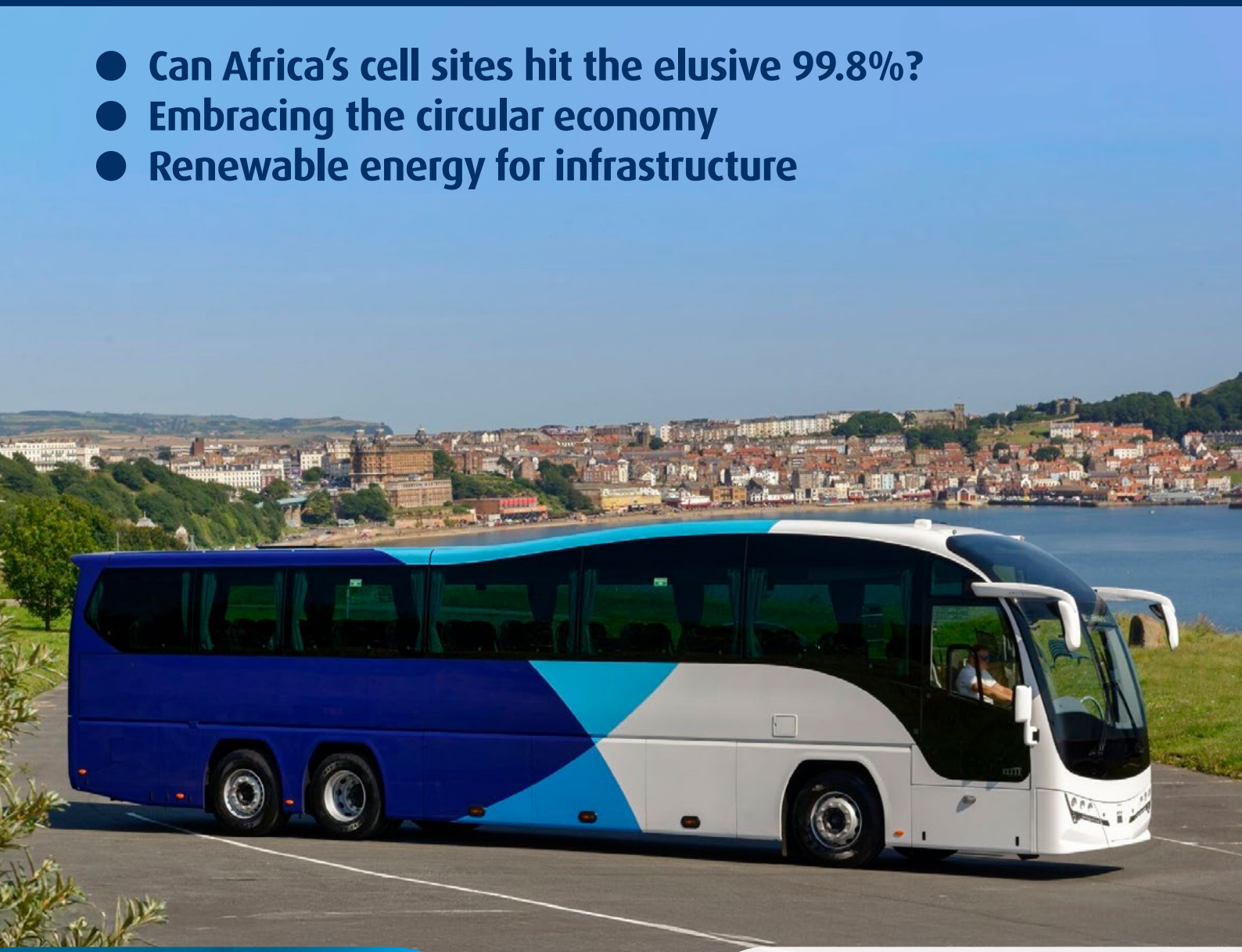
For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

MAY/JUNE/JULY 2025 Volume 29 Number 5

- Can Africa's cell sites hit the elusive 99.8%?
- Embracing the circular economy
- Renewable energy for infrastructure



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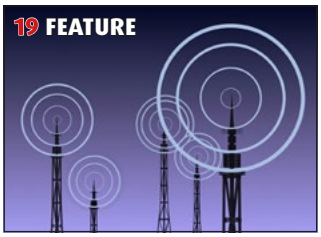

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Airtel Money Tanzania partners with TCDC to digitally empower farmers

Airtel Money Tanzania has announced a strategic partnership with the Tanzania Development Commission (TCDC) aimed at transforming the agricultural sector through digital financial inclusion.

The initiative is designed to give farmers across the country enhanced access to financial services by enabling direct mobile payments, thereby promoting greater efficiency and inclusion within Tanzania's vital farming community.

This collaboration will also focus on providing farmers with affordable smartphones, creating a crucial link to the digital economy for many who have previously been underserved. Additionally, farmers will benefit from specialised income credits intended to support farm growth, as well as comprehensive financial education programmes. These educational efforts are intended to equip farmers with the necessary knowledge and skills to manage their finances effectively, make informed investments, and improve their overall economic well-being.

The partnership highlights a shared commitment to harnessing digital technology to overcome longstanding challenges faced by the agricultural sector, which is a key pillar of Tanzania's economy. By bringing essential financial tools directly to farmers' fingertips, Airtel Money Tanzania and TCDC aim to drive increased productivity, better livelihoods, and sustainable economic development across rural Tanzanian communities.

Namibian government reappoints Audrin Mathe as Head of ICT Ministry

The Government of Namibia has announced the reappointment of Audrin Mathe as Executive Director of the Ministry of Information and Communication Technology (MICT) for a second term.

The decision was confirmed by Secretary to Cabinet Emilia Mkusa, who stated that Mathe will remain in his position for the next five years, with his new term commencing on 1 November 2025.

Mathe's leadership has played a pivotal role in driving Namibia's digital transformation efforts. His tenure has seen the advancement of initiatives aimed at expanding rural connectivity, enhancing digital governance, and fostering innovation within the ICT sector.

The reappointment reflects a commitment to maintaining stability in Namibia's national ICT strategy, as the government continues to work towards broader continental objectives of promoting digital inclusion and developing resilient technological infrastructure.

IHS South Africa launches free public Wi-Fi project in KwaMashu

IHS South Africa has announced the launch of a new initiative in partnership with non-profit organisation Project Isizwe, aiming to provide free, uncapped public Wi-Fi access in KwaMashu, Durban.

The project is designed to support local residents, students, job seekers, and entrepreneurs by fostering community development, promoting education, and creating new employment opportunities in an area where approximately 21% of the population still lack internet access, youth unemployment exceeds 60%, and small businesses struggle with affordable digital tools.

"It's about empowering a community with the essential resources needed for education, economic growth, and comprehensive digital inclusion," said IHS South Africa's CEO, Sandile Msimango.

The programme aims to narrow the digital divide and facilitate access to vital online services that can drive community upliftment.

A key component of the project involves developing digital skills among KwaMashu's youth. Just before the public Wi-Fi launch, IHS South Africa's partner, Social Coding, conducted a five-day training programme for ten unemployed local youths. The training covered a range of topics including virtual reality, mobile applications, exhibition management, effective communication, customer service, and technical troubleshooting, equipping participants with valuable digital skills and positioning them as potential technology ambassadors for their communities.

Following the training, efforts will extend to local primary schools, featuring a robotics showcase targeted at younger audiences to inspire interest in science and technology.

"Beyond facilitating connectivity, we need to provide young people with opportunities to acquire digital skills so they can serve as technology ambassadors and catalysts for community growth," said Msimango.

Founded in 2013, Project Isizwe has partnered with funders, government agencies, and internet service providers to deploy public Wi-Fi hotspots in low-income areas across South Africa. The organisation states it has connected millions of South Africans to reliable, affordable internet, supporting access to education, information, and economic opportunities for underserved communities.

SMART Zambia Institute unveils paperless system

In a move to advance its digital transformation, the SMART Zambia Institute recently showcased its new paperless system at the Ministry of Health Headquarters in Lusaka, aiming to improve service delivery through technology.

The initiative forms part of the government's broader strategy to digitise public sector operations and reduce reliance on paper-based processes.

The SMART Office System, once fully implemented, is expected to establish a comprehensive e-registry that spans from provincial to district levels. This digital registry will manage vast amounts of data efficiently, streamlining record-keeping and administrative procedures. Officials believe that this system will significantly cut costs associated with stationery and printing, saving the government millions of dollars annually.

Beyond cost savings, the system addresses long-standing issues such as missing files and document misclassification, which have hampered effective record management within government institutions. The government's digitisation efforts are not limited to the Ministry of Health; similar initiatives are underway in other key public institutions, including the Public Service Management Division, Ministries of Finance, and Education.

The SMART Zambia Institute emphasised that the new solution is part of a larger national effort to digitise government operations, aiming to increase efficiency, transparency, and service quality across the public sector.

Mauritius Telecom announces plans to launch 5G Advanced

Mauritius Telecom has announced during the 'All My.t Business AI Summit' in Pailles that it plans to soon deploy 5G Advanced (5G-A) technology across Mauritius.

CEO Veemal Gungadin shared that initial testing is already underway to evaluate network performance and identify key use cases tailored to the Mauritian market.

Building upon existing 5G infrastructure, 5G Advanced integrates native artificial intelligence into the network, enhancing energy efficiency, signal stability, and bandwidth management. This evolution aims to support high-demand applications such as IoT, industrial automation, augmented and virtual reality, and digital health services — paving the way for a more resilient and versatile digital ecosystem.

Minister of Information Technology, Communication and Innovation Avinash Ramtohul expressed strong support, emphasising that Mauritius is committed to digitalisation: "Mauritius is moving forward towards a solid digital future. All communication services must be on board with this vision."

The deployment aligns with the national Digital Mauritius Blueprint 2025–2029, which aims to position the country as a regional technology hub. With a target of providing 5G coverage to 98% of the population by the end of 2025, Mauritius is already ranked third in Africa for ICT development according to the International Telecommunication Union (ITU), behind Morocco and Libya, and continues its upward trajectory in digital power.

If successful, Mauritius would be among the first African nations to activate 5G Advanced, strengthening its attractiveness for digital investments, accelerating sectoral innovation, and solidifying its leadership in technological advancement on the continent. This move underscores Mauritius's ambition to become a pioneer in Africa's digital economy.

Starlink launches LEO services in Lesotho

Lesotho has become the latest African nation to benefit from Starlink's satellite internet services. The service aims to deliver high-speed, low-latency internet even in the most remote and mountainous regions, and Lesotho's rugged terrain provides an ideal testing ground for the technology's capabilities.

The Lesotho Communications Authority (LCA) awarded Starlink a ten-year operating license in April 2025, following a regulatory overhaul that recognised the potential of low Earth orbit satellite technology. This policy change, formalised earlier that year, paved the way for Starlink Lesotho (Pty) Ltd to begin offering commercial internet services to households and businesses across the country. The initiative is seen as a major step toward fostering a more digitally inclusive future for Lesotho, especially in rural areas where traditional connectivity has long been lacking.

Starlink's hardware costs $410.80, with a monthly subscription fee of $52.70. To improve affordability and expand access, the company also offers a Minikit option priced at $210.95, targeting lower-income users and communities that need connectivity solutions.

However, the arrival of Starlink has sparked debate within the local telecommunications sector. Mohale Ralebitso, managing director of Vodacom Lesotho, expressed concerns over the lack of local ownership, criticising the foreign entrant for not establishing local equity before launching. Ralebitso urged regulators to enforce policies requiring local participation, emphasising that a shareholding component would foster job creation, tax contributions, and economic dividends — benefits that terrestrial providers have traditionally contributed to the local economy.

Civil society voices similar worries, cautioning that unrestricted foreign entry could hinder domestic telecom investments and limit opportunities for local companies. These tensions echo wider regional challenges, notably in South

Africa, where Starlink's expansion has been delayed due to laws mandating 30% black ownership in telecommunications firms. To address these requirements, Starlink has proposed a $27.9 million investment in educational infrastructure through an Equity Equivalent Investment Program, though this proposal is still under review.

Despite ongoing debates, the launch of Starlink in Lesotho is widely viewed as a positive development for digital inclusion. The government has committed to closely monitoring the service's performance to ensure it supports national development goals.

"Our mission is to ensure that every Mosotho, from urban centres to mountain villages, can access the tools of the digital age. Starlink is helping us turn that vision into reality," said Mamathe Makhetha, spokesperson for the LCA.

DR Congo secures $515 million in loans for digital transformation

The Democratic Republic of Congo (DRC) is set to advance its digital development with an anticipated $515 million in new loans aimed at supporting its ongoing digital transformation efforts.

Finance Minister Doudou Fwamba Likunde has signed a series of financing agreements with the World Bank, totalling $1.9 billion, which includes a dedicated $400 million allocation for the digital sector. The European Union also contributed €100 million, roughly equivalent to $115 million, to bolster the country's digital initiatives.

The plan aims to expand digital access and promote inclusion, support the development of digital services, enhance digital skills tailored to industry needs, and foster innovation. Key components include extending broadband connectivity to underserved regions, linking schools, hospitals, and universities, and supporting the National Research and Education Network.

The initiative further involves investments to establish a secure government intranet, develop a national data centre, and create shared digital platforms for public services and administrative tools. It also emphasizes training students, teachers, and civil servants in advanced digital skills, alongside funding innovation centres at universities and supporting local technology startups.

These agreements form part of Congolese President Félix Tshisekedi's vision to leverage digital technology as a catalyst for national integration, good governance, economic growth, and social progress.

Africa's 5G ambitions accelerate amid ongoing challenges

5G technology is gaining momentum across Africa, driven by increasing investments and expanding networks on the continent.

According to the African Telecommunications Union (ATU), by 2024, 79 telecom operators across 41 countries had committed to 5G investments, with 35 operators already operational in 21 nations. Since Vodacom Lesotho launched Africa's first 5G network in 2018, the region has seen rapid progress. As of June 2021, seven active commercial 5G networks operated within five markets, and by 2024, over 26 million consumers had subscribed to 5G services, with approximately 600 million unique mobile subscribers across sub-Saharan Africa.

The International Telecommunications Union (ITU) projects that by 2024, 25% of mobile coverage in urban areas will be 5G, a significant rise from the 73% coverage for 4G. Including North African nations such as Tunisia and Egypt, where commercial 5G has been available since February and June 2025 respectively, the total number of African countries with active 5G networks is expected to be higher. Data from the Ecofin Agency indicates that 46 operators are now active in 27 countries, exemplifying the continent's growing commitment to 5G deployment.

Despite this positive outlook, numerous obstacles still hinder widespread adoption of 5G across Africa. The African Union Telecoms Agency (UAT) highlights five main barriers: high device costs, limited practical use cases, infrastructure challenges, spectrum availability, and regulatory issues. While 5G-enabled smartphones can be purchased for as little as USD 150, affordability remains a barrier for large segments of the population, necessitating interventions by governments, regulators, and operators to make devices more accessible and to foster continued 4G growth alongside 5G expansion.

Furthermore, the UAT notes that the lack of concrete applications for 5G — such as smart cities, autonomous production, healthcare monitoring, and IoT innovations — limits its adoption to primarily improving internet speeds. This has led to concerns that 5G remains a luxury product, mainly serving wealthy individuals and businesses, rather than being a transformative tool for broader economic development.

Additional challenges include the high costs of deploying 5G infrastructure, the limited availability of essential spectrum, inadequate optical fibre networks, and the absence of clear standards for cross-border data exchange. Addressing these issues is crucial for making 5G a catalyst for growth, with the ITU emphasising that tackling these obstacles will enable Africa to harness the full potential of 5G for economic development.

Looking ahead, the GSMA estimates that by 2030, 5G could contribute approximately USD 10 billion to Africa's economy, accounting for about 6% of the total mobile sector's economic impact, underscoring both the opportunities and the importance of resolving existing barriers to widespread 5G adoption.

Madagascar launches digital healthcare initiatives

The Malagasy government has introduced a smart queue management system and a digital medical records platform in two university hospitals in Antananarivo as part of its pilot digitalisation project for public hospitals.

These advancements aim to improve care coordination, streamline hospital operations, and provide faster, more consistent patient services. The initiative signals a move toward wider adoption across the country in the coming months or years.

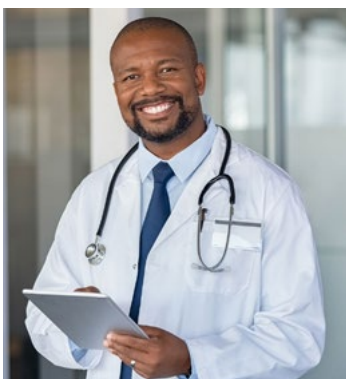
However, the success of these digital health tools hinges not only on technology deployment but also critically on having a well-trained workforce capable of managing and utilising these systems effectively. The Ministry of Digital Development, Posts and Telecommunications emphasised that this initiative seeks to sustainably enhance healthcare efficiency and support hospital staff.

According to Madagascar's "National Digital Health Strategy 2023–2027, only about 2% of healthcare workers involved in digital health had received relevant training in 2023. The strategy notes that specialised digital health skills are still under development and are being built alongside the rollout of new initiatives, with support from partners. The ministry recognises that advancing digital health will require a comprehensive review of existing skills, job functions, and the training system within the health sector.

To address skill gaps, a budget of approximately US$91,000 US dollars has been allocated to standardise staffing levels and enhance skills, although digital health training was not initially a top healthcare expenditure priority. The government has set a target to increase the proportion of health workers trained in digital health to 35% by 2027.

Nonetheless, experts caution that developing digital skills alone will not guarantee successful digital transformation. Critical factors include securing adequate funding, ensuring reliable infrastructure such as internet connectivity and data centres, providing modern equipment, and maintaining that equipment regularly. Additionally, safeguarding data security and raising user awareness are vital to ensuring the effective, sustainable adoption of digital health solutions.

This holistic approach underscores the complexity of digital health transformation, requiring coordinated efforts across technology, workforce capacity, infrastructure, and policy to truly enhance healthcare delivery in Madagascar.



Cerillion and MVNX enhance MVNO ecosystem

MVNX has upgraded and expanded its use of Cerillion's suite to streamline operations and accelerate the onboarding of new MVNOs.

Since partnering with Cerillion in 2020, MVNX has utilised Cerillion's Convergent Charging System and Enterprise Product Catalogue to grow its MVNE business. Now, by integrating additional modules — CRM Plus, Revenue Manager, and Service Manager — the platform supports both prepaid and postpaid subscribers within a unified, multi-tenant digital BSS/OSS environment. This comprehensive upgrade simplifies architecture, providing a single source of truth for customer management, product offerings, and revenue assurance.

MVNX's platform now enables easier integration for MVNO partners via Cerillion's open APIs, certified by TM Forum, allowing them to incorporate their own CRM and self-service applications seamlessly. This flexibility accelerates MVNO launch times and enhances service agility.

"With Cerillion's pre-integrated BSS/OSS Suite, we've made it faster and easier for brands to establish and expand their MVNO operations. Our solution supports both prepaid and postpaid services and allows us to offer our partners multiple host operator options across Cell C and MTN networks — all through a single, streamlined platform," said Valde Ferradaz, CEO of MVNX.

MVNX currently serves 14 active MVNOs, including brands like TFG Connect, Mr Price Mobile, uConnect, Spot Mobile, and Standard Bank Mobile, with several more under development. Its upgraded platform positions MVNX to support further growth across South Africa and expansion into the broader African market, responding to rising demand for tailored, branded connectivity solutions across the entire African continent.

Namibia allocates N$31 million from Universal Service Fund to bridge digital divide

Namibia has disbursed N$31 million from its newly established Universal Service Fund (USF), part of a total N$145 million allocated over three years to expand ICT access across the country. The funding aims to address gaps in digital connectivity, particularly in underserved regions.

The initial phase, launched in late March, focuses on five regions — Kavango East, Kavango West, Kunene, Ohangwena, and Oshikoto — where 4G coverage remains below 80%. The Communications Regulatory Authority (CRAN) has prioritised these areas to accelerate access.

CRAN CEO Emilia Nghikembua announced that the funds allocated to mobile operator MTC will facilitate free, uncapped WiFi connectivity for 26 schools and four clinics, with services planned to last for seven years. She emphasised that the USF reflects a bold step toward making ICT services accessible to all Namibians, asserting that connectivity is now a fundamental necessity, not a luxury.

Nghikembua estimated that the nine sites established in this first phase will provide connectivity to over 5,000 people who previously had no access. She also highlighted progress in national network coverage, reporting that as of the latest CRAN market data, 91% of Namibians are covered by mobile networks, and urban internet access is nearly 85%. Rural areas are steadily closing the gap, demonstrating tangible results from targeted investments and strong partnerships.

This initiative underscores Namibia's commitment to bridging the digital divide and ensuring inclusive access to ICT services, fostering social and economic development across both urban and rural communities.

OneWeb launches ground station in Angola

Eutelsat, through its subsidiary OneWeb, has announced the inauguration of its ultra-modern ground station in Luanda-Bengo, Angola.

The result of a partnership between OneWeb Angola and the Angolan Communications Authority (INACOM), this facility represents a vital bridge between the low-Earth orbit constellation and terrestrial digital infrastructure in southern Africa.

"As part of our ongoing commitment to bridging the digital divide, this important milestone will play a vital role in supporting inclusive economic growth and digital transformation priorities," said Eutelsat Group in a statement. The company also highlighted the importance of this project in bringing high-speed, low-latency connectivity to the most remote areas.

This station acts as a Satellite Network Portal that connects low Earth orbit (LEO) satellites to terrestrial infrastructure. It allows Eutelsat OneWeb to offer telecommunications services to businesses, public institutions, and telecom operators, using a B2B model. The project, which required four years of construction and technical coordination, is designed to strengthen digital inclusion in Angola and beyond by efficiently connecting rural and underserved areas.

This initiative is part of a broader movement to deploy satellite gateways in Africa, where Eutelsat already has stations in Ghana, Senegal, Tanzania, South Africa, Mauritius, and will soon expand to other countries. It comes as Angola seeks to assert its position as a regional digital hub. The country is increasing investments to modernise its telecommunications infrastructure and expand internet access.

Yas Comores announces €25 million investment in digital infrastructure

Yas Comores, formerly known as Telma, has revealed plans to invest €25 million in its telecommunications network over the coming years.

CEO Christophe Olivier announced that the company secured a loan from the World Bank, enabling this significant expansion. The announcement was made during a launch event celebrating the 50th anniversary of Comoros' independence.

The funds will be directed toward accelerating infrastructure investments and deploying new services based on the latest technological advancements. Notably, Yas Comores has launched fibre-to-the-home (FTTH) services, currently available in a quarter of Moroni, with plans to extend coverage across the entire metropolitan area by September and then to the broader country.

In addition, the company is fast-tracking the expansion of its 5G network, which was launched last May in downtown Moroni, with full coverage of the capital expected by the end of July. This move aims to position Yas as a key player in the country's evolving telecom landscape, challenging the longstanding monopoly of the state-owned Comores Telecom.

Since entering the market in December 2016, Yas has been actively working to establish itself and stay competitive. Notably, it was the second operator to introduce 5G, launching the service just two weeks after Comores Telecom, which has historically been the sole provider of fiber optics to individuals in the country.

As of the end of December 2023, Comores Telecom reported approximately 655,000 mobile subscribers out of an estimated population of 850,000. It also served 2,500 fixed-line internet subscribers through ADSL, FTTH, dedicated lines, and WLL. By the end of March 2025, Yas reported around 300,000 active mobile subscribers, 208,000 internet subscribers, and 124,000 users of mobile financial services, reflecting its growing footprint in the nation's digital economy.

This investment signifies Yas Comores' commitment to expanding connectivity, improving service quality, and fostering digital inclusion across the islands, positioning it as a key driver of the country's telecom modernization efforts.

Tanzania hopes to rise as East Africa's next tech hub

Ranked 7th in East Africa in StartupBlink's 2024 Startup Ecosystem Index, Tanzania is accelerating its efforts to emerge as a regional technology hub. The government is actively focusing on establishing dedicated technology hubs, enhancing digital skills, and improving access to financing to foster startup growth and reduce structural unemployment.

A significant marker of this progress is the report from the Tanzania ICT Commission in March 2024, which indicated that about 21 million young Tanzanians aged 15 to 34 are self-employed within the technology and innovation sectors — mainly in startups and online businesses. This group accounts for roughly 33% of the country's total population of approximately 61.7 million, based on the 2022 census.

Tanzania benefits from a predominantly young population, with over 60% under the age of 25, and has experienced remarkable digital growth, with internet subscriptions increasing by 86% between 2020 and 2024, according to the Tanzania Communications Regulatory Authority (TCRA). This youthful demographic and rapid digital expansion present promising opportunities for innovation and economic diversification.

However, compared to regional leaders like Kenya and Rwanda — ranked first and third respectively in East Africa per the World Bank's Digital Readiness Index — Tanzania still faces challenges in digital infrastructure, administrative efficiency, and private sector engagement. To bridge this gap, the country needs to strengthen its digital infrastructure, streamline administrative procedures, and foster more public-private partnerships.

Inspirational benchmarks include Rwanda's data centre investments and Nigeria's fintech ecosystem development. By translating these examples into concrete reforms and sustained investments, Tanzania aims to position itself among the top five technology hubs in the region, unlocking new economic opportunities and reducing unemployment through innovation.

Paratus Zimbabwe and PowerTel to launch national fibre network

Paratus Zimbabwe has announced a significant partnership with PowerTel, a wholly owned subsidiary of Zimbabwe Electricity Supply Authority (ZESA), to develop a new high-capacity national fiber infrastructure in Zimbabwe.

This collaboration aims to establish a resilient, long-distance fibre backbone across the country, with plans to extend connectivity beyond borders to neighbouring nations.

PowerTel holds a license to operate an optic fibre backbone network in Zimbabwe, and following Paratus Zimbabwe's recent licensing approval earlier this year, the two entities will jointly invest in rolling out extensive fibre infrastructure. The initial phase, set to commence within the next six months, will focus on connecting key locations — Plumtree, Bulawayo, and Livingstone — significantly enhancing connectivity in these regions.

"This marks a major step forward in Zimbabwe's digital transformation because this partnership will enable us to deliver on our mission to provide high capacity and affordable connectivity to the people and enterprises of Zimbabwe. We are proud to be working with Paratus Zimbabwe and

to be creating a resilient national long-distance backbone," said Willard Nyagwande, Acting MD of PowerTel Communications.

"This is very good news for Zimbabwe, and we are delighted to be partnering with PowerTel to bring about this landmark deal. Paratus Zimbabwe will be offering an unmatched service through the Paratus Group's quality network. By expanding into Zimbabwe, we will bridge gaps between neighbouring countries and further strengthen our regional connectivity," said Martin Cox, Chief Commercial Officer of Paratus Group. "The Paratus Group is at the centre of Africa's digital revolution, driving and reshaping connectivity across the continent. We are building networks and creating the digital arteries that will connect more and more people in Africa and give them the service and support they need to realize their individual and collective potential."

Airtel ordered to report on service outages and improve quality standards

The Zambia Information and Communications Technology Authority (ZICTA) has instructed Airtel Zambia to submit a comprehensive report explaining the recent service disruptions and outlining measures to prevent future outages.

The regulator responded to concerns over deteriorating service quality by summoning Airtel management, led by Managing Director Hussam Baday, following a data service interruption in Lusaka and Central provinces on 10 June.

ZICTA emphasized its commitment to safeguarding consumer interests and maintaining high-quality ICT services. In its statement, the authority acknowledged the poor Quality of Service (QoS) experienced by some providers and assured the public that it is actively implementing measures to address these issues.

The regulator signalled its readiness to enforce sanctions if service providers fail to comply, including requiring Airtel to pay outage credits in line with consumer protection guidelines. It also clarified that a thorough assessment of the incident is underway, in accordance with the Consumer Protection and Quality of Service Guidelines, which obligate providers to ensure service continuity and communicate promptly with customers during outages.

ZICTA expressed deep concern over the sector's QoS and warned service providers to adhere strictly to regulatory standards. The authority reaffirmed its dedication to protecting consumer rights, fostering high-quality ICT services, and creating a conducive environment for sector growth and innovation.

Talking critical

Joseph Mehawej, Regional Director, DAMM, member of TCCA's TETRA Industry Group

TETRA and broadband: better together

At first glance, they look like competing technologies. Narrowband TETRA versus broadband, moving towards true critical broadband. For organisations facing the challenge of upgrading a critical communications network, do they stay with what they know works, or commit to the technology of the future?

The answer is that both TETRA and broadband are technologies of the future. TETRA will keep doing what it does brilliantly, and broadband will bring additional capability. They will bring a better future by working together.

Built to talk

During the late 1980s, the development project that evolved into TETRA was given one objective. Create a digital radio infrastructure that guarantees voice calls will be transmitted and heard 100% of the time, with a zero failure rate.

The specific task TETRA had to enable, under any conditions, all the time, without a single failure, was 'shoot/no shoot.' The scenario sees a sniper, weapon trained on a suspect, awaiting that order in that precise form of words.

The challenge was to ensure that the word 'no,' would always reach its destination and always be audible, no matter how noisy or chaotic the scene. The noise-suppression technology developed to enable this is the bedrock of TETRA. It is unmatched by any other system.

Built to share data

Broadband was developed to share data. It was given no specific task. It evolved to fulfil a desirable function: to enable the digital universe. We are living in that universe now, with broadband as an increasingly indispensable tool.

Data is the DNA of broadband. Voice is the DNA of TETRA. Broadband was built for open borders and the free exchange of information. TETRA was built to protect people and property, and for the restricted exchange of information. Put them together and they become more than the sum of their parts.

Evolution and revolution

TETRA was specifically developed for the most critical of critical communications: the 'shoot/no shoot' scenario. When the TETRA standard was launched in 1998, there was nothing comparable in terms of voice clarity, stability, resilience and availability. There still isn't. In the meantime, it has continued to evolve.

1998 is a very long time ago in broadband terms. Back then, 'the web' was only just beginning to become a household word. We still had dial-up modems offering 54kbps. We were solidly in Web 1.0 and ready for the first dot.com bubble. Fast forward 27 years and the digital revolution has transformed the web. The computing power of 1998 would barely open an app today.

Interoperability

This is where the two complementary technologies meet. TETRA is vastly complex. It has taken 40 years of the finest minds in telecommunications engineering to achieve the level of voice call quality and security it supports today. For critical communication that relies on voice, there is no comparable option.

With broadband, added-value functions like livestreamed video, drone images, AI analysis and filtering, and push-to-talk apps are enriching critical communications with new and valuable functionalities. The most powerful and effective systems combine the best of both.

Sharing stability and security

TETRA was specifically designed to communicate life or death calls, the original protocols made the infrastructure as close to 100% secure as radio technology allows. Broadband was not built for that purpose, and online security is a multi-billion-dollar industry for that reason. But this does not prevent broadband from being integrated into the secure world of TETRA critical communications. As long as the gateway is secure, broadband can bring all its power to the network.

Resilience and availability

A critical communications system must keep functioning, whatever happens. For this reason, TETRA systems are routinely designed with eight hours of battery backup. If a hurricane has torn down the power lines or an earthquake collapsed a building on top of the local substation, this buffer allows time to get the grid back up and running or to find alternate power sources.

In a disaster scenario, hybrid TETRA-broadband networks will keep running when pure broadband systems may not. They will be hostage to whatever backup the mobile networks have defined. This is typically 30-60 minutes but can be as little as zero. In hybrid configuration, both technologies can continue to do what they are best at, whatever the conditions.

Better together

For networks that rely on stable and resilient voice communication – that is, all critical communication networks – the best achievable solution is to combine the voice power of TETRA with the data power of broadband. Where that is not possible for cost or logistical reasons, TETRA will remain the default technology for critical communication as long as voice remains the primary mode of human interaction.

TETRA's growth trajectory is twofold: it is supporting the refreshment of existing public safety networks while simultaneously driving the digitalization path in transportation, utilities, and critical industrial sectors globally. What is particularly noteworthy is how TETRA has transcended its European roots, which represent 49% of the total TETRA market. Omdia has observed how Asia is the fastest growing region, and now represents 23% of the TETRA market, followed by the growing adoption in the Middle East, and American markets.

TETRA is a continuously evolving narrowband standard that provides the backbone of critical communication systems worldwide. For mission-critical users requiring group voice communication and messaging services using narrowband technologies on dedicated frequencies, TETRA remains the optimal multi-vendor interoperable choice.

Find out more about the benefits and potential of TETRA, and its implementation around the world, at Critical Communications World, 17-19 June 2025 in Brussels, Belgium – www.critical-communications-world.com

Connectivity Gold for the world's mega events

During the Birmingham 2022 Commonwealth Games, I saw the essential role antenna infrastructure and technology played in providing reliable connectivity and access for visitors as well as underpinning critical communications. Just as in Africa, the requirement for connectivity in the UK was a challenge that had to be achieved between venues and while users were on the move.

The 2022 Commonwealth Games was attended by 1.3 million people, the overwhelming majority of whom wanted to connect their portable devices to the internet. This is a major challenge to all mega events, where people now expect to have access to fast, reliable communications and transmission capability. How this is achieved often must depend on what systems are already available at a venue and its environs. Options can include Wi-Fi 6 as an enhanced version of the 2.4/5GHz spectrum - 2.4GHz provides the most coverage at slower transmission speed, while 5GHz gives less coverage but higher data transmission speed - to allow multi-user connectivity. Meanwhile, LTE and 5G provide good communications with the capability for expansion via temporary cell sites. There are also Distributed Antenna Systems (DAS), widely used in stadia, which facilitate multiple-user, high speed connectivity. The network used is often determined by what is already available and the resources available to pay for access to a network.

Whether we're looking at the Commonwealth Games or the Africa Cup of Nations, critical comms are, as it says on the tin, critical. Police, security, emergency and transportation services rely for data transmission and communications on network accessibility and reliability. Here, signal connection is important, as is the security of the network provided by the network operator. However, the most secure network is useless if users can't connect to it or if signals don't get through. Antenna and system design are critical for ensuring communications from, for instance, first responders being received from all locations at an event. Thus, there is a need for robust systems; and if resources permit a degree of redundancy and appropriate back-up systems.

One success of the 2022 games was transport logistics, with columns of buses efficiently and economically moving a million competitors, fans, officials and volunteers between events. Underpinning this was reliable, wide area communications between vehicles and the control centre. The games used bus providers from all over the UK to provide a free transport service.

I used these buses both as a volunteer and spectator and found the communications worked well, particularly given that the different bus operators had different communication, tracking and location systems. GPS/GNSS location solutions with LTE cellular systems for information communication with the control room were used to provide passengers with real time information at smart bus shelters. The buses were also equipped with Wi-Fi for passenger use. Some operators had incorporated Mobile Mark's LTM946 antenna, offering 4x4 MIMO for 5G cellular along with 6 Wi-Fi 6e elements for data distribution, collection and a GNSS element for location or timing.

Modern buses come with an array of technology, electronic ticket validation, passenger counting, CCTV, VHF and UHF communication links. This is true the world over, Africa included. The hardware being concealed within bus ceilings and side panels utilising high performance antennas inside and outside. Data exchange from bus

to control room and back requires appropriate on-board equipment to give both operator and customer what they need. The challenges are cost and installing multi-band high performance, durable antenna systems to deal with film and video streaming by customers and control room communications. High demand for connectivity and network pressure peaks, such as half-time breaks or opening/closing ceremonies, requires robust solutions with deployment of temporary cell sites, or the use of DAS being available options for organisers.

Looking at the critical comms aspect of the Games, it was a complex operation between police, military, first responders and in house security that was underpinned by cellular and TETRA two-way radio that proved successful in maintaining communications with all involved in making the games safe, secure and enjoyable.

Looking forward from Birmingham 2022 and at challenges for antenna solutions for super-fast communications at mega events, the number of elements required for future lightning-fast data transmission rates, alongside increasing frequency ranges, are going to be challenging. This is as true in the UK as it is in Europe, Asia, and Africa. 5G mmWave running at high frequency and extremely high data rates pose a challenge as radio waves at such frequencies act more like directed light from a bulb, rather than receive anywhere radio waves. These characteristics require both the send and receive antennas to be pointed at each other.

Consequently, a new technology named 'Smart Antennas' is emerging. This uses automated beam steering, which electronically aims the antenna at users' devices to achieve maximum data rates. The system uses Massive MIMO arrays, which have dozens or even hundreds of individual radiating elements which can be switched and aimed as required.

With the growth of Smart Cities and the prevalence of IoT, the demand for appropriate antennas is a design challenge, as with 5G using MIMO technology requiring multiple data channels for transmitting data concurrently. In the antenna industry we are working to satisfy the needs of users and the technology for connectivity. Be that at an event, on a bus, in a smart building or cheering the winners at the finishing line - innovative developments will remain an essential part of these solutions, in the UK, the USA, Africa and beyond! ■

Linda Clark, MD, Mobile Mark Europe

Angola Cables and MEO to build transatlantic digital 'Super Corridor'

Angola Cables has announced a strategic partnership with Portuguese firm MEO Wholesale Solutions aimed at significantly enhancing global connectivity.

Together, they are developing a high-capacity digital 'super corridor' designed to provide direct access for European businesses to markets across the United States, South America, and Africa. This ambitious project will strengthen the interconnection of MEO's extensive data centre networks and expand its telecommunications services worldwide by leveraging Angola Cables' robust subsea cable infrastructure and data centre assets.

The collaboration also seeks to establish a direct link between MEO's data centres in Portugal and Angola Cables' facility in Fortaleza, Brazil, utilising the South Atlantic ring of submarine cables. This connection will create an integrated Atlantic digital ecosystem that enables seamless data transfer across continents, supporting enterprise needs and global operators alike. The initiative aims to facilitate faster, more efficient transit of digital traffic from Europe to South America, Africa, and North America, with Portugal serving as a strategic entry and exit point. This network will especially benefit Portuguese-speaking communities on both sides of the Atlantic, ensuring content and services are delivered swiftly and reliably.

According to Samuel Carvalho, Angola Cables' Chief Marketing Officer, the project will engineer a 'super business corridor,' leveraging existing submarine cables connecting Lisbon to the Americas. He explained that this optical link will support rapid data delivery, enabling content providers and enterprises to meet growing demands for high-speed, low-latency digital services across multiple regions.

Ana Carla Sousa, director of MEO Wholesale Solutions, emphasised that the partnership marks a crucial step in positioning Portugal as a leading digital hub within Europe. It will provide access to a vast network of over 66 data centres globally and over 930 data centres combined, including more than 500 cloud connection points, all interconnected through high-performance virtual networks.

Both companies are committed to sharing business models and developing joint services that capitalise on their combined infrastructure. By doing so, they aim to create new commercial opportunities and strengthen their roles in the global digital economy. Carvalho highlighted the importance of this alliance in supporting Portugal's ambition to become a strategic gateway for digital traffic between Europe, the Americas, and Africa, ultimately fostering innovation and economic growth in the region.

Cameroon's Telecom regulator fines MTN Cameroon and Orange Cameroon

Cameroon's telecommunications regulatory authority has imposed a combined fine of approximately 2.6 billion CFA francs on the country's two leading mobile operators, MTN Cameroon and Orange Cameroon.

The penalties, announced publicly on July 7 by TRB Director General Philémon Zoo Zame, stem from violations related to coverage, service quality, and pricing commitments.

The fines follow inspections conducted between April and May 2024 along major corridors — including Yaoundé-Mbalmayo-Ebolowa-Kyé-Ossi — and in key cities such as Yaoundé and Douala. The regulator examined both the network performance and the operators' adherence to license obligations, revealing notable deficiencies.

Orange Cameroon was fined a total of 1.6 billion CFA francs: 1.4 billion CFA francs for failing to meet coverage and quality standards, and an additional 200 million CFA francs for irregularities in pricing transparency and non-compliance with regulations. The violations included malfunctioning opt-out codes for value-added services — an issue directly affecting consumer rights — and concerns over unfair pricing practices.

MTN Cameroon received a fine of 1 billion CFA francs for similar shortcomings in network coverage and service delivery.

Zame emphasized that these actions underscore the regulator's commitment to enforcing service quality and consumer protection: "laxity in meeting regulatory obligations will not be tolerated."

Both telcos had not issued public comments on the fines as of the publication date. This enforcement signals Cameroon's broader efforts to strengthen telecom sector regulation amid rapid digital growth and increasing consumer expectations.

AXIAN Telecom raises $600 million in bond offering

AXIAN Telecom has successfully priced its US$600 million Senior Notes due in 2030. The bond offering, announced on June 25, 2025, garnered strong interest from international investors.

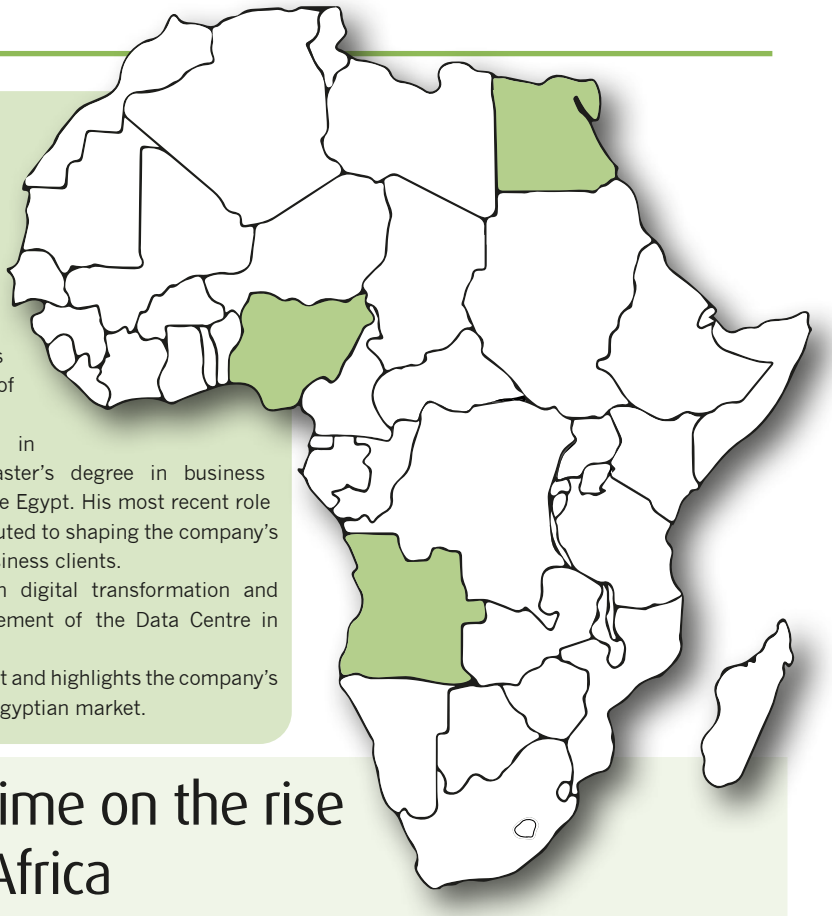
The initial price thoughts were set at around a 7.875% yield, but the notes were ultimately priced with a coupon of 7.250%, translating to a yield of 7.375%. This achievement is notable given the challenging global market conditions. The orderbook peaked at approximately 3.0 times oversubscription, reflecting robust demand from a diverse range of high-quality institutional investors.

The funds raised will be used to refinance existing notes and a term loan, as well as for general corporate purposes. These include expanding AXIAN Telecom's digital infrastructure and advancing its mission of fostering sustainable growth and digital inclusion across its African markets. As part of the issuance, AXIAN Telecom published a Sustainable Development Impact Disclosure, outlining its plans to invest in infrastructure, increase smartphone access, promote mobile financial services, and enhance digital connectivity across its operations.

This successful issuance demonstrates increasing investor confidence in African issuers and positions AXIAN Telecom as a key driver of innovation and connectivity continent-wide.

"This bond issuance reflects the strength of our diversified business model and the trust investors have in our long-term vision. It enables us to accelerate our mission of delivering inclusive digital transformation and connectivity across Africa," said Hassan Jaber, CEO of AXIAN Telecom.

Hesham Mahran appointed CEO of Orange Egypt



The Board of Directors of Orange Egypt has announced that Hesham Mahran will become the company's new Chief Executive Officer and Managing Director, effective 1 August 2025.

Mahran will succeed Eng. Yasser Shaker, who will now serve as Chairman of Orange Egypt following his recent appointment as CEO of Orange Middle East and Africa, taking over from Jérôme Henique.

Hesham Mahran brings more than 25 years of experience in telecommunications and information technology. He holds a master's degree in business administration and has held multiple leadership positions within Orange Egypt. His most recent role was Chief Officer for the Business Sector, where he significantly contributed to shaping the company's enterprise strategy and developing integrated telecom solutions for business clients.

Throughout his career, Mahran has led several key initiatives in digital transformation and infrastructure development, including the establishment and management of the Data Centre in Egypt's New Administrative Capital.

His appointment underscores Orange Group's confidence in local talent and highlights the company's ongoing commitment to strengthening its presence and growth in the Egyptian market.

Cybastion invests $170 million in Angola

Cybastion has announced a landmark $170 million partnership with Angola's national telecommunications provider, Angola Telecom E.P., aimed at strengthening the country's digital infrastructure and cybersecurity resilience.

This collaboration is part of Cybastion's broader Digital Fast Track initiative, designed to accelerate Africa's digital transformation and position Angola as a regional leader in the digital economy. The initiative emphasizes building cybersecurity capabilities, enhancing digital sovereignty, and developing local talent through comprehensive training programs.

An initial $25 million will be dedicated to establishing a national cybersecurity agency and launching cybersecurity training in partnership with the Cisco Networking Academy. Additionally, the investment will fund critical infrastructure projects, including the deployment of undersea cables connecting Luanda to the port city of Lobito, significantly improving Angola's connectivity and digital backbone.

This strategic move builds on a memorandum of understanding (MoU) signed earlier this year during the Mobile World Congress 2025 in Barcelona, reflecting Angola's commitment to leveraging advanced technologies for national development, regional competitiveness, and digital inclusion.

"The deal is about enhancing Angola's digital transformation. It will also facilitate the deployment of undersea cables from Luanda to Lobito to improve national connectivity," said Thierry Wandji Ketchiozo, CEO of Cybastion.

Cybercrime on the rise across Africa

Cybercrime continues to expand across the African continent, with some regions experiencing cyber offences constituting up to 30% of all reported crimes, particularly in West and East Africa. This alarming trend was detailed in Interpol's latest Cyber Threat Assessment Report.

The annual report highlights a significant increase in digital attacks within African member states, noting that cyber threats are becoming more sophisticated and diverse. Among the most prevalent are online scams such as phishing, ransomware, business email compromise (BEC), and digital sextortion. Several attacks have targeted critical infrastructure, including institutions like the Kenya Urban Roads Authority and Nigeria's National Bureau of Statistics.

Criminal organisations operating across borders are heavily implicated in these activities. In West Africa, groups such as the transnational syndicate Black Axe have been linked to BEC fraud operations involving millions of dollars. The report reveals that South Africa and Egypt recorded the highest number of ransomware detections in 2024, with 17,849 and 12,281 cases respectively. Nigeria and Kenya follow closely behind, with 3,459 and 3,030 cases respectively, underscoring the vulnerability of the continent's most digitalised economies.

Interpol also warns of a surge in digital sextortion cases, which have been reported in 60% of African countries. Disturbingly, many of the compromising images used in these crimes are often generated or manipulated through artificial intelligence.

Despite the rising threat landscape, the capacity of African nations to respond remains limited. A vast majority of countries recognise that significant improvements are needed in law enforcement and prosecution capabilities. Many lack vital systems such as incident reporting, digital evidence management, and threat databases. Only around 30% of nations have established notification systems, with even fewer possessing dedicated digital evidence processing systems or cyber threat databases.

Legal and institutional frameworks also present hurdles. About 75% of surveyed countries admitted that their current legal provisions are insufficient to combat cybercrime effectively, while 95% cited a lack of training, resources, or specialised tools. Regional and international cooperation remains sluggish, with 86% of countries indicating that slow investigation procedures, limited operational networks, and restricted access to data stored abroad hamper efforts. Additionally, 89% see a need to enhance collaboration with the private sector.

However, there have been some positive developments. Several African states have aligned their legislation with international standards, invested in specialised units, and participated in major operations such as Serengeti and Red Card, which have resulted in over 1,000 arrests.

Interpol advocates for stronger intergovernmental and private sector cooperation, as well as the adoption of emerging technologies to better anticipate and counter cyber threats. The report forms part of the AFJOC (African Joint Operation against Cybercrime) initiative, supported by the United Kingdom, aimed at bolstering cybersecurity capabilities across Africa.

Nigeria moves towards sustainable telecom power with NCC and REA partnership

The Nigerian Communications Commission (NCC) and the Rural Electrification Agency (REA) have announced a strategic partnership aimed at reducing the telecommunications sector's heavy reliance on diesel generators.

Currently, telecom operators in Nigeria consume over 40 million litres of diesel monthly, incurring approximately $350 million annually to power infrastructure nationwide.

To address this challenge, the NCC-REA Collaboration Committee will focus on deploying renewable energy solutions — particularly solar and other sustainable sources — for telecom sites, especially in rural and underserved areas. The partnership also emphasizes aligning funding mechanisms and establishing impact monitoring frameworks to ensure the success and sustainability of these initiatives.

"Whether powering a base station or enabling a child's access to digital learning, this partnership can fundamentally change realities and bring opportunities closer to communities," said Dr. Aminu Maida, NCC Executive Vice Chairman.

He stressed that beyond infrastructure, the initiative aims to promote digital inclusion, close existing gaps, and foster shared prosperity across Nigeria.

"Merging renewable energy infrastructure with digital connectivity can catalyze sustainable development in underprivileged areas, empowering communities and creating a more resilient telecom ecosystem," said Abba Aliyu, Managing Director of REA.

This collaboration signals Nigeria's commitment to building a greener, more inclusive digital economy, reducing operational costs for telecom providers, and extending reliable connectivity to all regions through sustainable energy innovations.

Talking satellite

Kallie Carlsen, MD of Paratus South Africa

Africa's connectivity landscape: the challenges and solutions, and the role of satellite technology

The demand for increased connectivity across Africa is determined and shaped by the continent's unique geography, population distribution and infrastructure. Africa spans vast geographical areas with low population density and this makes traditional infrastructure deployment expensive and therefore both economically and logistically challenging.

Another major challenge in many regions is unreliable power infrastructure. This means that these countries need connectivity solutions that have low power requirements or independent and backup power sources. Another complication is limited terrestrial infrastructure, with fibre connectivity being concentrated in urban centres and coastal regions. At the same time, there is an urgent need for affordable solutions, given the economic constraints across most markets, as well as resilience due to all the harsh environmental conditions and infrastructure vulnerabilities.

Connectivity demands vary significantly across the continent. Southern Africa, including South Africa, Botswana and Namibia, benefits from more developed infrastructure but faces high demand for reliable backup solutions due to power instability and the need for backhaul redundancy. East African nations such as Kenya, Tanzania and Uganda have strong mobile penetration with a growing demand for high-capacity solutions for both business and education sectors. West African countries, such as Nigeria and Ghana, have dense urban populations that need high-capacity solutions alongside remote resource sector connectivity. Central African nations, including DRC, have minimal existing infrastructure and a critical need for basic connectivity across vast territories. North Africa generally has more developed fixed-line infrastructure, but this region is now experiencing growing demand for high-capacity wireless solutions.

Resource-rich African countries can prioritise industrial connectivity for mining and oil/gas operations, while service-oriented economies on the continent tend to focus more upon urban business connectivity and digital inclusion initiatives.

Low Earth orbit (LEO) satellite technology offers key advantages, but it is not a universal solution for Africa's connectivity challenges. Its strengths include low latency, high bandwidth, rapid deployment and wide coverage footprint, and is therefore ideal for remote industrial sites, disaster recovery, backup solutions, rural schools and clinics, and temporary project sites. However, it faces limitations including cost constraints, licensing complexity, terminal availability and weather vulnerability. LEO is transformational for specific use cases but is best when integrated with, rather than replacing, terrestrial infrastructure, particularly in population centres where fibre and mobile connectivity are more economical at scale. LEO works best as part of a connectivity ecosystem rather than as a standalone solution.

The integration of geostationary Earth orbit (GEO), medium Earth orbit (MEO) and LEO satellites is creating new opportunities across Africa. These different orbital satellite technologies provide complementary coverage profiles, which enable application-specific deployment that uses the right satellite technology for specific use cases. The multi-layered approach delivers significant redundancy benefits and provides enhanced reliability for critical communications. Telecommunications providers are now able to offer customised solutions based on specific client needs rather than one-size-fits-all satellite packages. A competitive ecosystem with multiple operators is therefore driving innovation and price competition, and this multi-layered approach has accelerated market development.

The mining sector in Africa is a strong example of where satellite connectivity adds strategic value. In remote operations, connectivity supports technologies such as automation, remote equipment monitoring and predictive maintenance. It also improves worker safety by enabling the tracking of staff movements and monitoring environmental factors like dust, gas levels or temperature to ensure safe conditions. In addition, satellite connectivity supports sustainability goals by enabling data collection that helps monitor environmental performance. Given the high operational value of mining sites, these locations often justify the use of premium connectivity solutions, whether as a primary service or a backup to terrestrial links.

Making satellite connectivity affordable in Africa is a complex issue. Business case viability is increasingly evident for enterprise applications where the investment can be justified by the numerous operational benefits. However, the barriers for consumer adoption remain because services are still prohibitively expensive for individual consumers that are not offered any subsidisation. Government initiatives are making satellite connectivity more viable for targeted applications, such as for rural schools and healthcare facilities. The price trajectory is encouraging, and costs are declining as competition increases and technology advances.

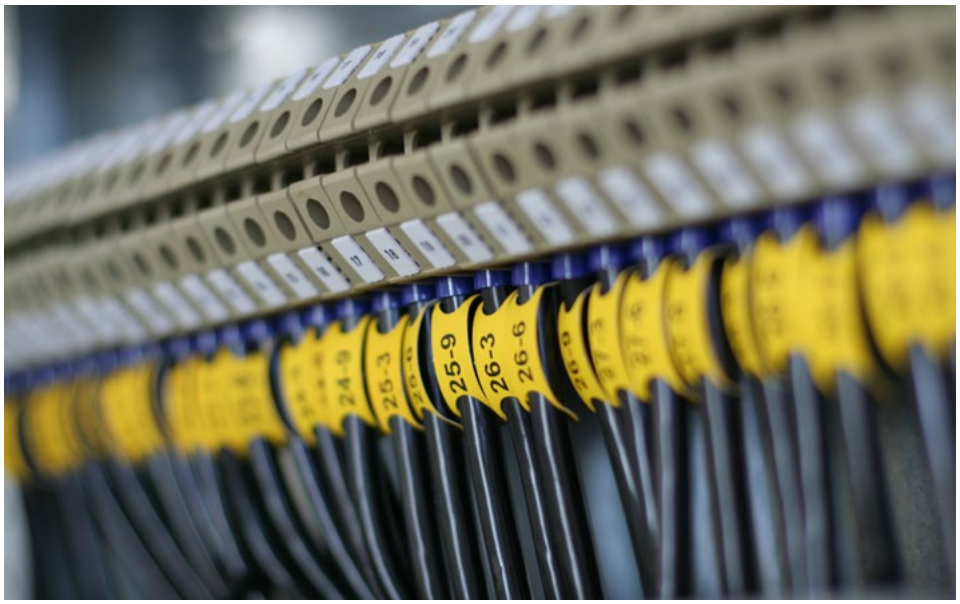
While Africa will remain mobile-first for the foreseeable future, satellite connectivity will be increasingly embedded in the connectivity ecosystem as a critical complement to terrestrial solutions, particularly as hybrid network architectures become more sophisticated.

The future of network automation in Africa

Samar Mittal, Vice President and Head of Cloud and Network Services MEA, Nokia

Automation is reshaping industries worldwide, and for Africa's mobile network operators (MNOs), its potential is immense. From optimising processes and improving cost efficiency to enhancing customer experience, automation is revolutionising network management. By reducing operational timelines and human errors, automation allows MNOs to deliver services faster, optimise network performance, and drive monetisation.

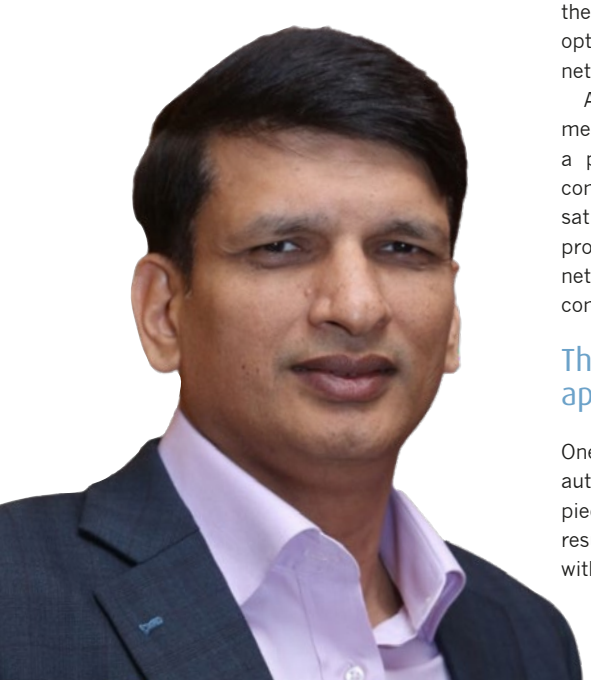
In Africa, where telecom operators manage a wide spectrum of technologies — ranging from 3G to cutting-edge 5G — automation serves as a unifying force that enhances operations regardless of where an operator is on its technological journey. Zero-touch automation, artificial intelligence (AI)-driven efficiencies, and predictive network maintenance are becoming essential components for ensuring long-term competitiveness and sustainability.



The measurable benefits of automation

Quantifying the impact of automation varies depending on an operator's level of investment, but early results demonstrate significant returns. Nokia's work with Safaricom Kenya, for example, has shown that AI-driven energy-saving solutions can lead to notable cost reductions. In some transformation projects, process efficiencies have improved by 50-60%, enabling faster service delivery and better customer satisfaction.

Automation is a journey, not a one-time implementation. Operators that strategically invest in automation progressively unlock new benefits. By reducing the time required for anomaly detection and correction by 20-30%, automation enhances network stability, minimises disruptions, and improves service quality. As MNOs continue down this path, their ability to monetise services and enhance customer experiences will continue to expand.



The core reasons for automating networks in Africa are clear: efficiency, cost savings, and improved customer experiences. With rising energy costs and inflationary pressures affecting the continent, operators must find ways to optimise resources and reinvest savings into network expansion.

Additionally, automation helps operators meet the growing demands of consumers. If a process that once took weeks can now be completed in days — or even hours — customer satisfaction improves dramatically. Faster service provisioning, reduced downtime, and proactive network maintenance all contribute to a more competitive telecom landscape in Africa.

The pitfalls of a piecemeal approach

One of the key lessons learned from global automation projects is that a fragmented, piecemeal approach does not yield sustainable results. Operators that deploy automation without a clear long-term blueprint risk investing in tools that become obsolete as network architectures evolve.

Today's networks are transitioning to cloud-native functions (CNFs) and software-defined architectures. Without a long-term vision — spanning at least 5-10 years — automation efforts may lack scalability and integration potential.

Instead, MNOs should define a holistic automation strategy that considers multi-vendor environments, interoperability, and future-proofing. A structured roadmap ensures that each investment contributes to a broader transformation, enabling operators to seamlessly integrate new technologies and maximise their automation ROI.

Overcoming cost concerns amidst hyper-automation

Many African MNOs operate within tight financial constraints, leading to concerns about the capital expenditure (CapEx) required for automation. However, automation does not demand an all-at-once investment. Instead, operators can take a phased approach — starting with low-hanging fruit in their automation journey and reinvesting savings into further improvements.

The industry follows the TM Forum's automation maturity model, which ranges from Level 0 (manual processes) to Level 5 (full hyper-automation). By gradually advancing from basic automation to AI-driven closed-loop networks, operators can reap incremental benefits without

overwhelming their budgets. The key is to start with strategic automation implementations that generate immediate efficiencies, then use those gains to fund the next stage of automation.

Indeed, as automation maturity increases, the industry is moving toward hyper-automation — a zero-touch, zero-wait, zero-trouble and zero-trust model that eliminates human intervention. In this model, networks are self-monitoring and self-healing. AI and machine learning detect anomalies, diagnose issues, and implement corrective actions without manual oversight.

Globally, some of the most advanced operators are already reaching Level 3 and Level 4 automation, with plans to achieve full hyper-automation in the coming years. While African MNOs are at different stages in their automation journey, they are quickly progressing. Given the continent's scale, population growth, and increasing demand for digital services, there is no reason to believe that African operators will stop at intermediate levels of automation. Instead, they are likely to push forward toward full automation to meet market demands and enhance network resilience.

Automation beyond telecom

While network automation is primarily associated with telecom operators, its benefits extend to other industries. In Africa, automation is gaining traction in sectors such as public safety and mission-critical communications, utilities, railways and manufacturing.

Automation is also becoming a critical component for data centres. As Africa's data centre industry expands to meet the continent's growing cloud computing and digital storage needs, automation is playing a vital role in infrastructure management, bandwidth optimisation, and service provisioning. The use cases in data centres differ from traditional telecom automation, but the underlying principles of efficiency, security, and cost optimisation remain the same.

Of course, with increasing digitisation comes heightened security risks. Automation is not just about efficiency — it is also a crucial tool for strengthening cybersecurity. By leveraging AI-driven threat detection and response mechanisms, networks can identify and neutralise threats before they escalate. Security automation ensures that African MNOs and enterprises are not only optimising their networks but also safeguarding them against evolving cyber threats.

Africa's automation - a path to the future

Africa's automation journey is poised for significant growth. Over the next 5-10 years, operators will continue toward higher levels of automation, driven by the need for efficiency, cost savings, and improved customer experiences. Automation will not stall at Level 3 — it will continue evolving, mirroring global trends. With the increasing adoption of AI, cloud-native functions, and predictive analytics, African operators will accelerate their automation initiatives, positioning themselves as leaders in the global telecom landscape.

The future of network automation in Africa is not just about improving efficiencies — it is about transforming the industry, driving innovation, and shaping the digital future of the continent. Those who embrace automation will be the ones to thrive in the next era of telecommunications. ■

Closing the loop: embracing the circular economy

In an industry built on speed and constant innovation, sustainability might seem like a strange bedfellow. Yet, for telecommunications companies, device manufacturers, and tech lifecycle partners, the circular economy isn't just a noble idea — it's becoming a business-critical imperative.

The telecom sector is responsible for a growing share of the world's electronic waste (e-waste), from smartphones all the way through to cell towers and server racks. With millions of devices sold each year and infrastructure expanding at pace — particularly in emerging markets — the question is no longer whether the sector should engage with sustainability, but how to do so effectively.

Cue the circular economy: a system that replaces the traditional 'take-make-dispose' model with one focused on repair, reuse, refurbishment, and recycling. By extending the lifespan of products and materials, companies can reduce environmental impact, improve cost efficiency, and even unlock new revenue streams.

For Julia Evans, Group Operations Director at TXO, this approach is foundational: "as Africa's telecoms landscape continues to expand at pace, sustainable infrastructure solutions are crucial," she says. "Embracing a circular economy approach gives organisations across the continent the tools to extend asset life, reduce environmental impact, and build networks that are both cost-effective and resilient."

Central to circularity

With their vast customer bases and constant contact points, telecom and mobile companies are well-placed to drive change — not only through products, but also through messaging and incentives.

"From a consumer perspective, these companies are uniquely positioned to influence the behaviour of their customers and through this to promote sustainable practices," says Mark Williams-Wynn, CTO of EWaste Africa. "Practical ways that they can promote sustainable practices include incorporating design-for-repair and design-for-reuse principles in their devices to ensure longer product lifespans and facilitate easier refurbishment. To influence the behaviour of their customers, they can implement take-back schemes, rental models, or device subscription services to increase the return and responsible handling of used electronics."

Yolandi Holm, National On-Site Manager at EnviroServ, agrees, noting the dual responsibility to educate and act: "telecommunications companies, device manufacturers, and others in the communications market can play a key role in promoting a circular economy by focusing on sustainability through material reuse, recycling, and product longevity."

Awareness campaigns are fundamental to shifting consumer habits and ensuring devices don't end up in landfills — or worse, in informal and unsafe recycling operations.

"As key players in communications, these companies also have a critical role in educating consumers about the circular economy," shares Williams-Wynn. "They can educate on what the circular economy is, why it matters, and how individuals can contribute through their everyday habits. This includes raising awareness about the environmental and social impacts of e-waste, and the importance of responsible consumption."

Building better from the start

Not all e-waste is created equal. Some devices are designed to last, while others barely survive a two-year contract a.k.a. planned obsolescence. That's why the principles of eco-design are essential.

"From conceptualisation to design, they can think of the circular economy," says Holm. "Implementing recycling programmes for end-of-life products ensures valuable materials are recovered, while reducing e-waste. Additionally, adopting sustainable manufacturing practices and using eco-friendly materials helps reduce environmental impact throughout the product lifecycle, supporting a circular economy and minimising waste."

Williams-Wynn breaks it down further: "this could include incorporating design-for-repair and design-for-reuse principles in their devices to ensure longer product lifespans and facilitate easier refurbishment as well as implementing take-back schemes, rental models, or device subscription services to increase the return and responsible handling of used electronics."

In practice, this might mean ditching glue in favour of screws, using modular components that can be easily replaced, or choosing materials that can be cleanly separated during recycling.

Holm highlights another innovation: digital passports, which provide transparency into a product's material sourcing and environmental footprint, "enabling owners to make informed decisions about the sustainability of their devices."

From take-back to take-forward

When it comes to technology take-backs, theory is good, but practice is better. Fortunately, several companies are already piloting or scaling successful circular economy initiatives in telecoms.

"Recycling electronic equipment results in carbon emission reductions approximately equivalent to the weight of the equipment," explains Williams-Wynn. "Reuse or refurbishment has an even greater impact, with an order of magnitude higher reduction in emissions."

"Companies like Vodafone and Ericsson have implemented schemes to recover and refurbish old devices, reducing the need for new products and minimising e-waste. These efforts not only reduce the carbon footprint associated with manufacturing new devices but also conserve valuable resources like metals and plastics," notes Holm.

It's not just about recovery — it's about reinvention: "additionally, some companies have shifted to using recycled materials in the production of new devices, further reducing their environmental impact," adds Holm.

These initiatives not only reduce resource demand but also help businesses meet regulatory and ESG commitments.

The power of partnerships

One company can't go circular alone. The circular economy thrives on collaboration across manufacturers, telecoms firms, waste management providers, and policy makers.

"The circular economy thrives on collaboration, between telecoms companies, manufacturers, and technology lifecycle partners," says Evans. "By embedding eco-design, improving asset tracking, managing networks sustainably and investing in end-of-life recovery, the industry can repurpose equipment, reduce waste and maximise value."

However, Williams-Wynn notes that not all relationships are friction-free: "manufacturers are often hesitant to support refurbishment, viewing it as a threat to new device sales." But, he argues, that's a misconception. "Refurbished devices often reach a different market segment — consumers who may not afford new devices but aspire to own that brand, particularly in the case of premium models."

As such, partnership is the way forward. "Manufacturers can provide certification or training to recycling organisations, ensuring refurbishment is carried out to a high standard and protects brand integrity. Telecommunications companies can further support this ecosystem by assisting with training efforts and reintroducing certified refurbished devices into the market, helping close the loop and make circular models more commercially viable."

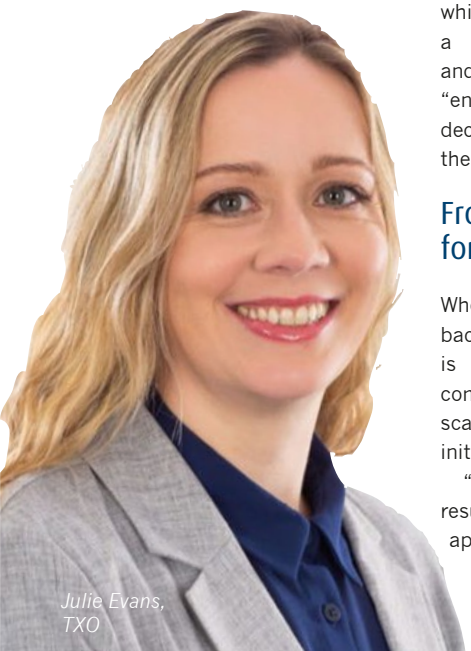
Holm emphasises that deeper partnerships can also lead to better infrastructure: "partnerships between telecommunications companies, manufacturers, and recycling organisations can make recycling more worthwhile by investing in the necessary equipment for efficient recycling. By engaging on shared sustainability targets, these collaborations can drive the reduction of reliance on virgin materials. Manufacturers can adapt their products to use fewer virgin materials, turning to readily available sources and recycled resources instead."

This creates a virtuous loop of shared investment, shared value, and shared sustainability.

Barriers and breakthroughs

Going circular isn't all green halos and glory. The road is paved with challenges — from consumer perception to logistical hurdles and regulatory red tape.

"One major barrier is consumer perception, with refurbished or pre-owned devices often being viewed as inferior, which leads to many customers preferring lower-quality new devices over high-quality refurbished ones. Additionally, due to a lack of awareness, customers may be hesitant to adopt circular models such as device rental, fearing they'll lose access to older



Julie Evans, TXO

Mark Williams-Wynn, EWaste Africa

devices when upgrading," says Williams-Wynn.

There's also the issue of traceability. "These devices are often passed down through multiple users, making it hard to trace their origin," notes Williams-Wynn. Without tracking, many end-of-life devices are simply dumped — lost to the loop.

To counter this, education is key. One of the key challenges telecommunications companies face in shifting towards a circular economy model is educating consumers about the importance of sustainable practices.

"Information sharing is crucial, as consumers need to understand the potential dangers of improper disposal and the benefits of recycling. To address this, companies can implement strategies to educate consumers on the facilities that handle e-waste, from production to end-of life, ensuring that all stakeholders are aligned with circular economy principles," says Holm.

Indeed, "raising awareness about the benefits of refurbished devices, the value of circular economy practices, and proper end-of-life management can help shift perceptions and encourage more responsible consumer behaviour," adds Williams-Wynn.

Regulatory challenges also play a significant role, with government regulations such as e-waste bans from landfills pushing companies to rethink their practices.

"To overcome these obstacles, telecommunications companies should engage in proactive strategies, such as investing in recycling infrastructure and adhering to strict sustainability guidelines," says Holm. "This would not only comply with regulations but also align with circular economy goals, ensuring that materials are reused and resources are conserved for the long term."

Yolandi Holm, EnviroServ

Circularity as a growth strategy

The circular economy offers a compelling, realistic path for the telecom industry to reduce waste, increase efficiency, and build resilient, future-proof networks. It's not just about recycling — it's about rethinking the entire product lifecycle, from design to disposal and beyond.

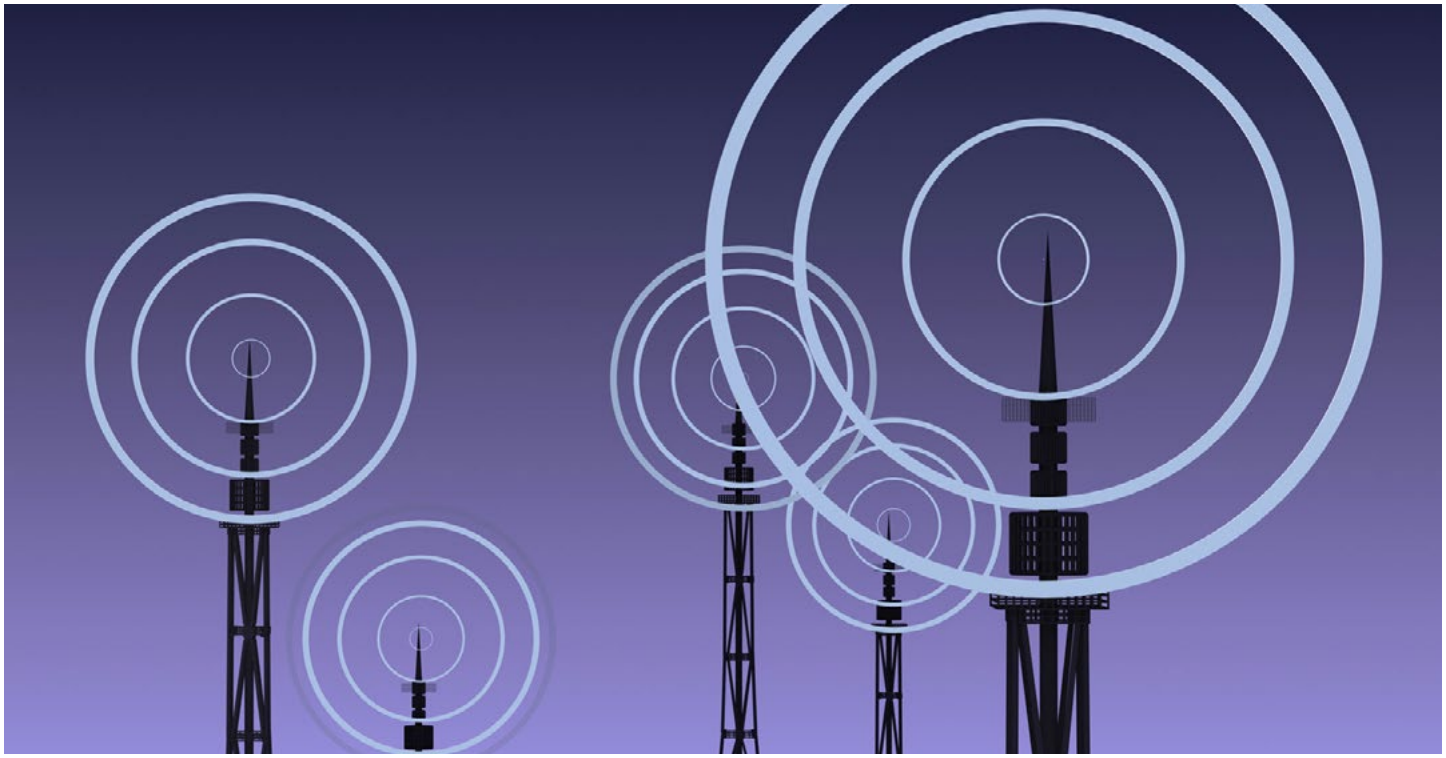
As always though, there's an elephant in the (board)room: profitability. Can circularity deliver on the bottom line?

According to Evans, absolutely: "refurbishment plays a key role in this model, offering carbon savings of up to 93% compared to buying new."

Those carbon savings translate directly into cost savings — on raw materials, production, logistics, and even brand equity. In regions like Africa, where access and affordability remain key challenges, circular models open new doors.

"This demonstrates how circular practices can reduce environmental impact and support digital inclusion and greener growth both across Africa and on a global scale," says Evans.

Through collaboration, education, and bold investment in sustainable practices, the telecoms sector can become a leader in circular transformation — connecting the dots between innovation and environmental responsibility. ■



Towering ambitions: can Africa's cell sites hit the elusive 99.8% uptime?

In a continent where connectivity is not just a luxury but a lifeline, Africa's telecom towers stand as silent sentinels of the digital age. Yet, these essential structures are struggling to meet a critical benchmark: 99.8% uptime. This target, while seemingly small in difference from current performance levels, marks a major leap in reliability and economic impact. With uptime directly linked to digital service availability, the challenge is both technical and transformative.

The elusive benchmark

Africa's telecommunications towers have made significant strides in recent years, but reaching 99.8% uptime remains a challenge for many operators on the continent. According to industry reports, Africa's average tower uptime is around 95–97%. The reasons behind the shortfall are manifold.

"Africa's towers often face challenges in achieving 99.8% uptime, particularly in rural and remote areas," says Anoj Singh, Vice President of Global MNO Business at Vanu. "While urban areas with better infrastructure may approach this benchmark, the overall performance is hindered by several factors such as reliability of grid power, infrastructure gaps, harsh environmental conditions, theft and vandalism."

"Achieving 99.8% uptime remains challenging for many towers in Africa due to various factors, including energy-related issues, vandalism and theft, and maintenance delays," agrees Al Mahdi Chakri, Head of Portfolio Development for Mobile Networks MEA at Nokia. "For power, TowerCos need to ensure that their power solutions are properly designed and account for traffic growth, which can lead to increased power consumption."

Chu Yanli, Vice President, ZTE Corporation, asserts that "Africa's power grid infrastructure is in a phase of continuous development, where power stability in certain regions may impact the sustained operation of base station equipment. There is room for optimisation in the configuration and maintenance strategies of backup power sources (such as diesel generators and

batteries), requiring systematic improvements to ensure the continuous uptime and operational capacity of telecom towers."

Indeed, the biggest challenge faced by infrastructure providers in this continent lies in energy efficiency and power reliability. Many towers still depend on expensive and polluting diesel generators because of unreliable electricity grids. Limited digitalisation also makes it harder to maintain towers efficiently.

Network congestion and outdated backhaul infrastructure compound these challenges. In many rural areas, insufficient bandwidth during peak hours can lead to outages, frustrating users and reducing revenue for operators. Moreover, the vast geographical expanse of Africa, coupled with local transportation constraints, presents accessibility challenges for equipment.

"Traditional scheduled maintenance models face efficiency pressures when pursuing high availability targets, necessitating the introduction of intelligent operation and maintenance (O&M) technologies for support," notes Yanli. "There is a need to strengthen specialised maintenance and debugging skills for local energy equipment (including PV systems, oil generators, lithium batteries, etc.), which currently limits the flexibility in troubleshooting timelines. Additionally, the decentralised nature of O&M resources imposes certain constraints on response efficiency."

Yet, not everyone agrees the situation is so bleak. Christopher Greaves of TowerXchange offers a counterpoint: "most Towercos do achieve 99.8% or above uptime in Africa due to stringent SLAs, but this comes at significant cost in energy (and in some markets theft replacement) capex and opex. There is an emerging discussion in the African Towerco sector as to whether the 99.8% uptime requirement is practical given the burden this places on pass-on cost to MNOs."

> "While the more established tower companies in Africa such as IHS Towers and Helios Towers guarantee a 99.7–99.9% uptime, the smaller infrastructure owners struggle to meet a 99.8% uptime SLA."

Tech to the rescue

Technology, it seems, may offer a solution. From AI-powered monitoring systems to hybrid renewable energy setups, innovation is becoming the lifeline to higher uptime.

While the more established tower companies in Africa such as IHS Towers and Helios Towers guarantee a 99.7–99.9% uptime, the smaller infrastructure owners struggle to meet a 99.8% uptime SLA. Technology can bridge this gap. Renewable and sustainable energy storage solutions can counter grid instability; robust remote monitoring solutions help to track energy consumption, outages, and faults, and leverage AI/ML frameworks to predict and prevent failures.

One of the most transformative developments in this space is remote tower monitoring. No longer a luxury, it has become a necessity.

"Remote monitoring is paramount for remote tower availability," notes Chakri. "In fact, remote towers using self-optimising, predictive maintenance and automation lead to improvement at different levels. It allows more optimised usage of the different energy sources used in the tower, which increases efficiency while reducing cost."

Greaves elaborates: "Remote tower monitoring is having a major impact in the efficiency and ability of Towercos to manage their distributed tower assets. Benefits include the reduction in site visits, saving transportation cost and improving efficiency of time for ground teams. It allows for the adoption of predictive maintenance to reduce risk of downtime."

Singh emphasises the broader implications: "Remote monitoring is enabling tower operators to maintain services in off-grid or remotest of remote locations, improving connectivity in underserved regions."

Meanwhile, Yanli highlights that technology is also the answer to energy management challenges that challenge tower uptime.

"By deploying intelligent operation and maintenance management systems, operators can monitor the energy operation status of sites in real-time, promptly identify issues, and conduct remote diagnostics and repairs, reducing the frequency and duration of on-site maintenance by personnel and improving maintenance efficiency," explains Yanli. Moreover, "by deploying solar power supply systems and enhancing battery energy storage systems, such as hybrid solar-battery or grid-battery power supply, reduce reliance on the grid and improve energy efficiency. Currently, the industry is vigorously promoting comprehensive energy solutions like hybrid solar and lithium battery-grid power supply for telecom tower stations."

Of course, enhancing equipment protection and environmental adaptability in the design phase is also key to supporting increased uptime and reliability.

"To address harsh natural environments, operators can take measures to strengthen equipment protection. For example, use equipment enclosures resistant to high temperatures, corrosion, dust, and water, adopt outdoor cabinets with IP55 or higher ratings, and configure flexible temperature control solutions to adapt to high-temperature and high-humidity environmental conditions." Yanli further recommends "establishing a comprehensive anti-theft system: implement integrated anti-theft measures such as top-level anti-theft cabinets, smart electronic locks, site video surveillance, and remote RMS management to reduce the risk of battery theft and site outages."

Operational efficiency meets sustainability

The addition of advanced technologies doesn't just boost performance; it also contributes to sustainability and cost-efficiency.

Remote monitoring solutions and efficient site management tools go hand in hand to transform the tower sector in Africa by reducing costs and improving reliability. They help in increased uptime, lower expenses, boost in energy efficiencies, and enhanced security to prevent theft.

"To achieve higher uptime levels, TowerCos and MNOs face increased capital expenditures (CAPEX) due to infrastructure upgrades, such as backup power systems (lithium batteries, generators, solar hybrid solutions), enhanced site security, and advanced monitoring. For example, one operator in South Africa needed to upgrade 4,000+ sites with new power systems and anti-theft measures, significantly raising initial investment costs," notes Yanli.

Operational costs (OPEX) also rise due to higher maintenance expenses for generator fuel, battery replacements, and energy consumption. However, improved uptime can reduce revenue

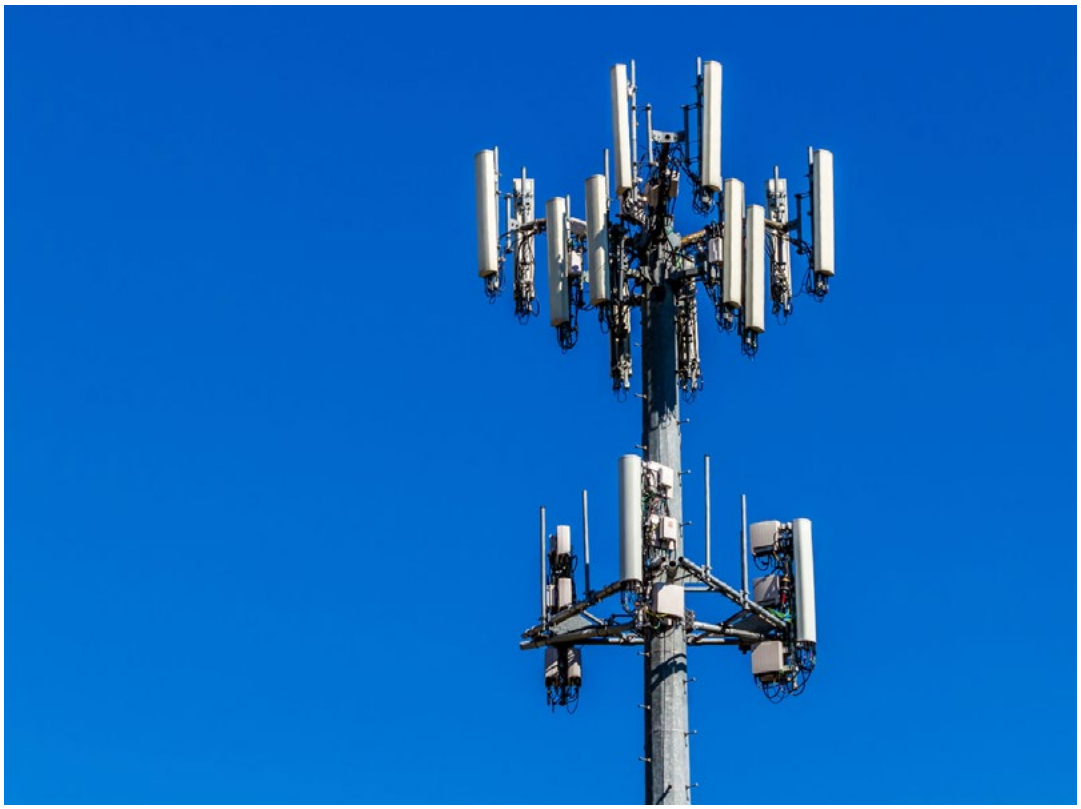
Chu Yanli, ZTE Corporation

Christopher Greaves, TowerXchange

losses from outages.

"Short-term service costs may increase due to higher infrastructure investments, potentially leading to elevated leasing fees for MNOs or slightly higher end-user tariffs," adds Yanli. However, "long-term benefits include improved network accessibility, particularly in regions with unreliable grids (e.g., South Africa's daily power outages). Enhanced uptime is critical for 5G and enterprise applications."

While pursuing higher uptime demands significant financial and operational efforts, the long-term gains in network reliability, customer retention, and support for mission-critical services justify the investment. Future trends, such as renewable energy adoption and AI-powered O&M, could further optimise costs while sustaining high availability.



Looking ahead

The path to 99.8% uptime is not uniform; it is paved with custom solutions, site-specific strategies, and a relentless focus on technological innovation. Yet for every challenge, there is also opportunity.

Yanli believes that the most promising developments may in fact stem changes in government policies, which "can introduce support for telecom infrastructure development, such as tax reductions, subsidies, and streamlined approval processes, which can lower operational costs for providers and enhance their ability to invest in and maintain telecom towers."

African governments and international organisations are increasing investments in power infrastructure for remote areas, improving energy access through initiatives like microgrids. This technology can connect multiple telecom towers to a small, independent power network, enabling power sharing and complementarity.

"This can improve the stability of power supply across the entire network and reduce the impact of single-point failures," says Yanli. "Additionally, close collaboration between energy companies and telecom operators can facilitate the joint development and maintenance of energy infrastructure, optimising resource allocation and sharing to improve the reliability and economic viability of power supply."

Further, as renewable energy technologies continue to advance and costs decrease, telecommunication base stations may well increasingly adopt solar photovoltaic as their primary power source.

"The integration of energy storage into hybrid power supply solutions will also become more prevalent," asserts Yanli. "These systems can intelligently switch between different energy sources, ensuring continuous power supply and maintaining operations even during harsh weather or grid failures. This necessitates more intelligent centralised management systems. Through these systems, energy usage can be monitored and optimised in real-time, energy demands can be forecasted, and automatic switching to energy storage systems can occur when power supply is insufficient. This will further enhance energy utilisation efficiency and system reliability."

Also focusing on Africa's unstable power supplies, Greaves expects to see technology adopted fastest in the energy component of tower operations: "this is where most of the pain points are. AI is becoming increasingly better understood and operations/technology executives are paying more attention to how AI can be utilised to drive operational and technical efficiencies. Most TowerCos in Africa have adopted some form of power-as-a-service or in-house energy generation, and AI is proving to be a critical tool in helping balance run-time of complex hybrid energy systems utilising a combination of renewable, battery, grid, and back-up generator power. Digital twin technology has also been around for a few years now, and seen some early adoption, but has not quite seen widespread take-up due to cost and questions of practicality. But as TowerCos shift their strategic focus away from M&A towards lease-up and increasing colocation, the use-case of digital twins may strengthen to help TowerCos manage increasingly complex sites."

Beyond energy, Greaves notes that "there is also an increasing move towards predictive maintenance to prevent the risk of site downtime by mitigating risks ahead of time. Other IoT and AI-based platforms can help to improve efficiency of on-site energy equipment and grid balancing to reduce energy costs and extend capex replacement cycles for equipment."

Singh is optimistic about what's to come: "Adaption of remote monitoring is expected to grow, drive better service delivery, cost efficiency and reliability across the African continent. This shift is vital to support Africa's expanding telecom market and increasing demand for connectivity."

In a sector where uptime is more than a metric — it's a mandate — Africa's tower industry is showing signs of resilience, adaptability, and innovation. While 99.8% might remain a tough target, it's no longer out of reach. Indeed, the question isn't if African towers can achieve 99.8% uptime, but how fast and how sustainably we can get there. ■

Al Mahdi Chakri, Nokia

Renewing Africa's future: how energy can be digital infrastructure's new strategic advantage

Rik Wuts, Head of Telecommunications; and Erin O'Brien, Senior Development Manager, CrossBoundary Energy

Africa's telecommunications sector is experiencing unprecedented growth. Expanding economies, populations, and the advent of new technologies such as 5G and AI are challenging operators of digital infrastructure across the continent to provision these developments reliably and cost-effectively. With mobile penetration rates soaring and data consumption accelerating, the traditional approach of diesel-powered telecommunications towers is proving increasingly unsustainable. Similarly, data centre capacities require modern, reliable power supply. To truly ride the wave of growth, the telecommunications sector needs innovative energy solutions that meet operational needs whilst saving capital and operational expenditure. Is this possible?

The perfect storm: the market forces driving change

Africa's telecommunications industry finds itself at the intersection of several powerful market trends. Unpredictable fuel costs, weak grid infrastructure, increases in energy demand, and regulatory and environmental pressures collectively make a compelling and urgent case for innovative energy supply.

Fuel cost volatility and supply chain disruptions

Roughly 70% of Africa's 500,000 telecommunications towers rely on diesel as their power source, accounting for 30-60% of tower OpEx in remote areas. Fuel costs have become a significant operational burden for network operators across Africa, increasing by 40-60% over the past two years in many African markets. Recent global events, including supply chain disruptions from regional conflicts and geopolitical tensions, have created unprecedented volatility in fuel prices.

The cost of fuel transport adds a further 15%-30% to tower OpEx. However, beyond cost considerations, fuel supply reliability has become a critical concern. Remote tower sites often face irregular fuel deliveries, which compromise network uptime and service quality. Fuel transportation logistics to remote locations not only add to operational complexity, but also introduce security risks in certain regions.

Grid infrastructure limitations

While urban areas in many African countries enjoy relatively stable grid connectivity, rural and semi-urban regions — where tower densification is most needed — often lack reliable electrical infrastructure. Where grid connections do exist, power quality issues, including voltage fluctuations and frequent outages, make grid power alone insufficient for consistent, high-quality power supply. Between 60-80% of telecom towers in sub-Saharan Africa experience 8-12 hours of daily grid outages.

The situation is particularly acute in certain countries. In Nigeria, grid availability can be as low as 40-50% in certain regions. In the Democratic Republic of Congo, vast rural areas remain completely off-grid, and in Sierra Leone, a demand cap of 6MW was recently announced[7]. Even in more developed markets like South Africa and Kenya, load shedding and grid instability have increased operational challenges for network operators.

Surging energy demand

Network expansion and densification, the proliferation of 5G, and the data centres required to power digital services have rapidly increased energy demand. 5G technology requires 10 times the data rate and a fourfold increase in tower density, resulting in a 2-3 times higher energy demand, despite its efficiency per MB.

5G connectivity also requires proliferation of smaller edge data centres, each requiring at least 50kW. AI data centres, which do not presently exist in Africa, require loads of at least 50MW and are already growing to a GW scale in some US locations. Most African countries do not have enough grid capacity to power new data centres, which severely limits the pace of development.

Regulatory and environmental pressures

Governments across Africa are increasingly implementing carbon reduction mandates and environmental regulations that affect the telecommunications sector. Countries like Morocco, Egypt, and South Africa have established renewable energy targets that include telecommunications infrastructure. Additionally, mobile network operators are facing pressure from investors and partners to demonstrate environmental responsibility through measurable carbon footprint reductions.

The strategic advantage of renewable energy

Despite the challenging market forces, operators who have made early shifts to renewable energy have seen their energy OPEX reduced by as much as 30%, while cutting carbon emissions by over 65%. However, operational advantages extend far beyond simple cost reductions.

Enhanced network reliability and performance

Solar-battery hybrid systems provide superior power reliability compared to diesel generators, which are prone to mechanical failures, maintenance issues, and fuel supply interruptions.

This enhanced reliability directly translates to improved network performance metrics. Tower operators report uptime improvements of 15-25% when transitioning from diesel-dependent systems to solar-hybrid solutions. For network operators, this means fewer customer complaints, reduced revenue loss from service interruptions, and improved network quality scores that can affect regulatory compliance and competitive positioning.

For example, CrossBoundary Energy developed a power solution to provide reliable, consistent uptime for Zoodlabs' ambitious 5G network rollout in Sierra Leone[12]. This solution incorporates advanced solar-hybrid systems paired with intelligent energy management platforms designed to support the high energy demands of 5G infrastructure and provide resilient, scalable power to Zoodlabs' 5G tower network. Renewable energy enabled the first rollout of 5G infrastructure in the country amidst fluctuating grid reliability.

Reliability and performance advantages also extend to data centres. The primary challenge for data centre operators in Africa is not merely the quantity of power but its quality and consistency. Renewable energy solutions can provide the stable, clean power essential for sensitive IT equipment, mitigating the risks of data corruption, hardware degradation, and costly downtime associated with unreliable grid power or the vagaries of diesel generation.

Renewable energy systems also offer superior scalability compared to diesel generators, which often require complete replacement to accommodate increased power demands. Solar panels and battery banks can be incrementally expanded to meet growing power requirements without major system overhauls.

Operational efficiency and remote monitoring

Renewable energy systems equipped with smart monitoring capabilities provide unprecedented visibility into power consumption patterns and system performance. This data enables predictive maintenance, resolving issues proactively and reducing the need for costly site visits. Remote monitoring also facilitates better energy management, helping operators

optimize power consumption across their tower portfolios.

The reduction in site visits significantly reduces operational expenses and security risks associated with transporting valuable fuel supplies.

The energy-as-a-service model: removing barriers to adoption

Renewable energy solutions, therefore, offer multiple advantages that enable the telecommunications industry to navigate market volatility. However, renewable energy deployments require significant upfront capital investments, creating barriers for many network operators and tower companies. The emergence of Energy Service Companies (ESCOs) has fundamentally changed this dynamic by offering renewable energy solutions as a service, without upfront costs.

Under these arrangements, ESCO partners finance, install, and maintain renewable energy systems, with customers paying for energy rather than equipment and maintenance. This approach eliminates upfront capital expense while providing immediate operational benefits and cost savings. Typical ESCO contracts span 10-15 years, with energy savings around 20-40% compared to fossil-based alternatives.

The energy-as-a-service model also reduces technical and operational risks, allowing digital infrastructure companies to focus on their core business while benefiting from reliable, cost-effective power solutions. For network expansions, ESCOs can often also finance other infrastructure, such as new towers and civil works. Such arrangements can further enable network operators to expand their footprint quickly and ensure optimal reliability for their network from the get-go.

Given the importance of power infrastructure to telecommunications operations, the benefits of renewable energy, and the appeal of the energy-as-a-service model, it is important that companies evaluate and select the right ESCO. Several dimensions should be considered, including the partner's track record, financial stability, local presence, innovation, and contractual flexibility.

Technical expertise and track record

The power requirements, reliability standards, and operational constraints of telecommunications equipment differ significantly from other sectors. ESCOs should be evaluated for their demonstrated experience in telecommunications power solutions, not just in general renewable energy projects.

There should also be evidence of case studies and references from existing telecommunications clients, as well as verified performance claims based on direct customer feedback. Partners should demonstrate expertise in hybrid system design, battery management, and telecommunications-grade power conditioning.

Financial stability and backing

Energy Service Agreements (ESAs) are long-term and require partners with strong financial foundations. Potential partners should have financial stability, including access to capital markets and backing from established financial institutions.

ESCOs with diversified financing sources and established relationships with development finance institutions, commercial banks, and investment funds focused on African infrastructure development, should be considered.

Local presence and support

While renewable energy technology is increasingly standardised, local presence remains critical for effective system maintenance, rapid issue resolution, and regulatory compliance. ESCOs should have strong local operations and partners, including technical staff, spare parts inventory, and service response capabilities.

ESCOs should also understand local regulatory requirements, environmental conditions, and business practices. Local partnerships or joint ventures with established African companies can provide valuable market knowledge and operational effectiveness.

Focus on technology and innovation

The renewable energy sector evolves rapidly, with continuous improvements in battery technology, smart monitoring systems, and system optimization capabilities. ESCOs should demonstrate ongoing investment in technology development and innovation to ensure that energy infrastructure remains current and competitive throughout the contract term.

ESCOs' approaches to system monitoring, predictive maintenance, and performance optimization should also be evaluated. Advanced monitoring and analytics capabilities can provide valuable insights for both energy management and overall tower performance.

Contractual flexibility and risk

ESAs should provide flexibility to accommodate changing business requirements while clearly allocating risks and responsibilities. Capacity expansion, technology upgrades, performance guarantees, and contract termination scenarios should be considered.

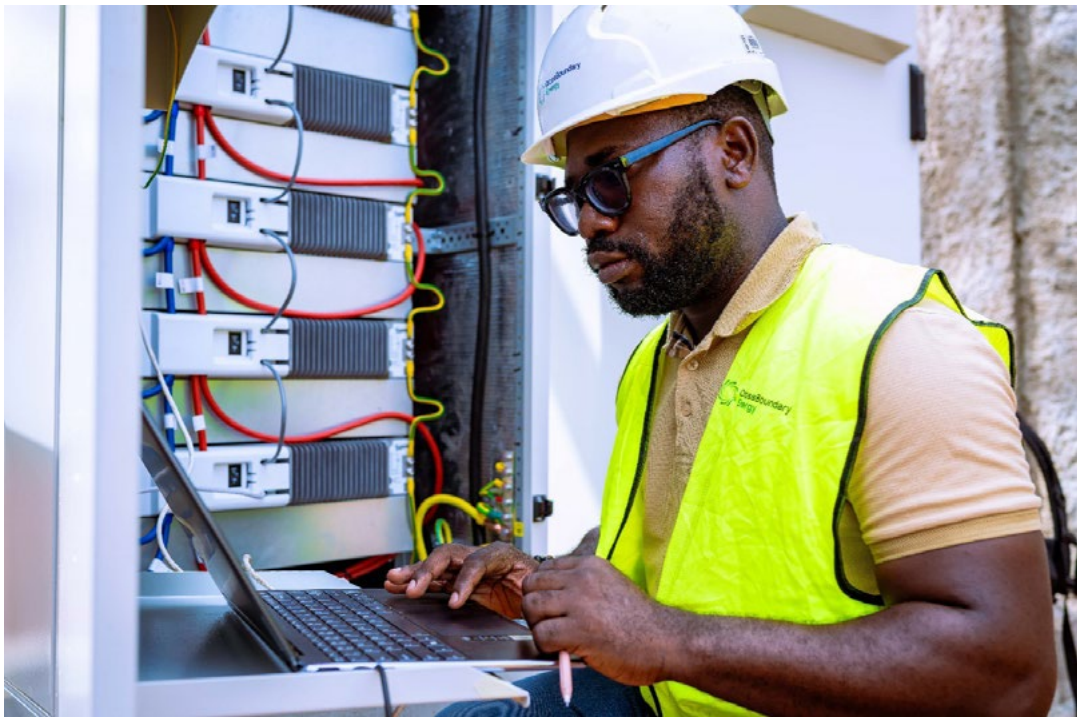
Contracts should include clear performance metrics, service level agreements, and remedies for non-performance. Risk allocation should reflect each party's ability to manage specific risks, with ESCOs typically assuming technical and operational risks and customers bearing business and regulatory risks.

Seizing the renewable energy opportunity

The convergence of exponential growth, rising fuel costs, grid infrastructure limitations, and improving renewable energy economics has created a compelling opportunity for Africa's telecommunications sector to switch to renewable energy solutions. Network operators and tower companies that embrace these solutions can achieve immediate cost savings, improved reliability, and enhanced operational efficiency, positioning themselves for long-term success.

As Africa's digital transformation accelerates, those who act decisively to address power challenges through renewable energy solutions will be best positioned to capitalise on the continent's tremendous telecommunications growth opportunity. The key to success in solving power challenges lies in selecting trustworthy Energy Services Companies and entering into well-structured Energy Services Agreements.

The question is not whether to adopt renewable energy solutions, but how quickly and effectively telecommunications companies can use them to gain strategic competitive advantage in Africa's rapidly evolving digital landscape. ■



Digitally transforming telecommunications in Tanzania

Faced with numerous operational challenges — including fragmented systems, complex inventory management, disjointed sales processes, and inefficient order management — a leading telco in Tanzania sought a unified, agile platform to streamline operations and enhance customer experiences.

The telco offers a broad spectrum of mobile services such as voice, data, messaging, and value-added offerings. With extensive network coverage across urban, semi-urban, and rural areas, the company has invested heavily in infrastructure to ensure reliable connectivity. Additionally, it operates a popular mobile money service that enables users to perform financial transactions like money transfers, bill payments, and airtime purchases directly via mobile devices, significantly contributing to financial inclusion nationwide.

Complexities hindering growth

The client encountered several systemic hurdles that prompted the need for a comprehensive digital solution. Firstly, there was a lack of integration between their Customer Relationship Management (CRM) system, iCAP, and their billing platform, VxView. This disjointed setup created operational inefficiencies and hindered seamless customer management and billing processes. Multiple inventory platforms further complicated inventory management, leading to errors and inefficiencies.

The absence of a centralised Sales Lead Platform meant the company struggled to systematically track and manage sales opportunities, resulting in missed potential and disorganised workflows. Additionally, the sales lead process was not integrated with the CRM, causing disjointed workflows and potential loss of sales. The existence of multiple product catalogues and configuration systems introduced complexity and inconsistencies in product management, while the lack of a unified data aggregation system made comprehensive reporting difficult.

Architecturally, the existing system was based on a Point-to-Point integration approach, with limited exposure to open APIs and no adherence to Open Digital Architecture (ODA) standards. The heavy reliance on customisation and lack of standardisation further hampered agility and future scalability.

Embracing a digital future with Canvas

Partnering with 6D Technologies, the client implemented Canvas — an all-encompassing digital BSS platform. The transformation encompassed the deployment of an Offline Charging System (OFCS) to support accurate rating and charging, alongside systems for sales leads, CRM, and an upgraded product catalogue to enable tailored plans for both individual and enterprise customers.

The new platform streamlined order capture, processing, management, and provisioning, leading to more efficient operations. An enhanced billing system was introduced to improve billing accuracy for enterprise clients. To support a variety of services, the solution included network support for LTE, GSM, fixed-line, broadband, co-location, corporate APN, and toll-free services.

A key component of the transformation was the development of integration adapters focused on reusability, ensuring seamless communication between systems. Over 12,000 comprehensive test cases were executed during deployment, minimising disruptions and aligning the transformation with critical business milestones. The iterative design approach enabled the team to adapt to specific local customisation needs without impacting project timelines, culminating in a successful migration that matched existing revenue reports upon cutover.

The architecture leveraged Canvas's open, API-driven design, moving away from the previous point-to-point approach. This facilitated better system exposure, standardisation, and future scalability. The platform supports LTE and TETRA networks and includes modules such as a Unified Product Catalogue, Offline Rating Engine, Postpaid Billing and Invoicing, Payment and Collection, Self-care, and Service Activation. The API layer ensures easy integration with third-party systems and payment gateways, tailored to the operator's specific requirements.

The flexible, modular architecture allows for seamless future expansion, ensuring the solution remains aligned with evolving industry standards and customer expectations. This strategic approach minimised complexity and maximised operational agility.

Delivering value across the board

The deployment of Canvas delivered multiple benefits, including a centralised product catalogue that streamlined retail and corporate offerings, improving the customer experience. The retail and corporate billing systems now operate with minimal disputes, ensuring billing accuracy and efficiency. An integrated campaign and loyalty management system offers a comprehensive view of customer interactions, empowering targeted marketing and engagement strategies.

Business process automation was achieved using Camunda-based Journey Management, which optimised critical workflows and enhanced operational efficiency. The platform supports a wide array of networks, including 3G, 4G+, LTE, broadband/FTTx, IPTV/Cable TV, and IMS, serving diverse customer segments such as prepaid, postpaid, hybrid, and corporate clients.

The legacy OCS and BSS systems were migrated successfully to the new cloud-native platform, ensuring a smooth transition. The modular and scalable design provides the flexibility to adapt to future technological developments and business needs.

The impact of the digital transformation was substantial. The telco expanded its customer base to include a broader range of segments, including prepaid, postpaid, hybrid, and corporate clients. Migration from legacy Huawei OCS and BSS systems was completed smoothly, supporting a user base of approximately 80,000 customers supported by Oracle Database.

Subscription growth increased by 32%, with monthly data usage per subscriber rising by 12%. Subscriber churn was reduced by 2.3%, indicating improved customer retention. Additionally, the operator experienced an increase in net new subscribers, reflecting the effectiveness of the new system in attracting and retaining customers.

Overall, 6D Technologies' Canvas platform empowered the operator to embark on a transformative journey — revitalising their BSS infrastructure, enhancing operational efficiency, and delivering superior services to their customers. ■

Malawi Telecommunications innovates on a budget

Malawi Telecommunications Limited (MTL) has repeatedly reinvented itself, transitioning from a government-owned entity to a private subsidiary, and then adapting to the rapidly evolving African telecom landscape as a fierce competitor.

Despite its status as a national mobile network operator (MNO), MTL faces many challenges common to smaller communication service providers (CSPs), including resource constraints and a competitive, dynamic market. The company grappled with high levels of theft and vandalism targeting its copper-wire infrastructure, prompting a strategic shift away from physical assets. Instead, MTL redirected investments toward internet connectivity and inter-branch links for enterprise customers, alongside maintaining traditional fixed-line services.

Recognising the explosive growth in mobile usage, MTL decided to expand into the LTE space. However, this new venture posed a significant challenge: their existing billing and charging system was outdated, costly to maintain, and incompatible with LTE technology. Overhauling the entire infrastructure was not feasible within their budget constraints. To address this, MTL turned to PortaOne for a phased, cost-effective evolution.

"PortaBilling was very flexible. We felt it could do what we wanted it to, and the pricing and licensing model was very good. We can add as many customers as we want, and we don't need to pay PortaOne," said Kondwani Masiye, MTL's head of business development.

Flexible solutions for market-specific needs

MTL selected PortaBilling's online charging system (OCS), leveraging Yate as the mobile network core. Because monthly recurring subscriptions are less common in Malawi's residential market, MTL appreciated the platform's ability to customise billing processes to suit local preferences.

Using PortaBilling's accessible API, MTL integrated a solution that enabled the creation of monthly customer accounts with expiration options similar to pay-as-you-go bundles. This approach offers customers the flexibility to auto-renew or let their service expire at the end of each term, providing a high level of control over their monthly expenses — an essential feature in a market where cost management is critical.

Building on this success, MTL aimed to expand its VoIP services, including cloud PBX offerings for enterprise clients. For this next phase, PortaSwitch — another PortaOne product — proved to be the ideal solution. Its modular design allowed MTL to set up VoIP and SIP switches independently, facilitating a smooth migration of pre-paid residential voice customers to the new platform in batches. Meanwhile, post-paid, data, and enterprise customers could remain on their existing systems until the company was ready to transition them.

"The brilliant part of our PortaOne products is the integration between the two systems," said Masiye. "There is the billing part, and then there is the voice switch. We are now migrating all of our PSTN customers over to VoIP and PortaOne."

This migration has been highly cost-effective, as MTL's internal team has handled most of the development work, leveraging PortaOne's comprehensive documentation and support when necessary.

"The system is very well documented," added Masiye, "and even today, my team often finds the solution they need in the documentation before reaching out for support. When issues do arise, the support team responds quickly — both over the phone and via email."

Expanding offerings and market impact

Encouraged by these successes, MTL explored additional services, including PortaPhone — a cloud-based business phone system — after a demonstration. The company has since integrated PortaBilling with their SAP ERM and CRM systems, enabling gradual expansion into SMS and VoLTE services.

Most recently, MTL launched Malawi's first locally offered cloud PBX system for businesses, utilising the Add-on Mart Kubernetes cluster based in Johannesburg.

Masiye believes this service will significantly ease enterprise communications: "small and medium businesses don't want that physical box — they lack the expertise and can't afford the cost. Our cloud PBX removes that need for hardware, making it easier for businesses to operate and move between locations without disruption."

The company's own headquarters was the first to adopt the new cloud PBX, serving as an ideal testing ground before extending the service to the wider Malawian business market later this year.

MTL's journey demonstrates that even established incumbents must continually innovate to stay competitive. By adopting PortaOne's flexible, scalable solutions, MTL has successfully navigated resource limitations, market shifts, and technological upgrades, positioning itself for future growth. ■

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High-capacity, cost-effective optical transport

PacketLight Networks has announced the launch of their latest innovation — the PL-8000G 10 x 800G Transponder — designed to meet the escalating demand for high-capacity, cost-efficient optical transport infrastructure.

This cutting-edge device supports ten 800G transponders, empowering service providers to deliver a diverse array of high-speed services — including 800GbE, 400GbE, and 100GbE — over ultra-capacity 800G DWDM wavelengths, thereby maximizing network efficiency and scalability.

The PL-8000G seamlessly integrates erbium-doped fibre amplifiers (EDFA) and an advanced Optical Switch (OSW), enhancing network resilience by compensating for fibre attenuation and enabling automatic protection switching in the event of fibre failures — an essential feature for mission-critical applications. Its modular, stackable architecture aligns with PacketLight's pay-as-you-grow philosophy, allowing operators to expand their networks incrementally without the burden of restrictive licensing fees. This design ensures a smooth transition as optical networks evolve, safeguarding investments for hyperscalers, cloud providers, telecom operators, and government agencies seeking future-proofed solutions.

Ideal for supporting ultra-low-latency, high-bandwidth GPU cluster interconnectivity, the PL-8000G is perfect for AI and ML applications, cloud-scale data center interconnects (DCI), and hyperscale deployments. It also functions as a last-mile aggregation platform for managed 100GbE, 400GbE, and 800GbE services, optimizing transport efficiency across diverse network segments.

Supporting ZR and ZR+ standards, the PL-8000G enables economical optical transport across metro, regional, and long-haul networks. It offers a clear demarcation point between client services and the DWDM transport layer, with comprehensive optical and service performance monitoring to ensure optimal operation. Designed for multi-vendor environments, it supports OpenZR+ and OpenROADM interoperability, facilitating seamless integration with third-party routers and switches. Additional features include robust line and service performance monitoring, remote management via out-of-band OSC, and field-replaceable components for straightforward maintenance, making the PL-8000G a versatile and future-ready solution for high-capacity optical transport needs.

The next evolution in semiconductor testing

Smiths Interconnect has announced the launch of its latest advancement — the DaVinci Gen V test socket. This cutting-edge component is designed to provide ultra-reliable and high-precision testing for semiconductor chips essential to the development of artificial intelligence, 6G communications, and advanced computing technologies.

The DaVinci Gen V plays a vital role in the manufacturing process by rigorously evaluating semiconductor chips to ensure they deliver consistent and dependable performance. These chips are foundational to a wide array of modern applications, including AI accelerators, automotive systems, and the upcoming global rollout of 6G networks.

Addressing two core challenges in the industry — impedance tuning and signal integrity — the DaVinci Gen V represents a significant leap forward in semiconductor testing technology. Impedance tuning, which optimizes signal transfer, and signal integrity, which measures the quality of electrical signals as they traverse circuits, are critical for the performance of next-generation devices. With this new socket, Smiths Interconnect offers manufacturers enhanced speed, reliability, and compatibility — key ingredients for pioneering technological advancements.

Designed to keep pace with the rapidly evolving landscape of integrated circuits, the DaVinci Gen V supports unprecedented high-speed data transmission, reaching up to 224 Gbps using PAM4 signalling for AI applications and exceeding 100 GHz for 6G communications. These capabilities are vital for managing the surging volumes of data transfer required by modern systems. Additionally, it accommodates the increasing complexity of contemporary integrated circuits, supporting a 40% growth in the size of next-generation ASICs—powerful chips that integrate multiple circuits into a single 'system on a chip.'

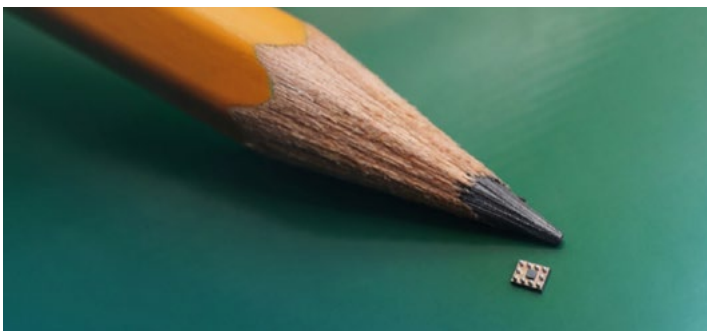
Anticipating the rapid progression of semiconductor technology — where bandwidth and computational power are doubling approximately every two years — the DaVinci Gen V is built with future-proofing in mind. Its seamless integration with existing testing hardware allows manufacturers to upgrade without extensive overhauls, reducing development cycles and speeding time-to-market.

Symphonic mobile clock generator with integrated MEMS resonator

SiTime Corporation recently launched its innovative SymphonicTM mobile clock generator, the SiT30100.

This groundbreaking device features an integrated MEMS resonator, delivering highly accurate and resilient clock signals tailored for 5G, GNSS, and IoT applications such as smartphones, tablets, laptops, and asset trackers. Designed to withstand extreme environmental conditions, the Symphonic clock generator not only enhances system reliability but also plays a pivotal role in enabling next-generation connectivity, unlocking a projected served addressable market (SAM) of $2 billion over the next five years.

Key features of the SiT30100 include four outputs capable of 76.8 MHz, 38.4 MHz, or 19.2MHz, suitable for baseband, RF, and GNSS applications. Its integrated MEMS resonator provides a smaller, single-chip solution that measures only 2.22 mm², streamlining design and reducing system complexity. The device incorporates a high-precision temperature-to-digital converter (TDC) with a UART interface, enabling real-time temperature compensation and achieving frequency stability as low as ±0.5 ppm. It demonstrates superior dynamic stability under airflow and thermal shock conditions, crucial for maintaining performance in mobile environments. Multiple Output Enable pins allow system power optimization and EMI reduction by selectively powering clock outputs. Operating across a temperature range of -30°C to +90°C (with options for wider ranges upon request), the SiT30100 is engineered for demanding applications requiring robust, precise timing.



Ultra-rugged high-precision GNSS/INS receivers from Sepentrio

Septentrio has announced the AsteRx RB3 GNSS receiver and the AsteRx RBi3 GNSS/INS (Inertial Navigation System).

Engineered for the most demanding and rugged conditions, these IP69K-rated receivers feature the toughest housing and components Septentrio has developed to date, ensuring reliable high-accuracy positioning even in the harshest environments. Both units have undergone rigorous testing and validation according to ISO standards, confirming their resilience against extreme mechanical, environmental, and electrical stresses.

Powered by cutting-edge multi-frequency GNSS technology, the AsteRx RB3 and RBi3 deliver centimetre-level accuracy, maintaining precise positioning amid heavy shocks, vibrations, and challenging surroundings where traditional GNSS signals may falter. Their exceptional robustness makes them ideal for machine guidance applications in construction, mining, port automation, and other industrial automation scenarios where reliability and durability are paramount.

The rugged design allows these receivers to be mounted directly onto heavy machinery or chassis, offering flexible placement options to simplify installation and maximize system uptime and productivity. The RBi3 version leverages FUSE+ technology to combine a high-performance GNSS engine with an industrial-grade inertial sensor, delivering enhanced positioning accuracy and orientation data, including heading, pitch, and roll. In a dual-antenna configuration, the receivers provide GNSS-based heading with sub-degree accuracy, available immediately from startup, ensuring rapid, precise orientation data.

The future of multiband, multiprotocol public safety communication

Tait Communications has unveiled the TM9900 Multiband Multiprotocol Mobile Radio, a groundbreaking solution engineered specifically for the demanding needs of public safety agencies.

Complemented by the portable TP9900 radio, the Tait 9900 series stands out as the premier choice for P25 communications, seamlessly supporting DMR and analogue channels across a broad spectrum of frequencies including VHF, UHF, 7/800MHz, and 900MHz. This innovative series is designed to elevate community safety by enabling superior interoperability among first responders, educational institutions, utilities, and other public sector organizations.

The Tait 9900 series delivers seamless multiband performance, offering configurable operation on any combination of VHF, UHF, 700/800MHz, and 900MHz bands. Customers benefit from flexible ordering options and can deploy single, dual, or multiband configurations both at purchase and later. Notably, the bands are not locked, allowing for reconfiguration at any time to meet evolving operational requirements.

Designed with user convenience in mind, the TM9900 offers the widest array of control head options within its class, enabling users to select the interface that best suits their operational needs. This versatility accelerates installation times and reduces fleet upgrade costs. Control head choices include local dash mounts, remote kits, integrated 4W speakers, and an optional keypad microphone, complemented by a rugged 15W external speaker compatible with any Tait control head.

The TP9900 portable radio exemplifies mobility and durability, recognized as the lightest multiband portable available. It features a high-capacity battery and a compact, ergonomic design built to withstand demanding environments. Its enhanced grip and intuitive control layout ensure ease of use, even while wearing gloves, empowering first responders with reliable, portable communication in critical situations.

A key feature of the Tait 9900 series is its advanced multiprotocol capability, bridging the interoperability gap between P25 and DMR standards. During emergencies, effective communication among diverse organizations — such as police, fire services, utilities, schools, coastguards, and transportation agencies — is vital. The 9900 series facilitates seamless communication across these standards, ensuring rapid coordination and improved community safety. Supporting a comprehensive range of operations — including Analog Conventional, P25 Conventional, P25 Trunking (Phase 1 and 2), DMR Tier 2 Conventional, and DMR Tier 3 Trunking — the series allows users to transition effortlessly between modes by simply changing channels.

Look out for...

Detecting cable sabotage

As concerns over deliberate sabotage of subsea fibre optic cables escalate, a wave of innovative solutions is emerging to enhance the security of these vital conduits for global internet data.

Companies like Optics11, Viavi Solutions, and AP Sensing are leading initiatives to transform subsea cables into sophisticated sensor networks capable of detecting disturbances indicative of potential sabotage incidents. Utilizing the inherent properties of optical fibre cables — originally designed for data transmission via laser light pulses — scientists and engineers have found methods to repurpose them as real-time monitors for various underwater events.

These advanced systems can pinpoint activities above the cables, such as vessel movements, anchor drops, and even marine life interactions. By detecting changes in light polarization — an effect influenced by external disturbances — these sensor networks can provide critical information about the nature and location of incidents. Notably, the technology can estimate the size and trajectory of vessels passing overhead, offering valuable data that can be cross-referenced with satellite imagery and Automatic Identification System (AIS) records.

Despite inherent limitations in range due to environmental noise, deploying signal repeaters and listening devices along the cables significantly enhances detection capabilities. While existing technology might only detect disturbances hundreds of meters away, innovative approaches could extend the range and accuracy of monitoring efforts. Notably, using retired cables or designing new cables as dedicated sensors could facilitate comprehensive marine traffic monitoring and incident detection.

With 150-200 faults occurring yearly due to both sabotage and accidental damage, leveraging technology to improve detection is essential.

Vocus to build first Telesat Lightspeed LEO landing station in Australia

Vocus, Australia's leading digital infrastructure provider, has partnered with Telesat to establish Australia's inaugural Telesat Lightspeed Low Earth Orbit (LEO) Landing Station.

The new facility will be constructed and operated in New South Wales, connecting Telesat's advanced LEO satellite constellation to terrestrial networks across the region.

This strategic development will enable secure, low-latency satellite services, bolstering Australia's digital infrastructure resilience. Vocus will provide fibre connectivity to link Telesat's point of presence (PoP) with the landing station, facilitating efficient data transfer between satellite and ground networks.

"Vocus is an ideal partner to deliver resilient, scalable terrestrial infrastructure that not only interconnects customer data but also strengthens Australia's digital infrastructure. With satellite launches beginning in late 2026, this landing station will be a critical component for satellite testing, customer trials, and global service deployment," said Asit Tandon, Telesat's Chief Network and Information Officer.

"With 30 ground stations already in operation or under development, Vocus provides the reliable infrastructure needed to support the growth of LEO networks and deliver low-latency connectivity to enterprise and government customers in Australia," said Ashley Neale, Head of Vocus Space and Wireless Operations.

The partnership includes a long-term agreement for Telesat Lightspeed services, which will offer Vocus' customers resilient, high-performance connectivity. These services, backed by committed information rates (CIR) and comprehensive service level agreements, will enhance Vocus' existing LEO satellite offerings.

Glenn Katz, Telesat's Chief Commercial Officer, emphasized the differentiated capabilities of the Lightspeed network, including its MEF 3.0 compliant Carrier Ethernet services and options for Private Access Stations with enhanced security features.

"Our architecture allows for direct terminal-to-terminal connectivity, eliminating the need for terrestrial links for sensitive data transmissions. For example, a naval vessel could communicate directly with deployed soldiers via optical laser-linked satellites, bypassing land-based infrastructure and preserving data sovereignty beyond Australia's borders," said Katz.

This direct connectivity feature is particularly valuable for mission-critical applications requiring secure, real-time communications, ensuring that sensitive operations can be executed with maximum security and minimal latency. The establishment of the New South Wales landing station marks a significant step forward in expanding Australia's satellite connectivity capabilities and supporting national security, enterprise, and government needs through innovative space-based solutions.

Lumitel announces $20 million investment to expand 4G coverage in Burundi by 2030

Lumitel, a subsidiary of the Vietnamese conglomerate Viettel, has unveiled a comprehensive five-year plan to invest $20 million in expanding 4G coverage across Burundi.

The initiative aims to reach 75% of the country's population by 2030, marking a significant step toward enhancing digital connectivity in the East African nation. The announcement was made on June 16 during a formal ceremony at the Ministry of ICT, where an official handover of IT equipment took place.

This strategic investment underscores Lumitel's commitment to strengthening mobile infrastructure and improving access to digital services, especially in rural and peri-urban areas. The company, which reports over three million subscribers and positions itself as a leader in Burundi's telecommunications market, intends to modernize its network infrastructure as part of this expansion effort.

Currently, data from the International Telecommunications Union's DataHub platform indicates that only 32.2% of Burundi's population is covered by 4G technology. In comparison, 2G coverage reaches 96.8%, and 3G covers about 53.2%, highlighting the need for accelerated 4G deployment to bridge the digital divide.

The investment aligns with Lumitel's broader strategy, which includes a planned launch of 5G services in 2025. It also responds to the government's initiative to promote digital inclusion and improve citizens' access to digital platforms. If the target of achieving 75% 4G coverage by 2025 is met, Burundi could make significant progress in its digital transformation journey, with positive impacts expected in education, entrepreneurship, and the delivery of online public services.

Indosat and Transsion to expand affordable smartphones in Indonesia

Indosat Ooredoo Hutchison has announced a strategic Memorandum of Understanding (MoU) with Chinese smartphone manufacturer Transsion Holdings, aimed at increasing access to affordable mobile devices, especially in rural and underserved regions.

The partnership, unveiled at the Mobile World Congress in Shanghai, will leverage over 10,000 Transsion retail outlets across Indonesia to serve as distribution hubs for Indosat's IM3 and Tri SIM cards, alongside broader digital services. This extensive network aims to expand Indosat's service reach and improve digital inclusion nationwide.

A key feature of the collaboration is that Transsion devices will come pre-installed with Indosat's myIM3 and bima+ apps, enabling users to easily manage data plans, access content, and stay connected right out of the box. To further lower barriers to smartphone ownership, the agreement includes launching 0% instalment plans for Transsion devices, making it financially easier for millions of Indonesians to acquire smartphones. The initiative also offers eSIM options, simplifying activation and switching between services.

Indosat and Transsion are exploring additional collaborations, which could include co-branded device offerings, expanded app integrations, and regionally tailored digital services, all aimed at fostering greater digital participation.

"By leveraging Transsion's distribution reach and Indosat's network reliability, we are creating opportunities for more communities to participate in the digital economy," said Vivek Mehendiratta, Indosat's Chief Marketing Officer.

Despite Indonesia's overall high internet penetration of 79.5% in 2024, the digital divide persists, with rural areas lagging at just 30.5% internet access. This partnership aims to bridge that gap by making affordable devices more accessible, thereby fostering inclusive digital growth across the archipelago.

Mexico regulator fines Telcel $93 million over alleged monopoly practices

Mexico's telecommunications regulator, the Instituto Federal de Telecomunicaciones (IFT), has imposed a hefty MXN1.78 billion fine on Telcel, a subsidiary of América Móvil, following a thorough investigation into alleged monopolistic conduct.

The regulator's action stems from claims that Telcel engaged in exclusivity arrangements with Oxxo, the largest convenience store chain in Latin America, to restrict competition in the mobile market.

The IFT explained that Telcel allegedly granted incentives to Oxxo and Impulsora de Mercados de México (IMMEX), a food and beverage services company, under the condition that they would not sell SIM cards from rival providers. This practice, the regulator argued, aimed to limit consumer choice and maintain Telcel's dominant position in the telecommunications sector.

Oxxo, which operates nearly 22,000 stores in Mexico and has expanded into Brazil, Colombia, Chile, Peru, as well as growing markets in Canada and the United States, is a significant player in the retail landscape. América Móvil, a major telecom operator with a broad presence across Latin America, denied the regulator's allegations and announced plans to challenge both the investigation and the fine.

The investigation by the IFT was initiated in 2021 following a complaint from a competitor who accused Telcel of engaging in monopolistic practices. Alongside the fine imposed on Telcel, the regulator also sanctioned Oxxo and IMMEX with penalties totalling MXN19.5 million. Both subsidiaries are linked to Femsa, a multinational corporation involved in beverage and retail sectors.

Nokia supplies cloud-native 5G core to O2 Czech Republic

Nokia has announced that O2 Czech Republic has successfully deployed its cloud-native 5G Standalone (SA) core software, enabling the telco to offer advanced 5G services such as network slicing.

This milestone makes O2 Czech Republic the first in the Czech Republic to implement a 5G SA network, enhancing the quality, reliability, and security of its mobile services.

The deployment aligns with O2's broader cloud-first strategy and aims to deliver a superior customer experience through increased network automation, reduced latency, and improved energy efficiency — benefits that also contribute to longer battery life for mobile devices. According to O2 network director Jakub Votava, the 5G SA rollout will allow faster delivery of new services, operational efficiencies, and greater flexibility without vendor lock-in, especially for data and analytics.

Erez Sverdlov, Nokia's VP of Cloud and Network Services Market Leader for Europe, highlighted that Nokia's cloud-native Packet Core enables O2 Czech Republic to operate in multi-cloud environments, providing scalable, secure, and rapid deployment of new network services. The solution ensures that the core network infrastructure and applications are fully cloud-native, delivering a more advanced and reliable experience for subscribers.

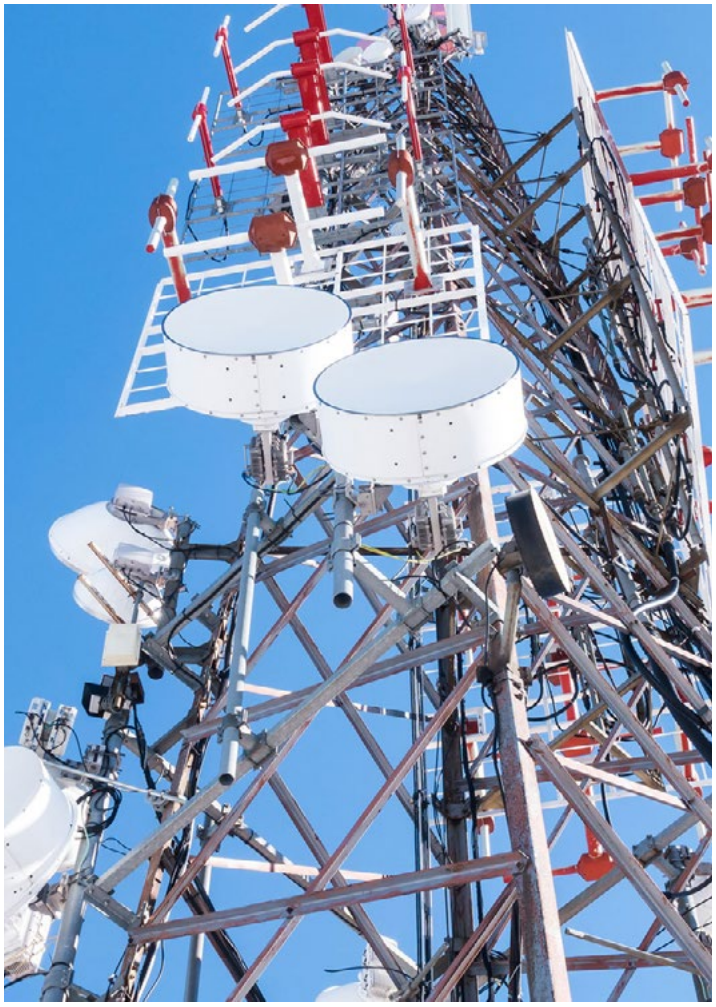
Ericsson signs new agreement with Bharti Airtel to boost 5G FWA in India

Ericsson has announced a new partnership with Indian telecommunications provider Bharti Airtel to support the rollout of 5G fixed wireless access (FWA) services through network enhancements.

Under the agreement, Ericsson will deploy its Local Packet Gateway (LPG) platform, which is designed to facilitate high-capacity FWA with a more compact footprint and improved total cost of ownership.

Andres Vicente, head of Market Area Southeast Asia, Oceania and India at Ericsson, highlighted that the LPG platform is engineered to deliver high performance efficiently and with scalability, making it well-suited to realise Airtel's ambitious 5G FWA plans. This latest collaboration builds on a previous agreement signed in February 2025, whereby Ericsson was tasked with deploying 5G packet core network solutions to create a unified, future-proof infrastructure enabling Airtel's transition to a 5G standalone (SA) network.

Airtel's CTO, Randeep Sekhon, stated that this strategic implementation is tailored to meet the rapidly increasing data demands of customers, ensuring reliable performance and seamless connectivity even during peak usage periods. The FWA partnership is one of several recent deals Ericsson has secured with Airtel since the telecom giant committed to a multi-year, multi-billion-dollar supply agreement for 4G and 5G equipment late last year. Additional contracts this year have covered areas such as extended reality (XR) applications and managed services.



Airtel launched its 5G FWA services in August 2023, and earlier this year, the company awarded contracts to Nokia and Qualcomm to expand its network. These agreements include Nokia's outdoor 5G receivers, designed for multi-dwelling units, and Wi-Fi 6 access points featuring Qualcomm Modem-RF and Wi-Fi 6 chipsets, aimed at enhancing in-home connectivity.

Motorola Solutions selected by Brazil's EAF for mission-critical communications

Motorola Solutions has been chosen by the Band Administration Entity (EAF), established by Brazil's Telecommunications Agency (Anatel), to deploy a comprehensive federal mission-critical communication system. This initiative aims to enable seamless, real-time collaboration among Brazil's defense and public safety agencies during joint operations.

Brazil has faced longstanding challenges in coordinating front-line response efforts across multiple jurisdictions. To address these issues, Motorola will integrate existing land mobile radio (LMR) systems with new broadband services, enhancing interoperability and data sharing capabilities.

The core of this upgrade is the deployment of WAVE PTX, a 3GPP standards-compliant platform that will operate over the country's private 4G network, and Critical Connect, a service facilitating interoperability between 4G broadband, P25, TETRA, and DMR LMR systems. This combined nationwide solution will empower organizations such as the Brazilian Army, Federal Highway Patrol, and the Distrito Federal Military Police with reliable LMR voice communications and advanced broadband features, including video streaming and rich data sharing.

Starting from Brasília, the new system will enable agencies to exchange critical information more efficiently, coordinate responses effectively, and make better-informed decisions — ultimately improving public safety and community protection.

"Efficiently addressing drug trafficking, organized crime, and natural disasters demands highly coordinated multi-agency responses. The current fragmented communication systems have caused delays that undermine response efforts. This new solution eliminates those barriers, providing reliable connectivity for federal agencies and, in the next phase, state military and civil police, to significantly enhance response times and mission success," said Geraldo Segatto, head of the Government Private Network Project at EAF.

"We are proud to support Brazil's vision of public safety modernization by delivering a platform that combines the proven reliability of land mobile radio with media-rich broadband capabilities. This integration offers resilience, improved situational awareness, and seamless interoperability, enabling faster and more effective emergency responses nationwide," said Edison Ambrosio, Sales Director for Defense and Federal Markets at Motorola Solutions.

Tees Valley to map mobile coverage using bin lorries

The Tees Valley Combined Authority (TVCA) in North East England has announced a new initiative to map local mobile network coverage by equipping refuse collection trucks with monitoring technology.

The project, funded by £32,490 from the UK Shared Prosperity Fund (UKSPF), aims to create the most detailed and accurate picture yet of 4G and 5G signal strength across the region, including Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland, and Stockton-on-Tees.

This approach builds on previous efforts by companies like Streetwave, which have used similar methods to gather mobile data across large parts of the UK. Inakalum, a digital mapping specialist, will install smartphones with specialised monitoring software onto bin lorries. As these vehicles operate their regular routes, they will record data on network coverage and data speeds across all four major networks — EE, O2, Vodafone, and Three UK.

The collected data will help identify areas with poor reception, guiding future improvements and enabling the creation of a new Tees Valley Mobile Coverage Checker. This tool aims to assist residents, businesses, and public services in understanding signal quality in their area.

The project may expand beyond bin wagons to include other vehicles or even on-foot surveys, targeting specific locations, events, or rural communities where signal issues are known. Local residents and groups are encouraged to share areas or upcoming events that could benefit from enhanced mobile coverage.

Vodafone Idea and AST SpaceMobile to bring space-based cellular connectivity to India

Vodafone Idea has announced a strategic partnership with AST SpaceMobile, a company developing a space-based cellular broadband network that connects directly to standard smartphones. This collaboration aims to expand mobile coverage into India's unconnected and hard-to-reach regions, complementing existing terrestrial networks.

India boasts over 1.1 billion mobile subscribers, with extensive 4G and emerging 5G coverage. However, AST SpaceMobile asserts that satellite connectivity can play a crucial role in bridging the remaining coverage gaps, particularly in challenging terrains where deploying traditional infrastructure is difficult or costly.

The partnership will integrate Vodafone Idea's extensive national network with AST SpaceMobile's innovative space-based cellular technology, which allows ordinary smartphones to connect directly to satellites without requiring specialized hardware or software updates. This ecosystem aims to deliver voice, video, data streaming, and internet services across the country.

Together, the companies will focus on the design, deployment, and management of the SpaceMobile Satellite System, wherein AST SpaceMobile will develop and operate the satellite constellation, while Vodafone Idea will handle terrestrial network integration, spectrum management, and market deployment.

They also plan to develop tailored commercial offerings targeting various sectors, including consumer, enterprise, and Internet of Things (IoT) applications.

Avneesh Khosla, Chief Marketing Officer of Vodafone Idea, emphasized the potential: "as satellite-based mobile access becomes a reality in India, we are excited to usher in a new era of seamless and resilient connectivity."

"India's vast and dynamic telecom market is the perfect environment to demonstrate how our space-based cellular broadband can seamlessly complement terrestrial networks. Together with Vodafone Idea, we aim to unlock new opportunities for emergency response, disaster management, agriculture, remote learning, and countless other applications that will benefit from truly ubiquitous mobile broadband," said Chris Ivory, Chief Commercial Officer of AST SpaceMobile.

This partnership signals a significant step toward bridging India's digital divide, leveraging space technology to deliver reliable, wide-reaching connectivity that supports economic growth, social development, and disaster resilience.

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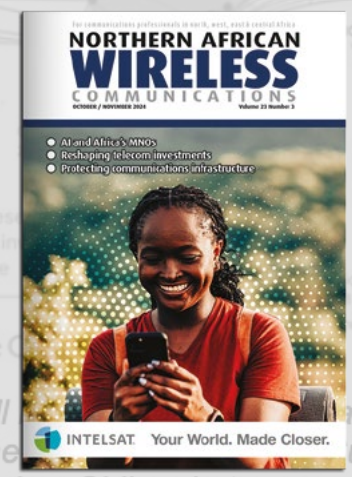

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