

For communications professionals in north, west, east & central Africa

NORTHERN AFRICAN WIRELESS COMMUNICATIONS

AUGUST / SEPTEMBER 2024

Volume 23 Number 2

- Is mobile money bridging the divide?
- The importance of WISPs in connecting Africa
- The impact of AI on data centres



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**Ramesh Ramaswamy, EVP & GM,
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Nigeria to shift emergency comms to the cloud

To keep its operations connected to the humanitarian community tackling insurgency in northeast Nigeria, the country's Emergency Telecommunications Sector (ETS) is seeking to migrate its systems to the cloud.

ETS confirmed the move in an update, revealing that, in collaboration with its main funder, the World Food Programme (WFP), it was reviewing a proposal provided by a cloud partner. ETS has not named the partner at this stage.

"The migration exercise will ensure availability of back-up data in the event of an emergency," said Patrick Midy, coordinator, ETS.

The ETS has confirmed receiving critical funding of \$153,000 from the European Commission Humanitarian Aid Office. Of the \$1.16 million required to maintain services in northeast Nigeria, ETS' funding is now at 42%. The figure previously stood at 28%.

As of the end of August, ETS provided data connectivity to 1,160 users from 122 organisations, comprising 16 United Nations agencies and 106 non-governmental organisations. During the month, connectivity for humanitarian agencies was disrupted when internet services were severely disturbed during a nationwide anti-government protest.



Burkina Faso to expand internet services to 1,000 remote areas in 3 years

Burkina Faso is planning to extend mobile and internet services to 1,000 remote areas over the next three years. These areas, known as 'white zones,' are regions without access to telephony and internet services.

Currently, operators are not obliged to invest in these areas as they are not profitable. Public money will be used to invest in and build out the infrastructure required for people to access connectivity.

Aminata Zerbo-Sabane, Minister

of Digital Transition, Posts, and Electronic Communications, said that 1,700 white zones have been identified in the country, with 183 already connected in 2022. The government has invested CFA6.2 billion through the country's Universal Access and Service Fund (FASU) to make this possible.

Mobile service coverage in Burkina Faso stands at 85%, while 3G internet covers 64% of the country, and 4G internet covers 46%.



Uganda tackles mobile phone-based scams head on

Mobile phone scams persist in Uganda, despite efforts by authorities to tackle them, reports ICT and National Orientation Minister Chris Baryomunsi, who has now opened an investigation targeting telecommunications companies, with the threat of severe sanctions.

"I have spoken to the telecom operators, who assure me that only authorised numbers are active, but the facts seem to prove otherwise. It is clear that unregistered SIM cards are still in circulation, perhaps in the name of deceased persons. I am committed to further discussions with these companies," said Baryomunsi.

The move is part of the government's ongoing efforts to address mobile subscriber identification issues. Since 2018, a campaign by the Uganda Communications Commission (UCC) has led to the deactivation of 1.4 million irregularly registered SIM cards. The move comes as a wave of fraudulent messages targeting citizens, including officials, has intensified in the country. Most messages solicit large sums of money in exchange for services in various constituencies.

The aim of this new investigation is to combat these persistent criminal activities more effectively.

Liberia appoints Cybastion Institute of Technology in DC deal

Liberian Foreign Minister Sara Beysolow Nyanti signed a Memorandum of Understanding (MoU) with Cybastion Institute of Technology for the construction of a data centre, as well as connecting Liberia to a new submarine cable to strengthen the country's digital infrastructure.

"Today's signing paves the way for further technical discussions with relevant government agencies on the provision of digital services under the Digital Fast Track program," said Nyanti.

The program is designed

to accelerate Liberia's digital transformation, focusing on improving digital services and infrastructure across the country. Liberia presently has only one data centre; and is only served by one submarine cable, namely the Africa Coast to Europe (ACE). The government recently began working to land another cable in the country.

The implementation of the project is expected to support the Liberian government's digital transformation ambitions, which sees digital infrastructure as a cornerstone to accelerate national development goals.

Rwanda breaks ground on Kigali Innovation City

Rwanda has marked a new milestone in technology growth with the ground-breaking ceremony of Kigali Innovation City (KIC), a \$300 million project that is expected to become one of Africa's top innovation hubs.

KIC is planned to act as an African technology, research, and innovation hub, creating more than 50,000 jobs and generating \$150 million in technology exports within the next two years. The project is supported

by Africa50 and the Arab Bank for Economic Development in Africa.

KIC, dubbed Rwanda's Silicon Valley, is the brainchild of the Rwanda Development Board (RDB), a government institution that brings together all state organisations responsible for attracting, retaining, and facilitating investment in the national economy.

"It is going to be a new dawn in innovation and economic

development of our nation and the continent," said Francis Gatare, RDB executive director and CEO.

"Over the past 5 years we've had top universities join the KIC ecosystem, the first being Carnegie Mellon University Africa. Beyond the physical space, the KIC's focus is also on streamlining the infrastructure, policy and regulatory environment, talent, and financing needed to create a thriving ecosystem and scale

the innovations that will be born here," said Paula Ingabire, minister of information and communications technology and Innovation.



Cameroon's operators trade jobs

Camtel and other MNOs in Cameroon have been trading blame for recurrent disruptions to voice and data services.

MTN Cameroon and Orange Cameroon have often blamed poor service quality on Camtel's optic fibre connectivity. Camtel has a monopoly on national optic fibre backbone, which spans over 12,000km, as well as access to four subsea cables.

Camtel is seeing an increase in statements from its competitors aimed at denigrating the quality of its network, and said that it has always taken all necessary precautions to ensure that it provides quality services, notwithstanding an increase in acts of vandalism against its network and incidents associated with the execution of public works.

"Despite this situation, Camtel has always taken appropriate measures to guarantee redundant connectivity, thus ensuring permanent availability of services to customers," said Eric Benjamin Lamere, Camtel's head of institutional and digital communication division.

Lamere accused the other operators for not investing enough in infrastructure to assure smooth capacity despite big and growing customer bases, stating that underinvestment causes congestion.

"Unfortunately, they, displaying a lack of discernment, take pleasure in unfairly pointing fingers at Camtel's backbone," said Lamere.

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Going further in critical communications



Kenya's new Integrated Healthcare Information Technology System on the cards

Safaricom has collaborated with a coalition of businesses to introduce a multi-million-dollar Integrated Healthcare Information Technology System (IHTS system) in Kenya.

Safaricom will lead a partnership that comprises Apeiro Ltd. and Konvergenz Network Solutions Ltd. to deliver IHTS. These three partners specialise in health technology, digital infrastructure,

and healthcare management, and will invest roughly \$815 million over ten years to develop, manage, and support the IHTS system beginning in February 2025.

The consortium will recover the investment over the period with monthly instalments set to commence in February 2025 upon successful completion of key milestones of the project.

The project's key component is the establishment of a Health Information Exchange, which is intended to enhance interoperability among all health systems in the country. This will allow for the unification of patient records across healthcare facilities, boosting efficiency and continuity of service.

The system will also make it easier to create and implement a Standards-Based Integrated Hospital Management Information System, which will aid in the digitisation of public health institutions. Moreover, it intends to provide a comprehensive infrastructure for Kenya's digital healthcare ecosystem. This will feature a locally hosted health cloud, particularly built endpoint devices such as tablets and PCs for healthcare personnel, and a secure mobile and fixed network

infrastructure across public health facilities. Power backup systems will also be installed at healthcare facilities to ensure uninterrupted operations.

Safaricom and its partners intend to implement strong cybersecurity measures to protect patient data and maintain compliance with Kenyan legislation. They will also assist the Ministry in training public health personnel, project management, and the nationwide implementation of various technology components.

"The delivery of this project builds on Safaricom's ability to roll out digital platforms that have had a positive impact on Kenyans such as Hustler Fund, the fertiliser e-voucher programme and disbursement of social support funds to the elderly through the Inua Jamii program," said Peter Ndegwa, CEO of Safaricom.



NCC announces new Key Performance Indicators for telcos

The Nigerian Communications Commission (NCC) has issued a set of key performance indicators for the quality of service (QoS) of all telecommunications companies in the country.

The commission's new QoS Regulations 2024 define parameters for telcos' 2G, 3G and 4G networks, including drop call rates, call setup success rate and traffic congestion, to improve service quality.

The new QoS regulations are in correlation with the recent 50% telecoms service target set by communications, innovation and digital economy minister Dr Bosun Tijani. According to the NCC, failure to meet each parameter attracts a N5 million fine, with an additional N500 000

The telcos are to file their QoS reports on a monthly basis, while the NCC will also carry out its measurement through methods which may include drive tests, consumer surveys and data collection from its Network Operating Centres.

To achieve the QoS target, the commission is focused on collecting and analysing granular data from

operators to assess service quality at local levels, instead of a national approach. This data-driven method enables targeted improvements and regulatory actions when necessary, ensuring optimal service delivery. The approach focuses on ensuring consumers receive an enhanced quality of experience, beyond the narrow and technically evaluated QoS.

The telecoms regulator, after remaining silent for a while on service quality complaints, is now poised to enforce fines with the new regulations, indicating a crackdown on regulatory compliance. The most recent fine imposed on a telecoms operator over the issue of QoS was in 2020, when the commission fined Airtel N2.3 billion for disconnecting Exchange Telecommunications Limited without regulatory approval. This was deemed a violation of the NCC's QoS and enforcement process regulations.

The new QoS regulations are being issued as telecoms operators battle the effects of currency devaluation and inflation. Facing significant forex losses, they are reducing operating expenses and network investments, leading to declining service quality.

IHS Nigeria opts for solar

IHS Nigeria has announced a strategic partnership with Jaza Energy to roll out solar power hubs across 250 telecommunications towers in underserved communities in Nigeria.

This initiative aims to provide sustainable energy solutions not only for the towers but also for local communities, marking a major step forward in reducing reliance on fossil fuels.

The solar hubs will power the towers, ensuring consistent and environmentally friendly energy for telecommunication operations. Interestingly, these hubs will generate excess energy, which will be used to charge portable battery packs for local households and small businesses. This approach directly addresses the issue of energy

access in remote areas, significantly reducing the dependence on diesel generators that are both costly and harmful to the environment.

Jaza Energy has already made a substantial impact in Tanzania and Nigeria, with over 3 million solar battery swaps and support for more than 100,000 individuals. Jeff Schnurr, CEO of Jaza Energy, emphasized that the partnership with IHS Nigeria is set to benefit an additional 200,000 people in Nigeria's most underserved regions by the end of 2025. The collaboration highlights both companies' commitment to creating sustainable, long-term energy solutions while fostering socio-economic development in areas with limited infrastructure.



Ethio Telecom announces new data centre plans

Ethio Telecom will contract Shandong Hi-Speed Group Co. Ltd. to build its next hyperscale data centre, said Frehiwot Tamru, CEO of Ethio Telecom, following discussions with Cal Kun, CEO of Shandong Hi-Speed Group.

“Shandong has expressed its willingness to collaborate with Ethio Telecom in building and financing the data center, forming a strategic partnership to advance Ethiopia’s digital infrastructure,” said Ethio Telecom on X.

This initiative is fully in line with the operator’s growth strategy,

focused on finding partners to accelerate the country’s digital transformation. The data centre project aims to support the digital infrastructures already in place by Ethio Telecom, including its latest centre inaugurated in 2022.

This new hyperscale centre can host thousands of computing resources. By leveraging such infrastructure, Ethio Telecom aims to strengthen its role in providing cutting-edge digital services in Ethiopia, in line with the government’s vision of making the country a digital nation.



Hotspot teams up with Solarkiosk Solutions for off-grid energy

Hotspot Network has joined forces with Solarkiosk Solutions, launching a joint venture - Hotspot-Solarkiosk – focused on the communication landscape in underserved areas of the country.

According to the two companies, the primary objective of the partnership is to deliver technology solutions that would increase solar energy availability and improve internet connectivity in rural Nigeria.

“This collaboration will combine connectivity and essential services, transforming rural Nigeria and driving economic empowerment in off-grid communities,” said Thomas Rieger, CEO, Solarkiosk Solutions.

“This joint venture realises years of work on sustainable rural ecosystems, integrating ICT and energy access,” said Morenikeji Aniye, CEO, Hotspot Network. “It aims to enhance income, gender participation, and skills, marking a significant step in improving rural Nigeria’s socio-economic conditions.”



Tunisia marches on to 5G deployment

Tunisia is taking another step towards the deployment of 5G as Tunisie Telecom, Orange and Ooredoo submitted their applications to the headquarters of the Ministry of Communication Technologies, following the call for tenders launched on 28 June.

The three files have been administratively accepted by the commission responsible for the

preliminary phases for the granting of licenses. The next step will consist of the study of the technical files and financial offers with a view to final validation. This step, which should be finalized in the next three weeks, will be followed by the official granting of the licenses.

According to the Tunisian government, the deployment of 5G is part of the strategy of the Tunisian

State relating to the digital development of the national territory aimed at developing digital infrastructure, generalizing very high-speed coverage throughout the national territory. The country is also seeking to accelerate the digitalization of the administration, secure the national cyberspace, guarantee digital sovereignty and establish a climate of digital trust essential to digital transformation.

The Gambia sets out infrastructure sharing framework to enhance coverage

The Gambia has set out a framework for the sharing of telecoms infrastructure among different service providers.

The ‘Infrastructure Sharing Regulations (ISR)’ was validated by the Public Utilities Regulatory Authority (PURA) and industry stakeholders.

“Sharing infrastructure is a key

element in the evolution of our digital economy. It promotes the optimal use of resources, reduces duplication and allows service providers to reach underserved areas more effectively,” Njogou Bah, PURA’s Director General.

The Gambia has a relatively low level of infrastructure sharing, according to PURA. Just 23% of

telecom towers installed in the country are shared or leased.

According to the International Finance Corporation (IFC), infrastructure sharing offers significant opportunities to improve accessibility and accelerate digital connectivity in emerging markets like The Gambia.

Somalia to advance new emergency communications initiative

The National Communications Authority (NCA) of Somalia wants to ensure the effective implementation of the National Emergency Telecommunications Plan (NETP) launched in November 2023.

The regulator is thus organising a national stakeholders meeting in partnership with the International Telecommunications Union (ITU) and the Global Telecommunications

Operators Association (GSMA).

“The success of the National Emergency Telecommunications Plan is highly dependent on the active participation of our telecom operators. Their infrastructure, services and technical expertise form the backbone of Somalia’s emergency communications framework. This plan is critical to ensuring that our communications

infrastructure remains operational and reliable in times of crisis,” said Mustafa Yasin Sheikh, Director General of the NCA.

Effective implementation of the contingency plan is expected to help reduce the impacts of natural disasters in Somalia. However, its success will largely depend on the quality and extent of the country’s telecom infrastructure.

LINX extends African interconnection

The London Internet Exchange (LINX) is extending its African interconnection platform to PAIX Data Centres in Nairobi following demand from the local networking community.

Networks located at the PAIX facility in Nairobi are soon to be just a single cross connect away from peering opportunities with any

network present at LINX Nairobi, from global content networks like Meta to local ISPs such as ICON Fiber, Mtaani Telecom, Mymanga Networks and PepeaNet.

LINX Nairobi has a fully interconnected and dual fibre infrastructure between the data centre sites for full resilience and redundancy. The addition of

PAIX will enhance the LINX fabric to a 4-site interconnection hub and the installation work is being prepared and looking to go live in the coming weeks.

Launched back in November 2023, the new Internet Exchange Point (IXP) is going from strength to strength with a strong community of local Internet Service Providers (ISPs), global content networks and strategic partners already interconnected, and traffic starting to build. The team at LINX have spent a lot of time with the local engineering community and following interest from key networks located at PAIX it was decided that the infrastructure needed to grow – only 9 months after launch.

“With our cloud- and carrier-neutral datacentre located in the centre of the business district, we host communities of interest for the financial and content industries, so that includes financial services,

advertising, broadcasting, and entertainment companies,” said Emmanuel Makina, Sales Manager of PAIX Data Centres. “The customers that host their mission critical equipment in our facility have a requirement to be online 24x7 in today’s digital economy. They all benefit from being able to connect to multiple networks, easily scale their bandwidth, reduce their connectivity costs, and have the lowest latency to their partners.”

“We didn’t expect to be expanding the LINX Nairobi network this soon, but we like to pride ourselves in our commitment to the local community. They said, we listened. By expanding the peering opportunities to the customers at PAIX we are adding value to the entire LINX Nairobi community and prospective new local and global networks who we are in talks with,” said Jennifer Holmes, CCO for LINX.



Raxio inaugurates Ivory Coast data centre

Raxio Group has inaugurated its state-of-the-art data centre in Abidjan, Ivory Coast, Raxio Côte d’Ivoire (CIV1).

Marking the fifth data centre launch in its current portfolio and the company’s third consecutive launch this year, with Tier III accreditation by international industry body the Uptime Institute, Raxio aims to play a pivotal role in the country’s digital growth.

The data centre is the country’s first Tier III certified carrier-neutral and cloud-neutral facility and its presence in the fastest growing economy in francophone West Africa will drive appetite for data consumption and local content by all digital users. The facility is fully equipped with best-of-breed technology and capable of housing up to 800 racks at full capacity and delivering 3MW of IT power.

The launch of this facility marks Raxio Group’s entry into West Africa. As the regional hub for the West African Economic and Monetary Union (WAEMU), which includes Benin, Burkina Faso, Côte d’Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo, Raxio CIV1 is strategically located to serve this economic block, with regulation allowing storage and movement of data by the

banking industry and other financial institutions within the territory.

“The inauguration of our Abidjan data centre establishes us firmly in West Africa, a key growth sector for our continued expansion,” said Robert Mullins, CEO of Raxio Group. “Abidjan is the ideal location for organisations and businesses from across the economic region to collocate their mission critical infrastructure in a highly reliable and secure facility. We are proud to contribute a fundamental cornerstone to facilitate Côte d’Ivoire’s continued digital growth and cement its hub status in the region.”

Situated in the Village of Innovation and Technology (VITIB) approximately 30km from the city centre of Abidjan, Raxio CIV1 is supported by multiple paths for power

and fibre connections, and cutting-edge redundant equipment, which underpin its Tier III certification. The 24/7 facility is positioned along key fibre routes, delivering best-in-class colocation and excellent domestic and international connectivity, with six connectivity providers currently supplying fibre to the facility. CIV1 will also serve as host to the country’s Internet Exchange Point (CIVIX) allowing for low-cost interconnection of local and international traffic in an optimal, carrier-neutral environment.

From this location, Raxio CIV1 will be serving customers in Abidjan and in the wider WAEMU region – and across a wide range of sectors – at a time when digital transformation, data and content consumption, and connectivity are all increasing at historic rates.



Africa’s e-Governance on the rise

In Africa, the e-Government Development Index (EGDI) increased by 4.8% between 2022 and 2024, from 0.4054 to 0.4247, according to the United Nations (UN).

The ‘E-Government Survey 2024’ indicates that Africa shows the second highest progression after Asia, with an increase of 7.7%.

This improvement demonstrates the continued efforts of many African countries to develop their digital public services. Among them, Mauritius and South Africa stand out by joining the group of countries with a very high EGDI (above 0.75), a first for the continent. However, despite this positive trend, e-government in Africa faces several obstacles that slow down its development. According to the UN, even if the continent’s average EGDI increases, it remains well below the world average, which stands at 0.6382 in 2024.

Several factors explain this delay, including significant disparities in digital infrastructure, connectivity, digital skills and e-government readiness persist within the region.

Kenya to streamline digital government platforms

Kenya has unveiled new digital platforms to streamline the management of presidential directives and foreign travel approvals.

The Kenyan government says the Presidential Directives Management Information System (PDMIS) and the Foreign Travel Management Information System (FOTIMS) both seek to address the need for greater efficiency and transparency in government operations. Kenya's deputy president, Rigathi Gachagua, said the introduction of these digital platforms is part of the government's efforts to enhance governance and streamline public service delivery through digital transformation. The two platforms will be vital in increasing efficiency, transparency and accountability within the government.

"FOTIMS enhances application, processing and approval of foreign travel for public servants. Importantly, it ensures prudent use of public resources and accountability for expenses incurred during the travels," said Gachagua.

Kenya's deputy chief of staff, Eliud Owalo, emphasised the pivotal role of these new systems in advancing accountability and effective governance: "PDMIS, which manages and tracks presidential directives, and FOTIMS, which streamlines the process of foreign travel clearance, are pivotal in advancing accountability."

The PDMIS system is accessible only to cabinet secretaries (ministers) and principal secretaries, who can download directives through their respective portals. What this means is that all presidential directives will now be dispatched exclusively through PDMIS, eliminating the need for hard copies. The FOTIMS platform, on the other hand, automates the process of approving foreign travel for senior government officials. It replaces the manual approval process with a digital platform, ensuring that all travel is justified.

Axian Telecom explores potential Wananchi Group investment

Axian Telecom is reportedly looking to acquire Kenya-based mobile, internet and TV provider Wananchi Group.

According to local media, files made with the Comesa Competition Commission suggest that Axian Telecom subsidiary Axian Telecom Fibre is looking to acquire 99.63%

of Wananchi. It trades under the Zuku brand offering TV, broadband and mobile across Kenya, Tanzania, Uganda, Malawi and Zambia.

Comesa has received the proposed acquisition from Axian Telecom Fibre for 99.63% of Wananchi. Wananchi agreed to the regulator's condition of selling its

majority stake in iSAT Africa as a condition to complete the sale.

Wananchi Group has struggled in recent years as shareholders clashed and hampered investment plans and product development. Shareholders claimed to have been defrauded by rival shareholders to the tune of KES20 billion in 2018.

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Egypt enhances EM radiation monitoring at cell towers

Egypt has strengthened the quality of electromagnetic radiation monitoring of its telecom towers via a memorandum of understanding between the National Telecommunications Regulatory Authority (NTRA) and the National Telecommunications Institute (NTI), which now includes the search for digital measurement solutions to promote automated and regular monitoring.

Through the agreement, which highlights health and environmental concerns, the two organizations will ensure that electromagnetic radiation levels do not exceed the globally permitted limits, in accordance with the conditions set out in the protocol signed by the Egyptian Ministry of Communications and Information Technology (MCIT), the Ministry of Health and Population and the Ministry of Environment.

For frequencies from 2-300 GHz, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) recommends, among others, the following electromagnetic radiation limits for consumer equipment: 61 volts per meter for the electric field; 10 watts per square meter of power density in continuous exposure.

With the acceleration of digitalization, the growing demand for broadband, the interest in 5G, telecom operators are increasing their investment in strengthening their networks. The density of telecom towers is increasing in the immediate environment of populations.

ICNIRP data, endorsed by the International Telecommunication Union (ITU) in its recommendation ITU-T K.91, indicate that exposure beyond the stated limits of electromagnetic radiation can result in increased internal body heat and possible health problems.



Talking critical

Kevin Graham, TCCA CEO



Looking to the new capabilities of 5G for critical communications

TCCA promotes the use of standardised technologies to deliver mission-critical communication systems that are secure, available, resilient, interoperable and, ultimately, trusted. It also supports other standardised narrowband technologies, and with the establishment of its Critical Communications Broadband Group (CCBG) some 14 years ago, TCCA recognised the need to deploy 3GPP mobile broadband critical communications, which in many cases will complement or replace narrowband networks.

We are now in the 5G era, and with 5G rollouts advancing, the opportunities to further enhance critical communications are becoming clear. 5G is an ever-evolving technology with new features still being added. For example, network slicing is designed to allocate specific required resources to meet the requirements of different user groups, while multi-access edge computing (MEC) servers can enable low latency applications by moving processing closer to the edge.

Through 5G innovative features and technological innovation, 5G is envisioned to support unprecedented and diverse mission critical applications and use cases. These include:

- Isolated Operation for Public Safety (IOPS) - enabling continuous site operation even with backhaul link damaged
- Non-Terrestrial Networks (NTN) - enabling extended terrestrial coverage through satellite, and direct satellite to device connection
- Multimedia Broadcast and Multicast Services - improving broadcast, multicast and public warnings/messaging systems' efficiency
- Unified Access Control - reducing signalling and processing in Next Generation Node B (gNB), ensuring network stability during high traffic loads/congestion
- National Roaming - enabling the roaming into multiple networks from commercial mobile network operators to public safety networks in situations of limited coverage

5G technology will essentially deliver improvements to users in two distinct

ways: enhancing use cases initially enabled by 4G LTE in terms of scaling up these services to more users within a given locality; and addressing new and emerging use cases made possible with advancements in technology such as ultra-low latency mobile connectivity. Both will provide important user benefits, ranging from enhanced situational awareness - using advanced video recognition capability, artificial intelligence analysis of data collection and new immersive user applications - to greater use of remote and specialist expert analysis of incident ground environments for first responders. The information between agencies can be shared more easily via cloud-based application platforms. The net result is that the cooperation between first responders can be more effective and efficient, improving the safety of users and saving the lives of others. From a technology perspective, 5G will provide a plethora of new capabilities, most notably enhancing mobile broadband services with ultra-reliable low latency communications and supporting massive machine-type device deployments. Whilst these capabilities will be available across all bands, lower sub-1GHz spectrum allowing greater macro coverage while the benefit of some will be more pronounced at higher frequencies due to correspondingly larger channel bandwidths supporting higher capacities.

Security has been one of the main considerations in 3GPP standards development, ensuring that the resulting technology is trustworthy. Each generation of 3GPP standards has incorporated security improvements - underpinned by advancements in hardware and software - and against the backdrop of an ever-evolving threat landscape. Hence the security of 5G is a further enhancement over 4G LTE.

The global ecosystem committed to 5G will undoubtedly drive further standardisation and development of mission-critical services. Industry is also investing in and delivering solutions capable of providing new ways of monitoring network performance and assuring service levels using complementary software technologies such as automation, analytics, and artificial intelligence.

5G continues to make inroads in Africa. According to the GSMA as of September 2023, 27 operators in 16 markets across the region had launched commercial 5G services. More markets are expected to follow, with operators in an additional 10 countries making a commitment to launch

5G. 5G coverage in the region is still mostly limited to major cities, but there is growing evidence that 5G coverage is ramping up in some countries. In South Africa, for example, 5G coverage reached 41% of the population as of September 2023.

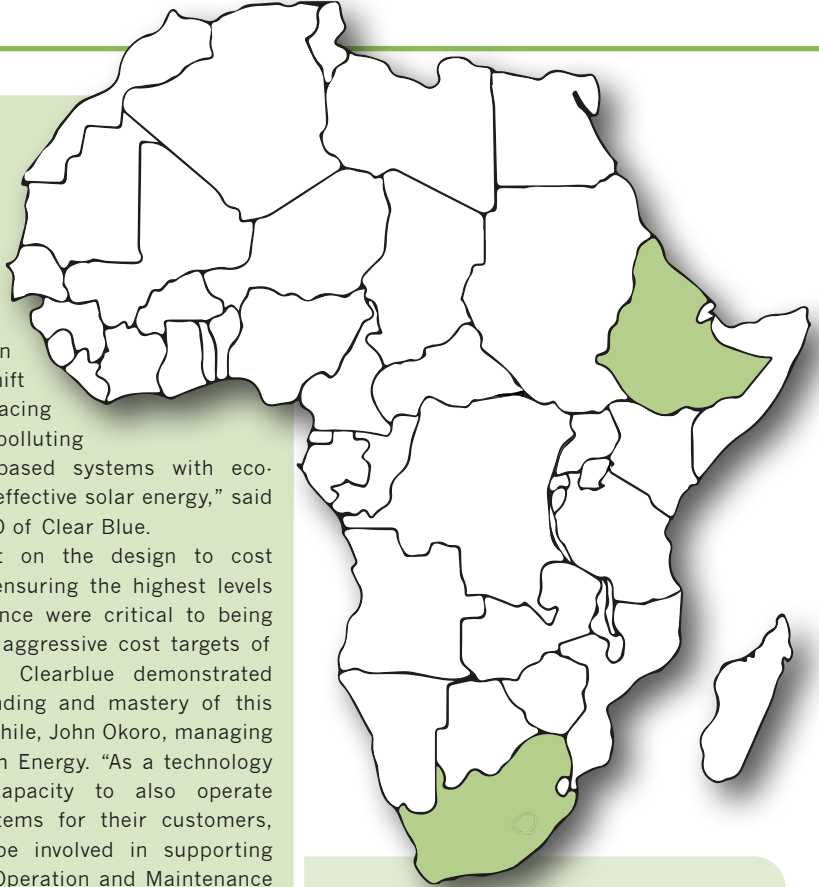
Whilst a significant amount of progress has been made by the critical communications community in establishing mission-critical broadband spectrum, standards, technology and a competitive marketplace, there is still more to achieve. We must continue to expand collaboration efforts with commercial mobile network operators (MNOs) to deliver and enhance mission critical mobile broadband services for critical communication users, leveraging 3GPP defined capabilities and utilising shared and/or dedicated spectrum for private deployments and rapid deployables.

We must continue to prioritise, resource and support further 3GPP-driven standards definition and testing for features of particular benefit to the critical communications community and drive conformance, certification and interoperability.

We must continue to identify any new 5G functionality that could be of benefit to critical network operators looking to deploy solutions involving multiple MNO infrastructures and hybrid private/commercial options, such as improvements in handover performance, security and interworking and interoperability in general.

The work of TCCA enables international collaboration on service deployment experiences and sharing of best practice. We recognise that the introduction of a next-generation technology requires careful consideration, including aspects such as coverage, security, resilience, capacity, performance, interoperability, and integration into user operations. In general, each organisation will, at their own pace, go through an evolution process, this technology shift providing the opportunity for new operational models to become institutionalised over time.

TCCA's vision is advancing global critical communications for a safer, more connected world. Our mission is to empower critical communication users with secure, trusted, and standardised technologies. We will work to help ensure that 5G fulfils its full potential in helping the critical communications sector deliver the best possible services and support for those users.



African telcos to benefit from renewable energy

Clear Blue Technologies International has teamed with Growth Energy to power a network of African telecoms facilities.

Growth Energy develops, finances, deploys, and manages renewable energy power plants for African industries, telecom, and gated estates, whereas Clear Blue provides 'wireless power' to meet the need for reliable, low-cost, solar and hybrid power for lighting, telecom, security, Internet of Things (IoT) devices, and other mission-critical systems.

Growth Energy has chosen Clear Blue as its original equipment manufacturer partner, and it will use Clear Blue's Esite-Micro power technology, as well as its Illumience Smart Power management service, to power network of African telecom sites.

The project is nearing the end of contract discussions, with preparations for funding disbursement and the start of the engineering, procurement, and construction phases now underway. Phase one of the project is slated to ship in 2024, with two additional stages anticipated after that, totalling a potential \$4 million over three phases from 2024-2026.

"This project is an example of the African continent-wide shift towards replacing expensive and polluting diesel generator-based systems with eco-friendly and cost-effective solar energy," said Miriam Tuerk, CEO of Clear Blue.

"Our alignment on the design to cost approach, while ensuring the highest levels of quality assurance were critical to being able to meet the aggressive cost targets of the project, and Clearblue demonstrated a good understanding and mastery of this approach," said While, John Okoro, managing director of Growth Energy. "As a technology company with capacity to also operate and manage systems for their customers, Clear Blue will be involved in supporting Growth Energy's Operation and Maintenance teams during the long-term operation and maintenance, ensuring the project exceeds performance expectations and delivers guaranteed long-term benefits."

Africa's first 5G ultra-range offshore coverage via MTN South Africa and ZTE

MTN South Africa and ZTE Corporation have announced Africa's first 5G ultra-range maritime offshore coverage at Mossel Bay, Western Cape, South Africa.

This groundbreaking initiative promises to revolutionize maritime connectivity, enhance tourism, and significantly boost the economic prospects of local fishermen in the lucrative Southern African fishing industry.

The deployment of ultra-range 5G network in Mossel Bay will enable high-speed, reliable internet access in previously hard-to-reach maritime areas, bringing unprecedented connectivity to the region's waters.

This achievement delivers more than 210Mbps throughput at 22km from the shore, benefitting fisheries, shipping, tourism, sea rescue, and marine research, improving operational efficiency and data transmission while supporting marine ecological protection through advanced 5G services like live streaming and video applications.

"By launching Africa's first 5G maritime network in South Africa, MTN is setting a new benchmark in connectivity. This innovation not only strengthens our position as a leader in digital transformation but also opens up new horizons for economic growth and technological advancement across the continent," said Charles Molapisi,

CEO, MTN South Africa.

"We are incredibly proud to be pioneering this transformative technology in South Africa. By integrating 5G Ultra Maritime Coverage, we are not only expanding our network's reach but also opening new avenues for economic growth and enhancing the travel experience for tourists. This initiative is a testament to our commitment to driving innovation and supporting local communities," said Rami Farah, CTO, MTN South Africa.

"Our collaboration with MTN represents a significant step forward in maritime technology. ZTE is dedicated to delivering cutting-edge solutions that address the unique needs of different regions. With our 5G Ultra Maritime Coverage, we are setting a new standard for connectivity and enabling Africa to harness the full potential of its maritime resources," said Luca Shen, CEO, ZTE South Africa.

"This project is more than just a technical milestone, it is a meaningful step towards enhancing the digital economy and protecting marine environments. We are excited to see the impact this innovative solution will have on local economies, tourism, and sustainable ocean management in South Africa and beyond," continued Shen.

Ethio Telecom plans \$1 billion investment

Ethio Telecom plans to invest \$1 billion mainly in its telecom infrastructure during this financial year 2024/2025 to expand its network coverage.

Ethio Telecom plans to deploy 1,298 new mobile sites, including 165 in rural areas. In addition, the operator plans to build 320,000 new fibre optic distribution lines, install 1,553km of metropolitan fibre and extend its national network by 400km, bringing its total length to 22,200km.

"By deploying additional telecommunications and digital infrastructure to deliver quality services that increase satisfaction and enhance experience, the company will continue to offer a variety of modern digital solutions, enabling citizens, businesses and institutions to realize their limitless potential," said Ethio Telecom in a statement.

These investments are part of its 'Lead' development strategy, launched in September 2022, which aims to diversify activities and offer new solutions beyond connectivity. These initiatives are expected to enable Ethio Telecom to expand its 4G coverage to 500 additional towns and 5G services to 15 more towns. The company also aims to cover 1,000 new rural areas. This should help it achieve its target of growing its customer base by 6% to 83 million, including 79.7 million mobile subscribers, 47.4 million mobile internet subscribers and 934,000 fixed line subscribers. The operator also expects its revenue to grow by 74.7% to 163.7 billion birr.

NCA initiates consultation on consumer concerns

Ghana's National Communications Authority (NCA) has initiated a one-month public consultation process to address consumer concerns about unwanted promotional messages.

The proposed Draft Guidelines for the Management of Network Promotional Messages aim to establish clear industry standards to ensure that these messages are distributed transparently, ethically, and in accordance with regulatory requirements.

Many Ghana subscribers have expressed dissatisfaction with the influx of unwanted paid subscriptions and promotional texts from telcos cluttering their inboxes. According to an NCA statement, the growing unhappiness emphasises the importance of establishing clear and effective procedures for managing the distribution of such messages.

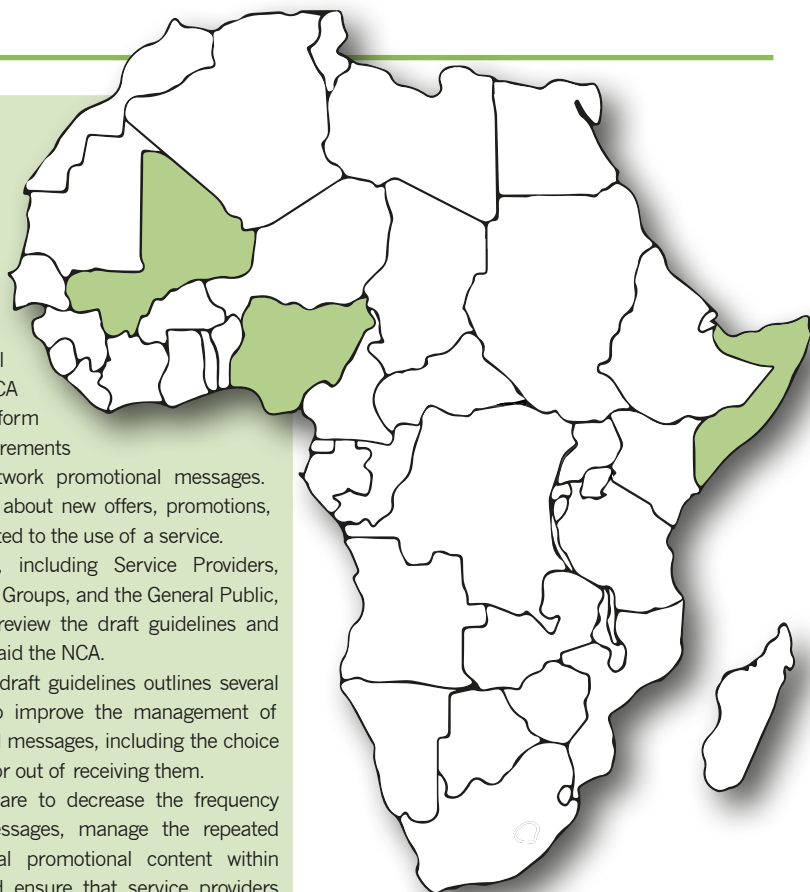
"The guidelines aim to protect consumer rights by providing clear opt-in and opt-out mechanisms, regulate the frequency and timing of promotional messages, and harmonise sender identification names and short codes for better consumer recognition," said the NCA statement.

Through the Guidelines on the Management of Network Promotional Messages, the NCA seeks to create uniform standards and requirements for transmitting network promotional messages. This includes alerts about new offers, promotions, bundles, or fees related to the use of a service.

"All stakeholders, including Service Providers, Consumer Advocacy Groups, and the General Public, are encouraged to review the draft guidelines and provide feedback," said the NCA.

Section 3 of the draft guidelines outlines several critical objectives to improve the management of network promotional messages, including the choice to voluntarily opt-in or out of receiving them.

Other key goals are to decrease the frequency of promotional messages, manage the repeated sending of identical promotional content within a short period, and ensure that service providers standardize sender names and short codes.



Guinea considers Gecomsa privatisation

The Equatorial Guinean government is considering privatizing the telecoms company Gecomsa, currently 100% state-owned, to revive it.

As well as privatisation, Teodoro Nguema Obiang Mangue, the vice-president of the Republic, has also proposed auditing Gecomsa to determine the cause of its bankruptcy, as well as carrying out an inventory to assess its current value. In the meantime, the company will be placed under the supervision of the historical operator Getesa.

This government initiative follows the exit of shareholder ZTE from Gecomsa's capital in April 2023. ZTE had participated in the creation of the company in January 2012 with 49% of the shares, compared to 51% for the Equatorial Guinean state. This withdrawal came as the operator closed its doors, weighed down by financial and operational difficulties.

According to Gecomsa, the government has accumulated a debt of 12.24 billion CFA francs for services between 2013-2020. Added to this are the debts that the company itself contracted with ORTEL and GITGE. In addition, revenues from commercial activity were not sufficient to cover the costs of maintaining the system or to generate profits. Operationally, the technology used by the company is considered obsolete.

Maroc Telecom coughs up MAD 6.4 billion to Wana Corporate

Maroc Telecom has agreed to pay MAD 6.4 billion to rival Wana Corporate (operating under the Inwi brand) following a prolonged legal battle over unfair competition practices that have deeply impacted the country's telecom sector.

Initially, Maroc Telecom planned to challenge the ruling in the Court of Cassation, however, the company has now opted to settle the fine, marking a significant turn of events in this high-profile dispute. The decision to move forward with the payment suggests a strategic pivot

for Maroc Telecom, prioritizing stability and potentially closing one of the country's most notable corporate legal battles.

This unprecedented fine — accounting for 17% of Maroc Telecom's 2023 revenue — sets a record in Morocco's telecommunications history. The ruling signals a broader shift toward stricter enforcement of fair competition laws in the country, a move that could reshape Morocco's telecommunications landscape moving forward.

Somalia to strengthen submarine cable framework with NCA and IFC

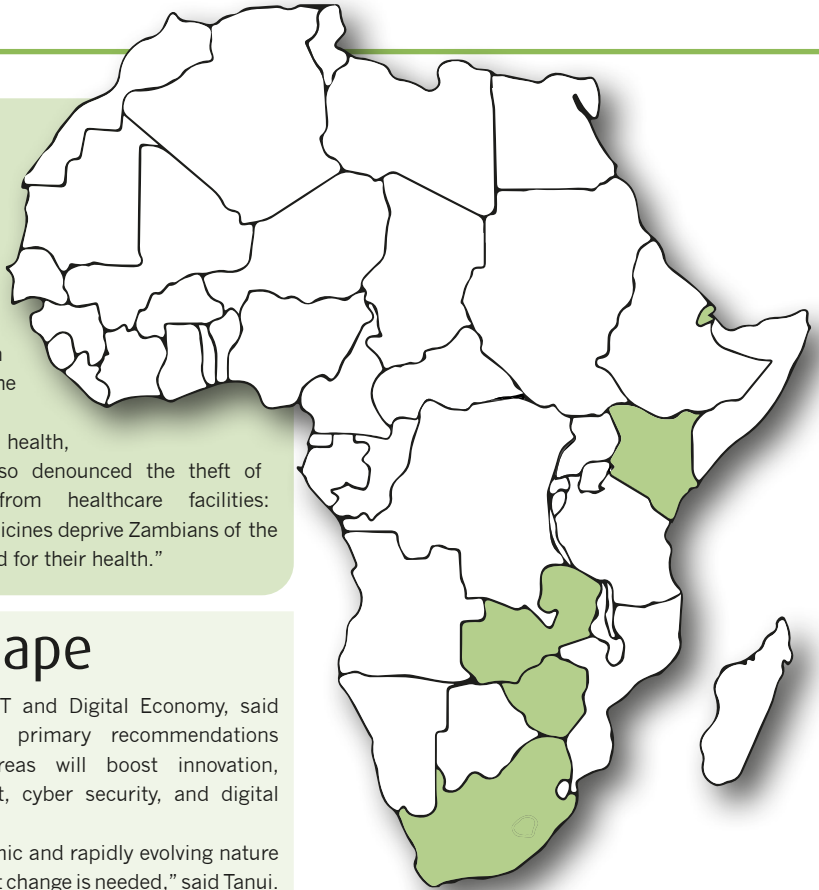
The Somali government wants to strengthen the regulatory framework for submarine cable landings in the country.

Discussions between the National Communications Authority (NCA) and the International Finance Corporation (IFC) include licensing of submarine cable landings, environmental considerations and infrastructure sharing. These regulations aim to align Somalia's telecommunications framework with international standards, while supporting national economic development objectives.

This initiative is part of the NCA's strategic plan to improve connectivity in the country by

strengthening the national digital infrastructure. The country is currently served by five international submarine cables, according to the specialized platform Submarine Cable Map. These are 2Africa, Djibouti Africa Regional Express 1 (DARE 1), Eastern Africa Submarine System (EASSY), Gulf2Africa (G2A) and PEACE. The country is also connected to the Africa-1 cable which is expected to be commissioned in the fourth quarter of 2024.

The new regulatory framework is expected to facilitate the introduction of new submarine cables in Somalia. This should help reduce internet costs in the country and make it easier to use in the country.



Zambia initiates digital healthcare systems

Zambia has begun implementing Digital Health Systems in hospitals around the country to digitise health services while also ensuring the availability of drugs.

Felix Mutati, Zambia's minister of science and technology, said that hospitals around the country will now be able to provide health care making use of digital tools to reach as many citizens as possible. Mutati said his ministry, in collaboration with the Ministry of Health, is now using modern technology to track and trace pharmaceuticals from

procurement to patient use.

"The pilferage of drugs will soon be a thing of the past," said Mutati.

The minister of health, Elijah Muchina, also denounced the theft of pharmaceuticals from healthcare facilities: "those stealing medicines deprive Zambians of the medicines they need for their health."

Kenya shakes up ICT landscape

Kenya is currently aligning its ICT landscape with global trends, with the last major reforms taking place 26 years ago.

The Sector Working Group (SWG) has submitted the crucial report to the Ministry of Information, Communications, and the Digital Economy on policy and legislative reforms to bring Kenya's ICT landscape in line with global norms.

John Tanui, principal secretary: State

Department for ICT and Digital Economy, said that the report's primary recommendations in key theme areas will boost innovation, talent development, cyber security, and digital infrastructure.

"Given the dynamic and rapidly evolving nature of ICT, it is clear that change is needed," said Tanui.

The ministry has thus introduced new ICT directorates to address sector demands.

AMS-IX Djibouti sees traffic quadruple in just 12 months

Djibouti's Internet Exchange Point (IXP) (DjIX), now AMS-IX Djibouti, has seen its peak traffic quadruple over the past twelve months.

This was jointly revealed by Wingu Africa, manager of the data center hosting DjIX, and its partner AMS-IX. The growth was attributed to recent increases in traffic from several broadcast networks.

"The phenomenal growth in traffic at DjIX is a clear indicator of the growing demand for reliable and efficient internet services in the region. Our

partnership with AMS-IX is essential to meet this demand, ensuring businesses and consumers have improved connectivity at reduced costs," said Anthony Voscariades, Chairman and CEO of Wingu Group.

Strengthening the capacity of the internet exchange point is expected to maximize Djibouti's potential for international connectivity. As of 2023, the country was connected to 9 operational submarine cables with a nominal capacity of at least 513Gbps.

Kenya Pipeline Company onboards Syokinet Solutions

Kenya Pipeline Company (KPC) has onboarded Tier III internet service provider (ISP) Syokinet Solutions, to activate 1.6Tbps data capacity on KPC's fibre optic cable which runs from Mombasa to Nairobi.

The new high-capacity fibre link will bring fast gigabit internet speeds and unparalleled reliability to homes, businesses and community networks in Kenya's two largest cities, representing a major advance in Kenya's digital infrastructure and connectivity goals.

Managing Director Joe Sang said that the launch "represents a new milestone for KPC as we strive to expand and upgrade our fibre optic cable in line with

our long-term business diversification strategy," and that the partnership will unlock additional connectivity and offer high-speed internet services for homes and businesses between Nairobi and Mombasa.

The deal with Syokinet will provide increased backbone capacity on KPC's fibre, with benefits that include faster gigabit connectivity to households as well as expanded reach for public Wi-Fi services through hotspot and community network growth.

The new fibre link will also see increased diversity and resilience for enterprise data centres, and greater bandwidth availability for local ISPs and community networks in both Mombasa and Nairobi.

Zamtel debuts eSIM in Lusaka

Zamtel has debuted its e-SIM in Lusaka, marking a significant milestone in its commitment to enhancing customer experience and delivering greater value.

Analysts say that e-SIM technology is provoking change across the telco industry, presenting telecom operators with the promise of new revenue streams, differentiated offerings and reduced costs - and an enhanced user experience for consumers.

TelOne Zimbabwe becomes new Starlink reseller

TelOne Zimbabwe has announced its formal status as a Starlink reseller just one week after Zimbabwe's telecom regulator ordered that Starlink agents, dealers, and Internet Service Providers (ISPs) be approved by the government first.

POTRAZ issued Starlink Zimbabwe (Pvt) Ltd two licenses earlier this month: a telecommunications license for network services and a national Internet Services Provider licence. This license stack authorises Starlink to provide internet services throughout Zimbabwe using its low Earth orbit (LEO) satellite network.

Now, TelOne will extend its offerings and provide modern and effective connectivity solutions.

Vodacom SA launches low-cost cloud phone

Vodacom South Africa has introduced a cloud-based phone, to reduce the cost of smartphone access in the country and to accelerate the migration of customers from legacy networks to modern 4G networks.

A report by the Broadband Commission for Sustainable Development in 2022 argued that lowering the cost of devices is key to increasing access to smartphones. For example, the Alliance for Affordable Internet estimates that a smartphone priced at R1,094.24 could cost almost 63% of the average monthly income across Africa. The Broadband Commission's report recommended that so-called thin-client phones – like the new cloud-based phone which Vodacom has delivered – should be explored. The new cloud-based phone leverages the power of cloud computing to deliver a range of features typically associated with entry smartphones at a more affordable cost.

The cloud-based phone comes standard with YouTube, TikTok and Facebook, all accessed via the cloud, giving users a “smartphone lite” experience. The device will retail at R249 with 48MB RAM + 128MB ROM with a 2.8” screen and a 1000mAh battery.

“As smartphone penetration continues to rise, with many South Africans now owning a smartphone, the digital divide remains a challenge, among those who still rely on 2G and 3G networks. At Vodacom, we remain committed to bridging the digital divide by providing affordable devices – which explains why we have introduced this cloud-based model to offer lite smartphone benefits to those who traditionally cannot afford them. The cloud phone will also help customers still anchored to 2G phones and not familiar with the touch screen experience, allowing them to appreciate a smooth transition to the data and application world,” said Davide Tacchino, Managing Executive for Terminals, Vodacom South Africa. “As technology continue to evolve, we must stay abreast of evolution, to ensure customers are not left behind. Our cloud-based phone is not just another phone, but a tool that enables access to the digital ecosystem. Through greater collaboration between governments, mobile operators and everyone across the value chain, we believe we can make strides to work together to lower 4G-enabled smartphones prices.”



Talking data centres

Stephane Duproz, SDC Consulting, vice-president of the Africa Data Centers Association



The impact of AI on African data centres

After decades of being an emerging concept, Artificial Intelligence (AI) has very concretely become a major drive in the digital ecosystem, which resides in data centres. The amount of data centre capacity AI will require by 2030 is expected by Goldman Sachs Research to be equal to all existing global data centre capacity. In terms of power consumption, we are talking 200TWh per year to be added to the current existing 200TWh per year. What impact will this have on Africa's data centres?

Slow uptake – in the beginning

The learning and training parts of the AI process consume a lot of data centre capacity, but these are not latency sensitive and do not need to be close to the users. Consequently, these phases will likely be hosted in regions with abundant, affordable, and sustainable power, a situation that Africa is only expected to achieve once its vast renewable energy potential is fully developed – a process that will take time.

The inference part of AI, the actual user interaction, does not need as much power and will deploy in Africa as AI services are being used, with significantly smaller data centre capacity needs. Consequently, African data centres will not see big deployment of AI-specific infrastructure in the visible future. But on the other hand, they will benefit from numerous other features AI can offer.

Driving growth in the data centre industry

AI is significantly enhancing the growth of the African data centre sector by improving efficiency and expanding operational capabilities. Traditionally, managing data centres involved extensive manual oversight, with personnel responsible for monitoring systems, identifying faults, and ensuring optimal performance. AI technologies like machine learning and predictive analytics have automated many of these processes, reducing human error and increasing reliability.

These advancements lead to significant cost savings for data centres, enabling them to reinvest in further expansion and technological upgrades. AI's ability to predict hardware failures and conduct preemptive maintenance reduces downtime, ensuring consistent and reliable service, which is crucial for economic stability and growth.

Attracting investment

AI's influence on the African data centre sector is also apparent in the attraction of both domestic and international investments. As AI technologies improve the performance and reliability of data centres, these facilities become more appealing to investors seeking high returns in emerging markets. AI's optimization of energy consumption, enhancement of security, and more efficient data management can make African datacenters more competitive globally.

Countries like Kenya, Nigeria, and South Africa are already witnessing increased investment in their datacenter industries. For example, Kenya's emphasis on renewable energy sources such as geothermal, wind, and solar power has made it a prime location for datacenter investment. AI's ability to identify regions with cheaper and greener electricity further boosts investor confidence, ensuring sustainable and cost-effective operations.

Supporting the broader digital economy

AI-driven data centres are crucial for supporting Africa's broader digital transformation. As more businesses and governments embrace digital solutions, the demand for reliable and efficient datacenters grows. AI helps meet this demand by ensuring data is processed and stored in the most efficient manner possible, enabling businesses to operate more effectively and scale their operations.

Additionally, the rise of AI startups and AI-driven enterprises across the continent is driving the need for advanced data centre services. These startups require robust computing power and data management capabilities that datacenters can provide. This symbiotic relationship not only stimulates growth in the datacenter industry but also fosters innovation and technological advancement, contributing to the region's overall economic development.

Job creation and skill development

The integration of AI in the data centre sector is also creating new job opportunities and necessitating the development of new skills. While AI automation may reduce the need for some manual tasks, it increases the demand for skilled professionals who can design, implement, and maintain AI systems. This shift is prompting a new wave of educational and training programs across Africa, aimed at building a workforce capable of supporting the AI-driven economy.

Job creation in this sector spans various roles, from AI specialists and data scientists to cybersecurity experts and infrastructure technicians. Developing these skills not only benefits the datacenter industry but also enhances the overall skill base of the African workforce, contributing to economic diversification and resilience.

Enhancing competitiveness

AI technologies are making African data centres more competitive on the global stage. By improving efficiency, reducing costs, and enhancing security, AI-enabled data centres can offer services that rival the best ones in the world. This competitiveness attracts international businesses looking to expand into Africa, bringing investment, jobs, and technological know-how.

Moreover, AI's ability to optimize energy usage and integrate renewable energy sources aligns with global trends towards sustainability. This alignment makes African data centres attractive to companies and investors who prioritize environmental responsibility, further enhancing their competitive edge.

AI can profoundly impact the African data centre sector, offering significant improvements in efficiency, competitiveness, and sustainability. By driving growth, attracting investment, and supporting the broader digital economy, AI is positioning Africa's data centre industry as a key player in the global digital landscape. Embracing this technology today can position Africa as a leader in the global digital economy, driving innovation, job creation, and economic development across the continent.

Bridging the Connectivity Divide: The Role of Satellite Operators in Africa

By Ramesh Ramaswamy, EVP & GM, International Division, Hughes

In recent years, internet connectivity in Africa has experienced remarkable growth. At the end of 2023, 37% of the African population had access to the internet, a significant increase from just 26% in 2019. This growth represents a substantial step towards digital inclusion for millions across the continent. However, challenges remain in closing the connectivity gap, particularly in rural and underserved regions. Satellite operators like Hughes are positioned to be major enablers for telecom providers throughout Africa – assisting these providers in expanding their reach, addressing operational pain points, and evolving to meet the market's needs.

Expanding Reach into New Markets

Satellite companies are key partners for telecom providers looking to extend business operations into new geographies and markets. One of the most effective ways we do this is through backhaul services for mobile networks. Many telecom operators utilize very-small-aperture terminals (VSATs) to provide backhaul in areas where fiber optic networks are absent. This capability allows mobile operators to extend their coverage to underserved regions, enabling them

to offer 3G, 4G, and even 5G services where terrestrial infrastructure does not currently exist. Hughes supports over 5,550 VSAT sites throughout Africa, working with major telecom players such as Algerie Telecom, Ethio Telecom, Telcom Malagasy (Telma Madagascar), Telkom SA, and Vodacom Group in South Africa and the Democratic Republic of Congo.

In addition to extending mobile network coverage, satellite technology plays a vital role in bridging the connectivity gap in remote areas. Countries including Ethiopia, Botswana, Nigeria, Kenya, and South Africa utilize VSATs to deliver internet services to remote schools, health clinics, and businesses where laying fiber cables is prohibitively expensive and time-consuming. Through partnerships with Yahclick and Eutelsat Konnect, Hughes delivers affordable internet solutions to consumers and small and medium-sized enterprises (SMEs) – playing a crucial role in addressing the connectivity challenges these regions face. In Egypt, Hughes is also helping broadcast players like Nilesat diversify its business to offer internet connectivity by providing a robust ground system for the Nilesat 301 satellite.

Beyond consumer applications, satellite technology is used to support business operations for enterprises, particularly in sectors such as financial services, mining, agriculture, and government. Telecom operators partner with businesses needing reliable internet connectivity in remote locations, fostering economic growth and promoting digital inclusion. In Ethiopia, Algeria, Egypt, and South Africa, the oil and gas and mining sectors rely on VSATs for communications at isolated sites, ensuring they remain connected and operational.

Addressing Pain Points and Reducing Costs

Telecom providers face many challenges in extending connectivity to new areas of Africa. Thankfully, they

aren't alone in facing these challenges and through partnerships with satellite companies, telecom providers in Africa are addressing significant pain points and reducing operational costs across the board. Many areas on the continent present formidable challenges for traditional telecom infrastructure such as fiber optics or cell towers. Rugged terrain and poor road access often make reaching these areas impractical. VSAT systems circumvent these obstacles by providing direct satellite connectivity, allowing telecoms to serve remote locations without the burden of expensive infrastructure. The high cost of laying fiber optic cables presents another barrier to connectivity. Installing fiber networks in remote or sparsely populated regions is economically unfeasible. VSATs offer a cost-effective alternative, helping telecom operators to provide services without the heavy capital investment required for fiber installations.

In rural areas with unstable or nonexistent power grids, installing telecom equipment is challenging. VSAT systems, which can operate on solar or other renewable energy sources, provide an ideal solution for delivering connectivity in off-grid locations. Conversely, urban networks often face congestion and limited capacity, leading to slow speeds and frequent outages. VSATs alleviate this congestion by offering additional bandwidth and enhancing network performance, particularly during peak usage times. Unlike traditional networks, which can take years to implement, VSAT systems are deployed rapidly—sometimes within days—allowing telecoms to provide services swiftly, whether for rural expansion or emergency connectivity.

Evolving to Meet Market Needs

As the telecom landscape evolves, satellite companies are integral to helping providers meet the evolving needs of the market. The expansion of 5G networks is one area where satellite technology plays a pivotal role. With 5G, users can expect faster

data speeds and the ability to connect more devices, facilitating innovations including smart hospitals. Low-Earth Orbit (LEO) satellites are crucial in extending 5G coverage to remote and underserved areas where traditional infrastructure may not reach.

Beyond extending 5G networks, scaling IoT connectivity also presents a great opportunity for telecom and satellite operators. IBM predicts that the number of connected devices worldwide is expected to double by 2030. For industries such as agriculture, mining and environmental monitoring, many of these devices will be in or pass through places where terrestrial connectivity is not available. Satellites enable IoT and machine-to-machine (M2M) communications where terrestrial networks do not exist, driving new opportunities for innovation within the telecom sector.

Conclusion

Satellite technology is a critical component of the connectivity landscape in Africa. By collaborating with telecom providers, satellite companies can expand their reach into new markets, address existing pain points, and evolve to meet the diverse needs of the market. The future of connectivity in Africa relies on the successful integration of satellite solutions, ensuring that all individuals and communities have access to the internet and the economic growth opportunities it brings. Together, satellite and telecom providers are poised to make significant strides in closing the connectivity gap and fostering a more inclusive digital economy across the continent.

Mr. Ramaswamy leads the International Division at Hughes, which provides satellite broadband equipment and services for network operators, enterprises and consumers outside the United States both directly and through subsidiaries. ■

HUGHES
An EchoStar Company



Achieving unsurpassed bandwidth in dense urban environments



Mark Lunsford, Chief Revenue Officer, Peraso Inc

Access to the internet has become one of the great equalizers in the modern world. Anyone with a device and an internet connection can access vast resources to learn new skills, solve problems and connect with others. However, not all access is equal, and the digital divide persists. Congested networks, weak signals and high costs limit access, especially in underserved or poorly connected areas.

Typically, there are two ways to get access to the internet; cellular data and via a broadband service provider. Cellular providers principal objective is to serve the mobile device needs of a person on the go, while a broadband service provider or internet service provider (ISP) serves fixed location access like a home or business.

Cellular data vs. fixed broadband

Cellular data, while broadly available, is expensive and without the latest phone and proximity to a tower can be lacking in performance. If the population in a particular area is dense and there are many phones accessing the same tower, the performance will be degraded. Cellular networks also have the burden of paying for the license to use the frequencies dedicated to cell phone service. Add this all up and cellular networks can be expensive, slow and unreliable.

Alternatively, an ISP will provide a fixed service that is reliable and usually has higher bandwidth than what is possible from a cell phone network. ISPs typically use co-axial cable, fibre, or radio connections to bring internet service to the home

or business. These connections then provide Wi-Fi or ethernet connectivity to the subscriber. The ISP is targeting the fixed broadband users and is not dependent on cellular spectrum. The challenge for ISP's is physically getting the service to the subscriber.

One significant challenge for cable and fibre providers is that they must pull physical hardware in the form of co-axial cable or optical fibre to the location either by trenching underground or hanging the media from service poles. This is a slow and expensive process and is susceptible to licensing, access limitations, and physical damage. Install times are long and disruptive to existing infrastructure. Once installed, cable or fibre provides good service but must now recover the high expense of installation and they must deal with the possibility of vandalism.

Wireless radio: a faster, cost-effective alternative

Wireless radio connections have the benefit of installation speed, low cost and are less prone to vandalism because the signals fly overhead in the atmosphere. Early on in broadband deployment, it was believed that fibre and cable had a speed and latency advantage, but with today's technology, there are wireless solutions that can deliver competitive bit rates with latencies often better than cable or fibre. Within the wireless realm there are generally three main options for deployment, including existing cellular networks, open unlicensed frequencies commonly used by Wi-Fi signals and mmWave signals in the unlicensed spectrum of 60GHz.

The signals that share spectrum with either the cell phone networks, or the Wi-Fi networks, can perform well in ideal circumstances but they are subject to crowding which can congest the signal and ultimately reduce performance. Congestion is particularly problematic in dense urban environments where an abundance of cell phones and Wi-Fi networks in close proximity requires the networks to share the available spectrum with a large

60GHz mmWave to the rescue.

mmWave implies a short wavelength or high frequency radio signal. The 60GHz band, which is generally available depending on regional regulations, is defined as 57GHz to 71GHz with 6 channels available. Each channel has bandwidth allowing multi-gigabit capacity, meaning you can have networks right next to each other without interference. Once the signal has been delivered to the client, an

“Imagine a world where internet costs are low enough to serve nearly everyone, with bandwidth that allows unlimited access to online resources.”

number of networks and clients resulting in limited throughput. The congestion affects the performance at the device level and at the same time the backhaul signals are also overwhelmed. In the limit, between the competition for available spectrum and the overhead needed to manage all the traffic, performance can be reduced to a crawl. To make matters even worse, the available bandwidth at these frequencies does not support the data rates needed in the best of circumstances. When you combine a low performing solution in a congested environment, you end up with unsatisfactory service to the end user.

The power of 60GHz mmWave technology

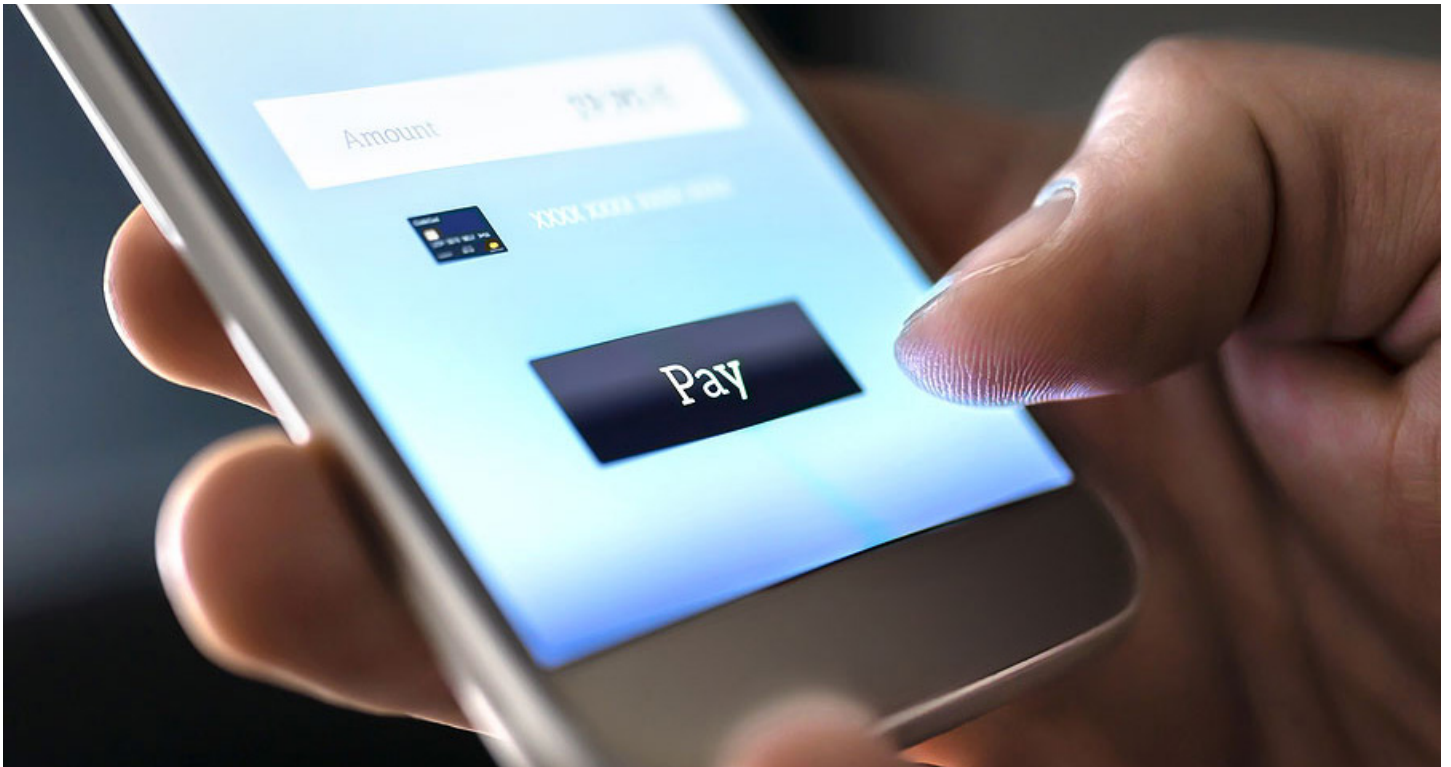
The solution to this problem is to move the primary data links to an unused frequency that isn't competing with every cell phone and Wi-Fi network in the area.

ethernet output can be connected to a gateway and subsequent ethernet networks or a Wi-Fi hotspot for local wireless distribution of the bandwidth. Now, with a 60GHz radio, an uncongested signal can provide gigabit level performance to the middle of a dense population at a cost that is a fraction of pulling cable or fibre and with bandwidth far exceeding any other RF solution.

Last mile connectivity

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IS mobile money bridging the digital divide?

For all the benefits delivered by mobile money across the continent, it remains unclear whether there is any notable impact on enhancing connectivity...

There's no denying the popularity of mobile money across the continent.

The GSMA reports that registered mobile money accounts grew 12% year-on-year to 1.75 billion in 2023, with some 435 million active by year-end – a 9% annual rise. Transaction volumes grew by 14% year-on-year, while, importantly for the operators, average revenue per user was up from \$2.2 in September 2022 to \$3.2 in June 2023 – resulting in higher profitability.

Indeed, mobile money has expanded access to financial services for millions of Africans who previously had restricted or no access to traditional banking. Often more accessible than traditional banking, especially in remote areas, mobile money allows users to manage all aspects of their finances without needing to visit a physical bank branch. And, by facilitating easier transactions, small businesses are empowered, delivering a much-needed economic boost.

Bridging the divide

It's a popular notion that the widespread adoption of mobile money has helped drive a reduction in the digital divide.

“By bringing financial services to remote and underserved communities, mobile money is helping to bridge the digital divide in Africa,” asserts CG Selva Ganesh, VP, CEO South Africa at In2IT Technologies. “It allows people who have been excluded from the formal financial system to access essential services like payments, savings, and loans. This not only enhances their financial security but also encourages the growth of local economies and supports broader digital adoption.”

Wiza Jalakasi, Director of Africa Market Development at EBANX, agrees that mobile money is stepping up to bridge the divide, but “within the expectations set for it. While it won't

solve the problem alone, it can significantly speed up progress as it has been doing. Very much driven by mobile money, digital payments penetration in sub-Saharan Africa doubled in less than eight years, from 23% to 46%. This strong adoption, combined with higher internet access, is unlocking digital commerce – which is growing faster across five of the main African countries than it is in the USA, or European countries. Addressing challenges like interoperability between platforms, providers, and countries will further boost not only Africa's digital inclusion but also its economy.”

Claire Maslen, Programme Director for Commerce and Payments, Mobile Ecosystem Forum (MEF), however, says that the debate around bridging the digital divide is far wider than just offering mobile money or mobile financial services to users.

“To start to close the digital gap, governments,

authorities, NGOs and the private sector must look at the investment needed to provide broadband and connectivity, access to handsets and devices, and education on how best to use the wealth of information that exists on the internet,” says Maslen.

Mobile money has been transformative for sure; however, challenges remain in network coverage and reliability, handset affordability, and security.

“Mobile money has certainly been a success story in many ways, providing financial services to millions of unbanked Africans and significantly contributing to economic inclusion,” states Ganesh. “However, challenges remain, such as limited access in some rural areas and digital literacy gaps, which prevent it from fully bridging the digital divide across the continent.”

Indeed, Maslen believes that mobile money is just one facet to solving the digital divide: “the main requirement for all markets is investment in network infrastructure. Once a reliable and robust infrastructure is in place not only will users have easier access to banking and financial services, but they will also have access to education and employment opportunities – which with the right knowledge and support – will in turn create inclusion and equity for communities. Mobile money in all markets where it exists, has certainly made strides to achieving financial inclusion.”

Those who need it most

With these remaining challenges limitations in mind, the jury is out on whether mobile money is reaching those who need it most.

“For women, mobile money has provided financial independence and greater economic participation. The disabled population has also benefited from mobile money’s ability to facilitate financial transactions without needing to visit physical bank branches,” shares Barnwell. “While there is always room for improvement, the progress made so far is a testament to the positive impact mobile money has had on these underserved groups. Continued efforts to improve digital literacy, affordability, and tailored services will ensure that mobile money reaches even more people in need.”

Alas, more men than women continue to have access to mobile money.

“The mobile money gender gap is yet to be closed, reported by the GSMA to be as high as 30% in Senegal and 46% in Nigeria,” confirms Kirsten Wortmann, Regional Director, Africa, Paymentology. “The GSMA also reported that a lack of knowledge and skills related to mobile money is an important barrier to higher adoption among women. Mobile money operators can reduce this barrier by providing information and training which is tailored to the female demographic.”

“I think it’s important when designing and developing mobile money solutions, product teams explicitly address inclusion issues, rather than assume or imply these segments

will be reached,” says Maslen. “To address inclusion, it helps if the teams are diverse – our organisations should be representative of the communities we serve.”

“While mobile money has expanded access to financial services for many, it hasn’t fully reached all those who need it most,” agrees Ganesh. “Overcoming obstacles like lower phone ownership among women, accessibility issues for disabled users, and cultural barriers requires targeted initiatives, including gender-sensitive designs and more inclusive financial literacy programmes.”

Movers and shakers

On a roll now, mobile money in Africa has evolved significantly in recent years, moving beyond person-to-person transfers to include a wide range of financial services such as savings accounts, microloans, insurance, and investment options.

“Telecom providers, institutions and fintechs across Africa have recognised the growing momentum of mobile money and are expanding their mobile money offerings with new products and VAS including next-generation payments technology,” says Wortmann. “For example, Zambian fintech Union54 recently added virtual cards to its ChitChat messaging and mobile money platform, enabling users to instantly issue virtual Mastercard cards, providing a convenient and fraud-resistant payment option.”

The impact on MNOs has been profound.

“Mobile money has become a critical revenue stream, often surpassing traditional services like voice and SMS,” says Barnwell. “It has allowed operators to engage with customers more deeply, reduce churn, and open up new business opportunities. Overall, the evolution of mobile money has solidified the position of MNOs as key players in the financial landscape, driving both profitability and customer loyalty.”

“It has also intensified competition with fintech companies and traditional banks, pushing operators to innovate continually,” adds Ganesh.

Recent years have seen mobile money evolve not only in terms of how users access it from the early days of USSD to the current developments around super apps.

“Perhaps more interesting though is how the ecosystem is developing,” says Maslen. “The operators have led the model for many years. But what we’re starting to see are developments around interoperable systems and more parties joining the eco-system. The opportunities for banks to reach typically underserved communities, or for fintechs to work with traditional banks to deliver rapid scale often at lower cost, is yet untapped.”

But exactly how successful has mobile money been for improving MNO profits? According to Barnwell, “extraordinarily.”

“By offering essential financial services to the unbanked and underbanked populations, operators have tapped into a vast and growing

market. The simplicity and accessibility of mobile money have led to widespread adoption, driving significant increases in transaction volumes and, consequently, revenues,” says Barnwell.

To maximise its potential, says Ganesh, MNOs should explore cross-border partnerships and expand into international remittances, as well as enhance the user experience through robust security measures and user-friendly interfaces to build trust and attract more customers.

Barnwell adds: “to further capitalise on this potential, MNOs should continue to innovate by expanding their service offerings — introducing more sophisticated financial products like microloans, investments, and insurance. Additionally, MNOs can leverage strategic partnerships with fintech companies and traditional banks to enhance service delivery and reach new customer segments, thus maximizing the full potential of mobile money.”

A hybrid future

With success already in hand, what does the future hold for Africa’s mobile money ecosystem?

“I expect mobile money to continue its strong growth trajectory across Africa, especially in regions like East Africa, which has already seen substantial adoption,” shares Ganesh. “Countries like Kenya, Tanzania, and Uganda will likely lead in further adoption due to their established mobile money ecosystems and supportive regulatory environments. However, regions such as Central and West Africa may continue to be underserved due to infrastructural challenges and lower mobile penetration rates.”

Looking ahead, Barnwell expects significant growth in West Africa, particularly in Nigeria and Ghana, where regulatory environments are becoming more conducive.

“East Africa, where mobile money has already deeply penetrated the market, will continue to innovate and set the pace for mobile money services. However, some regions, such as Central Africa, may still face challenges due to political instability and weaker infrastructure, which could slow adoption,” says Barnwell. “Nonetheless, I remain optimistic that ongoing investment in infrastructure and favourable regulatory changes will gradually bring mobile money to even these underserved regions.”

“Regulatory support of mobile money operators and their fintech partners will also be a crucial catalyst for adoption over the next five years,” adds Wortmann. “Regulatory guidelines differ vastly across Africa, and countries with guidelines that are not cloud-friendly, requiring on-soil hardware, hamper the adoption of next-generation payment technologies among unbanked demographics. Jurisdictions with regulations friendly to the cutting-edge of fintech will enable mobile money to continue its high pace of innovation and provide a wider range of accessible financial services to traditionally unbanked groups.”

According to Maslen, while some of the early

mobile money deployments date back to 2001 in Asia, the most cited and significant deployment for scale of mobile money came from M-Pesa in Kenya in 2007.

“Now two thirds of all mobile money transactions globally, occur in sub-Saharan Africa,” says Maslen. “I think we will see the need for interoperability increase, as users travel more widely and if employment opportunities don’t exist in your home country, it is obvious people will travel and the need for cheap and fast remittance services will be in demand.”

As Africa’s banking sector increasingly engages with fintech, the landscape is likely to evolve significantly, and soon. Banks and MNOs are already forming partnerships to leverage each other’s strengths; MNOs bring extensive mobile networks and customer reach, while banks offer regulatory expertise and comprehensive financial services. Partnerships like those between M-Pesa and various banks have allowed for integrated financial services that benefit from both parties’ capabilities.

With both banks and MNOs aiming to enhance financial inclusion, collaboration can provide a more seamless and extensive range of services to underserved populations, combining the outreach of mobile networks with the financial expertise of banks. A hybrid model can thus offer the convenience of using mobile technology for transactions and the security and trust associated with traditional banks for more complex financial services.

“A hybrid or partnership model is the most likely outcome,” asserts Barnwell. “Traditional banks bring regulatory expertise, financial knowledge, and access to capital, while MNOs offer unmatched reach and customer engagement, especially in rural and underserved areas. By collaborating, these entities can create a more inclusive and robust financial ecosystem. Such partnerships would leverage the strengths of both MNOs and banks, ensuring that fintech services continue to thrive across the continent while also benefiting from the trust and infrastructure that banks provide. This model not only promises to enhance financial inclusion but also drives innovation and growth in the financial sector.”

“Partnerships between MNOs, fintechs, and banks are crucial, combining the agility and innovation of fintechs with the trust and reach of traditional

banks,” agrees Ganesh. “This collaboration can accelerate financial inclusion and provide more comprehensive financial services across the continent.”

Banks are also increasingly partnering with fintech firms to integrate new technologies and innovative solutions into their services, including digital wallets, AI-driven financial management tools, and blockchain-based services.

“In other markets we have seen many successful partnerships from both fintechs and banks, and banks and operators,” says Maslen. “If created transparently with clear governance, all parties involved serve to gain. Good partnership models

allow for each party to grow from the others’ area of expertise, whilst allowing their investment and focus to remain on their core business. Reaching new customer segments, delivering in new markets or even stretching into adjacent sectors is definitely something where partnership model could be attractive.”

Indeed, the future of fintech in Africa is likely to be characterised by a hybrid or partnership model between banks, fintechs and MNOs. rather than a complete shift from MNOs to traditional banks. Collaboration has the power to drive innovation, expand financial inclusion, and enhance the overall financial services ecosystem. ■

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Powering Africa's communications networks

How big an impact is unreliable energy having on Africa's wireless communications services – and are renewables the answer?

Energy disruptions are having a significant impact on Africa's wireless communications sector – and given that consistent energy is essential to maintaining operations, this issue is critical.

According to the GSMA's 'Energy Challenges for Mobile Networks in sub-Saharan Africa' report, mobile operators in sub-Saharan Africa face multiple energy-related challenges, including power outages, lack of grid access, high energy costs, and difficulties purchasing and connecting to renewable energy. Nearly all operators (who responded to the survey) said that their three biggest energy challenges were power outages, high and rising energy costs, and a lack of grid access; and approximately half of responding operators – mostly in South Africa and the DRC – reported difficulties purchasing renewable energy and a lack of transmission and distribution infrastructure to connect to renewables.

Powering the infrastructure

For Africa's towercos, energy costs represent a substantial portion of operational expenditure, with some estimates suggesting that power accounts for 30-60% of total operating costs. This is exacerbated by heavy reliance on diesel generators, which are costly due to rising fuel prices and high carbon emissions.

"Towercos, with 4G and 5G, have seen a rapid increase in the power demanded on their access equipment, requiring more powerful systems," confirms Vertiv's technical director for Africa, Jonathan Duncan. "The additional power security and potential disruption is not acceptable for users. As a consequence, the towerco infrastructure has to become more resilient, with larger energy storage requirements on these edge sites. Along with this, we

see an increase in concurrent deployment of solar systems, where space allows. The nature of this cyclic power requirement further challenges the type of technology we deploy."

Troubles with energy supplies have indeed been amplified by the ongoing expansion of connectivity across the continent. With more users than ever before signing up to 4G/5G services, the demand for more coverage, new infrastructure, and higher quality connectivity requires even more power.

"Due to unreliable grid power, many operators and towercos depend on diesel generators, which are expensive to run and maintain. The fluctuating cost of diesel fuel further exacerbates financial pressures," says Sibongile Thobakgale, project sales manager (data centre) for Southern Africa at Aggreko. "The heavy reliance on these generators leads to frequent maintenance and repair needs, increasing overall operational expenses. Additionally, investing in and maintaining these energy sources can be complex and costly, especially in remote areas. Another challenge faced by network operators and towercos is battery theft. When the batteries are easily accessible, they are often stolen, which means that there is no back-up power in the event of a power outage, which again results in financial losses."

Power outages can also cause considerable network downtime, negatively impacting the reliability of mobile and internet services, resulting in lower customer satisfaction and potential subscriber loss.

"Africa has seen its share of the global energy disruption of network operators over the years, which is a huge challenge," says Nsikak Ekere, communication associate, Bridgia. "Nonetheless, the energy mix provides renewable energy as an alternative, especially in the era of climate change and

green energy. The demand for solar panels is on the increase, and green hydrogen and natural gas (NG) can provide economical, environmentally friendly energy and electricity supply to support data centres, operators, and towercos in delivering consistent, reliable services."

Hampering digital transformation

Without a doubt, Africa's unreliable energy supply continues to hold back digital transformation.

"Reliable energy is a fundamental requirement for the operation of digital infrastructure, including mobile networks, data centres, and internet services," asserts Thobakgale. "Frequent power outages and the inconsistent energy supply make it difficult for network operators and service providers to maintain stable and reliable services. This impacts the quality of internet connectivity, leading to frequent downtimes, slower data speeds, and unreliable service, which in turn hinders the adoption of digital technologies by businesses and consumers."

"Unreliable energy means that Africa sees additional costs with measures taken to mitigate these issues. This means investments are more selective as the ROI models are not always so feasible," adds Duncan.

Ekere reports that, according to the International Energy Agency Electricity Midway Report in July 2024, global electricity demand is anticipated at 4% in 2024, a record high since 2007. Africa's unstable electricity is affecting the QoS, quality of experience (QoE), operational delivery, and the quick ROI of digital transformation by companies.

The International Data Corporation 2023 report shows that Africa has 1MW of power supply and relies heavily on external sources. Africa is far behind when

compared to their counterparts in America (88.5MW), Europe (73.93MW), and Asia (28.68MW).

“Be that as it may, many businesses have found a way to transition and leverage alternative sources of energy supply, particularly compressed natural gas (CNG) and solar energy,” says Ekere. “Africa can still succeed with the introduction of innovative energy models and other renewable sources of power supply by commercialising its large natural resource deposits.”

“The lack of a stable energy supply affects other critical sectors that are essential for digital transformation, such as education, healthcare, and e-governance. Schools, hospitals, and government institutions require reliable internet and power to implement digital solutions effectively. Without a stable energy foundation, these sectors struggle to leverage digital technologies to improve service delivery and efficiency, thereby slowing down overall socio-economic development,” shares Thobakgale.

With not-so-great power comes great responsibility

With digital transformation hindered, and large swathes of the populace being charged a hefty fee for unreliable mobile connectivity, whose responsibility is it to ensure reliable energy supply for wireless communications networks and related infrastructure?

Ekere believes that the government is ultimately responsible for establishing cutting-edge infrastructure that can efficiently provide an affordable system of energy supply for wireless communications.

“However, the internal power supply for infrastructure is largely fuelled by public-private partnerships,” says Ekere. “As a result, Africa is attracting international players like Microsoft, Huawei, and Equinix, and this can boost distinctively relevant infrastructures at the national and subnational level for telcos, wireless communication operators, and MNOs. This will facilitate an enabling environment for businesses to thrive. Also, it must put in place clear fiscal policies to address high taxing and multiple taxing, as well as regularly monitor the quality of service (QoS) and quantity of electricity delivery to wireless communications networks.”

“Ensuring a reliable energy supply for wireless communications networks and related infrastructure is a shared responsibility among multiple stakeholders, including governments, energy providers, network operators, and towercos,” adds Thobakgale. “Governments play a crucial role in establishing and maintaining a stable and efficient energy infrastructure. They must implement policies that promote investment in energy projects, incentivize the use of renewable energy, and ensure a regulatory environment conducive to the development of robust energy systems. Energy providers are responsible for delivering consistent and reliable power, investing in grid improvements, and adopting sustainable energy sources to reduce dependence on fossil fuels.”

Duncan, on the other hand, believes that “this responsibility lies with the towercos themselves; however, their business models will mean a higher cost to serve being pushed back onto the consumer; a higher cost per data MB than in other parts of the world. This becomes somewhat of an oxymoron, as

these remote districts with lower income theoretically have the highest cost to serve. Should governments have some co-investment is a question that could be asked, and what about limiting ‘profiteering?’”

“Network operators and towercos must also take proactive steps to secure reliable energy supplies for their operations,” agrees Thobakgale. “They should invest in alternative energy solutions, such as solar and wind power, to reduce reliance on the often-unreliable grid power. Implementing energy-efficient technologies and infrastructure can minimize power consumption and improve operational efficiency.”

Hybrid solutions

Particularly on a continent like Africa with its ample sunshine, balancing sustainability with the need for reliable power should not be an insurmountable task.

Indeed, “operators can meet sustainability goals around energy consumption while ensuring reliable connectivity by investing in renewable energy sources and adopting energy-efficient technologies,” says Thobakgale. “By integrating solar and wind power into their energy mix, operators can reduce their dependence on fossil fuels and lower their carbon footprint. For instance, installing solar panels and wind turbines at cell tower sites can provide a steady supply of clean energy, reducing the need for diesel generators. This not only supports sustainability goals but also ensures more reliable connectivity by providing a consistent power source, even in areas with unstable grid power.”

Renewable energy is often considered the be all and end all for sustainable power generation. However, when the grid goes down, the best backup power solutions for Africa’s towercos and MNOs are hybrid systems, says Thobakgale, which combine renewable energy sources with traditional power generation methods.

“By integrating solar panels with battery storage systems, towercos and MNOs can harness and store solar energy during the day, ensuring a reliable power supply even during outages. Solar energy systems are not only sustainable but also reduce operational costs in the long run by decreasing reliance on expensive diesel generators,” says Thobakgale.

“Each situation and geolocation is different, however all should be trying to reduce their carbon emissions, so solar does seem attractive,” agrees Duncan. “However, on higher power sites, an availability of a football field sized space for panels may not always be practical. Lithium today seems to be the best energy storage solution due to its power density and high cyclic ability.”

“In addition to solar power, hybrid solutions that incorporate wind energy, where feasible, can further enhance the reliability of backup power,” adds Thobakgale. “Combining these renewable sources with diesel generators or other traditional power systems can create a robust and flexible energy solution. This approach ensures continuous operation during periods of low sunlight or wind.”

A low carbon future

In the absence of a complete, continent-wide overhaul of the power supply, and the desire to

adopt more sustainable practises, Africa’s wireless communications industry could well be on the path to a low carbon future.

“The future of Africa’s energy has strong potential to be low carbon, driven by the continent’s abundant renewable energy resources and increasing investments in sustainable energy projects,” says Thobakgale. “Africa is endowed with vast solar and wind resources, making it well-suited for large-scale renewable energy generation. Many countries are already investing in solar farms, wind parks, and other renewable energy projects to diversify their energy mix and reduce reliance on fossil fuels. Technological advancements and decreasing costs of renewable energy technologies are making these options more accessible and economically viable for widespread adoption.”

Ekere believes that Africa is on the path of a low-carbon emission future with short term and long-term low emissions strategies (LT-LEDS) and has set an ambitious target both at the AU, ECOWAS, and at some national level through Nationally Determined Contributions (NDCs).

“Africa is significantly adapting and adopting mitigation strategies for climate change and energy-efficient systems,” says Ekere. “But currently, the reality is that there’s an increase in carbon activities, and Africa needs to reduce mineral and fossil fuel exploitation through resilient actions by the stakeholders. Africa must increase budgetary allocations for climate projects and the enforcement of green policies to achieve net-zero emissions by 2060. Africa also needs more advocacy, innovative research, public-private partnerships, and infrastructural development from the government to drive sustainable development.”

“International support and funding are playing crucial roles in accelerating the transition to low-carbon energy. Various global initiatives and partnerships aim to enhance Africa’s capacity to develop and implement renewable energy projects,” agrees Thobakgale. “For instance, the African Development Bank and other international organisations are providing financial and technical assistance to promote green energy solutions. Governments across Africa are also setting ambitious renewable energy targets and implementing policies to encourage private sector participation in the renewable energy sector. As these efforts continue to gain momentum, the continent is well-positioned to shift towards a low-carbon energy future, fostering sustainable development and mitigating the impacts of climate change.”

But how does Africa’s wireless communications sector compare with the rest of the world?

“The future of the world is ‘lower carbon’ paradigm,” concludes Duncan. “In Africa, we are a few years behind the rest of the world and in parts of the continent we do have carbon fuel reserves. It seems almost unfair that emerging markets should have to use more expensive energy solutions and ignore those carbon fuels on hand but being part of the ‘global village’ we are subjected to a dichotomy whereby we need to reduce carbon emissions and yet much of Africa needs development and electrification. However, this type of situation sometimes allows us to leapfrog technologies and adopt the latest and greatest available.” ■



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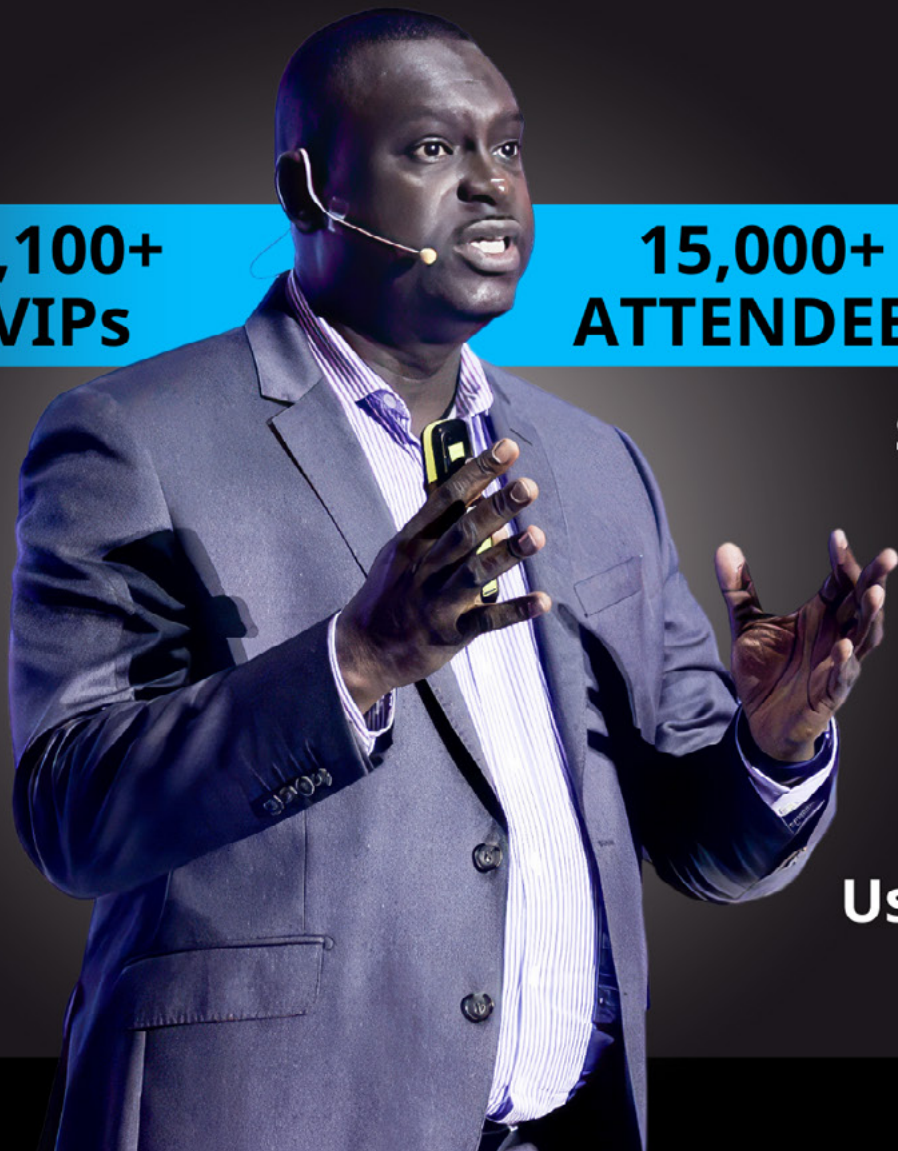
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The importance of WISPs in connecting Africa

Martha Suarez, President of the Dynamic Spectrum Alliance



Wireless Internet Service Providers (WISPs) have an important role to play when it comes to bridging the digital divide. They have the capacity to reach unserved and underserved areas and have consistently shown their intention to deploy access networks to low-income areas where bigger operators have yet to reach. The local nature of WISPs enables them to understand the needs and limitations of rural and remote users, thereby serving smaller communities better.

There are already a significant number of WISPs operating across Africa. If these are to break down the barriers to reliable connectivity – coverage, service and affordability – spectrum access will be essential. License-exempt spectrum access in the 2.4, 5 and 6 GHz bands is a necessary element of the WISP business model and remain the primary way for subscribers to access internet services.

Kenya

Kenya has been one of the fastest growing markets in Africa; the country's ICT sector has continued to experience steady growth over the last decade alone. Yet, despite this growth, there is room for improvement. By September 2022, approximately 98% of the population was covered by at least one 4G mobile network, which is reflected in the high share of mobile broadband connections (97%) within the country. The fixed broadband market is limited, with only 3% of the population experiencing it, and a low broadband penetration rate of 7.5%.

The greatest barrier to success for WISPs in Kenya is the difficulty in competing with the larger providers. Due to ongoing congestion problems related to the country's intensive use of the 2.4 and 5 GHz bands, as well as the difficulties in accessing expensive fibre backbone connections, WISPs impact at the moment is constrained. While Safaricom – Kenya's largest player within the ICT ecosystem – grant WISPs access to its fibre network, this is an expensive venture and only seen as a temporary measure.

However, the connectivity landscape in Kenya is changing, with the Government's 'National Digital Masterplan' currently deploying 100,000 km of fibre to provide internet access to key sectors, including schools, rural businesses, homes and public sectors. With half of the Kenyan population expected to be living in urban areas by 2025, the Masterplan, alongside the rapid urbanization within the country, is offering WISPs the chance to expand their influence. Despite only having less than 20% of Kenya's fixed broadband market share, WISPs are already making a difference in terms of overcoming reliability challenges. Through their knowledge of local communities, and their ability to service and maintain fewer sites, WISPs are filling the gap for users where fibre is absent or unreliable.

South Africa

South Africa currently has the third largest nominal domestic product (GDP) across the continent, and despite high levels of inflation and an economic slowdown - a thriving ICT sector. 68.2% of the population are believed to be using the internet regularly. However, at the same time, 90% of homes in South Africa only have internet access via mobile data, and such connections are expensive, and often data limited. As of 2023, the average data price of an unlimited 4G broadband plan costs around 399 ZAR, an expense likely too great for the 30.3 million South Africans (55% of the population) living under the poverty line.

Many WISPs have shifted their business model from capped to uncapped data offerings. Although uncapped, WISP data plans can be time based for residential customers, while a monthly subscription is typical for small and medium enterprises (SME) and other corporate customers. This gives users flexibility to choose the most suitable package for their needs. WISPs and community networks have been able to compete in South Africa through personalized services. When compared to generic, price-driven offerings made by large national competitors, these services create a sense of exclusivity and attachment for

“License-exempt spectrum access in the 2.4, 5 and 6 GHz bands is a necessary element of the WISP business model and remain the primary way for subscribers to access internet services.”

If WISPs can gain access to the full range of the 6 GHz band, including for standard power applications, then the issues of congestion would be solved. Having been granted the use of the lower 6 GHz band for unlicensed use in 2022, current estimates suggest that the cumulative economic value of using the full band between 2022 and 2031 would amount to \$14.28 billion USD in additional GDP for Kenya, alongside a \$1.12 billion producer surplus for enterprises, and a \$4.89 billion consumer surplus for the general population.

Community networks have been also growing in Kenya in the last months, thanks to the regulatory leadership of the Communications Authority that adopted a specialized regulatory framework for their operation in the country.

the user, making them and their businesses feel important. Continued support from the WAPA and SABISPA industry associations will help WISPs maintain their unique positioning.

This hasn't stopped large providers, such as Vodacom and MTN, from competing with WISPs in the market however. MTN Supersonic, the fixed broadband business unit, has begun offering services in smaller towns, and the company has the financial capacity to use state-of-the-art FWA equipment to reach markets previously served by the WISPs. The market itself is undergoing a significant consolidation phase itself, with HEROTEL acquiring over 33 smaller ISPs and WISPs to increase its position in the market. Over 100,000 subscribers are now serviced by HEROTEL, with 80% of these through fibre networks.

Nigeria

Nigeria remains the most populous country in Africa with over 220 million inhabitants, and much like Kenya, its ICT sector has experienced significant growth in recent years. Between 2010 and 2020, the share of the population using the internet tripled from 12% to 36%, yet Nigeria continues to underperform in terms of delivering reliable connectivity to all.

In January 2023, the country's median fixed broadband speed of 12.2 Mbps ranked Nigeria in the bottom quartile worldwide. Fixed broadband penetration currently reaches only 0.03% of households, far below the average rates seen in sub-Saharan Africa (0.6%) and comparable countries like South Africa (0.34%). While the government has been trying to increase access to internet services in the country through its 'National Broadband Plan', implementing policies to support rural and underserved areas, a lack of reliable electricity and available infrastructure has frustrated these efforts. The target of having 120,000 km of open access, shared fibre infrastructure by the end of this year now seems unobtainable, with only 52,000 km of fibre having been successfully deployed by Q3 of 2022.

Despite these setbacks, and uncertainty on how the upcoming fibre network will be managed once completed, there still holds some promise for WISPs in Nigeria. They have already been able to get a foothold in the country by low-price offerings such as daily subscriptions for open

Wi-Fi spots in highly transited areas. Increased urbanization also means WISPs will be able to serve more people in the populated areas they mainly operate in.

In Nigeria, the use of the 5.47-5.725 GHz band is designated for unshared, coordinated, and protected use of Wireless Access Systems (WAS), while the frequency ranges 5.25-5.35 GHz and 5.725-5.8 GHz are unlicensed. Neither the NCC – the country's spectrum regulator – nor the internet providers have expressed any difficulty with the use of the unlicensed bands, yet access to the full 6 GHz band would provide room for future growth both in subscriber base and capacity, bringing a \$72.14 billion USD boon should licence-exempt access be granted.

From a regulatory perspective, more can be done to support WISPs in Nigeria. Introducing specific provisions in the country's telecoms licencing framework to help the WISP market thrive, or a specific incubation strategy to foster growth of the internet provider system would go a long way to give WISPs the tools to ensure reliable connectivity across the country.

Best practises for the future

Whether it is Kenya, South Africa, or Nigeria, every country has its own legal, market and cultural landscape to consider when it comes to the broadband penetration. Countries and entities looking to close the digital gap should

be looking to use some of the best practices seen in Africa to support further growth and development of WISPs.

One is the regulatory and licencing framework established by the Communications Authority of Kenya (CA). Defining a community network as a non-profit internet service provider managed by communities, CA is offering a cost-effective way to apply for licences, which is an important precedent for developing regulations targeting smaller WISPs in Kenya.

The development of WISP industry associations will also be key. In South Africa, WAPA and SABISPA represent smaller ISPs, giving them more freedom to advocate for regulation or projects promoting WISPs.

In a dynamic, competitive market, the importance of empowering WISPs to advocate for their interests and stand up to larger operator interests cannot be understated. In this sense, WAPA and SIBISPA are better positioned to advocate for WISP interests than other global industry associations. WISPs associative efforts have been seen in Kenya recently, and hopefully they will materialise in the short term.

Across Africa, WISPs understand the needs and limitations of users, enabling them to serve smaller communities more effectively. This makes them valuable allies for governments in their efforts to provide inclusive, affordable, and sustainable broadband access, ultimately driving meaningful connectivity and digital transformation. ■





Debmarine Namibia gains ship-to-shore critical communications

Debmarine Namibia, a joint venture owned by the government of the Republic of Namibia and De Beers, mines in the offshore mining licence area off the southern coast of the country, some 90-150m below sea level. The company's vessels mine diamonds from the ocean floor using advanced drill technology supported with sophisticated tracking, positioning and surveying equipment.

A new vessel

Debmarine Namibia commissioned a new N\$7 billion custom-built vessel to expand annual production by around 45% with an additional 500,000 carats of high value diamond. The new Benguela Gem vessel was fitted out with proprietary mission equipment by De Beers Marine South Africa.

Taking two years to construct, it was the most technically advanced diamond recovery vessel in the world, underpinned by high standards of sustainability and safety performance. The vessel combines the latest technology and a fully integrated design to achieve unrivalled efficiency, reliability and accuracy. A state-of-the-art dynamic positioning system automatically optimises the vessel's performance in changing weather conditions to minimise energy use. It also generates its own fresh water using heat recovery systems and a reverse osmosis plant.

The vessel was communicating to shore using a Line-of-Sight (LOS) system which had become obsolete since its 2022 launch, offering throughput of less than 25Mbps. The growing need for information to be transferred from the vessel to shore caused the client to investigate more efficient and cost-effective technologies. Indeed, the MV Benguela Gem required a communication system to provide a bi-directional

IP (data and video) feed between the shore and the vessel.

Ship to shore

Ceragon's PointLink Access was identified as one such technology that could amp up essential ship to shore communications.

The marine-grade Point to Point (PtP) and Point to Multi Point (PtMP) connectivity system provides a secured, high capacity, low latency solution, enabling offshore and maritime operations. It integrates highly reliable microwave equipment with customised antenna stabilisation technologies as well as resilient paths and topologies to provide high reliability.

The PointLink Access enables effective communication to smaller vessels and mobile users, with communication based on technologies like LTE/4G in licensed frequency bands, WiFi in unlicensed bands and microwave links in both licensed and unlicensed bands. Following the installation by Altron Nexus, the Benguela Gem gained high-capacity connections with more than 50Mbps full duplex speeds to a maximum distance of 80km, and with less than 1ms link availability for minimum capacity and maximum distance better than 99%. Link availability for 200Mbps and 40km distance was also better than 99.99%.

The compact lightweight design saved valuable deck-space on board the Benguela Gem, and with a total weight of approximately 25kg including data modem, antenna and 60cm radome, the system was easy to install. Software controls the orientation of the directional antenna, securing optimal link margin in systems deployed on moving vessels and platforms. The system features automatic switchover between sectors in a multi-sector system, and automatic multi-homing in a distributed base station network.

Dual axis actuators compensate for pitch & roll motions up to +80/-30 degrees, with the help of motion sensors. Combined with accurate heading information from the GPS compass, the system ensures a unique pointing accuracy even under highly dynamic conditions.

Each microwave connection consists of a dedicated onshore PointLink antenna system. On the vessel, a dual PointLink antenna system is required, which enables true 360-degree connectivity between the vessel and the ground station at Kerbehuk. A high power RFU-D-HP radio is connected to the microwave radio antenna which has 35db (4&5GHz) / 37dB (6/7GHz) output power and a covered radome to protect both microwave and internal stabilisation systems. This proposed configuration is for very long links over the sea and in areas with difficult propagation conditions.

The link will benefit from small frequency diversity improvements by using two separate frequency carriers/connection from one dual core radio. Both carriers have the capacity to support modulations from QPSK – 4096 QAM. The available capacity and modulation schemes are limited by capacity activation keys. Current considered modulations are from BPSK to 32 QAM to deliver up to 100Mbps per carrier; however, 200Mbps capacity is possible with both radios having both cores activated running in an MC ABC configuration.

Supporting the Namibian economy

With the richest known marine diamond deposits in the world and being among the top 10 country producers of gem quality diamonds globally, Debmarine Namibia can now continue to support the Namibian economy with its lucrative diamond mining activities, supported by the most modern wireless communications capabilities available. ■

Last mile wireless connectivity at Bathopele Mine

The Bathopele Mine, run by Sibanye-Stillwater, is located in the north-western part of South Africa in Rustenburg. It represents one of the largest platinum reserves in South Africa having estimated reserves of 5.3 million ounces of platinum and an annual production capacity of 120,000 ounces.

A key enabler for digitalisation in underground mining is securing mine-wide, robust and resilient broadband wireless connectivity. Such digital infrastructure must operate and be maintained in a harsh environment. While legacy fibre installations are established and commonplace, these are generally terminated with a network switch at level access or waiting places with limited connectivity available up to the last mile. Without connectivity in the last mile, there is limited opportunity to receive and trend real-time data for asset and personnel intelligence and optimisation.

To remedy this, Dwyka Mining Services (DMS) partnered with Sibanye-Stillwater to roll out a proof of concept (POC) underground network to secure and extend its capability to aggregate real-time data in an active section at the Bathopele Mine.

Taking out the guess work

The primary goal was to establish an easily maintainable and extendable broadband wireless network with high up-time availability to ensure agreed levels of 802.11n wireless coverage in each working panel.

Success for this goal involved ensuring data rate and range were managed and optimised to rapidly upload real-time data across multiple underground WiFi enabled devices. The second goal was to provide a last mile backbone to connect the IOT.nxt Raptor hardware and enable

the cloud-based Commander IoT visualisation software to visualise real-time trackless mobile machinery (TMM) availability, alarms and other mission critical sensor data whilst active at the face. Success could only be achieved by a stable wireless network with broadband coverage into the active working panels for data transfer.

Maestro Digital Mine's Plexus PowerNet was identified as a potential solution to provide high broadband connectivity into each working panel. Indeed, Plexus PowerNet would address two primary challenges. It would allow for the establishment and extension of wireless connectivity from the belt tip to the working face by connecting and powering strategically positioned 802.11n wireless access points (WAP's) from terminating nodes installed less than 40m from the face with min-ready, high-gain antennas to extend coverage into each panel as well as along TMM tramping routes. Moreover, since fibre splicing underground can be complex with humidity, dust and concussion in mining locations, Plexus PowerNet would enable pre-terminated connections as the tip advances for backhaul for increased installation flexibility and greater data integrity - as a ruggedised alternative to the requirement of irregular fibre splicing performed underground.

As a global first, site survey technology was utilised underground to take the guess work out of network design. These heatmaps were utilised to dynamically design and optimise the positioning of the WAP locations and antennas for maximum WiFi coverage. This wireless coverage confirmed wireless network parameters and maximised time 'in-range' for IOT.nxt Raptor units to 'offload' telemetry data operating at the face and along designated tramping routes. Stable coverage would allow for a real-time view of asset overall effectiveness, with the opportunity to gain deeper

insight by trending historical data computed at the edge and stored in the cloud.

High speed, last mile broadband

Maestro Digital Mine's Plexus PowerNet was successful in providing high speed broadband connectivity into each working panel. This secured a robust and resilient broadband wireless connectivity and communication network to the mine last mile that allowed both human and machine to connect and communicate in arguably the highest risk and cost environment of the mine.

"Dwyka Mining Services has demonstrated it has the capabilities to deliver on its promises and exceed expectation," said Alex Fenn, Sibanye-Stillwater innovation head. "This proof of concept has proven that dependable connectivity is possible in the last mile and we are excited about pushing the technology further to expand its capabilities through the addition of other technologies that enhance our understanding and effective management of our operations."

Real-time network visualisation on IOT.nxt Commander and regular underground network surveys confirmed the quality of wireless coverage and up-time diagnostics of connected TMM assets. This data allowed for workflow and operator analyses that highlighted valuable optimisation opportunities for the company to consider.

"Real-time data from our machines allowed us to unlock considerable asset and operator value. Empowered with this real-time data and ability to trend it historically from our mixed fleet, it is difficult to imagine not having this information at our fingertips going forward, so we see a bright future for this technology augmenting our team's effort as we mine deeper and try to do so more safely," said Carlo van Rensburg, mine manager, Bathopele East Shaft. ■



STARLINE 1.8GHz ESD amplifier upgrades networks for DOCSIS 4.0

CommScope's STARLINE® 1.8 GHz Extended Spectrum DOCSIS®(ESD) amplifiers have now come to market, offering operators the ability to upgrade their networks in anticipation of next-generation architectures like DOCSIS 4.0, while fully monetizing their current network assets and better serving their consumers.

The BLE® 180 Line Extender and MB180 MiniBridger® amplifiers offer operators a simple and economical solution for introducing ESD to DOCSIS 3.1 networks as well as a clear path to DOCSIS 4.0. Both

amplifiers support ultra-high-split operation of up to 1794MHz in the downstream and up to 684MHz in the upstream to maximize network reliability and data rates.

“By deploying the amplifiers in mid-split or high-split 1.2GHz networks now, MSOs can optimize the performance of their DOCSIS 3.1 networks while taking an important step in future-proofing, before eventually upgrading taps and nodes,” said Guy Sucharczuk, SVP & President Access Network Solutions. “This incremental approach defers the costs per homes

passed associated with an immediate DOCSIS 4.0 network upgrade—the perfect way to both plan for the future and protect an investment in next-generation technology.”

The amplifiers support the gain and tilt required for 1.2GHz operation via a simple plug-in. The plug-in enables the increased gain operators require to upgrade high-loss spans that would otherwise require the installation of a booster amplifier, cable, and passive upgrades as well as moving amplifiers within the network — eliminating the costs and service interruptions

associated with these upgrades and improvements.

The new amplifiers feature a smart setup feature activated via a downloadable app for laptops, iPhones, and Android devices. The app greatly simplifies the process of setting up and configuring the amplifier for use in the field. Pluggable frequency split filters are accessible through each amplifier's RF module, enabling technicians to change the operating frequency of the amplifier in the field quickly, easily, and economically.

Wi-Fi HaLow access point meets Matter IoT gateway

Edgecore Networks' new EAP112 integrates Wi-Fi HaLow access point and Matter IoT gateway functionalities to address the growing demands of IoT applications. The EAP112 offers long-range connectivity, energy efficiency, and robust performance, making it an adaptable solution across various environments.

The EAP112 supports Wi-Fi 6, Wi-Fi HaLow (802.11ah), BLE, Zigbee, Thread, and LTE/CBRS, providing comprehensive coverage for IoT applications such as smart agriculture, smart cities, multi-dwelling units (MDUs), and industrial monitoring. Its versatile design makes it suitable for both indoor and outdoor deployments, with a rugged construction capable of withstanding harsh outdoor conditions. It can operate between -30°C and 50°C and features an IP65-rated enclosure for water and dust resistance, broadening its application in extreme environments.

This device broadens its support to encompass key wireless communication protocols essential for IoT applications, such as BLE, Zigbee, and Thread, enhancing short-range wireless connectivity. Moreover, it steps into the realm of long-range IoT applications with Wi-Fi HaLow, boasting widespread coverage, deep penetration, and a robust connection capacity for a multitude of devices.

Recognizing the critical role of backhaul transmission in network



infrastructure, the EAP112 embraces LTE-A and CBRS frequencies, as well as traditional wired Ethernet. In specific scenarios, the Wi-Fi HaLow technology facilitated by the EAP112 also doubles as a backhaul network solution.

In addition to its cutting-edge connectivity features, Edgecore Wi-Fi is introducing a new Wi-Fi HaLow and Matter IoT device management platform on its cloud-based controller, ecCLOUD, allowing seamless management of Wi-Fi HaLow cameras and Matter-compliant IoT devices. This platform simplifies network provisioning, configuration, and monitoring, enhancing both the user experience and network performance.

Integrated microgrid power for communications towers

Caterpillar Inc. has introduced an integrated microgrid power system for telecommunications towers capable of reducing diesel fuel consumption and associated carbon emissions by up to 80% while decreasing total owning and operating costs.

Available initially from Cat® dealers in Africa and the Middle East, the system employs solar PV panels, and a Cat diesel generator set to power the telecommunications system while fully charging an energy time-shift storage system. Power is drawn from energy storage when solar power is not available at night or in inclement weather.

Hybrid power systems can reduce total owning and operating costs, substantially decrease fuel consumption and associated greenhouse gases, and maximize system reliability. They are particularly well-suited for applications in remote areas where grid power is intermittent or unavailable and fuel delivery is challenging and costly.

The system features a modular design enabling the addition of components to increase power output for rising traffic and network upgrades over time.

This field-proven system can be offered through an Energy-as-a-Service agreement, which supplies a turnkey solution for addressing power needs and climate-related goals without requiring customers to purchase or maintain system assets. Optimized, deployed and supported by select Cat dealers, this agreement

enables telecommunications customers to amortize start-up costs and outsource responsibility for service and maintenance while reducing the risk of obsolescence.

“As customers embark on the energy transition journey, they are seeking tailored solutions to meet their requirements,” said Stephanie Baughman, Retail Vice President for Caterpillar Electric Power. “Our hybrid solution for telecommunications towers combines next-generation power technologies with industry expertise and a flexible service agreement that delivers a sustainable, reliable and cost-effective solution to our customers.”

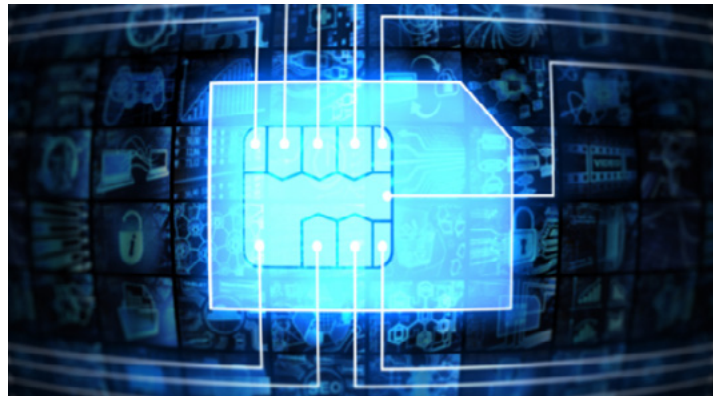


IoT platform to advance MNO monetisation

Hayo has launched its global Internet of things (IoT) platform, which supports Machine-to-Machine (M2M) and consumer IoT use cases, and can be used by both mobile network operators (MNOs) and enterprises.

MNOs can white label and resell Hayo's platform as their own to monetise the growing opportunities in IoT around the world. It makes it simple to capture new revenue and serve enterprise demands across verticals like agriculture, healthcare, transportation and more.

"We are continually innovating in digital solutions to solve real-world challenges with simple and powerful solutions, and IoT is a very exciting space to be in," said Feraz Ahmed, CEO at Hayo. "Launching our IoT platform is an important step in our roadmap. It will not only enable business customers to create new revenue streams, but also have a positive impact on local people's lives. IoT has a huge variety of use cases across multiple industry verticals. It's accelerating digital transformation, enabling seamless connectivity between medical devices, boosting efficiency



and profits for local farmers, and so much more."

Hayo's IoT platform is powered by a cloud-native full core network, with high speed and performance to enable devices to seamlessly communicate and share data intelligence. It utilises advanced AI algorithms to analyse and derive meaningful insights from this data, facilitating informed decision-making for businesses. This enhances operational efficiency, automates processes, and unlocks new possibilities for businesses in today's rapidly growing digital ecosystems. The platform also provides real-time

billing, multi-IMSI SIM management, automation, seamless connectivity management, monitoring and more.

Hayo provides expert support end-to-end to help MNOs maximise IoT monetisation, and the web portal can be fully customised with our customers' logos, brand colours and imagery. The global carrier network makes it simple for MNOs to seamlessly expand their global reach to areas not covered by existing roaming agreements. It's a highly fast and cost-efficient way of entering the market, with no upfront investments and a flexible business model.

Innovative SiP to accelerate IoT deployments

Nordic Semiconductor has released its smallest and lowest power System-in-Package (SiP) - the nRF9151, and its associated nRF9151 Development Kit (DK).

The nRF9151 is a fully integrated, pre-certified SiP featuring an application MCU for extensive application development or use as a stand-alone cellular modem. This simplifies the development and deployment of scalable products across massive IoT markets, including industrial automation, asset tracking, smart city, smart

metering, and smart agriculture.

The nRF9151 represents a significant advancement in cellular IoT technology, offering a cost-effective and globally accessible solution. Its comprehensive and compact solution includes hardware with a programmable application processor, software, cloud services, development tools, and world-class support.

The nRF9151 supports 3GPP release 14 LTE-M/NB-IoT global coverage and DECT NR+. Exclusive features include a significant

footprint reduction, which allows for more compact products without performance compromises. In addition to Power class 3 (23dBm), the nRF9151 also supports Power class 5 (20dBm) output power, leading to 45% reduced peak power consumption thanks to the unique nRF9151 low power design, which decreases the cost of battery-powered products. The nRF9151 will also add support for Non-Terrestrial Network (NTN) support in future firmware release.

Available with SIM Cards from Onomondo and Wireless Logic preloaded with free data, the nRF9151 DK is the ideal starting point for cellular IoT application development. The DK is supplied pre-flashed with Nordic's Serial LTE Modem application for interfacing through AT Commands. This also enables the nRF9151 to be used as a stand-alone cellular modem, simplifying its integration into existing customer solutions. Developers can get started with other firmware samples from the Quick Start tool.



Look out for...

Breaking records with PSE-6s technology

Faced with the challenge of ever-expanding demands placed upon connectivity infrastructure, the world's leading tech players are collaborating to achieve more capacity, affordably.

In one recent development, OTE Group and Nokia have announced two new optical transmission rate world records using Nokia's sixth generation of super-coherent Photonic Service Engine (PSE-6s) technology.

The field trial, which used Nokia's 1830 PSI-M optical transport solution, ran over OTE Group's national dense wavelength division multiplexing (DWDM) network, connecting IP Core data centres and routers in Greece. Two optical nodes were installed in Patra and Athens to boost performance over the specific fibre optic routes using PSE-6s coherent optics.

As a result, Nokia and OTE achieved record-breaking speeds in a live network in real conditions, transmitting 800Gbps on a single channel over 2,580km, and 900Gbps over 1,290km. This was achieved over a DWDM link transmitting a full load of DWDM channels over 4.8THz of spectrum and supported a total network capacity of 25.6Tbps per fibre. The companies also demonstrated 1.2Tbps transmission on a single channel over 255km.

Running an optical solution with Nokia's PSE-6s allows the increase of network capacity and spectrum utilization, reduces energy consumption per bit by 40%, and minimizes the network's carbon footprint.

The trial demonstrates the successful application of delivering high-capacity, long-haul DWDM transmission, paving the way to elevate data transmission capabilities to meet the growing demands of social media, cloud computing, and video streaming.

"We are proud to have developed, constructed and operate one of the most advanced long-haul backbone DWDM networks globally. This network has demonstrated world-record performances, as evidenced by our recent field trial. Our aim is to deliver top tier performance in the most cost-effective manner. In collaboration with our partner, Nokia, we look forward to further advancements in our DWDM technology," said Michalis Papamichail, OTE Group Core Network Devops and Technology Strategy Director.

São Paulo State Government opts for Motorola Solutions body cameras



Motorola Solutions has announced that the São Paulo State Government will deploy 12,000 V500 body cameras to its Military Police (PMESP) to replace and modernize the state's body camera program.

This significant investment of over R\$100 million underscores PMESP's commitment to leveraging advanced technology for the safety and protection of São Paulo state residents.

"Our investment in Motorola

Solutions' body camera solution will equip our officers with state-of-the-art technology to help protect and serve the community, allowing our agency to achieve benefits such as providing greater protection of the population and officers," said Gustavo Barbosa, Colonel and IT Director of PMESP. "We are confident that this solution will act as a powerful tool to curb criminal activity while providing reliable evidence to help simplify and accelerate police actions."

The LTE-enabled V500 allows agents in the field to stream live video and location to the control room, giving incident managers a better understanding of events so that they can respond more quickly and efficiently. The footage is automatically uploaded to the digital evidence management system so that the handling, storage and sharing of evidence can be managed securely in the cloud or on-premise, protecting information and preserving the

integrity of material for the police, public systems and judiciary.

"PMESP is leading the way in public safety innovation by equipping officers with the latest body camera technology," said Elton Borgonovo, MSSSI vice president, Latin America and Caribbean Region, Motorola Solutions. "This move positions PMESP among the most advanced law enforcement agencies and demonstrates its commitment to the safety of Sao Paulo's residents."

Vodafone rolls out private 5G at nuclear plant



Temelín nuclear power plant in Czechia has rolled out a private 5G network, provided by Vodafone. The company claims that the network is the first of its kind in Europe.

According to Vodafone, the pilot phase of the network covers outdoor space, as well as selected areas of a production unit. It is intended to enable transition away from two-way radio, as well as to facilitate the use of virtual reality glasses by technicians.

"By being entirely independent from the public network, our private 5G solution ensures that all user data and infrastructure are securely managed within the power plant's own systems. This is vital for maintaining the highest standards

of safety and reliability," said CEO of Vodafone Czechia, Violeta Luca. "This technology is a key enabler in advancing the secure digitalisation of such critical infrastructure."

"A selected part of the nuclear power plant's communication network, as an element of critical infrastructure, must be completely separated from the external network. That is why we always maintain an alternative in the event of an outage, and the management system of course remains completely separate from the outside world," said ČEZ Group's nuclear division director, Bohdan Zronek. "We are the first nuclear power plant in Europe to actually test a private 5G network, while other European operators work mostly with 4G."



Telecom Fiji taps Kordia for North transmission network



Telecom Fiji is partnering with Kordia to implement its North transmission network in Vanua Levu.

The project will connect the Savusavu Submarine Cable Station to the Labasa Exchange using advanced Ciena transmission equipment, marking a significant milestone in strengthening Fiji's telecommunications infrastructure. Kordia has collaborated closely with Ciena to deliver a solution tailored to Telecom Fiji's requirements.

"This collaboration with Kordia is a crucial step in expanding our network's capacity and reliability, especially for Vanua Levu. The new transmission network will support the growing demand for high-speed connectivity and digital services across Fiji, enabling us to provide even more robust and scalable solutions for our customers," said Telecom Fiji in a release.

Kordia has also offered consultancy and fibre testing services for Telecom Fiji's optical fibre network.

Vietnam delays 2G sunset in wake of Super Typhoon Yagi



Vietnam's Ministry of Information and Communications (MIC) has delayed its planned shutoff of 2G mobile networks by a month to mid-October as communities struggle to stay connected in the aftermath of Super Typhoon Yagi.

Under a roadmap issued by the MIC in July, telcos were scheduled to stop providing services to all 2G-only phones starting 16 September, with the exception of M2M 2G devices, as well as Vietnamese offshore platforms and the coastal archipelagos of Truong Sa (Spratley Islands) and Hoang Sa (Paracel Islands), which can continue to use 2G services for another two years.

However, the MIC has now pushed back the shutdown deadline to 15 October at the request of telcos as they struggle to keep people connected

in the wake of the massive impact of Super Typhoon Yagi.

Yagi hit Hai Phong and Quang Ninh provinces in northern Vietnam on 7 September with winds up to 203 km/h, according to the Indo-Pacific Tropical Cyclone Warning Centre. As of Monday, the death toll was at 292 with 38 people still missing.

Another reason for the 2G shutoff postponement also seems to stem from the fact that around 1.8 million 2G-only subscribers have yet to switch to 3G or 4G services.

The 2G shutoff will still happen next month as part of its plan to free up the 900MHz and 1800MHz bands for other services, including 4G and 5G in the immediate term and potentially 6G in 2030. The MIC also intends to ditch 3G for the same reason, by September 2028.

Cellnex deploys DAS for 37th America's Cup



Cellnex has deployed a multi-operator mobile coverage solution along 3.5km of Barcelona's coastline, from Sant Sebastia to Mar Bella beach.

The deployment aims to enhance 5G coverage in preparation for the 37th America's Cup, a global sporting event running from 22 August to 27 October.

As part of an agreement with the Barcelona City Council, Cellnex has installed a distributed antenna system (DAS) on the council's physical structures and street fittings along the city's beaches to serve the tens of thousands of visitors throughout the year. The infrastructure will

remain in place on the city's coastline after the sporting event ends next month.

"DAS systems reinforce the connectivity of any mobile operator in areas with a high influx of people, such as the Barcelona coastline. We are also deploying such solutions in urban centers, stadiums, shopping centers, large buildings, networks, and metro stations, among other locations. This allows us to expand and densify the network's capacity to provide the public with reliable connectivity at all times," said Cellnex Spain in a statement.



Free Mobile delivers France's first 5G 3.5GHz SA network



Free Mobile, part of Iliad, has announced the launch of what it calls France's first 5G 3.5GHz Standalone Access (SA) network on a national scale.

With over 20,000 5G sites in service, including nearly 7,000 on the 3.5GHz band, Free now covers approximately 95% of the French population.

The operator said 5G SA is the final phase of 5G network development. The new 5G SA network enhances mobile communication by providing faster speeds, lower latency, and higher reliability, independent of 4G infrastructure. Its deployment will allow the full potential of 5G technology to be realised through new services and applications in various domains.

Additionally, Free has introduced VoNR (Voice over New Radio), which improves voice communication over 5G, offering faster connection times and better voice quality. Subscribers to the 5G Free Mobile Plan can access 5G SA at no extra cost, provided they have a compatible device.



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LTG Group upgrades critical rail network

 Ribbon Communications has successfully deployed a critical network upgrade for LTG Group, the Lithuanian railway company, in collaboration with Telia Lithuania.

The upgrade, one of the largest network modernisation projects in Lithuania's public sector in the past decade, is designed to enhance the security, speed, and reliability of LTG's communications network. The upgraded system is ready for advanced services such as Communications-Based Train Control (CBTC) and integrates enhanced cybersecurity features, ensuring LTG's compliance with industry standards.

"The upgraded network ensures smooth and safe train traffic and efficient office operations. From now on, we will share data within

the Group via a network that offers greater security, faster data transfer, and a smoother roll-out of new services. This is one of the largest and most complex network modernisation projects of the past decade, not only for LTG but also in Lithuania's public sector," said LTG Group in a statement. "It

covers everything from architectural design, replacement of network nodes, network management systems, and security systems, to cabling and migration of existing services to the upgraded network. It also includes seven years of service and support for the newly installed equipment."



GSMA and MNOs launch Responsible AI (RAI) Maturity Roadmap

 The GSMA launched in conjunction with 19 operators its Responsible AI (RAI) Maturity Roadmap to provide operators with guidelines to effectively and safely tap into the emerging technology.


The initiative is being championed by Axiata, Deutsche Telekom, Orange, Telefónica and Telstra. Other operators to commit to the roadmap include Globe Telecom, MTN, Turkcell, True and Vodafone.

McKinsey estimated the expanded use of AI in the telecoms sector can deliver between US\$450 billion to US\$680 billion to the industry over the next 15-20 years. The guidelines being launched today were developed with insight from McKinsey.

The GSMA also took heed of existing global regulations and recommendations from international bodies such as the OECD and the UNESCO Recommendation on the Ethics of AI to create a roadmap for the whole industry to align on the use of responsible AI.

"The transformative potential of AI has long been apparent but its integration in our work and our lives must be done in a responsible and transparent way for it to be truly effective and sustainable. This roadmap will now empower more MNOs to embrace AI in the knowledge they, in line with the whole sector, are doing so responsibly and ethically," said GSMA Director General, Mats Granryd. "Responsible AI is the right way to explore and unlock the many opportunities the technology presents, and the telecoms industry is proud to lead the way as the first sector to commit to this approach – we hope others will follow our example."

Philippines acts to protect telecommunications infrastructure amidst cyber-threats

 PLDT, its wireless unit Smart Communications, and the government's Cybercrime Investigation and Coordinating Center (CICC) are spearheading a public-private project to protect telecoms infrastructure.

The project - PROTECTA Pilipinas (a.k.a. Protect Technology-Telecom Alliance) - was launched under an MoU signed by private and public stakeholders. The alliance aims to identify and advocate for measures that enhance the resilience of telecom networks, including redundancy, disaster recovery plans, and cybersecurity protocols.

In addition to PLDT, Smart and CICC, alliance members include the Philippine Chamber of Telecommunication Operators (PCTO), advocacy group CitizenWatch

Philippines, public policy think-tank Infracore PH, the PNP Anti-Cybercrime Group (PNP-ACG), the Federation of International Cable TV Association of the Philippines (FICTAP) and Manila Electric Co (Meralco).

PROTECTA Pilipinas intends to collaborate with government bodies responsible for telecoms regulation and infrastructure management, including initiatives on policies, regulations, and enforcement mechanisms to protect telecom assets. The alliance will also work with telcos, equipment manufacturers, and service providers to encourage best practices, information sharing, and joint efforts to secure infrastructure. PROTECTA Pilipinas also covers protection of physical infrastructure, a major issue as telcos continue to struggle with equipment theft,


including cables and batteries.

The alliance hopes to develop timely reporting mechanisms for suspicious activities or threats to telecom infrastructure to ensure swift action by relevant authorities. It will also push for legal frameworks that explicitly protect telecom infrastructure from vandalism, theft, and sabotage.

As part of the physical component, PROTECTA Pilipinas also plans to establish monitoring systems to track the health and performance of telecom facilities, as regular assessments can identify vulnerabilities, maintenance needs, and potential risks.

"These efforts will ensure that our critical infrastructure for communications are given proper attention in terms of security and integrity," said CICC executive director Alexander K. Ramos.

Omantel completes RedCap lab trial

 Omantel has successfully conducted a laboratory trial of RedCap to improve the speed and efficiency of the 5G network at a lower cost.

This technology was developed in collaboration with Huawei and aims to enhance internet connectivity while expanding the range of applications available to users. RedCap is

designed to meet the demands of Internet of Things (IoT) applications, offering high speeds and energy efficiency, making it ideal for a variety of devices, from smart wearables to advanced industrial equipment.

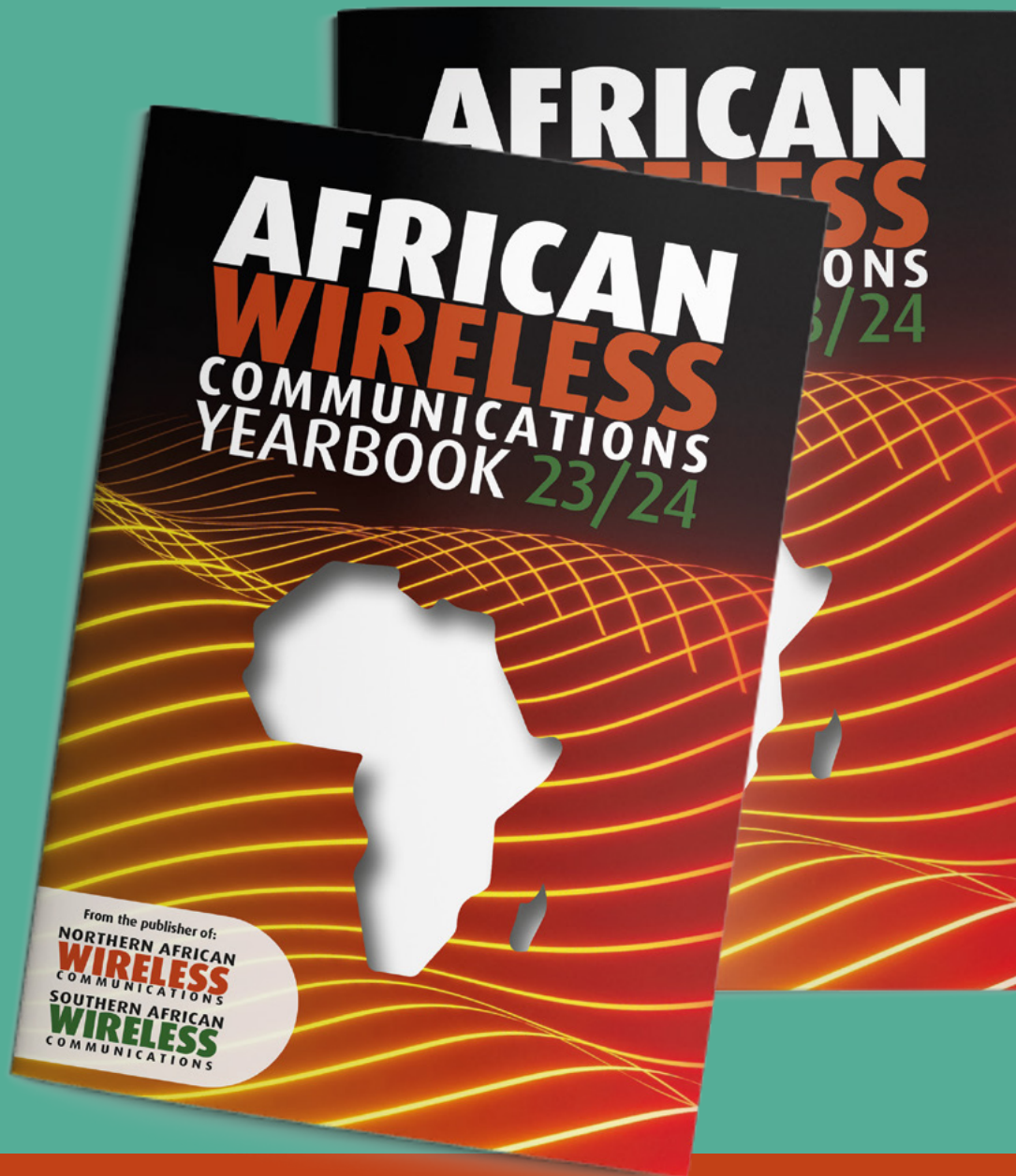
This technology ensures fast and seamless user experiences while extending the battery life of connected devices, thereby reducing

operational and maintenance costs.

"The successful trials of RedCap's 5G technology mark a significant milestone in our journey toward a thriving digital future for Oman. We believe this technology will revolutionise the telecommunications sector and unlock new opportunities for innovation and business growth," said Omantel.

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