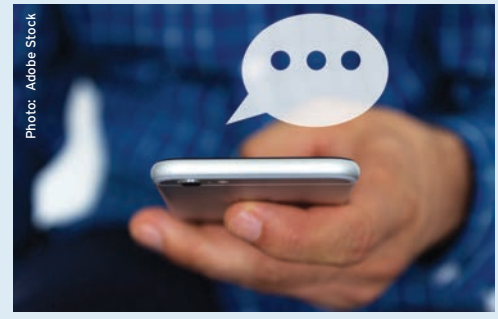


Photo: Adobe Stock

DAT has linked its delivery application to a whatsapp chatbot where customers can place an order

Nigerian fintech firm Carbon launches new social banking service

CARBON, NIGERIA'S DIGITAL financial services company, has launched a keyboard extension enabling customers to access Carbon services from any application they use.

Carbon Express allows users to initiate and complete transactions such as P2P transfers and keyboard bill payments without starting the Carbon App or leaving the current app they are using.

Instead, they will be able to access services from the touch of their keyboard allowing Instagram or Whatsapp to trade more quickly.

Carbon Express maintains the same PCI DSS-compliant encryption, authentication and security model as other Carbon services, thus ensuring the security of all transactions. To facilitate transactions the feature relies on smartphone keyboard technology. The technology adds to the customer's smartphone keyboard a unique Carbon-branded button which they can tap to perform transactions at any time.

Tunisia start-up launches virus-tracking app

A TUNISIAN START-UP, specialising in digital marketing tools for foreign companies, has launched a mobile phone contact tracing app that identifies and alerts users who may have had contact with others infected with coronavirus.

The E7mi application is available on Android and awaiting validation for Apple's iOS. Like the French StopCovid application, E7mi - Arabic for 'protect' - is not based on Apple or Google contact tracing technology.

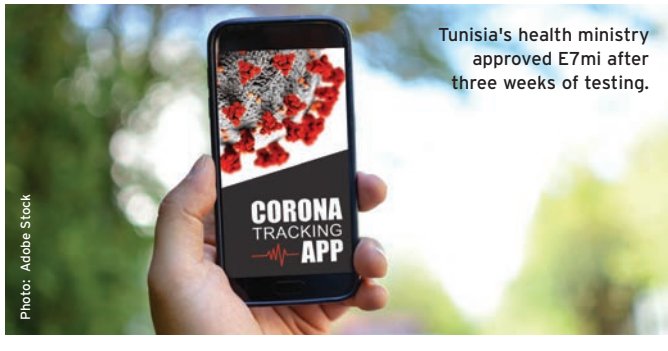


Photo: Adobe Stock

Tunisia's health ministry approved E7mi after three weeks of testing.

If a user tests positive for COVID-19, Tunisia's Observatory of Emerging Diseases (ONME) will contact other users whose telephones were detected near the device of the infected user.

Akil Agati, head of the Wizz Labs start-up behind the app, said, "We started in March when we heard about the TraceTogether app in Singapore, but we wanted to do something suitable for Tunisia."

"Users will not report themselves infected, to avoid false alarms, and users who have been notified of being in contact with a sick person will also receive a phone call from the ONME so there can be follow-up," he said.

Personal data will be archived under the control of the National Personal Data Protection Authority for 14 days, and will only be used by ONME to contact people about coronavirus.

Telkom Kenya to power Afya Rekod COVID-19 monitoring platform

TELECOM COMPANY TELKOM will power health tech company Afya Rekod's health management platform, which will facilitate COVID-19 monitoring and analysis.

The Afya Rekod platform is a centralised, multilingual, intelligent health data platform, built with artificial intelligence (AI) modules and blockchain technology. This platform converts structured and unstructured data to global health data record keeping, using Fast Healthcare Interoperability Resources (FHIR) and other international standards. The Afya Rekod platform will essentially provide a virtual repository for individuals to store their health data in real time.

Kenyans will be able to access the platform via USSD code: *380#, or by downloading the Afya Rekod App via Google Play Store.

This platform, which also allows for backward and forward integration with multiple electronic health record systems (EHRs) and medical electronic record systems (MERs), will enable streamlined information sharing to empower health workers.

The Afya Rekod platform will enable users to capture real-time data that will heat-map areas where COVID-19 infections are growing, and monitor the growth in real time, by collecting user-generated information from users, across multiple geographic locations, to allow for sufficient data analysis.

Photo: Adobe Stock

Kenyans will be able to access the platform via USSD code: *380#

IEC Telecom launches satellite-based solution to support critical communications

IEC Telecom has unveiled OneGate Aid Compact, a satellite-based networking management solution, to improve the efficiency of first responders in regional communities across the Middle East and Africa amid the COVID-19 pandemic.

The UN COVID-19 Global Humanitarian Response Plan (HRP) recognises the importance of communication and new technologies to fight the pandemic. IEC Telecom Group shares these same values and is confident that the new solution will contribute to COVID-19 resistance by empowering critical missions with an efficient communication tool.

OneGate Aid Compact is an agile and future-ready network management solution that operates from a virtual platform and is designed to keep mobile humanitarian teams connected at all times, enabling full control and visibility over active telecommunication links.

Nabil Ben Soussia, managing director IEC Telecom Middle East, IEC Telecom Group, commented, "Successful operations during the COVID-19 pandemic are dependent on timely and proper communication in affected communities. This is especially critical to first response groups or mobile hospitals that need to act fast in areas with no infrastructure.

"Now more than ever, telecommunications in general and satellite communications in particular, are critical to support our frontline workers. OneGate Aid Compact was developed as a solution to support continuous communication. It provides satellite links in remote areas and serves as GSM back-up under terrestrial network coverage."

IEC Telecom's OneGate Aid Compact is powered by Thuraya IP+ for stationed use and Thuraya Voyager for vehicular use over Thuraya's L-Band network. It enables first response teams with optimised network traffic availing services such as big data transfer and live conferencing.

HID Global introduces WorkforceID Cloud Platform

HID GLOBAL, A provider of identity solutions, has announced its new WorkforceID platform that provides a seamless, effortless experience when using identity credentials to access physical and digital workplaces at an office, in the field or on the road.

The new ISO27001-certified identity cloud service platform simplifies how employees access what they need to do their jobs while resolving workplace and visitor safety, regulatory compliance and a variety of new business challenges as employees return to work. The platform enables organisations to unify, automate and simplify identity issuance and management at a single facility or across any number of distributed offices or remote work locations.

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Facebook presents Messenger Kids across sub-Saharan Africa

FACEBOOK HAS LAUNCHED Messenger Kids, a video chat and messaging app that helps kids connect with friends and family in a fun, parent-controlled environment.

Messenger Kids, available for download from the Apple App and Google Play Stores, has been designed for children aged 6-12, with the app including two new features aimed at helping children connect with their friends and family.

Facebook has worked closely with youth advisors over the years to help shape the Messenger Kids app. The advisors included experts in online security, child development and media. Facebook consulted child safety advocates and educators throughout Africa prior to its launch to ensure that it provides a service that balances parental control with features that help children learn how to connect responsibly online. Through the Parent Dashboard, parents can control and monitor their child's activity.

Mastercard collaborates with Netcash on QR code billing service

NETCASH, A PAYMENT solutions provider, has collaborated with Mastercard to launch QR code payments across its billing platform as part of its efforts to help small and medium-sized enterprises (SMEs) collect revenue more effectively. By scanning a QR code with their mobile phone, consumers will be able to pay for services from thousands of small businesses, schools and non-profit organisations. Netcash, through its integrated accounting and ERP software, will automatically enable QR payments across its suite of invoicing services.

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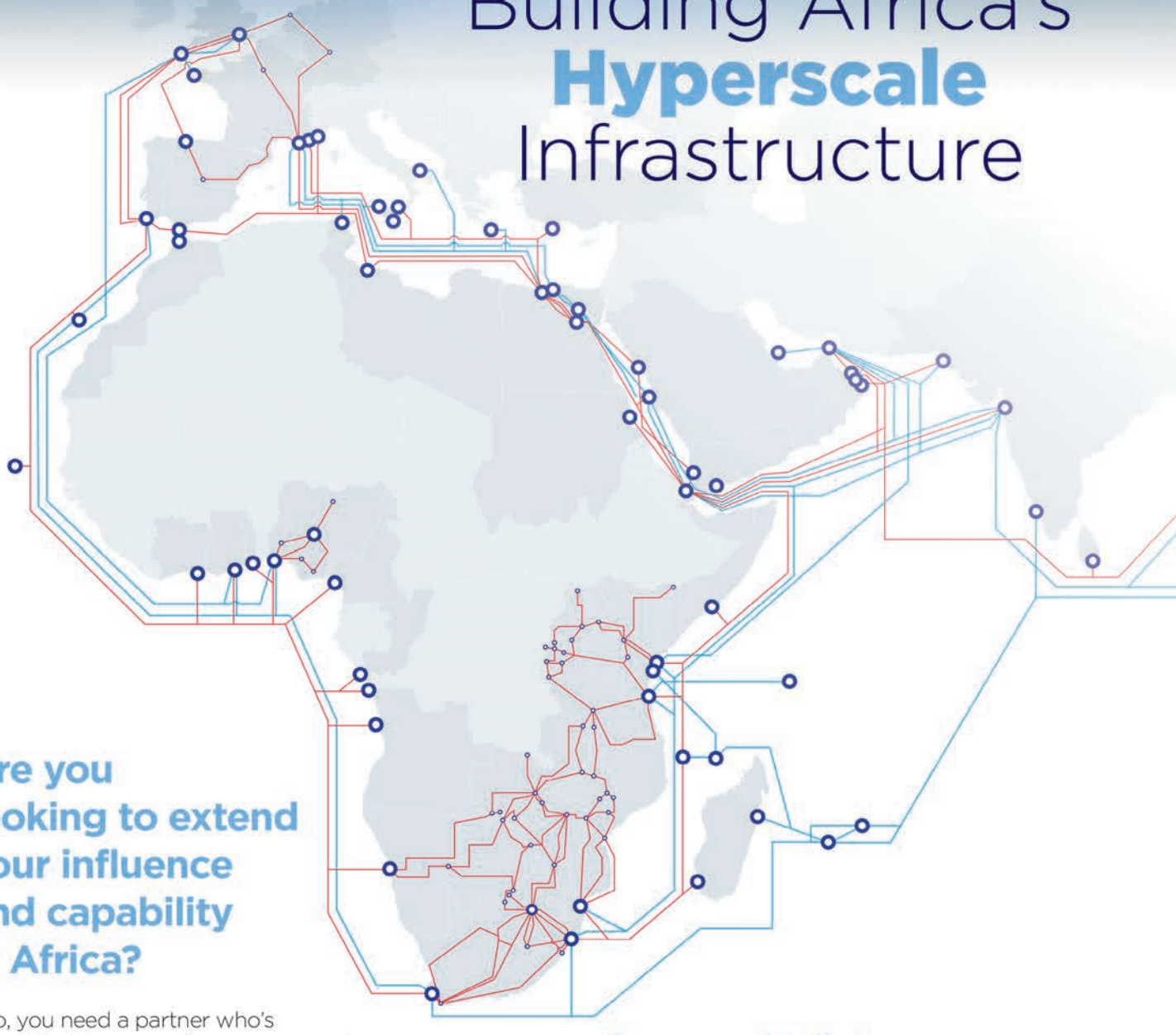

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