


For communications professionals in southern Africa

# SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

JANUARY/FEBRUARY 2025

Volume 29 Number 3

- Data centres - the end of an in-house era?
- Filling the gaps in tower tech
- Humanitarian assistance from MEO



**“Cloud-native technologies are set to gain momentum in 2025, forming the foundation for the evolution towards autonomous networks.”**

**Chris Butler, Vice President,  
Vodafone MEA Account, Cloud &  
Network Services at Nokia**



**NOKIA**



JAN/FEB 2025  
Volume 29  
Number 4

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## Cell C sets sight upon 5G launch in South Africa

Cell C is planning to launch 5G services in South Africa in the next two months as its financial turnaround plan gains traction.

CEO Jorge Mendes told local media that the company is at an advanced stage of preparing to launch 5G to its subscribers – and it plans to use the technology to deliver both 5G on smartphones and to offer a range of new, 5G-based fixed wireless access (FWA) broadband solutions

with large data bundles that compete with fibre.

Cell C's 5G launch plans come after intense negotiations with network partners MTN and Vodacom, which operate the last-mile infrastructure that connects consumers to the company's core network. Mendes said those discussions have progressed well and that Cell C is confident it will be able to launch a 5G offering that makes commercial sense.

Cell C's decision several years ago to shut down its own radio access network in favour of outsourcing that function to Vodacom and MTN has worked well. Not only has it significantly reduced the company's capital expenditure, but it has also greatly improved Cell C's network quality.

Cell C has spent the past 18 months deploying a Mocn – multioperator core network – roaming system, which has

allowed it to create a virtual representation of its network on top of either MTN or Vodacom's infrastructure. This has given Cell C significantly greater control over where it directs user traffic, allowing it to lower costs and be more efficient. It is also aggressively moving voice calls off old circuit-switched technology and onto an internet protocol-based technology – VoLTE – that routes calls over 4G/LTE.

## Paratus Namibia hit by cyberattack

A cyber-attack has targeted Paratus Namibia, compromising its internal operational files related to its systems.

Paratus asserts that the incident occurred in the early hours of 20 February and that it has subsequently taken steps to address the 'sophisticated' threat. The actions include isolating the affected environment, disabling virtual private network access, and safeguarding all impacted systems, including voice (083) services and select cloud-hosted environments, to contain the danger and minimise additional service and operational disruption.

The operator has enlisted the assistance of international specialists to restore infrastructure and data using established international procedures, including extra investments and enhanced cybersecurity measures. It has also initiated an investigation to ascertain the exact scope of the attack.

"We are acutely aware of the importance of the data entrusted to us by our customers and sincerely regret any inconvenience caused by this incident. The attack primarily affected internal operational files related to Paratus systems. Our ongoing investigation seeks to determine the full extent of any data compromise," said Paratus Namibia's managing director, Andrew Hall.

## SMART Zambia completes Government Wide Area Network project at 12 sites

Enoch Moonde, SMART Zambia's principal ICT officer for Western Province, has confirmed that work on the Government Wide Area Network (GWAN) has been completed in several districts, representing a significant milestone in the country's efforts to improve digital connectivity and communication among government institutions.

The GWAN project is a major component of Zambia's digital transformation program, with the goal of establishing a secure, dependable, and efficient communication network for government institutions.

The network is expected to improve public service delivery, increase transparency and accountability, and drive economic development.

The completed works include 12 sites: Luampa District Commissioner, Mitete Town Council, Limulunga Town Council, Limulunga District Commissioner, Sioma

District Commissioner, Sioma Town Council, Mwandu Town Council, Mulobezi District Commissioner, Mulobezi Town Council, Nkeyema District Commissioner, Nalolo District Commissioner, and Nalolo Town Council.

However, Moonde said the project's completion is dependent on the finalisation of last-mile connections by other parties, particularly ZAMTEL.



"We are working closely with ZAMTEL and other stakeholders to complete the last-mile connections, which will enable us to fully utilize the GWAN network," said Moonde.

The completion of the GWAN project in Western Province is a significant achievement for the Zambian government, which has been working to improve digital infrastructure and promote economic development in the region.

## Zimbabwe commissions mobile learning truck with Huawei

Zimbabwe has commissioned DigiTruck, a mobile learning facility as part of its efforts to boost digital literacy and access to information and communication technologies.

Led by Huawei, the effort focusses primarily on rural areas and aims to overcome the country's rural-urban digital divide.

President Emmerson Mnangagwa presided over the unveiling of the DigiTruck, a facility equipped with modern workstations. Equipped

with 20 laptops, 20 virtual reality headsets, and built in Wi-Fi, each DigiTruck serves as a temporary digital school that provides free classes, resources and material.

"We expect this programme to help bridge the rural-urban digital divide, to propel the growth of the economy, prosperity and a brighter future for all," said Mnangagwa. "As the world becomes more interconnected, concepts such as e-learning and e-commerce are gaining traction and

are widely adopted."

Mnangagwa said that the need for e-services in government ministries, departments and agencies had become an urgent necessity in Zimbabwe.

"My government has embarked on programmes and projects to promote the delivery of quality digital services, with noticeable programs in sectors such as justice, vital civil registration and immigration," said Mnangagwa.

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## Choose Digital Madagascar project launched

To attract investments in digital technology, the Malagasy authorities want to promote the branding 'Madagascar, destination of digital service.'

Several institutions in the country, including the Ministry of Digital Development, Posts and Telecommunications (MNDPT), have signed a memorandum of understanding with the Group of Information and Communication

Technology Operators (GOTICOM).

This agreement marks the official launch of the Choose Digital Madagascar project and the quality label for digital services in the country, Excelia. It will coordinate the efforts of stakeholders to develop the digital environment, e-commerce platforms and ICT training centres. The project is supported by the European Union through the Export Development and Regional Integration Support

Program (PADEIR).

"As the Ministry of Data, we are committed to providing relevant and accessible data to all decision-makers, whether in the public or private sector. In a world where data has become as precious as gold, we must ensure its optimal use for the development of Madagascar," said Stéphanie Delmotte, Minister of Digital Development, Posts and Telecommunications.

Madagascar wants to position itself as a hub for digital services. The country wants to increase the contribution of digital to its GDP and is multiplying initiatives in this direction. It has thus approached China, South Korea, India and France to conclude various partnership agreements. Earlier this month, an interactive digital platform centralizing the country's socio-economic data was launched for investors.

## Dandemutande eyes US\$15 million DC for Zimbabwe

ISP Dandemutande is planning to build a US\$15 million data centre in Zimbabwe. The company made the commitment under the International Telecommunication Union (ITU) Partner2Connect programme.

The Tier 3 data centre will guarantee a redundant infrastructure with multiple paths for power supply and cooling, thus limiting theoretical downtime to just 1.6 hours per year. In addition, the data centre will be carrier-neutral, meaning that different providers will be able to host their infrastructure there without restriction.

"The data centre will provide high-quality, reliable and scalable services in the SADC region, creating jobs and economic activity, while contributing to the local tax base. It will target underserved segments such as small businesses, content providers, financial institutions, government agencies and healthcare providers," said the ITU.

Dandemutande has committed to completing the data centre by 1 June 2026. The facility is expected to boost the ISP's capacity to meet the growing demand for data services driven by digital transformation and economic growth.

In addition to strengthening its telecom infrastructure, Dandemutande is positioning itself in the fast-growing data centre market. According to data portal Statista, the data centre market revenue in Southern Africa is expected to reach US\$1.42 billion in 2025. This figure is expected to grow at a CAGR of 5.14% over the period 2025-2029 to reach US\$1.73 billion.

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## Internet more affordable for South Africans

South Africa's Internet affordability improved substantially between 2023-2024, according to Surfshark's latest Digital Quality of Life (DQL) Index. However, the country's internet performance deteriorated substantially compared to other countries.

South Africa's DQL Index score of 0.4355 was an improvement of 4.13% over 2023. The score placed South Africa 66th out of 121 countries, compared with 72nd in the previous year. It was also 1st of the 25 assessed African countries. The country's best pillar was internet affordability, where it climbed nine spots from 52nd to 43rd.

For mobile internet packages, South Africa climbed from 63rd to 44th, a 19-place jump. According to

Surfshark, it would take the average South African worker an hour, 5 minutes, and eight seconds to earn enough money to afford a stable mobile internet connection. Although an improvement over 2023, it was still lower than the 35 seconds of 2022 and 59 seconds in 2021.

Fixed internet affordability improved just slightly from 42nd to 41st, with the time of work required for one of these packages at one hour, 34 minutes, and 12 seconds. South Africa also jumped 15 positions in the electronic infrastructure category and five spots in the electronic government ranking.

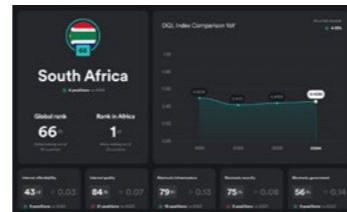
The main reason for the improvement in infrastructure was due to internet penetration increasing

from 58% to 75% of the population, pushing South Africa up 17 spots in the ranking for this criterion. The country's standing in electronic government improved due to the increased availability of government-run online services.

One area where South Africa's DQL rating took a big hit was in Internet quality. The country's ranking in this pillar plummeted 21 places to 84th. This was mostly to blame on South Africa's fixed broadband performance. While average speeds increased from 70.21Mbps to 79.28Mbps, the improvement was less than what other countries had seen. The biggest culprit, however, was fixed internet stability, where South Africa's ranking crashed

from 27th to 96th – potentially due to multiple subsea cable outages across Africa's coast in 2024.

The average mobile internet speed improved from 68.1Mbps to 91.44Mbps, pushing South Africa up to 48th in this indicator. Mobile internet stability also improved substantially, resulting in South Africa climbing 32 places to 31st out of all the analysed countries.



## MTN South Africa to shut down 3G this year

MTN South Africa reportedly plans to shut down its 3G mobile network by the end of this year – one year earlier than initially planned – following a successful pilot project in Cape Town to migrate 3G users to 4G and 5G.

According to media reports, the pilot – which covered Durbanville, Greater Melkbosstrand and several Cape Town suburbs – was launched early last year to help MTN fine-tune the migration process.

The 3G shutdown has been planned since 2022, when the Department of Communications and Digital Technologies (DCDT) said it wanted 2G and 3G services to be shut off to modernise South Africa's mobile networks and free up spectrum for 4G and 5G.

The DCDT originally ordered 2G to

be shut down by June 2024 and 3G by March 2025. However, in February the ministry agreed to push the shutdown deadline for both networks to the end of 2027. Even then, however, concerns remained over how the switch off would be handled and the scope of the potential impact on users.

MTN had previously announced that it would shut down its 3G network at the end of 2026. Following the success of the migration pilot in Cape Town, however, the telco said it will move up the cutoff date to 31 December 2025.

MTN told Cape Town customers in a letter that the transition would be implemented in stages to minimise disruption, the report said, although it added that some short-term disruption was inevitable.

Meanwhile, the Independent Communications Authority of South Africa (ICASA) is conducting an economic impact assessment to ensure that the 3G shutdown will not adversely impact subscribers, especially in areas where 4G coverage is limited or non-existent. According to ICASA figures, 4G covers 98.5% of South Africa's population. By contrast, 3G covers 99.9% of the population.

The pace of shutting down 2G and 3G networks in Africa has picked up as mobile network operators roll out switch-off plans and the adoption of high speed networks rises.

Retiring legacy networks offers huge possibilities to unlock opportunities in an internet economy that is estimated to be worth US\$180 billion by 2025 – over 5% of Africa's economy.

## Zimbabwe targets new satellites

Through the Zimbabwe National Geospatial and Space Agency (ZINGSA), the country plans to develop additional satellites, including its third Earth Observational satellite, ZIMSAT-3.

ZINGSA's director general, Painos Gemwe, highlighted that the agency is keen to leverage space technology for national development.

The country's specific and practical needs have driven the increase in the number of its planned satellites. Zimbabwe does not have real-time Earth observation capabilities that provide updated satellite imagery every 5-6 hours. Such capabilities are essential to applications such as monitoring environmental changes, analysing crop yields and monitoring soil erosion. This has been evidenced by the prioritisation of agricultural support through ZIMSAT-2, the country's second satellite launched into orbit in November 2024.

To support the development of these future satellites, the Mazowe Ground Station has been upgraded to accommodate the L, S and X bands, including Ultra-High Frequency (UHF) and Very High Frequency (VHF) transmissions. This makes the ground station a commercially viable project with potential for ground-station-as-a-service capabilities, as it continues to assist the country in transmission of its available in-orbit satellites.

## Zambia launches Public Service Change Management Framework

Zambia has launched a Public Service Change Management Framework, accelerating digital transformation for efficient, transparent governance and improved citizen service delivery.

Secretary to the Cabinet, Patrick Kangwa, officiated the launch, commending the e-Government Division (SMART Zambia Institute) for its efforts in revolutionizing access to government services through digital means. Kangwa said

that citizens can now use digital platforms to pay for government services, a significant step towards efficient and corrupt-free service delivery. He also praised SMART Zambia's National Coordinator, Percy Chinyama, for leading the digital transformation agenda.

The launch is part of the government's efforts to adapt to the evolving landscape of technological innovations and citizen expectations.



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## WBA releases L4S guidelines for WiFi networks

The Wireless Broadband Alliance (WBA) has today released a set of "L4S Implementation Guidelines" for Low Latency, Low Loss, and Scalable (L4S) throughput over Wi-Fi networks.

The guidelines demonstrate how demand for low-latency Wi-Fi applications such as cloud gaming, augmented reality (AR), and virtual reality (VR) can be achieved with an explanation of implementation approaches, Access Point (AP) tests and simulation studies for L4S AP performance in different scenarios.

Demand for L4S applications is growing, with both telecoms organisations and developers

beginning to implement the technology. Apple, for example, provides guidance to developers on how to implement L4S in their apps, in 2024 Nokia and Vodafone conducted the first trial of L4S over an end-to-end Passive Optical Network (PON), reducing latency from 550 milliseconds to 12 milliseconds, demonstrating its suitability for real-time applications, and Comcast recently announced deployment of L4S technology, which will be rolling out across its entire footprint.

Buffering is a primary source of delay in both wired and wireless networks, occurring when incoming packets exceed the departure rate,

leading to high buffer occupancy. Latency in Wi-Fi networks is largely influenced by two factors: delays associated with queuing and buffering under load, and delays introduced by the 802.11 Media Access Control (MAC) protocol.

The adoption of L4S technology is set to revolutionize Wi-Fi performance, particularly for applications that demand low latency and high throughput. To address these issues, the L4S project aims to minimize buffering delays, reduce data loss, and enable scalable throughput. This will enable several business benefits for vendors, enterprises and customers, including

supporting next-gen applications, and enhanced customer satisfaction and revenue potential.

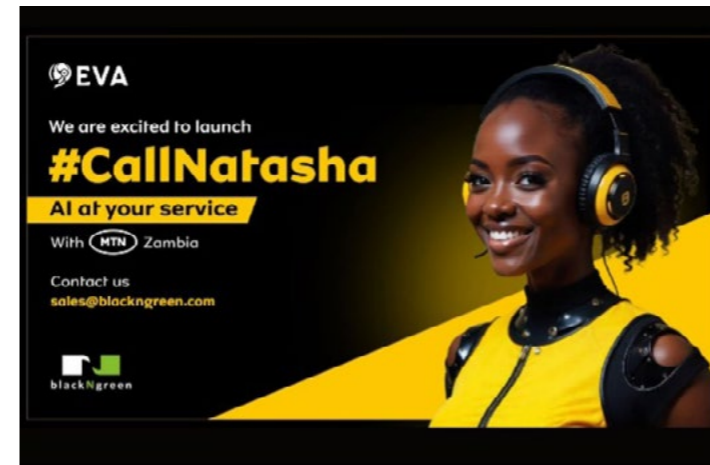
"As L4S technology continues to evolve and gain traction, it will play a pivotal role in shaping the future of Wi-Fi networks, ensuring they meet the demands of modern, latency-sensitive applications. The L4S Implementation Guide will help vendors and enterprises to achieve maximum business impact from the technology and improve customer experiences for latency sensitive applications such as gaming and virtual reality," said Tiago Rodrigues, President and CEO of the Wireless Broadband Alliance.

## MTN Zambia launches Call Natasha chatbot

MTN Zambia and blackNgreen have introduced 'Call Natasha' powered by blackNgreen's AI conversational agent, 'EVA'. The service aims to bridge the digital divide by providing AI-driven support on topics ranging from financial tips to global news.

"We are proud to share MTN Zambia's first AI tool – 'Call

Natasha.' At MTN Zambia, we believe that everyone deserves the benefits of a modern connected life and we are confident that this new innovative platform will bridge the gap for customers in how they access information," said Charles Mbewe, Digital Senior Manager, MTN Zambia.



## ZICTA names Collins Mbulo as new director general

The Zambia Information and Communications Technology Authority (ZICTA) has named Collins Mbulo as its new director general to spearhead the country's digital transformation program.

Mbulo joined ZICTA in 2008 as a spectrum planning and licensing engineer, having previously served as the director of engineering and technical services. He has 17 years of experience in telecommunications and information technology across multiple disciplines, has led numerous information and communication technology initiatives, and has served as an expert for both private and public sector organisations in Zambia and abroad.

He has also led engineering teams of specialists at the national, continental, and worldwide levels, chaired multiple worldwide Telecommunications Union (ITU)

meetings and study groups, and held expert leadership roles within ITU.

"The Board is confident in Eng. Mbulo's ability to lead the ZICTA management team in advancing Zambia's digital transformation agenda and believes his leadership will be key to achieving the vision of a connected and inclusive digital Zambia," said ZICTA in a statement.



## Unitel opts for solar at 300 sites

Unitel has reported that it operates more than 300 sites powered by 100% solar energy and about 100 hybrid sites.

The operator says that this reduces its reliance on fossil fuels while improving connectivity in remote areas where access to electricity can be complicated.

Like other African mobile operators, Unitel is highly sensitive to the region's

energy challenges. The use of solar energy is part of Unitel's efforts to accelerate coverage across the entire Angolan territory. By the end of October 2024, Unitel's 4G covered 22 localities, 179 communes and 130 municipalities. 3G was available in 44 localities, 246 communes and 158 municipalities. 5G covered 5.5% of municipalities and 2.2% of communes.



## 35% of Africa's device users hit by online scams

More than a third (35%) of African users of smart devices such as smartphones, tablets and laptops admit to having lost money to online scams, according to a report from KnowBe4.

The 'KnowBe4 African Cybersecurity & Awareness Report 2025' report is based on a survey conducted in September 2024 among a sample of 800 connected device users aged 30-60 in seven African countries (Morocco, South Africa, Nigeria, Ghana, Egypt, Kenya and Botswana).

Yet the overwhelming majority of respondents (83%) expressed confidence in their ability to recognize a security incident if they saw one. However, this high level of confidence does not appear to be well founded. 53% of respondents admitted that they did not know what ransomware was, while 37%

said they had fallen for fake news or a disinformation campaign. Additionally, 32% had clicked on a phishing email and 23% had been scammed following a phone call.

This disconnect between confidence and reality on the ground highlights the critical issue of overconfidence, often linked to the Dunning-Kruger effect, a cognitive bias in which individuals overestimate their skills in areas where they lack knowledge. This can be particularly dangerous in cybersecurity, as this 'overconfidence effect' creates a false sense of preparedness, making individuals and organizations more vulnerable to threats they don't fully understand or anticipate. This is especially true as cybercrimes become more sophisticated and harder to detect with the emergence of 'fraud-as-a-service' platforms that provide cybercriminals with

tools, techniques, and resources that make it easier to execute and expand fraudulent activities.

Email phishing and voice phishing remain the primary attack vectors, while cybercriminals are exploiting various communication channels and leveraging technological advances, such as artificial intelligence (AI)-generated content, for identity theft, extortion and data theft.

The survey also highlighted a worrying trend in the ease with which African smart device users disclose their personal information. The percentage of respondents who are 'very unlikely' to disclose personal information has almost halved, from 29% in 2023 to 14% in 2025. 14% of respondents, 97% of whom use smartphones and 74% use laptops, are comfortable sharing personal information, with 8% saying they are likely to do so if they can

get something in return, such as a discount on a purchase, and 6% saying they will share personal information at any time.

The level of understanding of using strong passwords also declined slightly, from 62% in 2023 to 58% in 2024, while understanding of multi-factor authentication remained stable at around 58%.

The report also found that the percentage of respondents saying they were 'very concerned' about cybercrime nearly doubled to 58% in September 2024, compared to 29% in the same month of 2023.

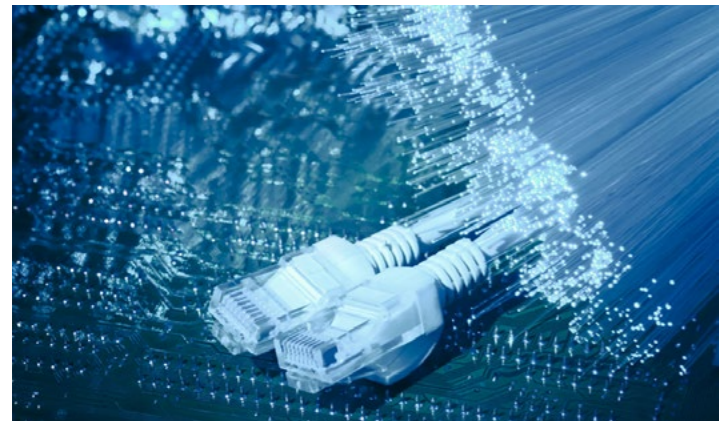
When asked what concerns them about cybercrime, 49% said they fear becoming a victim of online fraud and losing money, while 26% fear identity theft, 18% worry about their children and family, and 7% say they don't understand how to protect themselves from cybercrime.

## Raxio Group's DRC facility gains Tier III certification

Raxio Group's 1.5MW data centre in the Democratic Republic of Congo (DRC) has successfully achieved the Tier Certification of Constructed Facility (TCCF) from Uptime Institute.

expertise and unwavering dedication to quality.

"Achieving the TCCF for our DRC data centre is a significant milestone for Raxio Group. This certification not only demonstrates the resilience



The Tier III certification process involved a rigorous four-day, on-site evaluation conducted by Uptime Institute engineers. Every aspect of the facility's design and construction was thoroughly tested, inspected, and verified to ensure full compliance with Tier III standards. Successfully passing every test validates that the facility has been built entirely in accordance with the approved design documents, underscoring Raxio's technical

and adaptability of our team in overcoming many challenges but also reinforces our commitment to building and operating state-of-the-art data centres in emerging market," said Robert Saunders, CTO, Raxio Group.

With this latest certification, Raxio now boasts three Tier III certified facilities across its growing portfolio, further solidifying its reputation as a leading provider of cutting-edge data centre solutions in Africa.

## Malawi advances digital passport system

The Malawian government has signed a five-year, \$29.97 million passport production contract with Madras Security Printers Private Limited, which will replace local ICT company E-Tech Systems.

The decision comes after the government terminated a \$60.8 million contract with Techno Brain in 2021, citing violations in the agreement signed by the previous administration. Last year, E-Tech Systems was briefly contracted to produce passports.

"The new supplier can print more than 2,000 passports each day, compared to the present output of less than 1,000. This will significantly reduce the backlog and shorten

passport processing times," said Minister of Homeland Security Ezekiel Ching'oma.

Malawi's passport system has seen numerous technological and security problems in recent years.

The Immigration Department ceased passport production in February 2023 due to a system failure. Around the same time, President Lazarus Chakwera announced in Parliament that cyber criminals had hacked the system and demanded a ransom, hindering operations.

The government has since sought a more secure and efficient digital passport system to avoid future cyber threats and delays.



# Reflections from 2024: Navigating challenges and unlocking opportunities in Africa's telecom industry

As we step into 2025, the reflections from 2024 offer invaluable insights into the challenges and opportunities that shaped the African telecom industry. The past year has been particularly strenuous for this sector, highlighting several pivotal issues that need urgent attention to ensure sustainable growth and development.

While we are already seeing growing interest in autonomous networks and analytics, the reality is that the telecom industry in Africa faced sluggish progress in adopting these technologies in 2024. Communication Service Providers (CSPs) found themselves in a difficult position, having to juggle between maintaining traditional network operations and making substantial investments in automation and intelligent analytics. The slow pace of automation deployment is impeding the provision of advanced service offerings, putting CSPs under significant pressure to pivot towards enterprise use cases and Fintech services to sustain growth.

The ongoing macroeconomic challenges, coupled with political instability across various regions, have exerted additional strain on CSPs. The devaluation of local currencies, high inflation rates, and the scarcity of hard currency have complicated financial planning and investment strategies. These factors have hindered the ability

of CSPs to modernise their network infrastructure and expand their services. Onerous regulatory requirements have also presented significant hurdles for CSPs. Navigating complex regulatory landscapes, often involving stringent compliance mandates and penalties, adds to the operational difficulties faced by telecom operators in the region. Despite the growing demand for connectivity, the cost associated with implementing intelligent automation and security solutions remains a substantial barrier to increased adoption across the continent. Many CSPs struggle with the financial burden of deploying AI-driven network analytics and security frameworks, limiting the potential for enhanced operational efficiency and threat mitigation.

High operating costs, primarily driven by escalating energy tariffs, have further exacerbated the financial burden on CSPs. This increase in operational expenditure has made it challenging for telecom companies to maintain profitability while investing in network enhancements and new technologies.

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### Thriving innovation in connectivity solutions

On a more positive note, innovation in Africa continues to thrive. The continent has seen several world-first initiatives aimed at connecting underserved and poor communities. These innovative solutions have brought hope to millions, offering a glimpse into the potential of technology to bridge the digital divide.

AI and automation are emerging as essential tools for the survival and growth of traditional CSPs. The complexity of managing networks that span multiple generations, from 2G to 5G advanced, has made manual operations untenable. AI-driven automation allows networks to optimise themselves in real-

time, enhancing user experience and reducing operational costs.

Most CSPs in Africa are currently at an automation level of between 1.5 and 2, indicating a slow adoption of AI technologies. Nokia's suite of software solutions and services exemplifies how AI can be leveraged to create intelligent, self-optimising networks. These solutions not only enhance network efficiency but also contribute to energy conservation by dynamically powering down idle equipment without compromising service quality. In the future, the ability to automate network slices to guarantee capacity for enterprise use cases will be a key differentiator for CSPs.

### Overcoming unique security challenges

The telecom industry faces unique security challenges that differ significantly from traditional IT networks. The complexity of telecom ecosystems requires specialised security solutions which span core, radio and transport networks, areas of the network largely overlooked by the CSP's and traditional cybersecurity vendors. Nokia's advanced security products, such as Identity and Access Management (IAM), Endpoint Detection and Response (EDR), and Nokia Cybersecurity Dome (NCYD), are tailored to protect telecom networks from evolving threats using Generative AI. As we enter the Quantum era, Quantum computing will have the potential to crack current encryption models. Nokia is already incorporating Quantum safe models into its product offerings to future proof networks for the future.

Nokia has also developed AI/ML-based telecom use cases to proactively safeguard networks from diverse attack vectors. The introduction of Generative AI, integrated with Nokia's Threat Intelligence, into telecom focussed cybersecurity solutions dramatically reduces the time to identify, respond and remediate threats. Remediation is reduced from days

to seconds once fully implemented and integrated across the Core, Radio and Transport networks. The repercussions of telco security breaches can be severe, leading to network failures and potentially disrupting essential services. Nokia's telco-centric security solutions are designed to protect both operational and information technology systems, ensuring robust defence mechanisms against the sophisticated threats of the 5G and Industry 4.0 era.

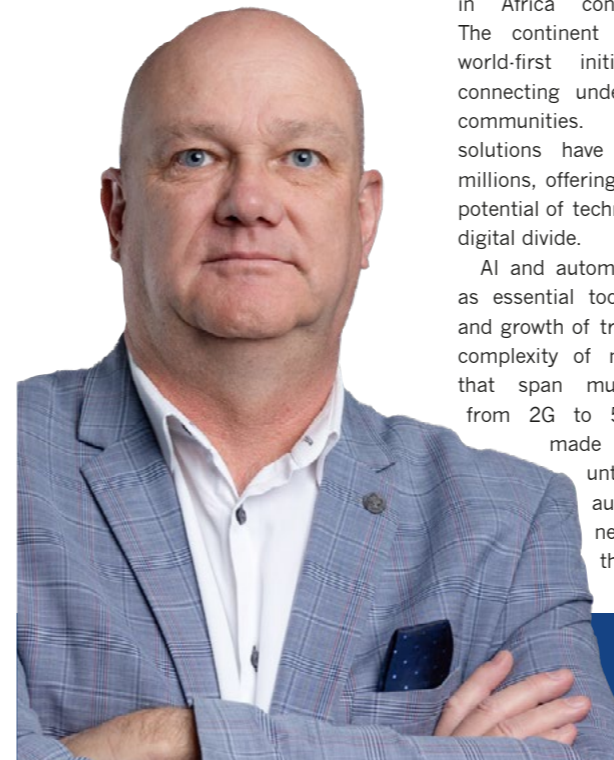
### A promising path forward for 2025

Cloud-native technologies are set to gain momentum in 2025, forming the foundation for the evolution towards autonomous networks. This shift is expected to enhance the scalability and flexibility of telecom networks, allowing CSPs to better manage resources and reduce costs.

Edge computing will play a pivotal role in the technological evolution of 2025. By moving workloads closer to the end-user, edge computing will alleviate congestion on core networks, reduce latency, and improve customer experiences in areas such as gaming and video streaming. Nokia's high-capacity packet core appliances exemplify the potential of edge solutions to enhance performance and reduce power consumption.

As Africa becomes a larger target for cyber threats, CSPs will place increased focus on cybersecurity measures. The need to protect the newly connected populations will drive investments in robust security frameworks to prevent data breaches and service disruptions.

While 2024 presented numerous challenges for the African telecom industry, the advancements in AI, automation, and innovative connectivity solutions offer a promising path forward. With the right investments and strategic focus, 2025 could mark a turning point for CSPs in Africa, fostering growth and resilience in an increasingly digital world. ■



**Chris Butler, Vice President, Vodafone MEA Account, Cloud & Network Services at Nokia**

## ATU weighs in on Africa's 5G readiness

The African Telecommunications Union (ATU) has unveiled a new report that evaluates the readiness of African countries to roll out and utilize 5G networks across the continent.

The 'Report on 5G Preparedness and Relevant Use Cases in Africa' estimates that Africa's internet use at 38% of the population against a global average of 68%. To bridge the gaps in both universal and more so meaningful connectivity, Africa, led by the African Union and supported by various institutions, is implementing the Digital Transformation Strategy for Africa (2020–2030).

ATU is actively undertaking various initiatives aimed at supporting the full and innovative implementation of the said strategy. Besides supporting the DTS, it is the statutory objective of the ATU to 'promote programmes for the development of the African Information Society', by promoting the development and adoption of appropriate African telecommunications policy and regulatory frameworks.

The report focusses on assessing the readiness of African countries to deploy, operate and use 5G networks. The report further explores challenges impacting the deployment of 5G in Africa and the status of deployment in countries that have already embarked on the process. Even more significantly, prominent locally relevant use cases for 5G are well elaborated. In the concluding sections, the report provides recommendations to support decision-making for the deployment of 5G networks and use cases in Africa with the ultimate objective of fostering its maximised benefit.

"I earnestly appeal to our Member States to exercise utmost political and technical goodwill towards this report. The recommendations on 5G usage are crucial, and the success of their implementation will have far-reaching impact on the societies and economies across our continent," said John OMO, Secretary-General, ATU.

### Talking critical

#### Managing mission critical video on a massive scale

For first responders and emergency services workers around the world, applications and services that can enhance their work and contribute to greater safety and better outcomes are welcomed. Video is one of the most promising and versatile technologies for improving operational efficiency and effectiveness. With the increasing use of bodycams and drones, video is now widely considered as a significant capability to improve safety, coordination, collaboration, and quality decision-making, particularly during high stakes, end-user operational scenarios.

However, to ensure the effective use of video, public safety agencies and operators need to consider how to successfully deploy the service to support mission-critical operations, especially where the scale of its usage is considered 'massive'. This means situations where the amount of video could potentially saturate network resources, if not appropriately managed.

To address this, TCCA has formed a task force focused on massive mission critical video deployments, and specifically identifying the key considerations when planning its implementation and use. One of the first outputs of the task force is the white paper 'Guidance for the successful usage of Massive Mission Critical Video'.

Within the paper, key use cases representing different categories of operations are documented, i.e. day-to-day (routine) operations, pre-planned events, and major incidents. When analysing these use cases, identifying video producers and consumers is fundamental to understanding the overall problem domain, and those identified include actors such as first responders, officers, dispatchers, operators, government agencies, and other stakeholders.

From the outset, in creating the white paper, an emphasis was placed on identifying the key questions and challenges posed by mass use of video. This involved, amongst other things, polling representatives from

government agencies and the critical communications industry. The results of the poll showed that the most frequent key challenges related to:

- (i) Being able to set priorities and maintain control over the video flows
- (ii) Ensuring seamless communications across different systems
- (iii) Avoiding network congestion due to excessive video traffic

It is clear from the paper that using video effectively requires some forward planning and appropriate design of the network platforms to be used, especially in cases involving massive use of video. Properly dimensioning the network in terms of topology, spectrum and capacity is obviously a pre-requisite, as are the prioritisation of resources such as Quality of Service, Priority and Pre-emption (QPP) mechanisms. To manage the video streams, both application and operational perspectives need to be considered: 3GPP Mission Critical Video standards should be implemented, as well as the utilisation of video applications that react to the availability of network resources in a dynamic way in order to provide contextual data to the control room.

The main conclusions from this analysis - assuming no prioritisation of video streams or quality had occurred, and taking the use cases and a particular model of a typical commercial mobile network operator (MNO) network as a basis - show that how the warning phase of an incident is likely to be supported depends on the criticality of the incidents. A single dedicated radio network offers enough capacity for minor incidents; for major incidents a single commercial network is sufficient, whereas a combination of a dedicated radio network and a commercial network is recommended for critical incidents in rural areas.

Critical incidents are often characterised by very high traffic levels, not only from first responders but also consumers using commercial networks, which if not managed could generate congestion impacting all. Implementing QPP including access and application priority mechanisms and optimising the radio network will serve to manage these high

load situations. Most situations would benefit from implementing greater video compression techniques and prioritisation of video streams wherever possible.

A key outcome from this study was the identification of the principal challenges linked to the massive operational use of video, particularly in each identified scenario, incident phase and locality (urban, suburban and rural). All user organisations interviewed had concerns about video being very bandwidth-hungry and therefore considered video flow management - i.e. avoiding and handling congestion situations due to excessive video traffic - as an important aspect of their operations. The organisations identified the need to set priorities between video streams and maintain control of the priorities during operations. Interoperability and seamless communications across different systems and agencies must also be ensured.

Among the solutions to address these challenges is the implementation of an appropriate network capability with sufficient capacity. This can involve a dedicated radio network (or network layer), access to the Radio Access Network (RAN) of a commercial MNO, as well as being able to deploy additional and significant capacity and coverage on site through rapidly deployable networks. Access to spectrum, whether dedicated or shared, is therefore also key for video. This is true whether the wide area coverage is provided via dedicated or commercial network(s).

The white paper identifies several network and video application capabilities relevant for managing massive use of video, but it is essential that operations are also taken into perspective to maximise the benefit of using video, as well as adopting standards-compliant solutions.

Advances in intelligent video applications and network capabilities will improve the usability of video in mission critical situations over time. The overall objective is to ensure that first responders and public safety agencies (and by implication other critical communication sectors) can use video effectively and for operational benefit.



Jason Johur, TCCA Board Director and Vice-Chair, Broadband Industry Group

## Airtel Kenya revs up mobile money efforts

Airtel Kenya is looking to strengthen its competitiveness in the mobile money segment dominated by Safaricom and its M-Pesa platform.

The company plans to implement payment interoperability by March, allowing M-Pesa users to pay for goods and services on Airtel Money, according to Airtel Money Managing Director Anne Kinuthia-Otieno.

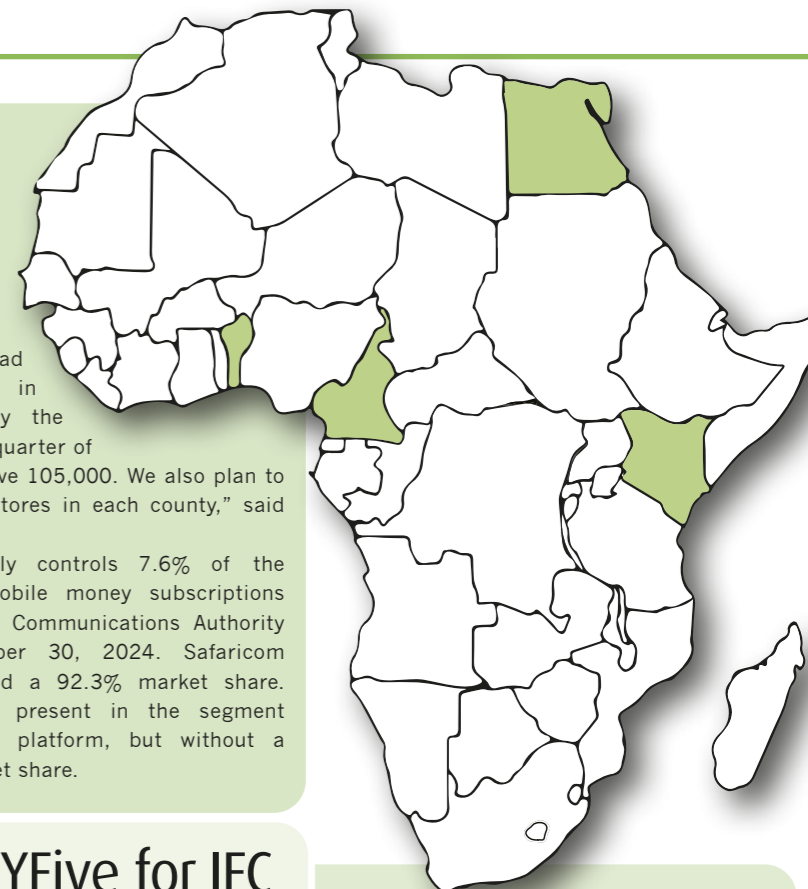
"Currently, our customers can pay into competitor billing accounts, and now we will allow the reverse: any customer of a competitor service will also be able to make payments into Airtel Money accounts," said Kinuthia-Otieno.

Airtel Kenya continues to expand its Mobile Money agent network across the country. In 2024, the company launched 60 new agents,

bringing its total to over 2,300.

"Two years ago, we had 80,000 agents in this market. By the end of the first quarter of 2025, we will have 105,000. We also plan to open exclusive stores in each county," said Kinuthia-Otieno.

Airtel currently controls 7.6% of the 40.6 million mobile money subscriptions recorded by the Communications Authority as of September 30, 2024. Safaricom and M-Pesa hold a 92.3% market share. Telkom is also present in the segment with its T-Kash platform, but without a significant market share.



## AITA partners with Arabia SKYFive for IFC

Africa for Information Technology and Aviation (AITA), which specialises in aviation IT solutions, has announced a strategic partnership with Arabia SKYFive, which provides broadband connectivity for aircraft, to provide high-speed in-flight connectivity (IFC) services for airlines in Egypt.

The collaboration will leverage the latest air-to-ground (A2G) communication technology and address the issue of Egypt being a prominent travel destination but one with severely limited in-flight connections.

Discussions with major Egyptian airlines on service implementation are already underway, with sign-off said to be likely in the near future.

The first commercial aircraft is scheduled to be ready for operation on an international route between Egypt and Saudi Arabia by the end of 2025.

Through this partnership with SKYFive Arabia, AITA says it will offer Egyptian airlines high-speed broadband connectivity, ensuring seamless and instant responsiveness for both passengers and crew. The A2G technology, developed by the German parent company

SKYFive, has already been successfully deployed across Europe. In fact, Egyptian companies will join a number of top-tier global airlines that are already using SKYFive technology through the European Aviation Network (EAN) operated by Viasat. Egyptian airlines will also benefit from uninterrupted connectivity across Europe via a roaming agreement between SKYFive and Viasat.

It has been estimated that the implementation of the A2G network in Egypt will benefit over 25 million passengers annually.

AITA explains that a ground-based network, leveraging proven cellular technology, will ensure that passengers can expect a seamless browsing experience with high speeds and minimal latency. The integration of lightweight technology not only enhances efficiency but also reduces weight and drag, contributing to lower fuel consumption and improved environmental sustainability.

AITA aims to expand its partnerships to cover all airlines in Egypt. It says it also has an ambitious expansion plan to introduce in-flight internet technology across Africa.

## Camtel makes new hires to solve service issues

Camtel added 75 new tech hires in the third week of February, including computer integration specialists, software development engineers, and satellite solution specialists, in an effort to improve service delivery in the face of strong competition.

The new employees, who just completed a four-month intense in-house training at the National Emergency Telecommunications Network Centre in Ekounou-Yaounde, join the telco's existing pool of 180 technicians dispersed across the country.

"Camtel has the task to digitalise Cameroon's economy and to do that, we need qualified human resources and that is what we have done with the recruitment of these young engineers," said Judith Yah Sunday Achidi, Camtel's general manager. "We have the conviction that we have recruited the best talents and from the interactions we have had with them for the past four months, we are very sure that they will play an essential role in our digital transformation drive."

Camtel intends to use its expanded technical staff, as well as emerging technologies it has acquired, to combat recurring network failures.



## Benin cracks down on SIM registration

In Benin, SIM cards not registered after 30 March 2025 will be deactivated from 30 April. This was decided by the Electronic Communications and Postal Regulatory Authority (ARCEP) during the last extraordinary session of its Council.

"Upon notification of this decision, electronic communications network operators will send a daily SMS notification indicating to the users concerned on their networks the timetable for

the end of the process (end date of identification data update operations, date of receipt and date of deactivation of unidentified subscribers)," said ARCEP in a statement.

The Beninese authorities have imposed SIM registration to better protect telecom subscribers against fraud, scams and cybercrime in general by precisely identifying each user. This also allows them to better regulate the telecommunications sector.

## Djezzy enters the cloud

Djezzy has launched into the cloud segment to support businesses and institutions in their digital transformation by offering them innovative, reliable and secure solutions.

“The cloud, an essential lever for the competitiveness of companies, is a solution that provides access to flexible, secure IT resources adapted to their needs,” said Djezzy in statement.

Djezzy is positioning itself in a growing market in a context of digital transformation where telecom operators want to diversify their activities beyond traditional mobile telephony services. The Global Mobile Phone Association (GSMA) believes that services beyond the core business are becoming increasingly important in the

growth strategy of operators in the Middle East and North Africa (MENA).

The organization cites a 2023 survey which showed that 57% of operators in 2023 cited public cloud among their top three technology priorities for businesses.

This initiative could allow Djezzy to increase its revenues. The company posted a turnover of 112.17 billion dinars in 2024, up 10% compared to 2023.

## Somalia seeks consumer telco views

Somalia’s National Communications Authority (NCA) has launched an online survey to gather consumers’ views on the pricing of telecommunications services.

“The authority seeks to understand consumer experiences and satisfaction with the tariff structures of different telecom operators. Your observations will help identify trends in service costs and refine the regulatory framework governing the pricing of telecommunications services,” it said in a post on X.

The survey comes days after the launch of the country’s first National Internet Protocol IPv6 Center, Somalia’s first step in the IPv6 transition process, which is critical to expanding internet access, strengthening network security, and supporting emerging technologies such as 5G and the Internet of Things.

“By participating, you are not only helping to increase transparency, but you are also supporting efforts to increase competition and consumer responsibility in the sector,” said the NCA.

## Ethio Telecom expands 5G to Jimma

Ethio telecom has continued its nationwide 5G expansion with the launch of 5G services in Jimma City.

This milestone is a significant step in the company’s mission to accelerate Ethiopia’s digital transformation, ensuring high-speed



connectivity and unlocking new opportunities for innovation and economic growth.

The network is now available in Jimma City, particularly around Jimma Zone Administration Office, Ferenj Arada, Central Hotel, Haile Hotel and Stadium Area, Dololo Hotel, Firomsis Hospital, Central Merkato, Kochi, Jimma University, Mizan and Boye areas.

Ethio telecom’s 5G network delivers speeds of up to 10Gbps with ultra-low latency as low as 1ms, supporting up to 1 million devices per square kilometer. The technology is designed to meet the rapidly growing data and internet demands of individuals, enterprises, and industries. The expansion facilitates online education and training, fostering innovation and job creation for startups while bridging the digital divide through increased smartphone access.

## Algeria Telecom and Huawei to boost digital transformation with ultra-high-speed network

Algeria Telecom has partnered with Huawei to deploy a 400G ultra-high-speed optical network, capable of transmitting data at a speed of 400Gbps. The initiative is expected to help strengthen the country’s telecom infrastructure to accelerate digital transformation.

Algeria Telecom and Huawei said that the 400G ultra-high-speed optical network will provide higher bandwidth and transmission speed than the existing network, as well as low latency, thus better handling the growing demand for data traffic.

“This ultra-fast network will provide a solid foundation for the development of the digital economy in Algeria and boost the growth of emerging sectors such as e-commerce, cloud computing and big data,” said the partners.

The partnership comes about three weeks after Sid Ali Zerrouki, Algeria’s Minister of Post and Telecommunications, urged mobile operators to take the necessary steps to accelerate the achievement of national connectivity goals. These goals included increasing bandwidth capacities and improving user experience in

line with the highest international standards. According to the minister, this aims to accelerate the implementation of the national digital transformation strategy.

According to Huawei, the project will help improve network speed and capacity; promote the development of the digital economy via e-commerce, cloud computing, and big data; and improve people’s livelihood services and promote the improvement of digital service levels in fields such as education, medical care, and government affairs.

## Ethio Telecom expands rapidly, meets revenue generation targets

Ethio Telecom is growing rapidly across multiple verticals, including meeting its revenue generation target, despite on-going infrastructure upgrade investments.

Ethiopia’s biggest internet and telephone provider published its performance this week in its 2024/25 Semi-Annual Business Performance Report, which covers the period from July to December.

Ethio Telecom ticked green on most of the key metrics during the period, hitting 90.7% of its revenue generation target and 80.5 million total customers, meeting 100% of the subscriber base target. This gain was 5.9 million, or 7.9%, higher than the same period in the previous financial year.

In terms of service types, mobile voice subscribers were 77.7 million, mobile data and internet users 43.5 million, fixed broadband 784.1 thousand, and fixed voice 765.6 thousand.

In terms of mobile coverage, Ethio Telecom deployed 202 new mobile stations and boosted mobile network capacity by 4.6 million, allowing 67 cities to access 4G and 10 cities to connect to 5G.

The operator emphasised that these advances are part of a larger effort to expand telecom services to rural areas. Ethio Telecom’s technological expansion milestones for 2024/25 include both fixed-line and cloud services.

The revenue growth was primarily fuelled by a sharp increase in mobile data usage, which has reached 642.2 billion MB, reflecting a 48.8% rise compared to the same period last fiscal year. Likewise, mobile voice services have expanded to 83.6 billion minutes, registering a 12.7% increase.

These achievements have played a pivotal role in reinforcing our company’s financial performance.

## Safaricom goes digital with billing

Safaricom has taken another step on its journey of digital transformation with Huawei’s Convergent Billing Solution.

Safaricom recently upgraded to the latest version, which is fully cloud-native and features embedded AI to provide an agile base for future services, allowing it to continuously improve system performance, reliability, stability, and intelligence. This will allow the operator to support customer service growth for its 50 million subscribers, as well as enabling innovative options for monetization.

The latest iteration of Huawei’s Convergent Billing Solution increases billing capacity by 40%, now able to support up to 70 million users, and reduces bill run duration by 65% – a significant increase to the billing efficiency. Additionally, the solution recovers more quickly from disruptions to minimize the impact on customers – for example, upgrade patches can be rolled out with zero downtime, and Recovery Time Objectives (RTOs) have been reduced from around 5-15 minutes to just 30 seconds. CBS R23 is more open than previous iterations, supporting 200 restful interfaces, which means developers can create new applications for the system more easily. In addition to its new 2B features, the system features a swathe of enhancements around enterprise billing.

Safaricom is also using CBS’ AIOPS capabilities such as Fault Correlation Analysis and Visualized Topology to drive innovation, and is exploring a joint innovation project with Huawei based

on the vendor’s Idea to Cash platform, aimed at accelerating monetisation via AI technology. The AI Platform is based on Huawei’s Telecom Foundation Model which can support service innovation from accelerating new service go to market and precise smart recommendation, resulting in faster time to revenue.

A pilot project has already taken place with Huawei and Safaricom, focused on users who only use free data, and therefore do not generate additional revenue. The innovation identifies Trigger Conditions – e.g. the user reaching the daily limit on their free data allowance – then recommends a smart offer via a flash USSD notification. The recommendation is based on the size, price and validity of the required data allowance, and the user can buy the package directly from the USSD notification, making it better suited to this task than an SMS notification. By using this AI model to recommend the best package at the most appropriate time, Safaricom has seen a 12% conversion rate significant from 3% over traditional mechanism, yielding a 24% increase in ARPU.

“This success of this project has set a great example for future projects. We are very happy to have cooperated with Safaricom in Convergent Billing Solution for over 13 years. In the future, we look forward to working closely with Safaricom to provide better services and experience for end users in the intelligent era,” said Wei Zhuang, Vice President of Software Business Dept, Huawei.

## Maroc Telecom’s Moov Africa CAPEX expanded 75% year-on-year in 2024

Maroc Telecom’s capital expenditures in its sub-Saharan African subsidiaries operating under the Moov Africa brand reached MAD7.96 billion in 2024, representing a growth rate of 75% compared to the MAD4.54 billion invested by the company in 2023.

3.54 billion dirhams were devoted to the purchase of frequencies and licenses. In Mali, the operator paid 160 billion CFA francs (\$256.2 million) to renew its telecoms license.

This comes amid growing momentum in Maroc Telecom’s investments in its sub-Saharan African subsidiaries. In 2022, the company invested 4.5 billion dirhams, compared to 2.98 billion dirhams in 2021. The company even invested 150 million euros in the construction of a new 9,414 km long submarine fibre optic cable to serve its Moov Africa subsidiaries.

Subsidiaries in sub-Saharan Africa are gradually becoming the group’s main growth driver. At the end of 2024, Moov Africa recorded a turnover of 18.7 billion dirhams, up 4.6%, driven by the growth of mobile Data (+15.6%), fixed internet (+21.1%) and mobile money (+14.4%). Meanwhile, turnover in Morocco fell by 2%, to 19.1 billion dirhams. A trend that is confirmed after 2023, where revenues in sub-Saharan Africa had increased by 6.6%, while those in Morocco had remained stable.

## MEA drives revenue growth for Orange

Africa and the Middle East are continuing to drive revenue growth for Orange. The Africa and Middle East division accounted for nearly all of revenue growth, with Q4 earnings surging 12.6% to €2.02 billion.

Orange's Africa and Middle East division capitalised on its four main growth engines, namely +18.4% in mobile data, +19.5% in fixed broadband, +20.4% for Orange Money and +12.5% in B2B across all activities. Orange Money is particularly popular in many of its 18 African markets, where traditional banking services are less accessible, especially in underserved areas.

The creation of Max-it, a mobile plan introduced in several African countries to offer affordable high volume of data, voice minutes, and text messages was another revenue earnings game changer across the continent.

"The Africa and Middle East region once again delivered a robust performance, driven by its growth engines, namely mobile data, fixed broadband, B2B and Orange Money," said Commenting on the results, Christel Heydemann, CEO, Orange group. "Orange now has over 160 million mobile customers and almost 40 million Orange Money customers on the continent. Orange's activities are a genuine lever for economic development in these countries – progress from which the group also benefits."

Despite a challenging year in its core markets, the company's success in these emerging regions helped offset declines elsewhere, particularly in France, where revenue dropped by 0.6% to €4.57 billion. The rest of Europe also faced a 2.3% decline, bringing in €1.89 billion, and Orange Business saw a 4.1% decrease to just under €2 billion.

Still, Orange successfully met its full-year financial targets, with organic cash flow from telecom activities reaching €3.37 billion, surpassing its guidance of "at least" €3.3 billion. Group EBITDA also grew by 2.7%, aligning with expectations of low single-digit growth.

Heydemann highlighted the achievements as a clear demonstration of the success of the company's "Lead the Future" strategic plan. Looking ahead, he said Orange has maintained its 2025 guidance, targeting around 3% EBITDA growth.

## Talking satellite

### Enabling humanitarian assistance from MEO

Over recent months, SES has been partnering with the European Space Agency (ESA)'s Business Applications and Space Solutions (BASS) programme, supported by the Luxembourg Space Agency (LSA), to enable humanitarian efforts in Burkina Faso.

The co-funded SENO pilot project (Satellite in Response to the Needs of Humanitarian Organisations) provided essential connectivity to the Red Cross and other humanitarian organisations operating in the remote Niger-bordered municipality of Dori, some 265km from the capital Ouagadougou.

### Addressing the demand for reliable high-speed connectivity

For several years now, Burkina Faso has been grappling with significant instability, marked by escalating extremist violence, political upheaval and humanitarian crises that have resulted in connectivity challenges. The landlocked country, and the broader Sahel region, have frequently seen terrestrial networks become destroyed or congested. These hurdles have made it difficult for humanitarian organisations to carry out missions, limiting their capacity to support the social and economic well-being of displaced and local communities.

To help address critical connectivity

issues, SES and Red Cross Burkina Faso (French version) have launched the SENO project under the ESA BASS framework 'Space in Response to Humanitarian Crises.' This partnership provided a reliable, independent and low-latency communication channel for multiple humanitarian organisations in Dori.

IP-based services were used to support displaced individuals and the local community, facilitate the collection and transmission of data using digital applications, online training and collaboration. The medium Earth orbit (MEO)-enabled service allowed significant improvements in daily operations.

"The VSAT connection has a very good throughput, we no longer have any difficulties in transmitting our reports and data collection. Software like Microsoft365, Outlook, TEAMS, OneDrive, requires a good connection," says one project ECHO/APP CRBF user. "I had always heard about online meetings, and it was a great experience for me to finally benefit from these while in Dori – connecting with colleagues in Kongoussi, Fada and Ouagadougou."

### Helping those most in need

Building on SES's and Luxembourg's previous experience in deploying the ICT infrastructure in five locations of Burkina Faso, this collaboration with ESA BASS was a logical step in responding to the evolving needs of the communities and humanitarian workers.

Simon Gatty Saunt, Vice President Sales, Global Service Providers, SES



SES's MEO with its Internet Gateway in Europe, served as the key enabler of the high-performance connectivity solution. End users could enjoy guaranteed 72Mbps download and 33Mbps upload speeds across 11 sites. The initiative was backed by the Luxembourg Space Agency (LSA) and the local Burkinabe authority responsible for ICT, ANPTIC, who provided access to the telecom infrastructure previously installed in partnership with LuxDev.

The SENO pilot took place over several months and benefitted nearly 900 users, including 217 humanitarian workers, through applications usage such as videoconferencing, emails and more, totalling around 29,000 hours. It also helped humanitarians identify more than 4,400 individuals that needed help and enabled more than 50 displaced people make contact with their families.

"Reliable high-speed connectivity is a critical capability that enables the humanitarian community to provide help on the ground," says Philippe Glaesener, Senior Vice President, Space & Defence at SES. "MEO satellite services are a key building block in addressing this connectivity need, especially where access to fibre is limited. It was an honour for us to join efforts with the European Space Agency (ESA), the Luxembourg Space Agency (LSA) and the Red Cross in supporting this meaningful initiative, and leverage our expertise in deploying services for institutions and organisations in remote locations."



# Autonomous TowerCos add a new layer to African telecoms

Amir Turalić, Chief Product Officer, ZIRA Group



As the demand for voice and data traffic continues to grow across Africa, MNOs must ensure the necessary infrastructure is in place. However, this requirement can affect their operational efficiency and profitability. To tackle this challenge, many MNOs are adopting a delayering strategy, which involves dividing their networks into separate, self-governing entities. An example of the benefits of delayering is the emergence of tower companies. The success of these tower companies relies on the presence of a dedicated Business Support Systems (BSS) platform. With these systems in place, Africa's MNOs will be better positioned to optimise their networks and prepare for evolving customer demands for the future.

## Optimising operations

Mobile networks in Africa account for up to 98% of all voice and data traffic across the continent, making them the primary means of voice and internet connections. Since 2020, there has been a significant increase in data traffic, primarily due to the COVID-19 pandemic, which led to more people working and learning from home and a rise in the use of online services such as mobile commerce and mobile banking.

Meeting customers' rapidly changing behaviours and demands can be costly for MNOs. Moreover, while Africa's mobile infrastructure will primarily rely on GSM and 3G technologies in the foreseeable future, a shift to LTE and 5G will be necessary as network demand increases. This transition will require considerable investment.

As MNOs wrestle with changing demands, rising costs, and the complexities of migrating from GSM and 3G to LTE and 5G, they will seek ways to optimise operations and improve efficiency.

For many, delayering may be a viable solution. This process involves separating the traditional telecoms model's governance, financial accountability, and organisational structure into three distinct units (or layers). These layers are made up of the ServeCos, which manage the retail side and what the MNO sells to end-users. The NetCos, which are responsible for the core network and technology stack. And finally, the InfraCos, which oversee the MNO's hardware and assets, including cell towers.

The advantages of delayering are substantial. By reassessing operational structures in this manner, African MNOs can enhance their operational efficiency, free up capital, and invest in next-generation connectivity in anticipation of future demand.

## The TowerCo example

The efficiency of delayered assets and their focus on a specific aspect of telecommunications appeals to investors and can lead to increased cash flow for businesses. Analysts note that pure-play ServeCos, NetCos, and InfraCos tend to outperform traditional telecom companies. For example, tower companies, or TowerCos, can operate their sites approximately 40% more efficiently than conventional telcos, making them attractive partners. It's no surprise that TowerCos have achieved a ROIC (return on investment capital) of 10-15% over the past two decades, while traditional telcos have struggled to break even on their cost of capital.

Independent TowerCos specialise in operating neutral hosts and 'passive' wireless network infrastructure, like mobile towers. By sharing towers with multiple tenants, they improve coverage, reduce MNOs' overall costs, and enable MNOs to pass those savings on to end-users. TowerCos' business model also allows them to find more innovative solutions, sustain growth, and assist partnering companies

in maintaining a competitive edge. Importantly for MNOs throughout Africa, independent TowerCos will play a crucial role in enabling 5G and expanding mobile network coverage across the continent.

## Complex challenges

The evolution of TowerCos from traditional telecom companies has allowed them to focus exclusively on infrastructure, significantly improving efficiency. However, this transition has left them susceptible to challenges that standalone businesses face in complex operating models.

Successful TowerCos must manage multiple tenancies at a single site, support complex business models, and execute intricate quotation processes with numerous variables. Traditional telcos use a BSS – a set of software programmes designed to manage partnerships, customer and service orders, products, and services – to support such processes. But, while practical, these systems were not designed for the complexities of a TowerCo's operations.

TowerCos rely on efficiency and adaptability, but traditional BSS often fail to meet unique industry requirements, such as passive infrastructure leasing, collocation enablement, and support for new technologies like small cells and edge computing.

To maximise efficiency and establish profitable partnerships, TowerCos need dedicated BSS solutions tailored to their specific needs. Relying on manual workarounds and patches can lead to substantial and unnecessary investments of time, effort, and money, ultimately undermining the efficiency that makes them so profitable.

## Advantages of dedicated BSS

A purpose-built BSS solution enables TowerCos to fully capitalise on the business opportunities

presented by Africa's evolving connectivity landscape. A BSS designed specifically for TowerCos can streamline the lead-to-cash process by automating each step, from initial customer engagement to final transactions.

TowerCos can integrate OSS (Operational Support Systems), BSS, and ERP systems to ensure data flows smoothly across segments. This integration is crucial for coordinating complex operational processes required for next-generation networks like 5G and LTE.

BSS solutions also improve customer interactions with robust order capture and management capabilities, enabling quick and accurate responses to service requests. They optimise billing and financial operations, guaranteeing correct invoicing and payment for services rendered.

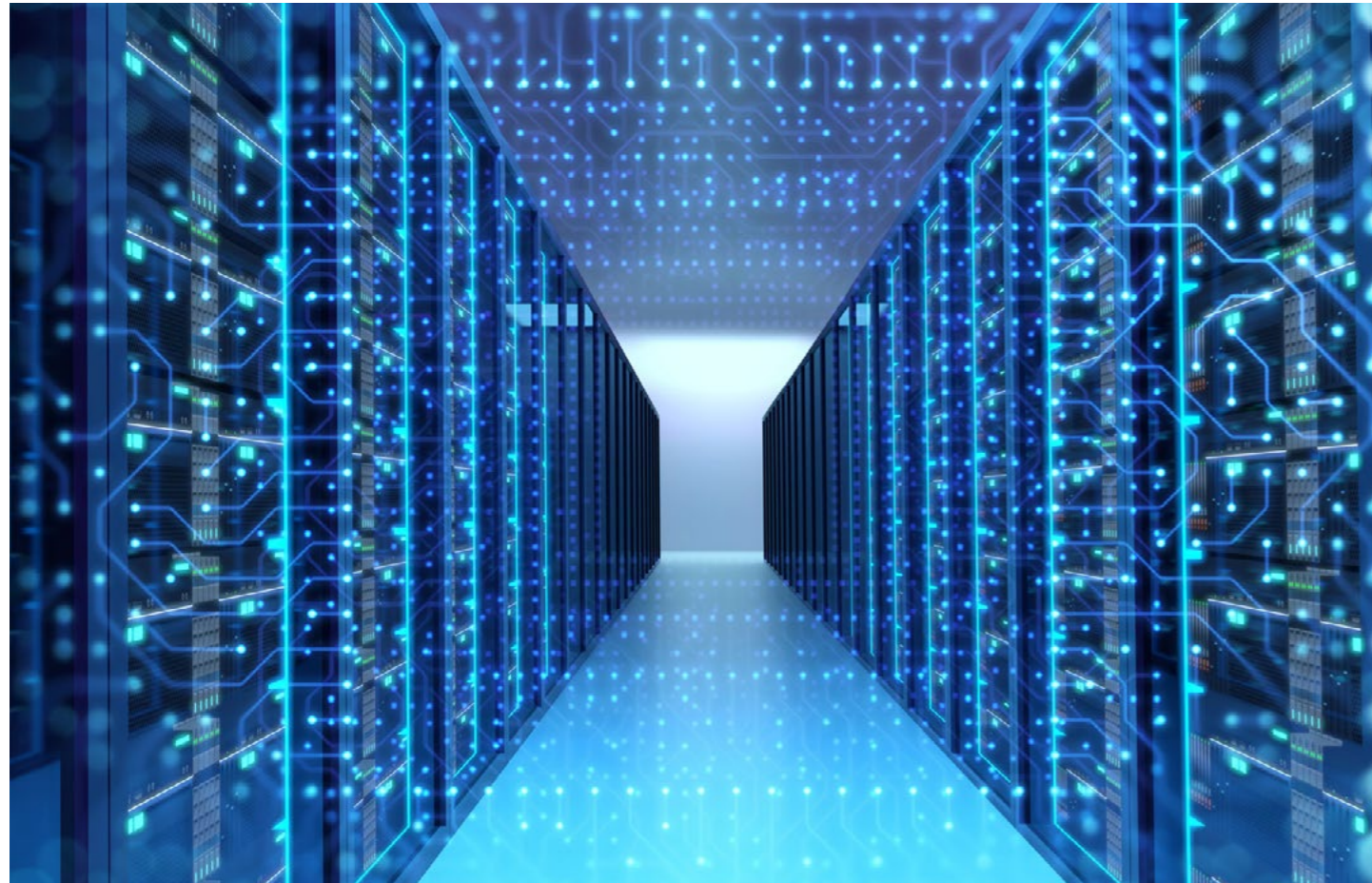
Additionally, a dedicated BSS platform supports complex business models, allowing for tailored service offerings and effective management of contract lifecycles. These systems also provide detailed analytics and reporting tools to identify performance trends and operational efficiencies, which are crucial for making informed decisions on asset utilisation and future investments.

## Seizing opportunities

By incorporating the capabilities of a modern, integrated, and modular BSS solution, TowerCos can streamline their foundational operational processes and adapt to Africa's rapidly evolving telecommunications landscape.

Of course, TowerCos are just one example of how delayering, supported by a dedicated BSS, can help MNOs maximise the efficiency and commercial potential of their business models. With huge changes on the horizon, Africa's MNOs should act now to seize the opportunities available by optimising and streamlining their operations for greater efficiency and profitability. ■





# The end of the in-house MNO data centre?

Times are a changing. The rampant digitisation taking place across the continent is causing a fundamental shift in MNO focus...

The demands placed on data centres by Africa's mobile network operators (MNOs) are driven by the need for high-speed, low-latency services, energy-efficient infrastructure, geographical distribution, and a constant push for scalability. "MNOs demand ultra-low latency, high bandwidth, and robust network connectivity to support critical telecom operations, unlike traditional data centre users focused more on storage and processing,"

explains Nikki Blake, CEO & Co Founder, GTSS Global Technologie Sustainable Solutions; and ADCA General Secretary. "In my experience, the differences (as always) are driven by the needs, where typically MNOs manage large volumes of real-time mobile data traffic, including voice, messaging, video streaming, and internet browsing, all of which require low latency, high availability, and robust connectivity. This is crucial for maintaining seamless customer

experiences," notes Stefano Resi, Head of Data Center Sales for Middle East & Africa, Nokia. "Vice versa, other data centre players (such as enterprises or cloud service providers) might prioritize bulk data storage or business applications that do not have the same level of latency sensitivity." Further, the differences extend beyond the technical challenges linked to telecommunications services delivery, through to the hardware itself.

"Historically, MNOs have built and maintained their own infrastructure, traditionally with a reliance on -48V DC power systems. Unlike traditional data centre users, who primarily depend on AC power and standardized cooling, MNOs require specialized power architectures, including large-scale rectifier systems and high-ampere-hour battery banks, bulky distribution systems due to the low DV voltages," highlights Menno Parsons, Founder and Managing Director, Master

Power Technologies.

"MNOs usually have the legacy requirements of -48V DC. The data centre operator must then be able to provide a central DC power panel or allow a customer to install individual rectifiers, which they must be able to bill," confirms Gbenga Adegbiyi, CEO for Geniserve; and ADCA Board Member. "Moreover, some MNOs may have racks and equipment which may not follow the regular airflow of front to back but bottom to top. This usually requires careful planning when considering rack positioning and air circulation."

## Non-negotiables

For colocation providers to successfully host MNOs, there exist several key requirements that go beyond standard colocation setups. But what exactly is non-negotiable?

"The most obvious answer would be an adequate power source. When using the term 'adequate' I mean Secure, Stable, Scalable," asserts Resi. "Less obvious, perhaps, is the capability of a colocation player to connect multiple networks and possibly peer them internally. This is an extremely attractive 'feature' for MNOs that can save costs, reduce latency and increase reliability. This is however only possible if the co-locator equips its data centre with a layer of flexible, secure, programmable data centre networking. With this move the operator will move out of the pure 'real estate' game and be ready to offer new extra services to its tenants."

"For co-locators to successfully host MNOs, they need equipment such as high-capacity servers, routers, switches, and cooling systems," adds Timi Fadeyi, Head - Data Center, Galaxy Backbone Nigeria; and ADCA Treasurer. "Redundant power supplies and backup generators are also essential to ensure uninterrupted service. While many African co-locators have started to invest in this equipment, there is still a gap in meeting the full requirements of MNOs."

Returning to the topic of power types, Parsons asserts that to host MNOs effectively, co-location data centres must accommodate both AC and DC power requirements. Although many modern telecom vendors now integrate AC-DC power supplies into their equipment, legacy

Mobile Switching Centers (MSCs) and core network infrastructure still require dedicated DC power distribution. Key infrastructure components include:

- High-capacity rectifier and battery systems to support -48V DC loads.
- Low-latency network interconnects for seamless traffic routing.
- Carrier-neutral environments to allow MNOs to interconnect with multiple network providers.
- Edge computing capabilities to support distributed network architectures.
- Scalable power and cooling solutions to handle fluctuations in network traffic demand.

"Not every African co-location provider is equipped to meet these demands," says Parsons. "Many facilities are designed with enterprise or cloud customers in mind, where AC power and standardized rack configurations dominate. However, leading co-locators are adapting to these requirements, particularly as MNOs increasingly turn to external facilities for expansion."

Reliable access to DC power is a must for MNOs, as is access to fibre diversity for access to towers and additional data centres.

"Resilient power infrastructure such as generators, UPS systems, and DC Rectifiers, in what is known as an N+1 (or better) setup, are critical to MNO deployments. An N+1 setup provides a minimal level of resiliency by adding an additional backup component — a UPS, HVAC system or generator — to the N architecture to ensure uptime in the rare case a system goes offline. When one system is offline, the extra component takes over its load to ensure things continue to operate as expected," shares Roderick de Boer, Commercial Development Director – Africa at Equinix. "Due to the investment required for this level of redundancy, N+1 architecture is not universally available across all African data centre operators for all parts of their infrastructure, leading to lower SLAs than often required for MNOs."

Additionally, "co-locators should be aware of the high diurnal variation of data movements through the day, with 'peak' demands becoming a possible choke point to their

operations," opines Jonathan Duncan, application engineering and technical solutions director, Africa at Vertiv. "To address this, they should therefore bolster their support systems and ensure that their data centres have the capacity to meet these peak demands. A robust power management system, that can shed non-critical loads, may be a requirement for the smaller edge-type, direct-current data centre. Additionally, differentiating between priority and non-priority subscribers can help optimise resource allocation and maintain service continuity during peak periods."



## Elasticity is key

One of the key differentiators between MNOs and other data centre users is the fluctuating traffic volumes. Handling this fluctuating user traffic, while complying with Service Level Agreements (SLAs), requires colocation providers to

implement flexible, scalable, and resilient infrastructure solutions.

"MNO traffic is inherently variable, influenced by network congestion, seasonal patterns, and large-scale events. Unlike enterprise workloads, which can be somewhat predictable, MNO traffic spikes can be sudden and intense," confirms Parsons. "Co-location providers must address this by deploying scalable power and cooling solutions that can rapidly adapt to demand surges; offering flexible interconnection capacity, ensuring that traffic peaks do not cause network bottlenecks; implementing AI-driven resource management to optimize energy use and load balancing dynamically; and ensuring robust SLA compliance with proactive monitoring, automated fault detection, and rapid response frameworks. The best co-location facilities are designed for elasticity, allowing MNOs to scale resources without compromising network

performance or reliability.”

Meanwhile, Resi says that the SLA should be intimately connected with the visibility and control of the networks: “if the co-locator is in a pure real estate type of game, then its SLA will be purely on power and connectivity. The technical value added by the co-locator will be low and so will the price. Vice versa, if the co-locator manages to start offering the MNO control over its network, evolved protection mechanism, fast traffic engineering, then it can offer a much higher level of service and value (hence price) to its MNO tenants as well as the other enterprises.”

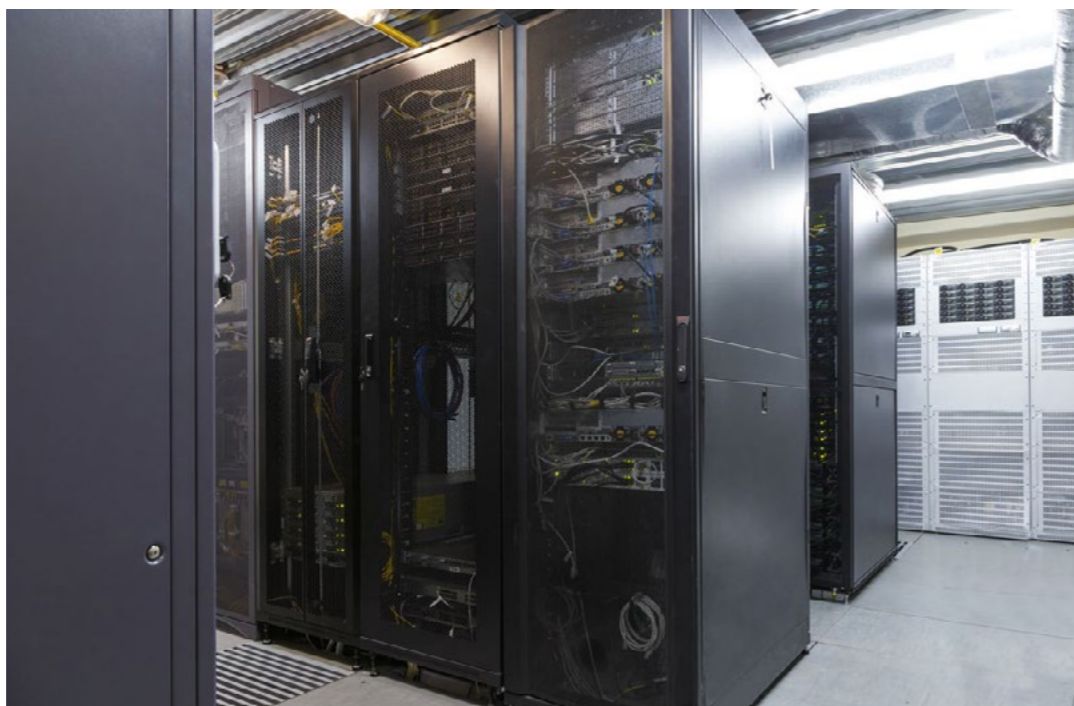
### Changing perspectives

The rise in mobile data usage, the rollout of 5G, and the need for reliable, secure, and scalable infrastructure make MNOs essential customers for colocation providers.

“Historically, many MNOs operated their own enterprise data centres, with some even offering colocation services. However, larger-scale, purpose-built data centre facilities have proven to be more efficient, making it more common to see MNOs leasing space. This trend, and the rate of growth in data consumption, suggests that MNOs will become increasingly significant to the co-location industry,” notes Duncan.

“As large-scale high-quality colocation data centres become pervasive, there is now little reason for MNOs to have their own data centres,” opines Ayotunde Coker, CEO, Open Access Data Centre; and ADCA Chairman. “This must move from afterthought to a strategic decision to leave the management of the data centres and capital expenditure to expert colocation providers. MNOs can focus their capital deployment into the network architecture and enhanced customer services.”

Indeed, “MNOs are becoming an increasingly important part of the co-location business, particularly as the telecom industry shifts toward outsourcing non-core infrastructure. While cloud providers, enterprises, and financial institutions still dominate Africa’s colocation market, MNOs are recognizing the benefits of shared infrastructure — reducing capital expenditure, improving redundancy,



and gaining access to multi-network ecosystems,” says Parsons.

However, the degree of focus on MNOs as data centre customers varies by provider and market maturity...

“MNOs are a significant part of the co-locator business. They contribute a substantial portion of the revenue and drive the demand for advanced infrastructure and services,” says Fadeyi. “However, co-locators also serve other end users, such as internet service providers (ISPs) and enterprises, making MNOs an important but not exclusive part of their business.”

“Five years ago, I would have said that MNOs are the primary, so-called anchor customer of a generic co-locator. This was when we started noticing several mobile operators building their own colocation companies and using their mobile business unit as anchor customers. Lately, however, I see that all colocation players are trying to win the business of the great American hyperscale companies that would use 50% (or more) space in their data centres, hence becoming the de-facto anchor customer,” shares Resi.

### The end of an in-house era?

Whether Africa’s colocation providers can ultimately meet the needs of the continent’s MNOs or if in-house data centre ownership is a better bet

depends on several factors, including the evolving infrastructure demands of MNOs, the maturity of colocation services in different regions, and the trade-offs between using colocation services versus building and managing in-house facilities.

Blake says that, while co-locators can meet many needs, in-house data centre ownership may be preferable for MNOs requiring bespoke infrastructure and greater operational control.

“Africa’s co-locators are making strides in meeting the needs of MNOs, but there are still challenges,” adds Fadeyi. “In-house data centre ownership can offer more control and customization, but it requires significant investment and expertise. Co-locators provide a cost-effective solution with shared infrastructure, but they need to continue upgrading their capabilities to fully meet MNOs’ requirements.”

Coker agrees that the high-quality data centre requirements for MNOs can be met by the top end colocation providers, but “where there is no availability, out of necessity, MNOs may have to build their own data centres. Regulators may bring about systemic change if MNOs are encouraged to aggregate data centre infrastructure with colocation providers and thereby encourage the investment by colocation providers in high quality infrastructure.”

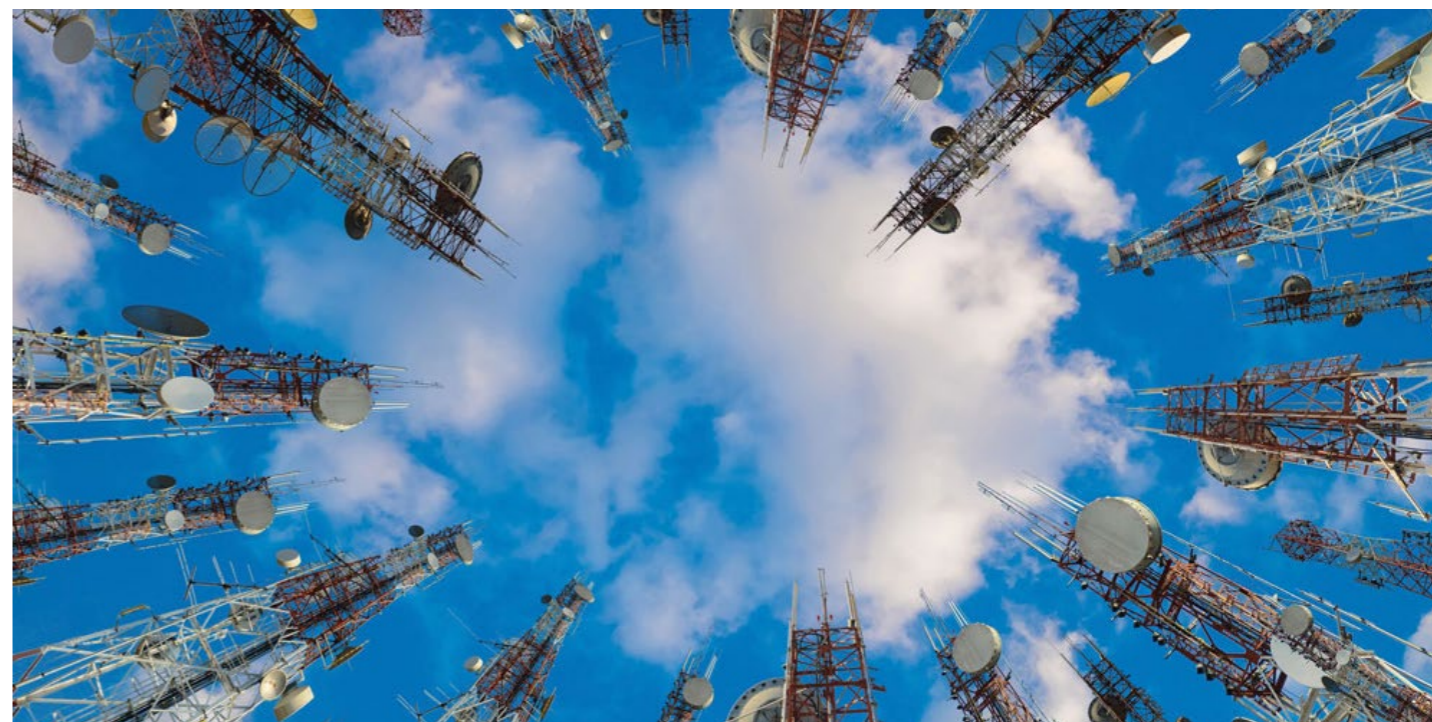
In contrast, “I believe that the era of in-house data centres for MNOs is definitely over. Security,

reliability, cost efficiency, internet peering, latency, and more are all parameters that make the colocation model extremely attractive for MNOs,” says Resi.

Parsons, too, agrees that the in-house data centre model has become less viable: “data centre management is not a core competency for most telecom providers, and maintaining self-built facilities is costly and operationally complex. While some MNOs in Africa remain reluctant to fully transition, the global trend is clear — telecom operators are exiting the colocation business and focusing on network services rather than infrastructure ownership.”

With the right investment in carrier-neutral connectivity, power support, and scalable infrastructure, Africa’s leading co-location providers can meet the needs of the modern MNO — marking the beginning of a new infrastructure model.

“This is a critical time for Africa’s data centre and telecom industries,” shares Parsons. “The shift towards colocation presents significant opportunities but also challenges in aligning infrastructure capabilities with telecom-grade requirements. MNOs that embrace strategic partnerships with well-equipped co-location providers will benefit from greater scalability, improved redundancy, and reduced operational risk. Those that hesitate risk falling behind in an increasingly interconnected digital ecosystem.” ■



# Filling the technology gaps in Africa’s tower industry

Which technology gaps still exist in Africa’s tower sector, and how are industry players responding to meet the new demands amidst seemingly unstoppable digitisation?

The Africa tower sector faces several technology gaps; however, almost all industry experts agree that power is the biggest divider.

“The biggest challenge faced by infrastructure providers in this continent lies in energy efficiency and power reliability,” asserts Ramesh Khanna, CEO, Tarantula. “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.”

“4G and 5G equipment requires more power than 2G and 3G, this has further widened the technology gap as there is limited availability of reliable power supply, which hinders the efficient operation of tower infrastructure,” adds Andrew Edmondson, CEO, Insite Towers.

Anoj Singh, Vice President of Global MNO Business, Vanu, highlights that the deployment of scalable energy solutions is a particular concern.

“The sector is heavily reliant on diesel generators

for powering telecom towers, which poses challenges related to fuel costs, environmental impact, and operational sustainability,” says Singh. “The gap in adopting greener and more sustainable energy alternatives, such as solar and hybrid power systems, significantly hampers the sector’s growth and efficiency.”

“If we look at power, tower companies will certainly benefit from adopting the latest power solution technologies including hybrid solutions with solar and wind for instance,” agrees Al Mahdi Chakri, Head of Portfolio Development for Mobile Networks MEA at Nokia. “These innovations can improve reliability and reduce dependence on traditional power sources.”

Of course, the power situation varies significantly from country to country and region to region across the continent.

“Countries with a large number of towers such as Nigeria and South Africa have made large strides in adopting renewable energy and optimising power

consumption,” explains Khanna. “Conversely, countries with disparate and rural geographies struggle to deploy towers and continue to grapple with frequent grid outages. To address these gaps, solutions like hybrid power systems and IoT-based predictive analytics can play a vital role in creating more sustainable and reliable operations.”

Conversely, Singh believes that “challenges are more or less the same across all the regions if we consider remote and rural regions. They still face significant gaps in energy infrastructure. Renewable energy deployment is slow due to limited infrastructure, investment, logistic challenges.”

### Towers-as-a-service

On the road to bridging the technological and geographical coverage gaps in Africa’s tower sector, Network-as-a-Service (NaaS) companies are playing a crucial and expanding role. By leveraging NaaS models, telecom providers and tower operators can

address several of the challenges associated with rural deployment and operation and significantly improve the economics of tower operations.

“NaaS is still in a relatively infant stage but is showing great promise,” says Christopher Greaves, researcher, Middle East & Africa, TowerXchange. “Rural TowerCos such as AMN, NuRAN and Vanu have all been successfully raising capital from DFIs, impact funds and even gaging early-stage interest from private equity. TowerXchange estimates that there are over 10,000 rural towers in the deployment pipeline from just these three companies alone. NaaS is proving to be an effective solution for MNOs to meet coverage obligations and reach new untapped markets in the 2G and 3G bands, while reducing capex burdens to near-zero.”

“NaaS providers deploy and manage telecom infrastructure as bundled Active (GSM and LTE RAN) and Passive (tower and solar power solution) allowing mobile operators to focus on the core business of providing services to end subscriber i.e. mobile voice and data,” explains Singh. “NaaS companies present a compelling solution for rural connectivity challenges, particularly in Africa. By lowering costs, leveraging shared infrastructure, and focusing on sustainable energy solutions, they make rural sites financially viable for MNOs. While challenges remain, the NaaS model holds significant potential to bridge the rural connectivity gap and drive economic growth in underserved regions. Collaboration between NaaS providers, MNOs, and governments will be key to unlocking its full potential.”

Khanna believes that, especially for rural connectivity, NaaS companies are pivotal: “by enabling shared infrastructure (both active and passive) and leveraging solar power and lightweight towers, NaaS providers can deliver connectivity in rural areas in a cost-effective manner. Companies such as AMN and the Orange/Vodacom JVs are using this approach to achieve economies of scale across the rural areas in Africa.”

Justin Head, Co-founder and executive vice-chairman, PowerX, however, believes that while they have a role to play, NaaS companies are not an effective standalone solution.

“The operation of NaaS involves significant capital investment, as these companies need to establish and maintain the infrastructure necessary to support their services. This requirement means that the speed of deployment can be relatively slow, as NaaS providers often face the continuous challenge of raising

capital for expansion. While NaaS can facilitate more efficient provisioning of tower services and potentially lower overall costs, the financial realities of securing funding can hinder rapid rollout in rural areas where immediate connectivity is most needed,” opines Justin Head, co-founder and executive vice-chairman, PowerX. “It must be integrated with other strategies and models to ensure timely and effective delivery of tower services. A multifaceted approach, combining NaaS with public-private partnerships, innovative financing solutions, and local community engagement, will likely yield the most effective results in expanding access to telecommunications

in these hard-to-reach areas.”

And Greaves notes that NaaS puts significant risk on the infrastructure provider, who can only rely on a small proportion of fixed-lease income: “this has limited NaaS partnerships to large, lower-risk operators such as Orange, MTN and Airtel who are more likely to guarantee the ability to generate revenues long-term.”

### Tapping into adjacent verticals

While African TowerCos have predominantly focused on core macro tower infrastructure in the past, today’s market evolution is likely to

include increasing uptake of integrated adjacent verticals such as Distributed Antenna Systems (DAS), small cells, and smart city connectivity into business models.

“Diversification of digital infrastructure is inevitable in Africa. However, the demand for DAS, small cells, and IoT infrastructure will be driven by urban densification in large cities and upcoming smart city projects,” opines Khanna. “For instance, smart city projects in South Africa and Kenya are driving the need for IoT support, while small cells will cater to growing 5G adoption. TowerCos integrating these verticals will unlock new revenue streams and bolster competitiveness.”

“As urbanisation increases and the IoT expands, the need for diverse connectivity solutions becomes more critical. Integrating adjacent verticals allows tower companies to provide comprehensive services that meet the varied needs of modern users and urban environments,” says Head. “Ultimately, as the industry evolves, we are likely to see tower companies in Africa adapting to the new connectivity landscape by integrating adjacent verticals into their business models, supported by the power of data science to inform and optimise these expansions.”

Prompted by growing demand for more, better connectivity both indoors and out, increased capacity, coverage expansion, and the drive for digitisation, Africa’s TowerCos would be remiss not to diversify revenue streams, improve network quality, and support next-gen technologies.

“TowerCos are well-positioned to invest in these technologies as MNOs seek cost-effective ways to meet rising data demands. As we know, mobile broadband usage is growing in African cities and networks are experiencing higher network congestion, so solutions like DAS and small cells are critical to enhancing indoor coverage and boosting network capacity in dense urban areas,” shares Singh. “Several African governments are launching smart city projects to improve urban infrastructure, transportation and public services. Tower can surely play a vital role by providing the infrastructure backbone for IoT sensors, surveillance systems, and public Wi-Fi networks in smart cities.”

Additionally, there is significant potential for African TowerCos to grow from basic physical tower sharing to progressively more active equipment sharing and neutral hosting.

“This will present several opportunities for TowerCos. In fact, this integration evolution is already happening in other regions of the world where some TowerCos are de-facto neutral host providers offering inbuilding infrastructure with DAS and small cell for residential buildings, venues, airports and others,” notes Chakri. “This integration is needed at different levels: bridging the digital divide with rural connectivity through connectivity-as-a-service model. It is needed to efficiently address government smart city initiatives and the urbanisation requirements of many areas in Africa for improved indoor and in building coverage.”

“While macro towers will remain the stable of African TowerCos, we are seeing an increasing

need to diversify service offerings and provide more bespoke solutions to fit the needs of customers,” agrees Greaves. “For example, Helios Towers has seen an increase in demand for outdoor DAS systems for high-density white spots, supporting capacity of the macro layer. As Africa urbanises and sees smart city technology adoption, demand for inbuilding and small cell infrastructure will also increase. ATC Uganda has been working with the Kigali City Municipality to deploy urban street monopolies as part of the city’s smart city strategy, for example.”

“As the African TowerCo market continues to evolve, we can expect to see a gradual shift towards a more integrated and diversified business model,” confirms Edmondson. “Our strategy has been to embrace the evolution in the TowerCo role, and we have already begun investing in Optic Fibre and Wi-Fi networks.”

### Tower tech in 2025

So, what’s in store in tower tech terms for 2025?

“Tower technology in Africa is poised for significant growth and innovation in 2025,” asserts Edmondson. “My expectations are centred around: increased adoption of renewable energy; expansion of fiberisation; rise of edge computing; growing focus on sustainability; and increased investment in digital infrastructure.”

Head, meanwhile, expects to see significant advancements in tower technology driven largely by the increased use of data science. Tower companies are likely to adopt more sophisticated analytics and ML algorithms to optimise operations, enhance network performance, and improve overall service delivery.

“I would like to see tower companies embracing data science as a core component of their strategy, enabling them to derive actionable insights and adapt quickly to the rapidly changing telecommunications landscape. This transformation could also result in the development of new revenue streams through value-added services, including remote monitoring, analytics solutions, and partnership opportunities with other sectors, such as transportation and energy,” notes Head.

On the power side of things, Singh expects TowerCos to continue to invest in solar, wind, and hybrid power systems to reduce reliance on diesel generators, in line with growing pressure from governments and investors to adopt sustainable practices.

Khanna, too, expects greater reliance on renewable energy, with solar and hybrid systems becoming the norm, as well as “large-scale digitalisation of tower management through comprehensive tools; AI-driven predictive maintenance to reduce downtime; and wider deployment of hybrid macro and small-cell towers with small footprints and quick deployment to bridge connectivity gaps.”

Similarly, “we expect to see TowerCos progressively evolving from their initial offering centered around physical site and power sharing to more active sharing,” asserts Chakri. “We also expect to see a progressive integration toward

adjacent areas including neutral hosting for in-building coverage and rural connectivity with a-service business models. We would also like to see TowerCos in Africa further investigating in opportunities for edge data centres, enhanced network monitoring and innovative digital services powered by AI from a technology standpoint and a stronger contribution towards bridging the digital divide in rural areas, while also facilitating the introduction of 5G.”

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.”

Singh, too, expects an expansion of small cell and DAS deployments to address urban network congestion and support 4G/5G expansion; for telecom regulator and respective government agencies to continue incentivising rural connectivity; and for TowerCos to explore more NaaS and infrastructure sharing models to further optimise the deployment costs.

“I would like to see affordable and reliable rural connectivity – by deploying cost effective and low power consumption radio access network solutions based on 2G and 4G technologies powered over off-grid solutions and ensuring universal coverage in rural areas,” adds Singh. “Committed collaboration between NaaS, government, regulators, and non-profits are needed to fund and scale these rural connectivity projects and minimise the digital divide.”

Meanwhile, Edmondson hopes to see the standardisation of tower designs, equipment, and operations to facilitate easier maintenance, upgrades, and sharing of infrastructure; more initiatives to develop local talent and skills in tower maintenance, installation, and management to reduce reliance on international expertise; and improved security measures to protect tower infrastructure from vandalism, theft, and damage, ensuring reliable network operations.

“Greater collaboration among operators, tower companies, and governments to share infrastructure, reduce costs, and improve efficiency, is also needed,” notes Edmondson. “By focusing on these areas, Africa’s tower tech industry can continue to grow, improve, and support the continent’s rapidly evolving digital landscape.” ■

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# The 60GHz opportunity

## Transforming Fixed Wireless Access



Wim Van Thillo, CEO, Pharrowtech

affordability concerns. At the same time, satellite internet has also been proposed as a potential solution, but its high latency and low throughput make it impractical for long-term, large-scale connectivity.

### Could FWA help bridge the digital divide?

Fixed Wireless Access (FWA) has emerged as a powerful alternative to traditional broadband solutions. Not only can FWA provide reliable, high-speed connectivity, but it can also be deployed rapidly and at a significantly lower cost than fiber, as it does not require extensive physical infrastructure.

Furthermore, FWA can utilize unlicensed frequency bands, reducing barriers to entry for ISPs and fostering competition. This competition helps drive down costs, making broadband more affordable for consumers — a critical factor in developing economies. Recognizing the need for alternative broadband solutions, several national regulatory authorities have made a groundbreaking decision by opening the 60GHz band for

outdoor use. This move is a game-changer for FWA providers, offering several advantages:

- 1. High-speed connectivity:** The 60GHz spectrum provides abundant bandwidth and ultra-fast speeds, delivering gigabit-level performance comparable to fiber.
- 2. Lower deployment costs:** FWA networks utilizing the 60GHz band are up to 45% cheaper to deploy than fiber rollouts in urban areas, making broadband access more widespread and affordable.
- 3. Rapid scalability:** Unlike fiber, which requires extensive trenching and investment, FWA can be deployed quickly, allowing service providers to scale their networks efficiently.
- 4. Reduced network congestion:** Many wireless ISPs (WISPs) currently rely on congested 5GHz bands. The 60GHz spectrum, while effective for some applications, suffers from significant interference due to widespread usage by Wi-Fi networks, home routers, and existing FWA deployments.

This congestion leads to increased latency, reduced data rates, and inconsistent performance, particularly in high-density urban areas. The 60GHz spectrum offers a clean, interference-free alternative for robust, high-speed connectivity, alleviating many of the challenges faced by ISPs operating in congested environments.

While FWA cannot entirely replace fiber backhaul and last-mile connectivity in high-density areas, it serves as a highly complementary solution. By rapidly extending high-speed broadband to underserved communities, FWA can unlock new opportunities in education, commerce, and remote work, helping to drive social and economic progress.

In densely populated cities, where multi-dwelling units and informal settlements pose unique connectivity challenges, 60GHz-based FWA provides an efficient and cost-effective way to deploy high-speed internet without the need for extensive cabling or disruptive trenching.

Africa is undergoing a digital transformation, driven by a young, fast-growing population, thriving cities, and an increasing demand for connectivity. With its population expected to nearly double by 2050, Africa presents immense potential for economic growth and technological advancement. However, persistent challenges such as economic fragility, rising spending pressures on infrastructure, health, and education, as well as a deep digital divide, continue to limit progress. Millions of Africans remain without access to the internet, restricting opportunities in education, e-commerce, and remote work.

### The connectivity challenge

While fiber networks have played a crucial role in broadband expansion globally, they face significant obstacles in Africa. The absence of legacy internet infrastructure means that upgrades are not an option, requiring costly new investments. Additionally, fiber installation is expensive and generally limited to densely populated urban areas where capital expenditure can be justified. Moreover, environmental factors such as challenging topography and the disruptive nature of underground cabling further complicate fiber deployment.

5G deployment in Africa lags behind the rest of the world due to spectrum constraints, infrastructure limitations, and



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### How WISPs can capitalize on the FWA opportunity

The opportunity for WISPs, particularly in urban areas, is substantial. As FWA solutions improve and key mmWave spectrum bands like 60GHz become widely available, it enables WISPs to rapidly address the needs of unserved and underserved communities, catalyzing economic development across African cities.

The opening of the 60GHz spectrum is just the beginning. Ongoing spectrum allocation efforts, combined with technological innovations such as advanced beam-steering techniques, will further amplify FWA's disruptive potential.

### CMOS vs SiGe: the advantage of cost and scalability

In the development of FWA solutions, the choice of semiconductor technology plays a crucial role in determining cost, efficiency, and scalability. Two key contenders in the mmWave domain are Complementary Metal-Oxide-Semiconductor (CMOS) and Silicon-Germanium (SiGe).

CMOS technology is highly advantageous due to its lower cost, lower power consumption, and scalability. This makes CMOS a more attractive option for mass production, helping to reduce the overall cost of 60GHz FWA equipment.

SiGe offers some performance advantages. However, the higher production costs and limited production scalability of SiGe make it less suitable for large-scale broadband deployments.

As 60GHz FWA adoption grows, CMOS-based solutions are likely to dominate due to their affordability, scalability and ease of integration into consumer devices, further driving widespread connectivity across Africa.

### Economic and social implications

The widespread deployment of FWA technology extends far beyond mere connectivity — it acts as a catalyst for economic growth, education, and social inclusion. By expanding broadband access, businesses can reach new digital markets, students can access vital online

educational resources, and remote work opportunities can become more accessible.

Additionally, the lower barrier to entry in the 60GHz band encourages increased competition among WISPs, which in turn drives down costs for consumers and stimulates innovation in service delivery. This is particularly significant in Africa, where affordability remains a major challenge in achieving widespread broadband adoption.

As more countries across the

continent adopt forward-thinking spectrum policies, FWA is set to become a dominant force in Africa's broadband landscape. The technology's ability to provide high-speed, scalable, and cost-effective connectivity positions it as a cornerstone of Africa's digital transformation.

### Conclusion

Africa stands on the brink of a connectivity revolution. With

the expansion of the 60GHz spectrum, WISPs and telecom providers now have a powerful tool to drive digital inclusion. By leveraging this technology, Africa can accelerate its path toward universal broadband access, unlocking economic opportunities and enhancing the quality of life for millions.

The future of connectivity is wireless, and the 60GHz spectrum is paving the way for an inclusive, high-speed digital Africa. ■



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# Namibia mine enhances driver safety via TETRA

Mining is inherently dangerous, with workers facing constant risk from cave-ins, explosions, and exposure to toxic materials. One of the critical challenges in many mines, particularly in remote areas of Africa, is the lack of reliable connectivity, without which workers are left vulnerable. Indeed, modern mines increasingly require robust critical communications systems to ensure worker safety, enabling real-time alerts, monitoring, and coordination in emergency situations.

One major mining company operating in Namibia approached Optalert to discuss trialling the Eagle Industrial early-warning drowsiness detection system, which detects the physiological warning signs of early onset drowsiness. A tiny LED is built into the lightweight frame of the glasses and measures the velocity of the user's eyelid 500 times a second. From this measurement the level of user fatigue can be derived in real time using the Johns Drowsiness Score (JDS).

The mine site in question was close to the ocean and covered a large area – some points were 40km from the centre of operations, and the only Wi-Fi available was in the town built for the mine with a very low range. Accordingly, the request to trial the Eagle came with a unique requirement – transmission of data via radio – leading Optalert to question how they could transmit data on a remote mine site without Wi-Fi or cellular coverage.

## Modifying the components

Optalert systems already produce a low-bandwidth data stream enabling them to transfer data in near real-time over cellular or Wi-Fi; but for the solution to work over radio, data transmission at even lower bandwidths was required.

“When we looked at the price of setting up a private network to cover the entire mine site, it was prohibitively high,” says Renato Lopez, VP Sales LatAm, Optalert. “The radio solution was not even a compromise on quality. It had a lower



Data mapping showing the remote operating geography of the customer mine and location of drowsiness warning events (red dots) transmitted from Optalert systems via radio network

price tag with rock-solid reliability.”

Thus began a collaborative development project in conjunction with the mining customer and Getac, the manufacturer of the Eagle Industrial tablet hardware. The objective was to ensure that the mine site in Southwest Africa had a robust, reliable data transmission platform.

This involved modifying the Eagle Industrial data transmission protocol to work over a Motorola two-way Tetra Radio system, requiring changes to the Optalert vehicle-based software and Android operating system to support the Point-to-Point Protocol (PPP) via an external RS232 serial port. This permitted a direct interface to the radio terminals with no additional hardware or changes to the cloud-based infrastructure. No change to the Eagle Industrial data files was required, and the customer's network was configured to pass the data from the radio network to Optalert's FRP server in the cloud.

This, ultimately, enabled site-wide data transfer from Optalert systems and allowed the

mine operator to monitor its drivers via Optalert's IRIS and view the data in Optalert's FRP Reports.

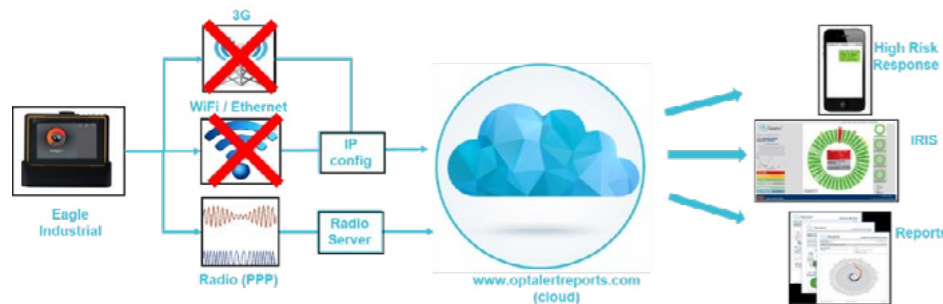
## From trial to success

The mining customer ran a three-month trial which enabled them to leverage their TETRA network via existing radio terminals in vehicles to enable drowsiness monitoring via Optalert's IRIS.

By taking a collaborative approach, Optalert created a solution for a customer operating in a very remote location, which saved them from having to purchase and install expensive new network infrastructure. This enabled the mine operator to monitor their drivers via Optalert's IRIS and receive daily and weekly reports based on the data transferred over the radio network. Given the low footprint of the system and the robustness of the radio network we installed, the mine operator had a rock solid, real-time view of all drivers' drowsiness on-site.

“Although a very long-standing technology, wireless communications still have a lot of applications – especially in remote regions! They are low-cost, reliable and can transmit across very large distances,” notes Lopez.

Indeed, sites that are remotely located or greenfield often lack telecommunications infrastructure. However, they can transfer data via radio network and enable near real-time monitoring of the drowsiness levels of individual operators, as well as daily, weekly, and monthly reporting. This is a far lower-cost solution than building out a comprehensive network infrastructure. ■



The data journey – data from the Eagle Industrial is sent via radio to Optalert's cloud server

# Endeavour Mining strikes gold with DMR

Endeavour Mining is a major gold mine company operating in Côte d'Ivoire, Burkina Faso, and Senegal in West Africa.

While expanding their mining area, Endeavour Mining identified a problem with the communication equipment which was worsening over time to the extent that some facilities had no equipment for communication at all. Radio coverage access is required across the whole mining site for their 940 employees. The lack of reliable communications infrastructure challenged the operational efficiency of the mine as the on-site command and dispatch centre could not function properly.

## A ruggedised solution

Endeavour Mining opted to invest in a devoted Digital Mobile Radio system and noted that Hytera's ruggedised equipment and radio terminals are designed to work well even in the severe environment of a mine and the high temperatures experienced in Côte d'Ivoire.

The mining company chose to apply a Hytera DMR XPT system founded on Hytera RD98XS DMR repeaters. The XPT is a multi-site digital trunking solution, which combines the advantages of DMR Tier II conventional systems and the properties of improved DMR Tier III trunked radio systems to expand network capacity at a compact cost.

Hytera HM78X mobile DMR radios and HP68X hand-held DMR radios were assigned to vehicles and staff correspondingly. The DMR XPT system was positioned across the whole mine to provide simple network coverage. As it was difficult to direct coverage into the mine pits,



the vehicles were equipped with Hytera RD98XS DMR repeaters to provide mobile coverage and develop main network coverage wherever and whenever required. The repeaters are powered using solar energy.

A network bridge is used to connect the mobile repeaters to the fixed site main network repeaters to ensure unified connectivity and handovers. To make the process of communication easier, all radio channels are obtainable for communication, meaning, the radio user no longer needs to

select a channel by hand. Free channels are automatically allocated for call requests and assigned dynamically.

XPT provides a profitable way to enhance capacity and gain additional features without having to invest in a developed DMR Tier III system. The vehicle-mounted, mobile RD98XS repeaters enable teams to stay connected wherever they go across the mining site, providing variable signal coverage where it is needed.

The HP68X handheld radios are protective against dust and moisture ingress and can endure a two-meter drop. The new and improved radios also use modernised technology such as cutting-edge AI-based noise-cancellation to decrease unwanted background noise and reduce howling, by this means ensuring high audio clarity, which is extremely important when users are operating in a noisy mining environment.

Finally, a Hytera SmartOne allocated communication platform was installed to provide powerful dispatching functions, including voice calls, GPS positioning services, messaging functions, and voice recording for report and command of the mine operations.

Thus, with the H DMR XPT two-way radio system, ruggedised mobile and handheld radio terminals, vehicle-mounted repeaters for additional mobile coverage, and a DMR SmartOne central dispatching system, Endeavour Mining was able to safely secure communications for all mine employees. ■





## Wireless Solutions for Exploration, Mining, Fleet Tracking & Surveillance

Mobile Mark is a leading supplier of innovative, high performance antennas to wireless companies across the globe. We've been in the wireless industry for over 30 years and have our roots in the early Cellular trials. Today, we benefit from enhanced design capabilities and expanded production capacity – along with a greater understanding of new and emerging markets such as mining and exploration.

Modern mining operations rely on a battalion of vehicles, ranging from massive extraction vehicles to modest-sized material transport trucks. These vehicles operate in tough environments where high vibration is a frequent wear and tear challenge. Mining companies throughout Africa have relied on our rugged, foam-filled mobile antennas for consistent connections. Mobile Mark's infrastructure antennas have been used for rapid deployment and redundancy coverage for effective wireless coverage in isolated settings.

## Amdocs streamlines fibre network deployment

Amdocs's next generation fibre offering introduces a robust framework and advanced automation capabilities to accelerate the planning, design, deployment and operation of fibre networks, yielding more cost-effective deployment for global service providers.

Amdocs has integrated IQGeo's network management software to its offering, enabling service providers to visualize, update, and manage their network assets in real time, and to automate key aspects of the planning and design process; driving faster deployment times and reducing the complexity of managing large-scale fibre projects.

Selected benefits for service providers include 30% faster deployment times for fibre rollouts; reduction of cabling and trenching by 10% or more; significant reduction in network management

cost by seamlessly integrating existing systems, replacing manual processes and reducing errors and rework.

Amdocs' fibre offering provides zero-touch automation capabilities that streamline complex fibre deployment processes. Service providers will benefit from a unified, future-ready solution that supports both greenfield and brownfield deployments, allowing them to optimize time to market, reduce operational costs, and improve overall network performance.

"As increasing their share of the growing broadband market with fibre offerings becomes increasingly critical to service providers around the globe, our fibre solutions will help service providers manage fiber deployment from inception to operations," said Anthony Goonetilleke, Group President of



Technology and Head of Strategy at Amdocs. "Service providers will know that seamless connected experiences matter, and broadband is often critical to creating those experiences. Our enhanced offering,

including IQGeo's advanced network management capabilities, will help service providers achieve differentiated experiences for their customers more quickly and efficiently."

## mmWave testing made simpler with Anritsu

Anritsu Corporation has released enhanced software functions for its Signal Analyzers MS2830A, MS2840A and MS2850A. These enhancements enable the analyzers to extend the spectrum measurement frequency range to encompass the millimeter-wave band by connecting VDI or Eravant external mixers.

Anritsu's mid-range benchmark MS2830A, MS2840A, and MS2850A signal analyzers provide high-performance capabilities and comprehensive options for wireless signal measurements across diverse applications. These models span the RF to microwave/millimeter-wave frequency bands and accommodate narrow- to wide-band signals.

For spectrum, signal, and phase-noise measurements, the measurement frequency range can be extended by installing Anritsu's External Mixer Connection Function MX284090A. This function supports connection of a recommended external mixer from Eravant or VDI to the signal analyzer's 1st Local Output port.

An image response can occur when measuring with external mixers lacking preselectors to eliminate unwanted signals, causing erroneous



reception of signals at different frequencies from the intended signal. Anritsu's signal analyzers offer intermediate frequencies (IF) of 1.875 GHz (MS2830A) and 1.8755 GHz (MS2840A/MS2850A), facilitating conversion of received high-frequency signals to manageable frequencies for processing. This enables suppression of image-response effects up to 7.5 GHz using Anritsu's proprietary PS (Preselector Simulation) function, facilitating measurement of hard-to-distinguish variable signals.

The single coaxial-cable connection between the signal analyzer and recommended external mixers enhances flexibility in positioning the signal analyzer and allows the external mixer to be placed close to the device under test.

## Smart Label redefines convenience and accuracy in location tracking

Giesecke+Devrient (G+D) has launched the G+D Smart Label, an innovative tracking solution that transforms any package into an IoT device.

Ultra-thin and only slightly larger than a credit card, the new Smart Label proposition has been jointly developed by G+D in conjunction with Sensos to enable cost-effective, accurate location tracking for a range of applications. These include fleet management and monitoring the movement of luxury goods.

G+D provides an all-in-one solution that includes hardware, an iSIM, IoT connectivity, and an IoT platform that manages the connection and firmware updates. This makes it especially easy to use and simple to deploy. The Smart Label uses smart motion sensors that detect movement and acceleration, underpinned by GPS accuracy which has been tested to ensure sub-10m precision in ideal conditions. Coupled with customizable reporting frequencies and agile cloud-based configurations, the Smart Label can adapt to specific business

needs and allow users to manage, monitor, and ensure the integrity of their assets at every stage of their journey, whether stationary or on the move.

Additional features of the G+D Smart Label include an open-close sensor for tamper protection and automated proof of delivery, and a temperature monitor to ensure the integrity of perishable goods, enhancing security and accountability. The label is easy to use, since activation is triggered when it is peeled and applied to an item. It is also reusable and certified for air travel, making it one of the most lightweight, versatile, accurate, and competitively priced tracking solutions on the market.



## 5G FWA and WiFi access products to meet MNO & MVNO demands

rainx has launched its new 101 range, an advanced ecosystem of fixed wireless 5G and Wi-Fi access products designed to meet the high standards of modern Mobile Network Operators (MNOs), Mobile Virtual Network Operators (MVNOs) and their customers.

This lineup includes the101 and the101 Pro 5G smart routers, the101 Xtender smart mesh Wi-Fi extender, and the101 Loop – a new category of product designed for today's always-connected customer, together, these solutions redefine 5G FWA, enabling operators to enhance network quality, reduce churn, and drive new revenue streams. The routers also offer a collection of 101 skins to suit the users' style, creating devices that are designed to be on show.

As demand for 5G-enabled FWA continues to surge, MNOs face

complex challenges in scaling network capacity and quality for fixed locations, while managing the concurrent load on mobile networks. Recognising this challenge, rainx has engineered the Customer Edge approach, an integrated ecosystem of products and services designed to empower operators to manage and optimise the customer experience. This begins with the101 range of 5G smart routers, which double as network probes, feeding real-time insights to theStation, rainx's smart managed services platform.

theStation provides operators with deep network insights, enabling accurate, proactive decisions on coverage and capacity expansion. Operators can access detailed data on network performance in the home, including Wi-Fi clients, usage patterns, speed and latency – providing proactive support and

direct customer communication through the101's touch screen. This visibility gives MNOs comprehensive control over the entire FWA ecosystem, anticipates capacity needs, and delivers high-speed connectivity for both residential and commercial customers.

For end-users, the101 range provides an intuitive, self-service interface that empowers customers to manage their network in real-time, minimising support needs and enhancing the overall customer experience.

Key Products in the101 Range include: the101 Pro 5G smart router; the101 5G Smart Router; the101 Xtender Smart Mesh Wi-Fi; and the101 Loop.

"Through smart hardware and services, we're partnering with MNOs and MVNOs to unlock the potential of 5G," said Brandon Leigh, Founder and Director of rainx. "Our ecosystem empowers operators to monetise latent 5G capacity, create new revenue streams, and addresses the shift from spiky mobile traffic to high, steady usage at fixed locations. Our Customer Edge approach provides operators with the deep insights they need to make informed decisions on their networks, manage the customer experience and generate ROI from 5G."



## Compact GNSS receiver modules cut SWaP

Septentrio has extended its established mosaic family of compact GNSS receiver modules with the mosaic-G5 receiver range.

These new modules will broaden the field of applications powered by Septentrio technology since they offer a size reduction of 60% and a power consumption reduction of 40% compared to the mosaic-X5 receiver. This substantial reduction of SWaP (size, weight, and power) is offered without compromising the high performance standards that Septentrio receivers are known for.

It opens doors to reliable high-accuracy positioning for a variety of devices that require components with minimal size, weight or power, including commercial UAVs,

compact industrial robots, high-performance hand-held devices and other high-volume compact professional equipment.

"The growing world of interconnected devices, robotics and autonomous systems drives the demand for receivers that deliver compact, low-power, yet highly reliable positioning, even in the most challenging environments," said Jan van Hees, Vice President of Business Development at Septentrio. "We are excited about announcing an extension to our mosaic family with the mosaic-G5 receiver range. This introduction emphasizes Septentrio's commitment to continuous innovation and providing high-

precision positioning to an ever-expanding array of industrial and professional applications."

The mosaic-G5 series will join the widely adopted mosaic portfolio of module receivers, which offer all-band GNSS technology with long-standing reputation of excellence in accuracy, reliability as well as resilience to GNSS jamming and spoofing.



### Look out for...

#### Need for speed

The demand for continued acceleration of enhancements on mobile networks has never been more evident. Global mobile data traffic is expected to grow more than fourfold by 2030, reaching over 5,400 exabytes – placing a lot of pressure on mobile networks the world over. With the need for speed, capacity, and reliability heating up, innovative solutions are required.

Accordingly, in recent news, Verizon, Samsung Electronics Co., Ltd., and MediaTek have demonstrated 5G speeds of 5.5Gbps in a 5G lab environment. Using carrier aggregation, which combines multiple channels of FDD and TDD spectrum bands to provide greater efficiency for data sessions transmitting over the wireless network, the companies combined six separate channels of sub-6GHz spectrum to achieve this multi-gigabit speed in the downlink.

This proof of concept was conducted in a lab and aggregated 350MHz of PCS, 850MHz, AWS, CBRS and C-band spectrum. Using Samsung's virtualized RAN (vRAN) solution and MediaTek's next-gen connectivity platform featuring 6CC technology, the trial ran 5G data through Samsung's 5G Standalone core, and demonstrated how the next generation of devices with this evolving technology will enable new use cases and drive innovation in mobility.

Virtualization is essential in next-generation network evolution that delivers higher speeds and lower latency. Using virtualization in the RAN allows Verizon to effectively manage its network and rapidly accommodate customers' varying needs by offering greater flexibility in resource allocation and enabling higher throughput speeds.

As pressures on mobile networks continue to mount – and amidst increasing competition and profitability concerns – making more from existing spectrum is paramount to ensure the reliable delivery of mobile connectivity, with the speeds and capacities required for all types of consumers, from business and government through to the rural consumer.

## Telecom Argentina steps up green credentials

Telecom Argentina has taken a new step in its sustainability and energy transition strategy with an agreement signed with MSU Green Energy for the supply of 60,000MWh of solar energy per year for the next ten years.

This new agreement raises the percentage of renewable energy the company uses on its path towards

its goal of reaching 50% supply of renewable sources by 2030.

The solar energy, provided by MSU Green Energy from its Pampa del Infierno solar park located in the province of Chaco in the north-east of the country, will supply more than 100 of Telecom's operational buildings distributed throughout its network.

This deal expands Telecom's

portfolio of sustainably-focused actions, which include the optimisation of energy consumption through automation technologies; process virtualisation through a hybrid model of cloud data centres; the implementation of state-of-the-art technology with greater energy efficiency; the use of sustainable SIM cards; the recovery and reuse of modems and

equipment in customers' homes; and sustainable packaging for the company's Tienda Personal (Personal Store) products.

With this new agreement with MSU Green Energy, Telecom Argentina says it will be investing close to US\$14 million annually for sustainable electric power supply, representing 17.5% of the company's total energy expenditure.

## Cellcard to migrate fibre network from GPON to XGS-PON

CamGSM, commercially known as Cellcard, is planning to migrate its fibre network from gigabit passive optical network (GPON) to 10 gigabit symmetric passive optical network (XGS-PON) using Nokia's Lightspan and Altiplano broadband solutions.

The modernised network will improve end user experiences and bring multi-gigabit broadband access to homes and businesses across Cambodia, providing up to 10Gbps internet speeds to customers. It will also help Cellcard increase competitive advantage and enhance the reliability, flexibility and scale of its fibre network to better support evolving customer demands.

Cellcard will deploy Nokia's Lightspan optical line terminals (OLTs) and its Altiplano access controller in the capital city Phnom Penh, as well as Siem Reap, the second-largest city in Cambodia, and other major cities

across the country. The Altiplano access controller provides a cloud-native platform with a complete suite of network management and software-defined networking (SDN) control functions that will enable Cellcard to better visualise, automate and optimise the broadband access services it offers.

Using its Lightspan access nodes, Nokia adds, Cellcard will also be able to establish a future-ready network that can seamlessly evolve to 25G PON (an evolution of PON that can deliver internet speeds of up to 25Gbps) and immediately address the growing demand for more capacity. As well as enabling Cellcard to provide enhanced broadband services, the upgraded network will support new high-speed, low-latency applications such as augmented reality and virtual reality and will help Cellcard to reduce its power expenditure and lower its carbon emissions.

## Smart Mobile Labs to deliver 5G campus network for Deutsche Bahn

Smart Mobile Labs (SML), a Boldyn Networks (Boldyn) company, has entered into a framework agreement with Deutsche Bahn AG, Germany's national railway company for the planning, delivery, construction and operation of 5G campus networks.

The agreement, valued almost in the double-digit million-euro range establishes SML as the designated partner for all affiliated group companies of Deutsche Bahn AG in the implementation of 5G campus networks.

These networks will utilise 'local spectrum' — radio frequencies in the 3.7GHz to 3.8GHz range — that can be easily obtained from the Federal Network Agency (Bundesnetzagentur) for a nominal license fee. By integrating 5G network components, this initiative

enables the creation of secure, non-public 5G campus networks tailored to industrial use.

Deutsche Bahn AG sees the implementation of these networks primarily in its maintenance depots, train formation, and transshipment facilities, as a cornerstone for future digitalisation and automation efforts. To meet Deutsche Bahn AG's specific requirements, SML has developed two tailored system solutions. Additionally, selected services will be provided in collaboration with STF Gruppe GmbH.

These cutting-edge solutions are built exclusively on 5G standalone architecture and support advanced features such as eSIM profiles, network slicing, and 5G RedCap. This ensures that Deutsche Bahn AG gains access to the latest 5G capabilities designed for industrial applications.

## Tech companies team up to make the internet safer

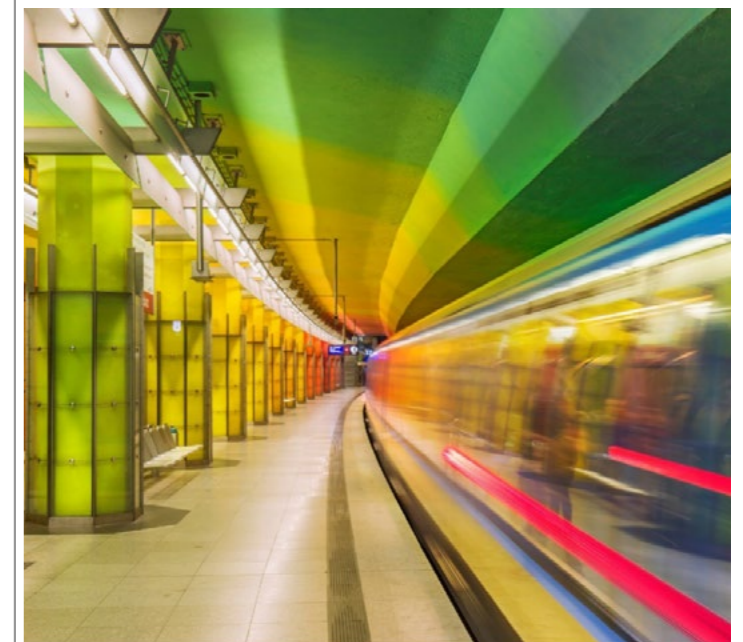
Google, Meta, Microsoft, and Airtel have joined the New Safer Internet India (SII), a newly formed policy advocacy group focused on combating cyber threats and enhancing user safety.

The coalition's members include Airtel, BOOM, Dream Sports, Fortinet, Google, Meta, Microsoft, Newschecker, Shiprocket, Truecaller, Vodafone Idea, and Zupee. The coalition aims to unite nearly a billion digital citizens and various public and private institutions to create a safer, more inclusive internet ecosystem in India.

The SII group said that the coalition

aims to combat cyber threats such as fraud and scams, which have risen alongside digital adoption in India, promote responsible AI use, and protect vulnerable users. The group will focus on information sharing, awareness campaigns, and disseminating best practices.

"Online scams and fraudulent activity are a serious issue, especially as more and more people come online. Combatting this issue requires concrete and cooperative measures across the ecosystem, led by the industry," said Shivnath Thukral, Vice President and Head of Public Policy at Meta India.



## Southeast Asia smartphone market decline ends

The Southeast Asian smartphone market rebounded in 2024 as vendors shipped 96.7 million units, an annual growth rate of 11%, ending two years of decline. Canals Analyst Le Xuan Chiew highlighted that Southeast Asia's rebound outpaced the global average of 7%. However, despite this growth, the average selling price (ASP) declined due to price-

conscious consumers. Samsung's shipments dropped 9% year-on-year, yet it bucked the trend of falling ASPs, recording a 14% increase in this metric. "The high-end smartphone market in Southeast Asia has gained momentum, driven by vendors expanding their distribution through new channels. Brands that invested in their channels during the 2023 slowdown are now capitalising on

those efforts, ramping up marketing to attract a growing base of upgraders," said Chiew. According to Chiew, a vendor's ranking by volume is "no longer a reliable measure of a brand's market position" due to short product lifecycles, shipment lead times, and the frequent launch of new models each quarter. Instead, value share, operational efficiency, and profitability are better indicators of

market standing.



## APTelecom appointed to spearhead MYUS Submarine Cable Project

Hexa Capital Consultancy has engaged APTelecom to spearhead the pre-sales and post-sales activities for all products relating to the MYUS Submarine Cable Project. APTelecom will also provide consulting, project management and implementation support for the project. The MYUS Submarine Cable Project is a strategic initiative aimed at enhancing digital connectivity between Malaysia and the United States, strengthening international bandwidth capacity, and supporting the region's growing demand for high-speed, reliable telecommunications infrastructure.

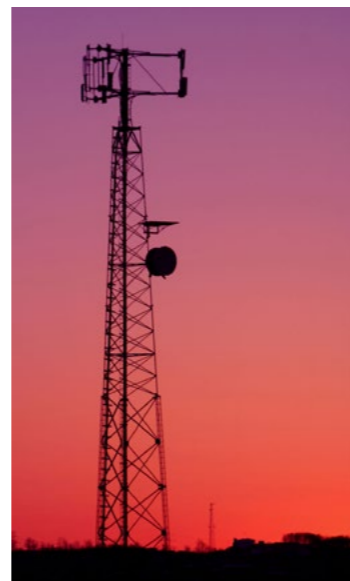
The MYUS cable is being planned with a ready-for-service date of mid-2028. MYUS will connect Malaysia and the US directly for the first time with high-capacity fibre optic connectivity, increasing access to reliable and affordable digital services across Southeast Asia. The cable will extend between the Malaysian Peninsula near Sedili to the US territory of Guam at the new Alupang Cable landing station and data centre and then directly onward to Alaska Communications' cable landing station in Florence, Oregon. Along the path, MYUS will also connect Batam, Jakarta and Balikpapan in Indonesia, and Davao in the Philippines.

APTelecom will be responsible for market positioning, customer engagement, and revenue generation strategies for MYUS products, ensuring a seamless transition from project development to commercial operations.

## Netherlands' newest towerco launches with 3,800 sites

KPN and ABP have announced the closing of a transaction to create a new towerco called Althio. Through the creation of Althio, KPN and ABP are creating the largest towerco in the Netherlands. As part of the transaction some of the existing lease conditions have been reset to align its portfolio and create a neutral platform for mobile operators across The Netherlands. As well as a widespread network of telecom and broadcast masts, Althio also owns rights to fix telecom equipment to the Netherlands' extensive network of high-voltage lines. The towerco will manage approximately 3,800 sites representing the consolidated

passive infrastructure Open Tower Company and KPN. The KPN-owned towerco will add new sites through in an agreed Build-to-Suit (BTS) commitment adding 600 new sites by the end of 2034. The deal will enable KPN to gain higher flexibility on a substantial part of its sites and achieve synergies regarding the development, maintenance and optimisation of the network infrastructure. In addition, KPN will reset lease fees on a big part of the tower portfolio and harmonise contracts into a single 20-year MSA covering 60% of the tower and rooftop portfolio, thus achieving operational efficiency.



## Orange Romania opts for wind energy

Orange Romania has signed a ten-year virtual power purchase agreement (vPPA) with Engie Romania to procure around 40GWh of wind energy per year from one of Engie Romania's wind farms.

This is the second vPPA between the two companies. A six-year virtual power purchase agreement (vPPA) was signed in 2023 that covered 30GWh of Orange Romania's electricity consumption with solar power.

Orange Romania is committed to a net carbon zero target by 2040. This agreement contributes to that goal by ensuring a substantial portion of its energy needs are met with renewable sources. In 2024, Orange Romania, one of the country's largest operators, with more than 11 million local customers, says it achieved its target of 93% of its energy consumption coming from renewable sources.

Engie Romania, a power producer and distributor, operates 211MW of renewables in Romania, distributed between three wind farms totalling 178MW and five solar plants with a combined installed capacity of 33MW. The company aims to reach 1GW of installed renewables capacity in the country by 2030.



## Telna signs major eSIM roaming deal

Telna, a leader in managed eSIM connectivity, has announced its strategic partnership with Bridge Alliance, a prominent mobile alliance comprising major mobile network operators (MNOs) across the Asia-Pacific, Europe, Middle East, and Africa. The partnership will enable participating MNOs to deliver a seamless mobile roaming experience for subscribers, drive new revenues and capitalise on the growing demand for travel eSIM services.

With the partnership, Bridge Alliance can leverage Telna's roaming eSIM enablement platform to equip its members with advanced roaming eSIM distribution capabilities, tapping into the wider eSIM distribution ecosystem. This implementation will enable onboarded MNOs to seamlessly integrate eSIM technology, ensuring their connectivity services are future-proofed and optimised to address new roaming challenges. They will be able to enhance their retail offerings and unlock new growth opportunities, allowing them to remain competitive in a rapidly

evolving mobile landscape. Telna's eSIM-Ready digital platforms – including APIs, web, mobile, and super app solutions – are helping to redefine international roaming. By embedding eSIM activation into every digital touchpoint, Telna enables MNOs and MVNOs to deliver a hassle-free international roaming experience that is underpinned by seamless and flexible international connectivity. This removes the need for physical SIM cards and delivers a frictionless experience for subscribers who can access flexible, and affordable, data plans directly through web stores and mobile apps. Additional business opportunities can be created through third party eSIM integrations, enabling brands to deliver travel services via their own super apps.

"eSIM technology is efficient, cost-effective, and flexible. It allows for faster and more efficient provisioning of services, eliminating the need for physical SIM cards which reduces costs. eSIM enables seamless mobile connectivity, with plans tailored to customers' needs

and usage patterns. This creates new revenue opportunities through data plans and device management services," said Gregory Gundelfinger, CEO of Telna. "The flexibility and simplicity of eSIM technology appeals to customers. It will help MNOs to monetise the so called 'silent roamers', subscribers that tend to avoid using mobile services while they're abroad, preferring to rely on WiFi instead. Operators have long sought for a solution to activate silent roamers and recover those revenues, but with little success. Now, eSIM offers that solution, allowing MNOs to provide affordable and easy-to-use roaming packages that help customers maintain control over their connectivity."

"We're delighted to have Telna join our Bridge Alliance Technology Partnership Programme. We look forward to deepening our partnership in enabling the roaming eSIM distribution ecosystem and to meet emerging needs in new roaming industry trends," said Ken Wee, Senior Vice President for Partnership and New Business at Bridge Alliance.



Telna's solution embeds eSIM connectivity into high-traffic super apps, allowing for instant eSIM activations for millions of users. Additionally, Telna's eSIM solution is white-labelled and customisable, enabling MNOs to brand their own digital eSIM storefronts and mobile applications for further revenue opportunities. Its API-first approach ensures flexibility, scalability, and ease of integration. MNOs can connect their systems with the platform's APIs to exchange data, plan information, and provisioning requests. The platform will then generate the necessary eSIM profile and deliver it directly to the customer's device, communicating with the MNO's network to complete the provisioning process.

## Eutelsat OneWeb concludes 'world's first successful trial' of a 5G NTN

Eutelsat's OneWeb network has just conducted the 'world's first successful trial' of a 5G Non-Terrestrial Network (NTN).

Eutelsat has long held an ambition to adopt mobile communications support into their satellite network, which would use the NTN standard within the 5G specification (3GPP Release 17). The latest test using a live commercial network is said to pave the way for deployment of the 5G NTN standard, which will result in future satellite and terrestrial interoperability within a large ecosystem, lowering the cost of access and enabling the use of satellite broadband for 5G devices around the world.

The trial used OneWeb satellites, with the MediaTek NR [5G New Radio] NTN test chipset, and NR NTN test 5G g-NodeB (gNB) provided by ITRI, using the 3GPP Release 17 specifications. Sharp, Rhode & Schwarz provided the antenna array

and test equipment and the LEO satellites carry transponders, with Ku-band service link, Ka-band feeder link, and adopting the 'Earth-moving beams' concept. During the trial, the 5G user terminal successfully connected to the 5G core via the satellite link and exchanged traffic.

"These trials show the commitment of Eutelsat Group in developing and adopting new technologies, in order to provide the best possible services to our customers, in collaboration with trusted partners. 5G NTN will be a key feature of the IRIS2 constellation, and Eutelsat is at the forefront of this innovation and active member of the ecosystem. We are proud to be the first satellite operator to demonstrate the 5G air interface working on a commercial fleet in Ku-band and paving the way for new applications in future constellations," said Arlen Kassighian, Chief Engineering Officer at Eutelsat Group.

## Vodafone pilots drones for mobile mast recovery

Vodafone has begun piloting a new type of drone designed to help restore connectivity to mobile masts, such as when their underground data capacity cables are cut or damaged. The drones employ a special optical wireless link.

The drones, which could also be deployed as part of disaster recovery situations, are currently being tested in Seville, Spain and use a wireless optical connectivity link that has been developed by



the Taara Project as part of the Google X programme.

Vodafone worked with Taara to demonstrate how two industrial-grade drones equipped with Taara's light beam terminals could be used to deliver a temporary connection. In the test, one drone was securely tethered to a mast, and the other to a nearby Vodafone data transport hub.

The drones equipped with Taara briefly established a two-way connection over 3km of distance, demonstrating how novel combinations of new technologies could potentially be used in future to address infrastructure challenges.

The backhaul fibre optic cables that link their masts are usually buried in the ground, making them susceptible to damage by mechanical diggers and sometimes even vandalism. Across Europe, Vodafone on average deals with between 75-100 such cable breaks every year.



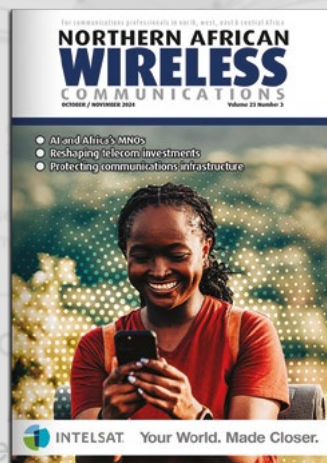
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