

For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

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Volume 29 Number 4

- **MVNOs: rewriting the connectivity playbook**
- **Embracing the power of photonics**
- **The rise of Africa's techcos**



**'Revolutionizing
connectivity with the
power of automation'**

**Alain Maupin, Vice President and
Head of Customer Unit Central East
Africa at Ericsson**



ERICSSON



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Ericsson's high-performing networks provide connectivity for billions of people every day. For nearly 150 years, we have been pioneers in creating technology for communication. We offer mobile communication and connectivity solutions for service providers and enterprises. Together with our customers and partners, we make the digital world of tomorrow a reality.



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Angola bolsters internet access with Angosat-2 and fibre expansion

Angola is aggressively pursuing improved internet access across the country, a key component of its broader digital transformation strategy. The launch of the Angosat-2 satellite in 2025 is a key driver of this initiative, allowing national operators like Angola Telecom, MSTelcom, and Startel to expand coverage throughout the nation.

This satellite-based connectivity is seen as vital for extending digital services into rural areas, bridging the gap between urban and rural

populations. It also bolsters strategic sectors like defense, agriculture, education, health, and the oil and mining industries, all of which benefit from reliable and high-capacity connections.

The government is also investing in terrestrial infrastructure, including the expansion of the National Broadband Network (NBN). This includes the construction of approximately 2,000 km of new optical fibre and the repair of 883km of existing fibre, aiming

to achieve speeds of 200Gbps, 400Gbps, and even 1Tbps.

A significant US\$300 million investment from the World Bank is further supporting Angola's digital inclusion efforts and strengthening public service systems, promoting trust in the digital environment.

While this ambitious plan holds great potential, Angola faces crucial challenges to realizing its full impact. Effective coordination amongst operators, consistent network maintenance, the

development of local technical skills, and robust regulation are vital for success. Equally important is achieving affordable and reliable internet access for all citizens, particularly in rural areas.



Unitel broadens mobile network in Angola

Angola's Unitel has expanded its 3G and 4G mobile network in the Cachingues municipality of Bié province, aiming to improve voice and data services for its customers. This upgrade is part of a larger network development plan encompassing further deployments beyond this initial area.

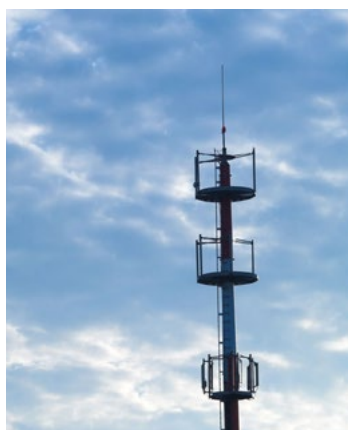
The company's commitment to widespread coverage is evident in its current network reach. Unitel's 2G network now covers 100% of Angola's 164 municipalities and 54.7% of its communes. 3G service has been extended to 96.3% of municipalities and 47.1% of communes. The faster speeds and improved communication of 4G are available in 80.5% of municipalities and 35.9% of communes. However, 5G coverage remains relatively limited, currently reaching only 6.7% of municipalities and 2.8% of communes.

Unitel emphasizes its ongoing focus on enhancing service quality, creating a superior customer experience, and strengthening its market position within Angola's telecommunications industry. The expansion into new areas reflects Unitel's dedication to maintaining a leading position in the Angolan telecommunications sector.

EIB Global announces \$100 million financing for Axian Telecom

The European Investment Bank (EIB), through its EIB Global arm, has announced a substantial financing package of US\$100 million for Axian Telecom, a pan-African telecommunications operator.

The funding will be allocated to



enhance network coverage, increase capacity, and introduce advanced technologies such as 4G and 5G in targeted regions. US\$40 million will support the expansion of Axian's mobile broadband network in Madagascar, while USD 60 million will be directed towards similar initiatives in Tanzania.

"The EIB's overall financing of \$100 million will help us develop mobile telephony infrastructure in Madagascar and Tanzania and bring it to millions of people. This new large-scale investment in networks will pave the way for socio-economic growth, digital inclusion, and greater opportunities," said Hassan Jaber, CEO of Axian Telecom.

This funding comes shortly after Axian Telecom's announcement of an \$82 million investment plan

aimed at enhancing 4G coverage to 97% of the population in Madagascar, Tanzania, and the Comoros by 2030. According to data from the International Telecommunication Union's (ITU) DataHub platform, Madagascar's 4G coverage stood at only 33.6% in 2023, with a mere 6.12% for 5G. In contrast, Tanzania saw 4G coverage reach about 79%, but 5G services have yet to be deployed.

The network expansion facilitated by this financing will enable more people to access reliable mobile and internet services, thereby reducing inequalities in access to information and digital services. It is anticipated that these improvements will stimulate economic growth across various sectors, including trade, education, and health.

Johannesburg launches free Wi-Fi at Rea Vaya stations, improves urban mobility

Johannesburg has made significant strides toward digital inclusion with the introduction of free Wi-Fi at Rea Vaya stations, marking a notable improvement in urban mobility for commuters.

The new 'Joburg Free Wi-Fi' network allows passengers to connect while traveling, transforming transit time into valuable opportunities for productivity, entertainment, and

seamless access to information.

This initiative, led by the city's digital infrastructure division, MTC, is part of a wider strategy aimed at modernizing public services and fostering a more connected urban environment. Currently, 35 stations have been equipped with the free Wi-Fi service, and plans for further expansion are already in motion.

The availability of free Wi-Fi at transit stations not only enhances

the commuting experience but also contributes to bridging the digital divide, ensuring that even those without personal data plans can access essential online services and resources while on the move. As Johannesburg steps forward in building a digitally inclusive city, this project is expected to play a crucial role in supporting economic opportunities and improving access to information for all residents.

Zambia's new Cyber Security Act ignites backlash

The recently enacted Cyber Security Act in Zambia has ignited fierce backlash from opposition parties and legal experts, who argue that it represents an effort to entrench dictatorship under President Hakainde Hichilema's United Party for National Development.

The Law Association of Zambia (LAZ) has raised alarms about the potential ramifications of the legislation, claiming it infringes upon fundamental rights and undermines the democratic ideals enshrined in the constitution.

The new law grants authorities the power to intercept and surveil a wide range of electronic communications, including phone calls, emails, messages, and streamed content. Individuals found guilty of violating these provisions may face hefty fines or imprisonment for a period ranging from five to fifteen years.

Lungisani Zulu, the president of LAZ, voiced grave concerns regarding the regulation's impact on press freedom and the independence of journalism in the country. He highlighted that the Zambia Cyber Security Agency is now centralized under the direct supervision of the president, rather than functioning as an independent entity, raising fears of political abuse.

"There is a significant risk that this agency could be used for

political suppression rather than national protection, undermining the very democracy and freedoms it was ostensibly established to safeguard," said Zulu.

LAZ had previously urged the government to withdraw the bill from the National Assembly and engage in consultations with various stakeholders. Although the government initially appeared amenable to these suggestions, Zulu noted that the ensuing consultation process was inadequate and failed to address concerns raised by stakeholders, including LAZ.

In defense of the Cyber Security Act, Spuki Mulemwa, the Western Province coordinator for the ruling party, characterized the law as a progressive measure necessary to protect citizens from rampant cyber attacks allegedly perpetrated by disgruntled individuals and elements of society seeking to incite regime change.

"We expect the new Cyber Security Act to bring normalcy and sanity in cyberspace, as it's a necessary tool for the security and protection of citizens," said Mulemwa.

As the debate continues, the implementation of the Cyber Security Act raises critical questions about the balance between safeguarding national security and preserving individual freedoms and democratic principles in Zambia.

Madagascar launches DECIM project for digital connectivity through widespread smartphone distribution

The Malagasy government has unveiled an initiative aimed at distributing digital devices, including smartphones, to the population as part of the Digital Connectivity and Energy for Inclusion in Madagascar (DECIM) Project.

With a budget of \$24 million, this initiative is designed to promote the adoption of internet and digital services throughout the country.

According to the Global Mobile Phone Association (GSMA), one of the major obstacles to the adoption of mobile technology, particularly in areas where network coverage already exists, is the inability to acquire internet-enabled devices. While many smartphones are available for under \$100, this price point remains unaffordable for a significant portion of the population.

In Madagascar, a smartphone priced at \$100 accounts for nearly 20% of the annual gross national income (GNI) per capita, which is estimated at \$510 based on the latest World Bank data (2023). Even with an average smartphone lifespan of three years, the cost of acquiring a device is substantial, particularly in a context where basic needs are prioritized.

The Malagasy government intends to distribute a total of 664,000 connected digital devices, with approximately 400,000 of these allocated specifically to women and girls. This initiative seeks to reduce inequalities in technology access and bolster digital and economic inclusion.

To facilitate this effort, a dedicated 'Sale of Digital Terminals with Internet Access' counter will be established, featuring targeted subsidies for devices, a line of credit for distributors and financial institutions, special considerations for remote areas to ensure broad accessibility, and promotion of mobile money as a tool for financial inclusion.

This government initiative aligns with Madagascar's broader digital transformation ambitions outlined in the five-year Digital Strategic Plan (PSN) 2023-2028. The plan aims to position Madagascar as a significant player in the African digital economy by focusing on the development of telecommunications, e-government, and digital inclusion. Authorities are targeting a contribution of 6% from the digital sector to the national GDP by 2028, up from 1.5% in 2019.

NetOne and AST SpaceMobile to accelerate 5G adoption in Zimbabwe

NetOne has entered into a partnership with AST SpaceMobile to enhance its 5G capabilities.

This collaboration could enable NetOne to expedite the rollout of 5G services across the country, with plans to launch the technology in October 2025.

AST SpaceMobile operates a space-based telecom network utilizing low-Earth orbit (LEO) satellites equipped with Direct-to-Device (D2D) technology. This innovative approach allows NetOne customers to directly access telecommunication services from

the satellites, eliminating the need for specialized smartphones or satellite antennas. As a result, the telecom operator can avoid heavy investments in terrestrial infrastructure required to receive satellite signals, streamlining the process of delivering connectivity to end users.

The deployment of space technology for 5G aims to help NetOne close the gap with industry leader Econet Wireless, which launched its commercial ultra-broadband services in February 2022. Since then, Econet has

invested in enhancing its network infrastructure, including the construction of new 5G sites and upgrades to existing ones.

NetOne's rollout of 5G is part of its broader strategy announced in October 2024 to reclaim its leadership position in the market. As of the third quarter of 2024, Econet controlled approximately 71.94% of Zimbabwe's 15.1 million mobile subscribers, while NetOne held a market share of 25.56%. Telecel, the country's third-largest operator, accounted for 2.5% of the market.



DRC pioneers digital identification technology

The Democratic Republic of the Congo (DRC) is set to become a pioneer in digital identification technology, a crucial step in its ongoing digital transformation journey. The DRC government has teamed up with Trident Digital Tech to implement this innovative digital identification project, which promises to yield numerous benefits across various sectors of the nation's economy.

During a recent visit to the DRC, Soon Huat Lim, the founder,

chairman, and CEO of Trident, demonstrated the potential of the company's technology. He expressed confidence that the initiative would significantly reduce identity fraud and cybercrime, thereby safeguarding the country's digital future. By implementing digital IDs, the project aims to streamline public administration processes, reduce bureaucracy, and enhance transparency.

Moreover, Lim highlighted that the digital identification system

would accelerate financial inclusion by enabling millions of unbanked citizens to access banking services and digital payment systems. This level of accessibility is expected to boost economic activity and empower individuals financially.

In addition to the economic benefits, the initiative aims to improve identification processes in education, enhancing student identification, online learning, and academic verifications. The DRC's healthcare sector will

also benefit, as the digital IDs are designed to facilitate secure medical records and better access to healthcare services.

Lim emphasized that this digital initiative would 'redefine trust' in digital interactions through the use of modern technologies, including Web 3.0 blockchain, artificial intelligence, biometrics, and zero-knowledge proofs.

"It is more than just a tool. It is a catalyst for transformation across the country and continent," said Lim.

AfDB and Mozambique explores drone-based disaster management project

The African Development Bank (AfDB) has partnered with Mozambique and Korea's Busan Technopark to initiate a pioneering drone-based plan aimed at enhancing natural disaster preparedness in the Southern African nation. The Drone-Based Disaster Management Project is supported by a funding of \$967,000 from the Korea-Africa Economic Cooperation Trust Fund.

This ambitious project will establish a drone training centre in Mozambique and provide training for 30 professionals, including ten specialized instructors. It will also implement a drone-based monitoring and response system across five high-risk flood zones, as highlighted by the AfDB.

Mozambique frequently grapples with natural disasters such as floods, mudslides, and cyclones, leading to significant humanitarian and economic challenges. The Drone-Based Disaster Management Project

is expected to significantly enhance real-time disaster monitoring, improve early warning systems, and refine predictive flood modelling. This will empower Mozambique to effectively anticipate and mitigate climate-related disasters.

Spanning a six-month implementation period, the initiative aims to evolve into a regional centre of excellence for disaster management and preparedness.

"This project exemplifies our commitment to leveraging technology in enhancing our disaster management efforts," said Muchanga Américo, Mozambique's Minister of Communication and Digital Transformation.

"This project reflects the power of collaboration between governments, development institutions, and private sector partners, united in a shared mission to protect lives, strengthen resilience, and promote sustainable development," said Flavio da Gama, a country economist at the AfDB.



MICT resumes oversight of Telecom Namibia



Following recent changes in government and a reconfiguration of administrative responsibilities, the Ministry of Information and Communication Technology (MICT) has resumed its oversight of Telecom Namibia.

In light of this development, Telecom Namibia's Board of Directors and Executive Management, along with the Board and Executive team of its subsidiary, Powercom, convened with the Minister of Information and Communication Technology, Hon. Emma Theofelus (MP), on 23 April at the Telecom Namibia Head Office in Windhoek.

This meeting marked the inaugural quarterly gathering as part of the Ministry's engagement with public enterprises under its purview, which now includes Telecom Namibia. The discussions focused on strategic matters relevant to Telecom Namibia, aligning expectations,

and exploring collaborative opportunities to further Namibia's digital transformation agenda.

Telecom Namibia expressed its enthusiasm for the opportunity to engage with the MICT Minister, emphasizing its commitment to supporting the national vision for a digitally empowered Namibia.

"We believe that close collaboration with the Ministry is essential to maximize our contribution to the nation's development in areas such as network modernization, the rollout of national 5G services, fibre projects, and improving overall quality of service," said Stanley Shanapinda, Chief Executive Officer of Telecom Namibia.

As Telecom Namibia embarks on initiatives to enhance its digital infrastructure, the partnership with MICT aims to ensure that the company effectively contributes to Namibia's technological advancement.

Mozambique launches “Internet for All” initiative

In a bold step toward bridging the digital divide, the Mozambican government has unveiled the “Internet for All” initiative, aimed at democratizing internet access across the nation by 2030.

This ambitious project is a key component of the government’s digital transformation strategy, designed to propel Mozambique toward a more connected and inclusive future.

“This program constitutes a fundamental pillar of the government’s overall digital transformation strategy, creating an inclusive digital environment that will enable citizens, businesses, and public institutions to interact and innovate,” said a representative from the Communications Regulatory Authority (INCM).

The initiative aims to foster an accessible digital economy by ensuring equitable access to essential services, such as public administration, education, health, and economic opportunities, ultimately enhancing the quality of life for the population.

The government’s plan includes ambitious targets, seeking to achieve a mobile penetration rate of 80% and ensure 95% coverage across

the national territory, with network availability expected to reach 99%. In terms of performance, officials are aiming for connection speeds ranging from 100Mbps to 1Gbps for 5G networks, 10Mbps to 100Mbps for 4G, and 0.1Mbps to 10 Mbps for 3G. To facilitate these advancements, Mozambique plans to welcome low-orbit satellite operators and telecom tower companies, alongside significant expansion of the fibre optic network.

Current statistics from the International Telecommunications Union show that while the 2G network covered 87% of Mozambique’s estimated population of 32.6 million in 2022, the coverage drops significantly for newer technologies: 3G at 85%, 4G at 60%, and just 5% for 5G. Despite this apparent network coverage, the internet penetration rate remains low, with estimates indicating only 21.2% of the population is connected, compared to 22.3% for mobile telephony.

As part of its initiative, authorities are planning digital literacy and technology training programs to enhance the capabilities of local communities and promote the effective use of digital services.

A\$60 billion Africa artificial intelligence fund announced

A transformative initiative is set to reshape the landscape of artificial intelligence across the continent, as a A\$60 billion Africa AI Fund is established through a collaborative effort of public, private, and philanthropic capital. This significant commitment was unveiled at the Global AI Summit on Africa, held in Kigali, Rwanda.

The primary goal of the Africa AI Fund is to cultivate a secure, inclusive, and competitive AI economy in Africa. The declaration emphasizes two main objectives: to leverage the potential of AI to drive innovation and competitiveness, aiming to advance Africa’s economies, industries, and societies; and to position Africa as a global leader in the ethical, trustworthy, and inclusive adoption of AI technologies.

Additionally, the declaration calls for the sustainable and responsible design, development, deployment, usage, and governance of AI technologies across the continent.

The memorandum establishing the fund was facilitated by Qhala, Smart Africa, and Rwanda’s Centre for the Fourth Industrial Revolution, with support from the Gates Foundation. Qhala serves as an AI enabler focused

on driving innovation and digital transformation throughout Africa.

In their statement, Qhala outlined the shared commitment among African nations to align national strategies with continental goals, safeguard data sovereignty, build digital infrastructure, and foster a sustainable AI innovation ecosystem. The organization highlighted the rapid evolution of Africa’s AI landscape, forecasting that AI could contribute \$2.9 trillion to the African economy by 2030.

“This declaration is timely, as Africa’s AI ecosystem is rapidly evolving but remains fragmented and underfunded. This will ensure that Africa takes its place in a leadership role in global AI development,” said Shikoh Gitau, CEO of Qhala.

“AI is not just technology to us; it’s an African arrow that, when thrown with the right ethical frameworks and inclusive policies, can pierce the way to African digital prosperity and resilience for the benefit of every citizen,” said Lacina Koné, CEO of Smart Africa.

With this ambitious initiative, the Africa AI Fund aims to harness the transformative power of artificial intelligence, providing a vital foundation for the continent’s future economic growth and technological advancement.

MTN and Meta to enhance voice and video calls across 12 African countries

MTN recently announced a technical collaboration with Meta, the parent organization of popular platforms such as WhatsApp, Facebook, and Instagram. This alliance aims to improve the stability and quality of voice and video calls made on Meta’s applications in twelve African countries.

The collaboration entails a series of technical adjustments designed to optimize the performance of Meta’s apps on MTN’s mobile network. Key initiatives include network infrastructure enhancements and improved synchronization between Meta’s servers and mobile user traffic. Nigeria has been designated as a pilot testing ground for these improvements, with initial results indicating a significant boost in call quality.

“This implementation further demonstrates our commitment to improving our customers’ digital experience. We are delighted with the remarkable improvement in our real-time communication services, which reflects our commitment to innovative solutions for customers,” said Yahaya Ibrahim, Chief Technology Officer of MTN Nigeria.

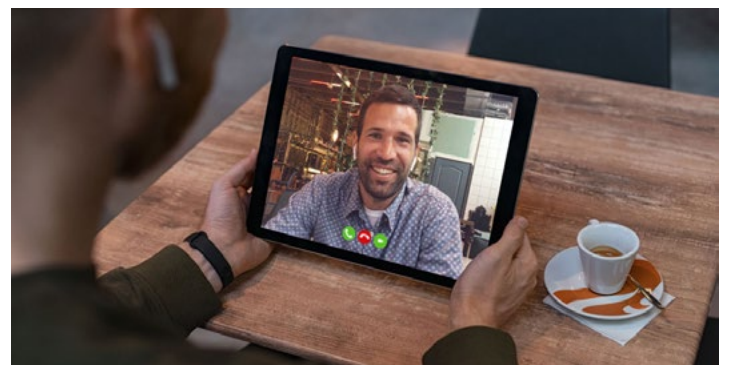
Meta’s applications facilitate calls; however, users often experience issues such as inconsistent coverage and slow connection speeds that can degrade service quality. The partnership between MTN and Meta seeks to tackle these technical hurdles, providing users with a more stable and seamless communication experience.

This initiative aligns with MTN’s broader strategy of evolving from

a traditional telecommunications provider into a technology-driven entity. By enhancing its digital communication services, MTN aims to solidify its position in the market and cater to the growing demand for reliable mobile services.

If successful, this partnership could pave the way for similar collaborations

between telecom operators and digital technology companies, potentially transforming the landscape of mobile services across Africa. Such alliances could substantially elevate the quality of communication services on the continent, impacting millions of users who rely on these applications for daily communication.



Revolutionizing connectivity with the power of automation

Alain Maupin, Vice President and Head of Customer Unit Central East Africa at Ericsson

What is Ericsson spearheading at MWC this year?

This year's MWC marks a major shift from previous years. Ericsson is focused on transforming the industry by moving from traditional, purpose-built technology to open ecosystems and partnerships. We have over 70 partners, including Google, Apple, and leading CSPs like Singtel, showcasing how to monetize new technologies.

One of our biggest innovations is Aduna, which functions like an 'App Store' for network infrastructure. Just as the iPhone revolutionized mobile applications in 2007, Aduna is doing the same for network programmability. It provides an

open platform where developers can create and deploy services tailored to specific network needs.

Aduna is still in its early stages, but we've signed our first exposure deal with an operator in Southeast Africa. This allows network capabilities to be exposed via APIs, paving the way for more advanced services. The next step is expanding these API reselling capabilities to other markets.

Another key area this year is mission-critical connectivity, which ensures secure and robust connections for industries like healthcare, utilities, ports, and defense.

We're also focusing on AI-driven operations, automating complex tasks like optimizing bandwidth for large events in real-time. There's been a significant shift compared to previous years around the pervasive presence of AI. It's not just a buzzword; these technologies are now integral to how we operate.

If we stick to the traditional method of manually configuring everything, we won't be able to manage effectively. We need to introduce intelligent engines that can enhance operations by driving performance and predicting potential degradation before it occurs, enabling us to deliver superior connectivity and services. Automation significantly simplifies operations and brings

cost efficiencies to managing complex technologies. It feels almost magical, and I love it!

How have global network changes impacted Africa?

Africa is still in the process of building high-capacity mobile broadband networks. Over the past five years, the number of people covered by mobile broadband has more than doubled.

One key development is the adoption of fixed wireless access (FWA), which is becoming the first real 5G use case in Africa. Many suburban areas lack fibre infrastructure, so FWA enables high-speed internet for homes and businesses, supporting services like streaming and enterprise applications.

Though still in the early stages, FWA has strong commercial merit. It will help enterprises, industries, and port facilities access high-speed connectivity that is otherwise unavailable. African operators are looking for new revenue streams since traditional data revenue growth has not kept pace with demand, and FWA offers a promising new avenue for monetization.

How are new connectivity innovations affecting heavy industry?

In the Middle East and Africa, we have established a dedicated organization called 'Mission Critical' within Ericsson to engage in this space. We see significant opportunities in sectors like

mining, port connectivity, and utilities. Countries such as Zimbabwe, South Africa, Tanzania, and Angola have abundant mineral resources and potential for development.

We've successfully deployed similar initiatives in places like France and the western part of Australia, as well as northern Sweden. Recently, we conducted a proof of concept (POC) in South Africa, which proved to be very successful. Our goal is to replicate this success and enhance connectivity in the mining sector, enabling greater automation and addressing safety concerns. By automating processes and utilizing machines instead of relying solely on human labour, we can significantly improve health and safety for workers.

This is definitely a growth area for us.

What role does connectivity and automation play in sustainability, and how is Ericsson contributing to the green ecosystem?

Energy efficiency is a top priority for Ericsson. Our R&D efforts focus on reducing energy consumption in our equipment. When launching 5G, our goal was to ensure no increase in power consumption compared to 4G, despite the higher capacity demands.

We've developed technologies like sleep mode. For example, with Deep sleep mode, we can go up to 97% reduction in energy consumption on Massive MIMO Radios like 3255. We also align with customers' sustainability



targets to support their Net Zero ambitions through energy-efficient solutions.

Net Zero is our ambition, and we take it very seriously. We aim to achieve it by 2040, aligning with the sustainability goals of our customers and the broader industry. While it's a challenging goal, we are committed to making continuous improvements in energy efficiency.

What can you tell us about Ericsson's key strategic partnerships?

One major initiative is Aduna, which brings together key industry players like Verizon, Etisalat, Telstra, and Singtel. Aduna is becoming a key enabler for us. These partnerships are crucial for us.

Of course, we also have other partnerships that may not be as visible as those we showcase prominently. For instance, we are working closely with Apple. Recently, Apple released a new iOS update that will enhance network slicing, which enables us to allocate certain resources with specific quality of service levels. The new iOS can now detect the type of service you need, ensuring that you receive the required quality of service. This means that when you need high performance, the network can interact with the infrastructure to provide enhanced resources, ensuring a seamless experience. This is another important strategic partnership that I believe is worth highlighting.

What is Ericsson's vision for emerging ICT trends?

Automation and AI are at the core of Ericsson's strategy. AI is embedded in network operations, enabling predictive maintenance and automated optimization.

For example, AI-driven algorithms can now predict KPI degradation — similar to how a doctor diagnoses health issues. If a network issue is likely to occur, the system can automatically recommend or implement corrective actions, improving performance and reducing manual intervention.



Human oversight will always be needed no matter how advanced the automation. Many repetitive optimization tasks can already be fully automated, but more complex decisions still require human intervention.

For example, intent-driven AI operations allow network engineers to request a specific outcome (e.g., more throughput in a stadium during a football match), and AI automatically configures the network to achieve it. However, operators can still choose to approve or adjust these actions manually. This balance between automation and human decision-making is a key question not just for telecom but across all industries adopting AI.

Can you share more about the new products Ericsson is launching at MWC?

Naturally, AI and automation increase power demands, but Ericsson is actively mitigating this through energy-efficient network infrastructure. I'm excited to announce that we're launching new radios tailored specifically for high-capacity environments in the African market.

This product doesn't just respond to existing demands but anticipates future capacity needs as data consumption continues to grow. The availability of the power grid is inconsistent across the continent, and operational expenses can be high due to electricity costs or the pricing models used by power companies, which place significant financial burdens on operators. As a

result, we need to focus on reducing weight and energy consumption.

In this context, we are excited to introduce a new radio model, specifically designed for FDD operation. This product is aimed at high-capacity urban areas, where there is significant demand for increased data capacity, particularly in spectrum bands well-suited for Africa. We crafted this radio in response to the specific needs expressed by our operators.

I've had numerous customer meetings this week, and there is considerable enthusiasm for the new radio. Clients are eager to know when it will be available and when they can expect it to be deployed. It's clear that there is strong demand for this product, and I'm proud that Ericsson has responded effectively to this need. ■

Sub-Saharan Africa's digital divide: high costs and unequal access

A new report from the International Telecommunication Union (ITU) highlights the persistent digital divide in sub-Saharan Africa. While mobile internet penetration has grown significantly since 2005, affordability remains a major obstacle.

The report reveals a concerning trend: entry-level mobile data plans (2GB per month) in sub-Saharan Africa cost a median of 3.9% of average monthly income per capita in 2024. This figure is the highest globally and substantially exceeds the UN Broadband Commission's upper threshold of 2%. Similarly, fixed broadband (5GB per month) costs 3.4% of average monthly income. These high costs disproportionately affect low-income households, exacerbating existing digital inequalities.

Internet penetration in sub-Saharan Africa (38% in 2024) lags significantly behind the global average (68%). While the region has made progress, growing at an average of 16.7% per year since 2005 (compared to a global average of 8%), the past decade's growth has been more moderate (10.7% annually vs. 6.1% globally).

The report underscores significant disparities in internet access across countries in the region, with rates ranging from a low of 11% in Burundi to a high of 87% in Seychelles. A gender digital divide also exists, with 43% of men accessing the internet in the past year compared to just 31% of women.

The report emphasizes a stark urban-rural digital divide. Urban internet usage in 2024 reached 57%, while only 23% of rural populations had access. This gap is the largest globally. 4G and 5G networks primarily serve urban populations, creating a connectivity deficit in rural areas, which rely on slower 3G or no access.



Talking critical

Nina Myren, Chair, TCCA Legal and Regulatory Working Group and TCCA Board member



Action needed on security measures for physical critical communications infrastructure

In the telecommunications world, there is increasing visibility of and debates around cybersecurity – protecting the networks from digital attacks. Yet there should also be emphasis on the security of the physical infrastructure. TCCA's Legal and Regulatory Working Group (LRWG) aims to focus the attention of critical communications providers to the importance of the issue, with the goal of catalysing the creation of a global standard for the physical security of infrastructure supporting critical communications.

Why is this important now? Because most of the current critical communication networks using narrowband technologies such as TETRA, Tetrapol and P25, are owned and operated by the state, and their physical security is assured by the state to the extent deemed necessary. However, the emerging use of commercial mobile operator (MNO) networks to support broadband critical communications, particularly as Radio Access Networks, is changing the operating model.

TCCA describes 'critical communications' as "communications services that are critical for the successful delivery and completion of the missions, tasks and operations of professional users who rely on being in contact when it counts. There are many and varied types of operations which need critical communications. These include public safety and security, emergency services, critical infrastructure, public utilities, transportation, critical industries and related activities, where failures in critical communications would lead to catastrophic degradation of services. This in turn could place critical services and citizen safety and security at immediate risk."

Telecommunication infrastructure consists of several elements, including electronic components and passive elements such as physical sites and towers. The physical security of these network elements is of paramount importance, but it is debatable whether the measures that MNOs are currently adopting in this regard are sufficiently robust and fit for purpose.

First responders require critical

communications to be reliable, available and stable to a very high degree. Assuring these characteristics would be the responsibility of the state or emergency services when the network is owned, managed and operated by either. However, it becomes complicated when the operating model of the new broadband networks for critical communications rely on MNOs for some or all their functions.

There is no universally agreed definition of what 'good' looks like with respect to physical security of infrastructure for critical communications. Different countries may have different ambitions and needs, depending on the evolving threat picture and resources, including finances, available. A new white paper produced by the LRWG aims to stimulate discussions that will ultimately lead to an agreed regulatory baseline that all nations must agree to meet.

The white paper looks at the measures in place in several countries around the world in the context of their approach to broadband critical communications. To create greater cohesion, the paper identifies two potential approaches:

- impose security obligations through legislation/regulation;
- rely on provisions in the contract between the critical communications operator and the MNO/infrastructure provider.

The LRWG's assessment is that while each approach has advantages and disadvantages, a combination of the two would serve the interests of the critical communication services best.

The governmental critical communication networks may obligate MNOs to adopt sufficient measures to ensure the security of the network elements that are used for critical communication by legislation and/or regulation, or by contract with the relevant MNOs. While enforcement of a contract between parties will require legal action, legislation/regulation has the force of law and enforcement is a process between the MNOs and the respective regulator. The main difference between the two options is under regulations, enforcement is primarily in the hands of the regulator with legislated sanctions while under contract, it is the right and the responsibility of the governmental critical communications provider with restitution being primarily damages or

specific performance.

With legislation/regulation there will be a baseline that all MNOs would be obligated to meet and other interested parties would be aware of, including principles for cost-ceiling and cost sharing between the MNOs and the critical communication operator. This would enable MNOs to make better informed decisions, particularly when bidding to provide services for critical communications. Compliance with the requirements would be a statutory obligation, which would be easier to harmonise across jurisdictions, making way for multi-state standards.

On the other hand, legislation/regulation need to be carefully crafted in order to make the obligations proportionate as the scale of MNOs' engagement may vary. Addressing developments in technology or the market may be more complicated as it will require legislative amendments. Since the regulator will be the enforcing authority, the critical communication operator may have limited access to information on MNOs' compliance, unless access to that information is specifically granted through the legislation/regulation.

Contractual arrangements would make it easier to design individualised and proportionate obligations, and to update the contractual provisions in line with developments in technology and the market. However, it would take time, effort and expertise to negotiate standards of security with the MNO acceptable to the critical communications operator, particularly if there is no legally set minimum standard. It would also be challenging to monitor compliance by the MNO and would require specific contractual provisions that empower the critical communications operator.

Though new legal/regulatory obligations on physical security may increase the costs and burden of compliances for MNOs/infrastructure providers, it would have a salutary effect due to the improved security and resilience of the network, which is being increasingly sought by consumers, particularly business customers.

The white paper 'Legal and Regulatory aspects relating to the physical security of telecommunications infrastructure used for critical communication services' [can be read here](#)

Axian Telecom announces \$82 million investment to expand 4G in Madagascar, Tanzania, and Comoros

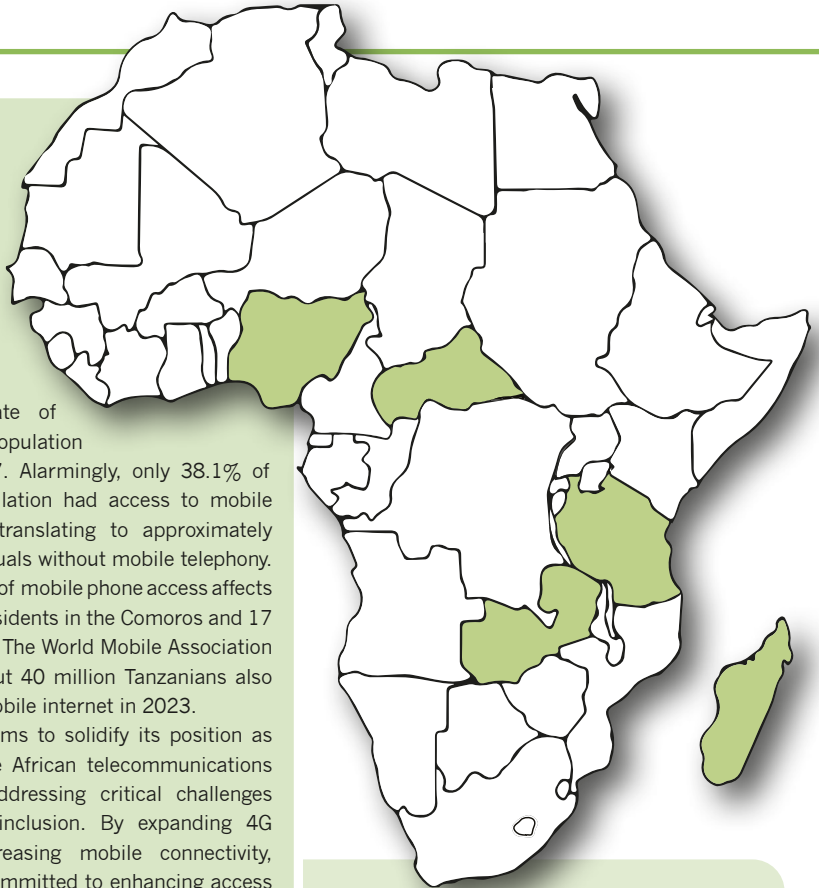
Axian Telecom has unveiled plans to invest \$82 million in Madagascar, Tanzania, and the Comoros by 2030, with the primary objective of extending 4G coverage to 97% of the population in these markets. This initiative is expected to add 6 million new subscribers, significantly enhancing digital connectivity across the region.

The investment announcement was made on March 25 by the International Telecommunication Union (ITU) as part of the Partner2Connect initiative, which focuses on mobilizing commitments to achieve universal connectivity and drive digital development, particularly in underserved areas and among vulnerable populations.

According to the ITU, 4G coverage in Madagascar currently reaches only 33.6% of its population, estimated at 31.2 million in 2023. In Tanzania, 4G coverage stands at 79% among a population of 66.6 million, while the Comoros

has a notable rate of 94%, serving a population of around 850,387. Alarmingly, only 38.1% of the Malagasy population had access to mobile phones in 2023, translating to approximately 19.3 million individuals without mobile telephony. Furthermore, a lack of mobile phone access affects roughly 190,000 residents in the Comoros and 17 million in Tanzania. The World Mobile Association estimates that about 40 million Tanzanians also lacked access to mobile internet in 2023.

Axian Telecom aims to solidify its position as a key player in the African telecommunications landscape while addressing critical challenges related to digital inclusion. By expanding 4G coverage and increasing mobile connectivity, Axian Telecom is committed to enhancing access to vital communication services for millions in the region, contributing to broader economic growth and social development.



Central African Authorities grant operating license to SOS Telecom

The Central African authorities have officially awarded an operating license to Brazilian company SOS Telecom in a ceremony led by the Minister of Digital Economy, Posts and Telecommunications, Justin Gournu Zacko, alongside SOS Telecom's CEO, Kertoumar Djargue.

The Central African Ministry of Digital Economy stated that the goal for the end of the year is to achieve 60-70% geographic coverage of telecommunications infrastructure. The aim is also to extend optical fibre connectivity to rural areas. The initiative aligns with the vision of President Faustin Archange Touadera, who seeks to transform the country's geographical isolation

into an opportunity by enhancing digital access.

This project is part of a regional effort that includes collaboration with Chad, another landlocked nation exploring synergies to improve connectivity. In September 2024, Chad was linked to a 900km network of fibre optic cables connecting it to Congo and Cameroon, supported by \$33 million in funding from the African Development Bank and the European Union.

The success of SOS Telecom's project will hinge on its ability to meet investment and deployment commitments. If the targeted coverage and infrastructure goals are accomplished, the Central African Republic could experience a substantial leap in internet accessibility.

Airtel to invest \$14 million in Zambia for tower expansion

Airtel has announced plans to invest \$14 million over the next six months to construct 152 new communication towers in Zambia, in partnership with IHS Towers. This strategic rollout aims to enhance network quality and expand mobile coverage across the country, which is crucial for supporting the growing demand for mobile services.

Airtel aims to increase its mobile network population coverage from the current 91.6% to 93% by 2026, with plans to further boost coverage to 95% and 96% within the next two years. This progressive goal highlights Airtel's commitment to enhancing connectivity in Zambia, where improved telecommunications infrastructure can play a significant role in socio-economic development.

Fintech boosts EMTL levies in Nigeria

The Nigerian federal government has reported that the Electronic Money Transfer Levy (EMTL) generated \$49.5 million in revenue, with fintech companies contributing \$18 million to this total. According to the Federation Account Allocation Committee, this represents a significant 56.8% increase compared to the \$31.6 million recorded during the same period in 2024.

While the levy initially targeted established banking institutions, fintech firms have now been included in its scope due to their remarkable growth, which has seen a 2,507.94% increase in transaction values since 2020. The EMTL is part of the government's broader initiative to regulate the rapidly expanding fintech sector, which processed transactions valued at \$29 billion in 2023 and approximately \$49.3 billion in 2024.

Enacted through the Finance Act 2020 as an amendment to the Stamp Duty Act, the EMTL imposes a charge of \$0.03 (N50) on electronic transactions amounting to \$6.19 or more, conducted through banks and financial institutions. This tax aims to leverage the growth of electronic payments, projected to surpass \$619.70 billion in total transactions by 2024.

In response to the burgeoning fintech landscape, the government has opted to broaden its tax base, anticipating annual EMTL collections to rise by 31.35%. The Medium Term Fiscal Framework for 2025-2027 envisions EMTL revenue reaching \$142 million in 2025, an increase from \$108 million in 2024.

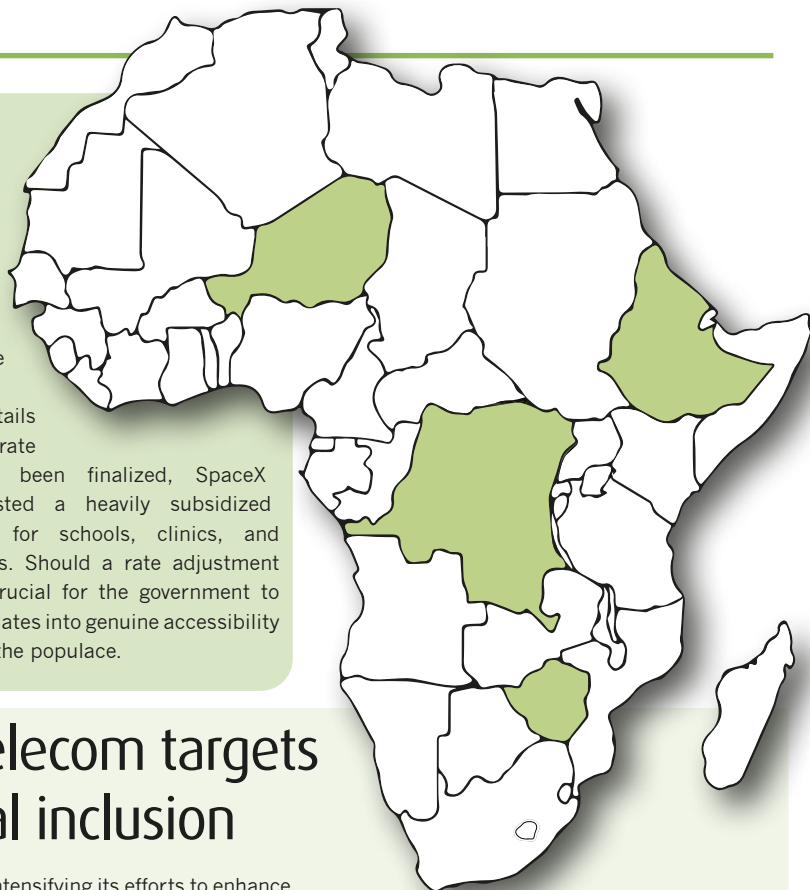
Zimbabwean government seeks lower costs from Starlink

Zimbabwean citizens may soon have the opportunity to access more affordable internet services provided by Starlink. The Zimbabwean government has formally requested that SpaceX review its pricing structure within the country during recent discussions aimed at enhancing internet accessibility.

Tatenda Mavetera, Zimbabwe's Minister of Information and Communication Technology (ICT), made the request, highlighting several key issues including the need to address capacity challenges affecting internet service in major cities such as Harare and Bulawayo. The government also urged SpaceX to consider the

installation of ground stations in Zimbabwe to further improve service delivery.

While details regarding the rate review have not been finalized, SpaceX reportedly suggested a heavily subsidized package tailored for schools, clinics, and community centres. Should a rate adjustment occur, it will be crucial for the government to ensure that it translates into genuine accessibility improvements for the populace.



Republic of Congo allocates funding to strengthen national cybersecurity through ANSSI

The government of the Republic of Congo has earmarked a budget of 800 million CFA francs for the operations of the National Agency for Information Systems Security (ANSSI), according to Léon Juste Ibombo, the Congolese Minister of Posts, Telecommunications, and the Digital Economy.

The allocated budget aims to bolster the agency's infrastructure, facilitate the recruitment of skilled professionals, and develop effective cybersecurity strategies. The overarching objective is to enhance the protection of information systems in the face of escalating cyber threats, thereby securing data and fostering trust in the country's digital landscape.

Ethio Telecom targets financial inclusion

Ethio Telecom is intensifying its efforts to enhance financial inclusion in Ethiopia by collaborating with global technology payment firms.

Recently, CEO Frehiwot Tamru met with a delegation from Visa Inc., led by Michael Berner, Senior Vice President and Head of the South and Eastern Africa Regions, to explore potential partnerships in international digital financial services.

During this meeting, the discussions centered on the performance of Ethiopia's first wallet-based Virtual Visa Card and the expanded remittance services introduced via Visa Direct and telebirr Remit in August 2024. This dialogue follows Ethio Telecom's previous engagement with MasterCard to leverage its telebirr platform to enhance digital banking services throughout Ethiopia.

The agenda with Visa also included a review of the current performance of remittance services and the market's expanding potential, particularly in the context of recent macroeconomic reforms in the country. Customer feedback on the new

remittance services was evaluated to identify areas for improvement.

Both parties recognized the opportunities to integrate Ethio Telecom's telebirr technology with Visa's extensive global network. Frehiwot emphasized telebirr's broad reach, robust infrastructure, and security features as vital elements in this collaboration.

The Visa delegation acknowledged the significant untapped potential within the Ethiopian market and advocated for the development of innovative international services to 'break the boundary' of existing limitations.

As a result of their discussions, both parties agreed to establish a joint steering group focused on exploring new collaboration opportunities that aim to significantly enhance innovative digital financial solutions, improve financial inclusion, and contribute to building a digital society in Ethiopia.

Niger state abolishes right-of-way fees for fibre

Niger State, Nigeria, has joined the national push for improved broadband access by abolishing right-of-way fees for fibre optic infrastructure installation. Instead of the previous per-meter fees, the state now mandates a one-time permit fee of 500,000 naira. This move aims to streamline the process and encourage the expansion of broadband connectivity.

The new policy, formalized in a government decree dated 2 September 2024, was confirmed by Suleiman Isah, Niger State Commissioner for Communications Technology and Digital Economy. The decision follows a previous exemption granted to a private company in March 2024 for a 40km fibre optic deployment in the state capital.

This initiative comes amid pressure from the federal government on states to eliminate toll charges. The federal government is currently undertaking a significant infrastructure project to install 90,000km of fibre optic cables nationwide at an estimated cost of US\$2 billion. However, existing right-of-way charges pose a significant barrier to the project's timely and cost-effective completion.

Currently, the standard national right-of-way fee is 145 naira per linear meter, established in 2017 through a federal-state collaboration. However, the Global Telecommunications Association (GSMA) reports that many states do not enforce this standardized rate, increasing costs by up to 70%.

The GSMA estimates a potential 15% reduction in overall fibre optic deployment costs if all states adhered to the harmonized rates.

While Niger State's action is a positive step, the widespread abolition of right-of-way fees remains a challenge. The federal government targets the elimination of these charges by the end of May 2025, yet only 11 other states have adopted a similar measure: Zamfara, Katsina, Anambra, Kebbi, Nasarawa, Bauchi, Adamawa, Kaduna, Ekiti, Imo, and Plateau. The implementation of this policy across the remaining states will be critical to the success of the federal government's ambitious broadband expansion project.

Safaricom earmarks Ksh 40 billion for M-PESA

M-PESA is set to undergo significant enhancements with a substantial investment of \$300 million, equivalent to approximately Ksh 40 billion, earmarked for the upgrades.

Safaricom Group CEO Peter Ndengwa recently announced the impending rollout of M-PESA 2.0, describing it as a transformative initiative that will enhance stability, capacity, and customer experience. Ndengwa emphasized that the upgrades aim to ensure uninterrupted service for users.

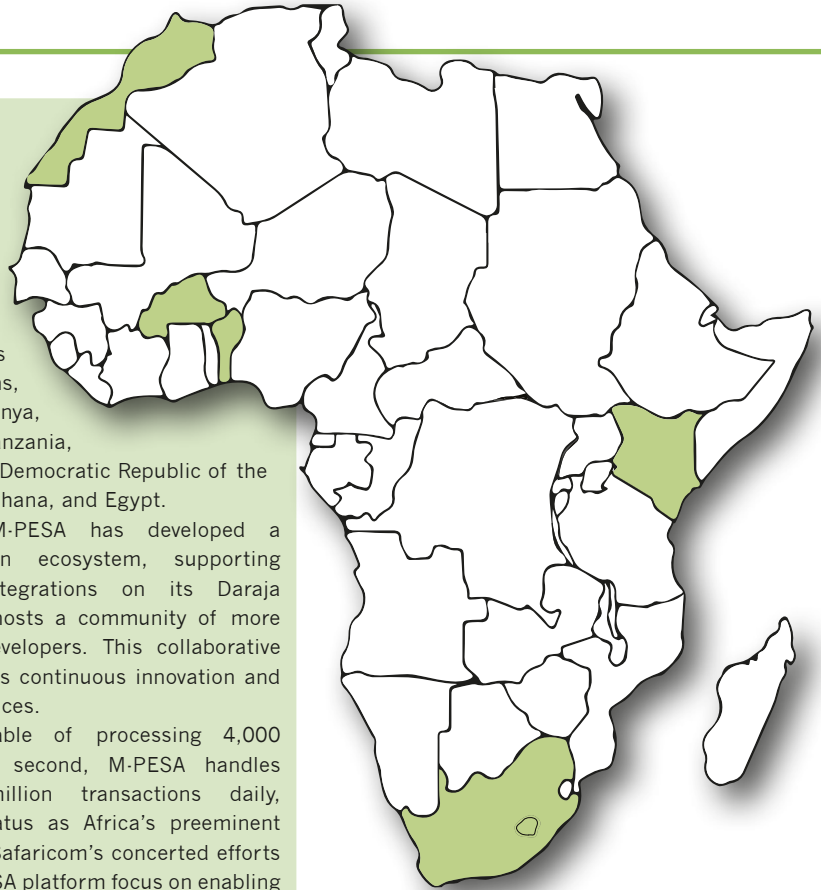
“By the time it’s fully rolled out, there will be zero downtime for customers. Safety and security are always our top priority,” said Ndengwa. “To maintain customer trust, we stay ahead of fraudsters and cyber threats, with strong guardrails in place. We’re constantly building resilience so customers can rely on our services with confidence.”

This announcement coincides with the celebration of M-PESA’s 18th anniversary, marking its launch in March 2007. Over the years, M-PESA has expanded its reach significantly, now serving more than 70 million customers across over 170 countries. The platform has also become an essential financial

service for more than one million businesses and agents in various African nations, including Kenya, Ethiopia, Tanzania, Mozambique, the Democratic Republic of the Congo, Lesotho, Ghana, and Egypt.

Additionally, M-PESA has developed a robust innovation ecosystem, supporting over 55,000 integrations on its Daraja platform, which hosts a community of more than 100,000 developers. This collaborative environment drives continuous innovation and expansion of services.

Currently capable of processing 4,000 transactions per second, M-PESA handles around 100 million transactions daily, solidifying its status as Africa’s preeminent fintech solution. Safaricom’s concerted efforts to scale the M-PESA platform focus on enabling more digital services, expediting new product development, and enhancing overall stability and reliability in response to the increasing demands of users.



Mergence Investment Managers takes the reins at Waterfall City

Mergence Investment Managers has acquired a controlling stake in vital digital infrastructure assets situated in Waterfall City, a prominent residential area in Gauteng. This strategic move, facilitated through the Mergence Infrastructure & Development Equity Fund II, marks a significant expansion of Mergence’s digital infrastructure platform.

The acquisition aligns with the seller’s broader strategy to refocus on its core property development and management operations. Notable assets secured in the deal include a fibre-to-the-home (FTTH) network, which grants Mergence exclusive rights to provide fibre connectivity to approximately 4,000 high-income residential units within Waterfall City. This network is designed with scalable capacity to expand connectivity to more than 9,500 units in the short to medium term, facilitating the essential last-mile connection for end users.

Additionally, the transaction encompasses a 250km long-haul fibre optic backbone that stretches from Waterfall City to the Botswana border at Kopfontein. With ample spare duct capacity, this extensive network is poised to enhance connectivity across significant

economic hubs such as Rustenburg and Brits, while also providing high-speed access to underserved mining communities in areas like Cullinan, Zeerust, and Groot Marico.

Mergence Investment Managers highlighted Waterfall City’s strategic location between Johannesburg and Pretoria as a world-class mixed-use development encompassing 2,200 hectares. The area, anchored by the Mall of Africa and benefiting from the proposed extension of the Gautrain, has emerged as a premium residential and commercial center with strong demand for integrated digital infrastructure.

“Fibre connectivity ratios in South Africa remain relatively low at below 40%, whereas connectivity in Waterfall City exceeds 80%,” said Chito Siame, Head of Private Equity at Mergence Investment Managers.

He emphasized that this investment not only bolsters the resilience and reach of their digital infrastructure portfolio but also aligns with their objective of funding at least 30,000 fibre connections across the nation.

The legal and financial advisors involved in the transaction included Norton Rose Fulbright, PSG Capital, and Nodus Capital, with financing provided by Investec.

Togo and Burkina Faso to eliminate roaming fees

Togo and Burkina Faso have struck a landmark agreement to eliminate roaming fees for their citizens when traveling across the border, marking a significant step towards greater regional integration and economic growth. The agreement promises to reduce communication costs for citizens of both countries while traveling.

Effective 30 May, calls received by Burkinabe citizens while in Togo, and Togolese citizens in Burkina Faso, will be free. Furthermore, calls made from either country to local numbers within the other will be charged at the same rate as domestic calls. This initiative is part of a larger regional push to streamline cross-border communication, spearheaded by ECOWAS (Economic Community of West African States) and the Alliance of Sahel States.

The agreement follows similar initiatives between other West African nations, including Ghana and Côte d’Ivoire in 2023, and Benin and Ghana in 2024. The goal is to boost digital integration and facilitate the mobility of citizens within the sub-region. The expected outcome of this initiative includes increased citizen mobility, reduced communication barriers, and enhanced economic integration within ECOWAS. The elimination of roaming fees will potentially strengthen the protocol on the free movement of persons, goods, and services within the ECOWAS region, encouraging active participation in economic, social, and cultural exchanges among West African nations.

Zoho partners with Maroc Telecom

Zoho has announced a strategic partnership with Maroc Telecom, aimed at delivering a comprehensive suite of integrated digital solutions to Moroccan businesses. This collaboration is set to accelerate the digital transformation of enterprises in Morocco and optimize their operational efficiency.

As part of this alliance, Maroc Telecom will provide its business customers with access to a complete range of applications developed by Zoho. These applications will be packaged into a unified offering, featuring centralized billing to make business management simpler and more efficient. The deployment will be supported by BSP, an IT solutions integrator that will provide training, technical support, and integration of these tools into corporate information systems.

This initiative reflects a growing trend among African telecom operators to move beyond providing traditional connectivity services and to position themselves as enablers of business digitalization. For Maroc Telecom, this partnership is a strategic lever to strengthen its Business Solutions department, diversify its revenue streams, and address the rising demand for accessible digital solutions in both the national and regional markets.

With operations in ten African countries under the Moov Africa brand, Maroc Telecom aims to capture new growth opportunities in these markets while enhancing the service offerings available to corporate clients.

Zoho stands to gain privileged access to ten sub-Saharan African markets through its partnership with Maroc Telecom, leveraging the latter's extensive presence and local expertise. The collaboration between Zoho and Maroc Telecom is expected to foster the growth of a more inclusive and efficient digital ecosystem across the continent, enabling businesses of all sizes to benefit from advanced technological solutions.



Talking satellite

Closing the digital divide with hybrid connectivity

Whilst for most people, having an internet connection was once one of life's luxuries, today it's a non-negotiable essential requirement. Yet, as Tristan Wood, founder of Livewire Digital says, millions of people remain unconnected, and unless the telecom industry acts fast, that number will only climb.

Terrestrial networks have taken us far. Copper, fibre, GSM 3G, 4G, and now 5G services have transformed global communications. But despite their transformative role, they were never going to be ubiquitous on their own. Vast tracts of our planet, from deserts, forests and oceans, remain off-grid. Even in localities closer to mainland UK, where you might expect coverage, such as the Isle of Sheppey, Papa Stour and Rathlin Island, still live with no readily available means of accessing the web or other data services. And even in those areas where infrastructure is well developed and integral to daily work, service outages and not-spots reveal just how fragile terrestrial systems can be. It takes only one downed mast, a blown or flooded power transformer, or simply an overloaded network, and entire communities can be plunged into digital darkness.

In the face of these gaps, the spotlight has turned to satellite – and rightly so. The emergence of low Earth orbit (LEO) networks like Starlink and OneWeb has opened up exciting new possibilities and allowed millions to access the web reliably. In fact, at this year's Mobile World Congress in Barcelona, telecom magnate Sunil Bharti Mittal, who owns a major stake in OneWeb, championed satellite integration as the next frontier.

But here's the catch. No single network, terrestrial, satellite or otherwise, can deliver on the promise of always-on, everywhere connectivity. That's why true hybrid connectivity, which seamlessly integrates multiple high-speed networks in real-time – such as fibre, Viasat, Starlink, Oneweb, Spacesail satellite services and local cellular services – into one

unified solution, is crucial.

This kind of technological innovation does not simply toggle between networks, it bonds them together via Software Defined Networking (SDN) – seamlessly and in real-time, to deliver the most reliable, efficient connection at any given moment. Any form of bearer can be brought into the mix and bonded, including cellular, GEO, LEO, Wi-Fi, 5G/LTE, 4G, etc.

The benefits of this true hybrid connectivity are clear and have been championed by Inmarsat in its NexusWave connectivity solution, to support digitalisation and crew welfare initiatives by transforming ships into floating offices and homes, even from the middle of the vast oceans. What's more, hybrid networks are already proving to be lifesaving and are already used in the UK in parts of the national health service – in particular on 'connected ambulances,' allowing fast, easy access to the data that matters during life's most critical moments.

A lifeline for the unconnected

We talk a lot about the 'digital divide.' But for many, the gap is not simply about speed, it's about access to critical services like education, healthcare and commerce.

Hybrid networks truly have the power to change the world for the better. Imagine a rural clinic using bonded 4G and satellite to conduct live telemedicine consultations, or a disaster relief team deploying a portable

hybrid system to coordinate rescue operations where infrastructure has been obliterated. These scenarios are not mere hypotheticals, they are already beginning to happen, and there has never been a more exciting time to be in telecommunications than now.

There's also a commercial case to be made. Telcos are under increasing pressure to deliver more bandwidth, more uptime and more reach, all while constraining costs. By offering hybrid connectivity 'as-a-service,' providers can monetise resilience and deliver greater value to enterprise and government clients alike. Evidently, this is not simply about altruism, it's smart business.

The time to act is now

We are on the very cusp of a technological revolution. But if we don't accelerate the integration of satellite into mainstream telco strategies, we risk leaving millions behind and undermining our own systems in the process.

The telecoms industry has always thrived on innovation. Now it is time to look beyond boundaries and reframe how we think about networks – not as competing silos but as complementary assets in a cohesive system.

Let's bridge the connectivity gap, not with promises, but with proven, practical solutions that work for everyone. After all, being connected is not just about convenience, it's about equality, resilience and the ability to participate in modern life.

Tristan Wood,
founder of Livewire Digital



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The future of communications: embracing the power of photonics

Chris Wright, CTO, Red Hat; and a member of the Board of Directors at the IOWN Global Forum

As we stand on the brink of a new technological era, the way we build and manage communication networks must evolve. The increasing demand for high-speed, low-latency, and energy-efficient networks is accelerating the transition from electronic to photonic infrastructure. To enable truly smart cities, power AI innovation, and drive sustainable industries, we need communication networks that operate at the speed of light.

High-speed, sustainable networks

The future of communications networks lies in shifting from electrons to photons. This transition is essential for meeting the demands of AI infrastructure, real-time data processing, and global connectivity. All-photonics networks (APNs) hold the key to unlocking these capabilities while significantly reducing power consumption. A fully optical network not only increases speed and bandwidth but also enables more sustainable digital ecosystems.

As we accelerate this transition, it's crucial to keep sustainability at the forefront. The environmental benefits of APNs are profound — offering reduced energy consumption and lower operational costs for organisations. Recognising this, Red Hat, in collaboration with IOWN Global Forum members, has established an Energy Efficiency and Sustainability Task Force.

A photonics-driven future

The transition from electronic to optical networks requires new infrastructure and smarter integration. Silicon photonics will play a central role in this evolution by embedding optical components directly into semiconductor chips, enabling

faster and more efficient data transmission. In addition, optical switching will replace traditional electronic packet switching, further reducing latency and power consumption.

On a larger scale, technologies such as dense wavelength division multiplexing (DWDM) will increase network capacity by allowing multiple data signals

to be transmitted over a single fibre. Meanwhile, reconfigurable optical networks will introduce real-time bandwidth allocation, eliminating bottlenecks caused by outdated electrical processing systems.

Despite these advancements, challenges remain. Managing heat in photonic chips and developing universal industry standards for optical networks are key areas that require attention. The IOWN Global Forum is actively addressing these issues by creating scalable frameworks for global adoption. The key to success lies in a phased approach, ensuring that hybrid electronic-photonic networks are deployed efficiently, reducing costs while preparing for a fully optical future.

Why CSPs must act now

Communications service providers (CSPs) cannot afford to delay the transition to all-photonics networks. The explosion in data consumption is placing unprecedented pressure on network infrastructure. In 2022, the average mobile user in Europe consumed 15GB of data per month — a figure expected to surpass 75GB by 2030, driven by AI applications, cloud gaming, immersive media, and ultra-HD streaming.

What worked in the past will not be enough for the future. While minor delays may be acceptable when browsing the internet, they are unacceptable for autonomous vehicles, remote surgeries, and AI-powered automation. These applications demand real-time responsiveness, making photonics-based infrastructure a necessity. The question is not whether CSPs should transition to photonics, but how quickly they can make it happen to avoid falling behind.

Aligning with sustainability goals

As organisations across the globe adopt AI to remain competitive, balancing technological advancement with sustainability is a pressing challenge. APNs provide a solution by enabling remote processing in advanced, energy-efficient data centres powered by renewable energy. By shifting workloads away from outdated, high-consumption facilities, organisations can reduce carbon footprints, lower energy costs, and improve overall efficiency.

This shift aligns with the United Nations' 2030 Sustainable Development Goals (SDGs), ensuring that digital transformation progresses in an environmentally responsible manner. APNs will be central to this effort, fostering a new era of energy-

efficient computing and resilient communications infrastructure.

Photonics in wireless communications

The IOWN Global Forum is actively developing proofs of concept (PoCs) to explore how APNs can enhance wireless communication networks. One major initiative focuses on mobile fronthaul over APNs, which has the potential to reduce power consumption compared to conventional Ethernet-based networks. The Forum is also pioneering multi-layer hibernation techniques to improve energy efficiency in O-RAN (Open Radio Access Network) environments.

According to the GSMA, 76% of a mobile network's energy consumption occurs within the Radio Access Network (RAN). By enabling intelligent traffic steering and selectively powering down remote and distributed units during off-peak hours, APNs can reallocate optical network resources to other services, such as remote GPU processing, enhancing overall efficiency.

Beyond 5G RAN, APNs are also shaping the future of vehicle-to-infrastructure (V2I) communication. Some IOWN Global Forum members are actively developing roadside units (RSUs) that aggregate 5G PC5 traffic from vehicles and transfer high-volume data, including video images, to GPU-powered processing centres. These RSUs, connected via APNs, will enable faster and more accurate real-time vehicle communication, playing a crucial role in the development of smart transport systems and autonomous mobility.

The future is optical

The transition to all-photonics networks represents a fundamental shift in the way we build and operate digital infrastructure. From AI-driven applications and financial transactions to next-generation wireless networks, the advantages of APNs are undeniable. As industries and governments navigate the challenges of sustainability, scalability, and speed, photonics technology offers a clear path forward.

With data consumption skyrocketing and digital transformation accelerating, we must act now. By embracing all-photonics networks, we can pioneer a new era of connectivity, one that is faster, more sustainable, and built for the future. The question is no longer whether we should adopt photonics — it's how quickly we can make it happen. ■





The MVNO moment: rewriting the connectivity playbook

From digital inclusion to fintech fusion, Africa's MVNOs are carving out a bold new future for wireless communications...

In the race to connect Africa's billion-plus population, a quiet revolution is reshaping the continent's telecom terrain — one that doesn't involve building towers or laying cables. Mobile Virtual Network Operators (MVNOs) are stepping up as agile disruptors, digital enablers, and vital partners in delivering inclusive, innovative, and cost-effective communication services.

The impact of MVNOs is starting to ripple through the markets — from bustling cities to the most remote corners of the continent. And they're doing it without owning the traditional infrastructure that mobile network operators (MNOs) have long controlled.

Instead, MVNOs are leveraging

unused network capacity, bundling mobile access with financial services, and deploying cutting-edge tech like eSIM, AI, and cloud-native platforms to reach populations that mainstream telcos often overlook.

Africa: fertile ground for MVNO growth

Unlike in Europe or North America, where MVNOs often emerge in saturated markets to undercut on price or provide boutique customer service, Africa's MVNOs are answering a more fundamental call: connectivity as a catalyst for empowerment.

"The rise of MVNOs in Africa is largely driven by the increasing population and demand for inclusive connectivity, underserved niche markets, and innovative digital services. Affordable smartphones, rising internet penetration, and government-backed initiatives for universal access are strong enablers in this growth trajectory," explains Engr. Morenikeji Aniyi, CEO of Hotspot Networks.

"Africa's MVNOs growth is driven by the need to extend services to previously unconnected or underserved segments — particularly in rural or low-income areas," confirms Jeegar Swaly, Co-founder

and VP of APAC & Africa, floLIVE. "The growing interest from non-telco entities (banks, brands, fintechs, etc.) reflects a broader shift toward bundling mobile connectivity with digital services."

Africa is home to the youngest and one of the fastest-growing populations in the world. It also has a complex mix of high urban growth and vast rural areas with limited infrastructure. This duality is giving rise to MVNOs tailored for both the digitally ambitious and the digitally forgotten.

Moreover, "regulators across Africa are actively opening markets to innovative MVNOs, recognizing their role in expanding connectivity and increasing competition. In South Africa, for example, MNOs are beginning to view MVNOs as strategic partners to help monetize excess network capacity. Similarly, in Nigeria, higher-tier MVNOs (Tier 4 & 5) have been granted rural licenses, enabling them to invest in radio infrastructure and engage in revenue-sharing agreements with MNOs," says Satya Mekala, CEO of Wireless Technology Labs (WTL). "Given Africa's price-sensitive market, MVNOs have significant opportunities to offer low-cost communication services bundled with essential financial, educational, and sector-specific solutions. By

integrating these value-added services, MVNOs can position themselves as compelling alternatives to traditional MNOs, driving greater adoption and connectivity across the continent.

According to Danielle Rios, Acting CEO of Totogi, the data speaks volumes: "Nigeria's Communications Commission recently awarded 40+ MVNO licenses across five tiers, demonstrating strong regulatory commitment to this model. South Africa has seen similar momentum, with companies like TelkomONE, Rain, and Virgin Mobile pioneering the MVNO market and paving the way for newer entrants. This isn't just a Nigerian or South African phenomenon — it's part of a continent-wide recognition that traditional MNO-only markets aren't serving all potential customers effectively."

Enabling Africa's MVNO uprising

Africa's connectivity challenges are forcing MVNOs to get creative — not just in business models, but also in their technology stack.

With public cloud infrastructure now available across the continent, African MVNOs can build on a fundamentally different technology stack with three critical components, namely public



Satya Mekala,
Wireless Technology Labs

cloud elasticity, cloud-native BSS solutions, and AI-powered operations.

"This technology foundation allows African MVNOS to achieve what was previously impossible: world-class customer experiences on modest budgets. The infrastructure model isn't about owning assets but orchestrating them intelligently through cloud-enabled platforms — perfect for markets where ARPU is low and competition is fierce," claims Rios.

According to Aniyi, shared infrastructure models such as tower sharing, Network-as-a-Service (NaaS), and satellite backhauls are critical for MVNO viability: "cloud-native platforms allow MVNOS to scale quickly, reduce costs, and innovate without heavy capital expenditure. The use of virtualized core networks and open APIs also facilitates better integration with MNOs and service providers, creating a flexible, plug-and-play ecosystem."

Further, "Africa's leadership in mobile financial services presents a unique advantage for MVNOS. By integrating mobile wallets, microloans, and insurance through partnerships with digital financial platforms, MVNOS can differentiate their offerings and create added value beyond basic connectivity," adds Mekala.

"From the infrastructure perspective, IaaS will work well in some countries in Africa and not so well in others," notes Seshan Krishnamurti, Vice President - Sales, CovalenseDigital. "Besides power and data centre infrastructure, cultural aspects of behaviour, own vs. rent, etc. will influence short-term decision-making."

But perhaps no technology has democratized access faster than the eSIM, which Gregory Gundelfinger, CEO of Telna, states is "tailor-

made for this rapidly changing environment. Even people living in remote areas can easily download a SIM card. There are no physical logistics required — activation is done digitally."

This becomes crucial in regions where postal systems are spotty, retail infrastructure is weak, and the digital divide is as much about distribution as it is about affordability.

MVNOS are also capitalizing on intelligent network selection. According to Swaly, Africa's telecom environment is highly fragmented, spanning regions with limited 2G coverage to urban areas adopting 4G and early-stage 5G. Supporting MVNO growth in such diverse conditions requires adaptable, scalable, and cost-efficient solutions.

"No single mobile network operator provides complete nationwide coverage across African countries," shares Swaly. "To ensure reliable connectivity, MVNOS must enable multi-network access with dynamic network selection and Intelligent IMSI switching to connect to the strongest local signal. By enabling dynamic IMSI and network selection, MVNOS can offer seamless, regulatory-compliant, high-availability services across Africa."

A shift from competition to collaboration

The telecom world hasn't always been cozy with outsiders, but the mood is shifting. Across Africa, MNOs are increasingly realizing the strategic value of partnering with MVNOS rather than competing with them.

"In today's environment, there is much more of the 'Big brother MNO' to 'little brother' MVNO which is perceptible," says Krishnamurti. "However, the nature of business transformation and the flattening ARPU in standard consumer services, business models relating to multiple supply side partners, reseller channels are growing in a big way. Many operators are looking to create a much more agile, market-sensitive reseller channel, while they focus on ramping up the infrastructure, security, scale and solutioning/product side more."

"Currently in Nigeria we have less than 50 licensed MVNOS and we hope to see support from MNOs as we see in most African countries where there is a shift from competition to collaboration," shares Gundelfinger. "The

MNOs are increasingly viewing MVNOS as strategic partners to expand reach, optimize unused capacity, and cater to segmented markets. MNOs are becoming more enthusiastic about the idea of partnering with MVNOS to explore digital and eSIM-enabled solutions. These collaborations allow MNOs to tap into innovative business models that bundle connectivity with value-added services."

From white-label launches to revenue-sharing deals, the partnership models are getting smarter: "wholesale agreements, white-label solutions, managed services, and fintech collaborations — these are all win-win models in Africa," says Mekala.

"The most promising trend is MNOs shifting from viewing their networks solely as consumer products to seeing them as platforms that become more valuable with each new service provider," says Rios. "This platform thinking transforms MVNOS from risky ventures into low-risk innovation opportunities, allowing MNOs to support diverse experiments in the market without betting heavily on any single approach."

Examples abound: Cell C partners with FNB Connect and me&you Mobile in South Africa; MTN collaborates with IoT-focused MVNOS for agriculture and fleet services; and Equitel in Kenya merges mobile banking with connectivity through Airtel.

Yet, challenges remain: "MVNOS operating across multiple countries face a significant hurdle: the need to integrate separately with each MNO," highlights Swaly. "It results in a fragmented model that is technically complex, time-consuming, and costly. A growing number of MVNOS are being launched by non-telco players such as banks, retailers, and fintechs. These organizations leverage their existing customer bases to offer bundled digital and mobile services, but they too encounter scaling challenges when expanding beyond a single market."

To address these challenges and foster smoother partnerships, Swaly reports that several business models have emerged as particularly effective:

- Pay-as-you-grow models that reduce upfront investment and align costs with growth.
- White-label solutions, allowing brands to quickly enter the market under their own name with minimal infrastructure.

- Managed service models, where MVNEs or MNOs handle technical and operational aspects for the MVNO.
- Value-added service bundles tailored to niche segments — for example, including low-cost international calls to specific countries for migrant workers.

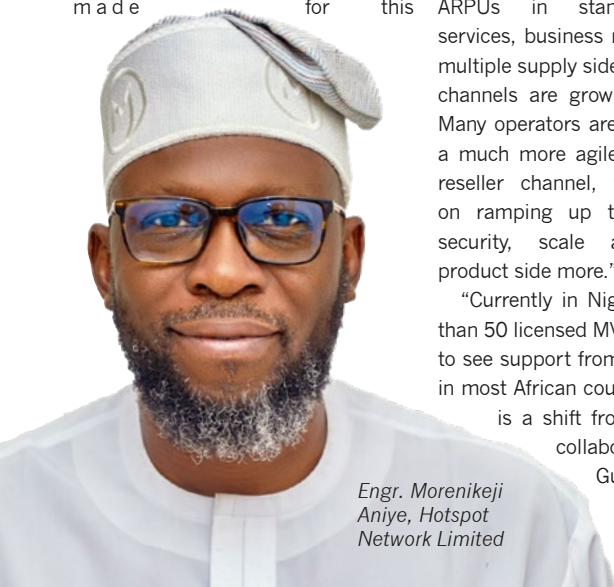
Krishnamurti adds that the MVNE insulates the MVNO from the complexities of network integration and performance while offering the tools to customise value propositions (product innovation, commercial order management, pricing, etc.) and create a brand presence as a network service provider.

"The MVNE also does the aggregation and offers wholesale pricing," notes Krishnamurti. "The Digital BSS/SaaS BSS allows MVNOS and even small ISPs aspiring to move into the MVNO/Integrated Digital Service Provider space the freedom to create a unique experience linked to their brand."

Policy plays a pivotal role

No conversation about MVNOS is complete without addressing the regulators who shape the sandbox.

"Regulatory frameworks in Africa are evolving to support this dynamic environment. Progressive policies that promote digital identity, spectrum sharing, and network interoperability are critical," shares Gundelfinger. "Policymakers can further nurture a sustainable MVNO ecosystem by encouraging transparency, fostering competitive practices, and simplifying licensing processes. This supportive regulatory landscape is essential for unleashing the full potential of eSIM-enabled MVNOS."



Engr. Morenikeji
Aniyi, Hotspot
Network Limited



Jeegar Swaly,
floLIVE

"Though there's a long way to go, regulatory advancements are gradually shaping a competitive MVNO landscape, with countries like Nigeria, South Africa, and Kenya leading the way," says Mekala.

Each country has addressed this differently. Nigeria NCC's MVNO Licensing Framework (2022) introduced five tiers, ranging from resellers (Tier 1) to full-service MVNOs with infrastructure investment (Tier 5). Higher-tier MVNOs can deploy their own radio networks in underserved areas and share revenue with MNOs. Meanwhile, South Africa's ICASA has encouraged MVNO growth by requiring MNOs like Cell C to open their networks, enabling brands like FNB Connect and Mr. Price Mobile to enter the market. Finally, Kenya's CA has supported MVNOs like Equitel, which combines mobile banking and telecom services, while Rwanda's telecom framework encourages infrastructure sharing and has licensed MVNOs like KTRN to enhance connectivity.

Aniye warns that "more needs to be done to lower entry barriers, enforce fair wholesale pricing, and ensure transparent interconnect agreements. Policymakers can accelerate MVNO adoption by encouraging infrastructure sharing, providing spectrum access incentives, and supporting innovation hubs focused on rural connectivity."

"Across Africa, the regulatory landscape is highly fragmented. While some countries have proactive MVNO frameworks, others lack MVNO-specific licensing or have unclear policies on issues like wholesale access terms, numbering, data localization, and permanent roaming," agrees Swaly. "One major gap is the lack of distinction between human (retail) and machine (IoT) connectivity. In countries with strict KYC regulations — where each SIM must be registered to an individual — IoT deployments (e.g., smart metering) face operational and compliance challenges, as the SIM user is not always the owner."

Data sovereignty and roaming regulations also present significant roadblocks, particularly for MVNOs looking to scale across borders or offer cross-border IoT services.

"To support a more competitive and sustainable MVNO ecosystem, policymakers should prioritize the creation of clear, tiered licensing frameworks that lower barriers to entry," explains Swaly. "Enforcing

fair and transparent wholesale access agreements, encouraging infrastructure sharing, and harmonizing regional regulations would enable more players to enter the market and scale across borders. Aligning MVNO policy with broader goals — such as digital inclusion, financial access, and IoT adoption — can help drive innovation and unlock the full potential of MVNOs to serve underserved populations and niche use cases across Africa."

What's next: a virtual tsunami

Over the next few years, MVNOs in Africa will evolve from basic resellers to full-service digital operators, offering everything from eSIM provisioning to AI-driven customer engagement.

"Technologies like 5G and edge computing will unlock new verticals such as smart agriculture, remote healthcare, and IoT-based logistics. Cloud-native infrastructure will empower nimble MVNOs to compete effectively, while AI will optimize network performance, user personalization, and fraud prevention, creating a smarter, more inclusive telecom ecosystem, predicts Aniye.

Meanwhile, Mekala envisions a future packed with mobile finance and IoT: "more MVNOs will integrate mobile payments, microloans, and insurance, leveraging Africa's mobile money dominance. IoT-enabled connectivity for smart agriculture, logistics, and fleet management will also grow. Tiered licensing in Nigeria and infrastructure sharing in Rwanda will allow MVNOs to invest in their own radio infrastructure, particularly in underserved areas."

However, "many African markets will continue operating primarily on 3G and 4G for the foreseeable future, with 5G deployments concentrated in urban centres. The transformative technologies for MVNOs won't be radio technologies but intelligence technologies that maximize the value of whatever connectivity is available," says Rios.

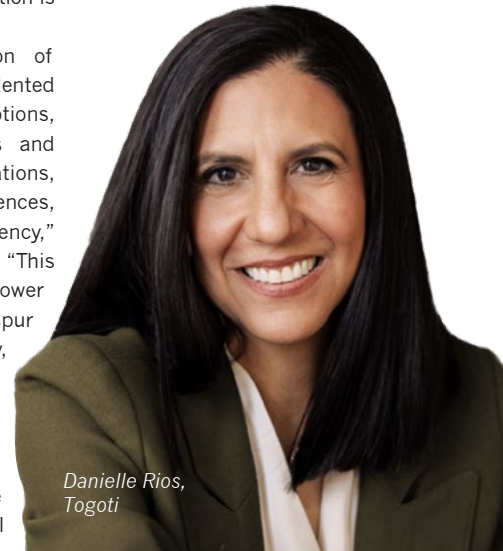
The tech stack, too, is set for a major upgrade: "5G, AI-based automation, and cloud-native platforms will influence how MVNOs operate and scale," notes Swaly. "With satellite connectivity complementing traditional cellular networks, we may see the rise of specialist MVNOs focused on mission-critical or remote use cases."

Rios believes that AI will level the playing field between large and small operators: "Nigerian MVNOs launching this year won't need massive data science teams to deliver personalized subscriber experiences — they'll leverage cloud-based AI platforms that provide enterprise-grade intelligence out of the box. This AI advantage will be particularly vital in Africa's volatile markets where customer retention is a constant challenge."

"The widespread adoption of 5G will unlock unprecedented speeds and connectivity options, while cloud-native networks and AI will streamline operations, optimize customer experiences, and enhance network efficiency," agrees Gundelfinger. "This evolution will not only lower operational costs but also spur innovation in service delivery, ensuring that MVNOs remain agile in meeting the diverse needs of African consumers and businesses."

Indeed, Africa's MVNOs are likely to experience substantial

growth and transformation over the next several years, fuelled by technology, market dynamics, and regulatory changes. As they adapt to the increasing demand for data services, leverage partnerships, and focus on customer-centric approaches, MVNOs will play an essential role in enhancing connectivity and digital inclusion across the continent. ■



Danielle Rios,
Togoti



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Beyond the call: the rise of Africa's techcos

The African telecoms industry is at a crossroads. Once focused solely on connectivity, operators are now evolving into technology companies — or 'techcos' — to expand their service offerings, drive revenue, and remain competitive in a rapidly digitising world...

The shift from telco to techco marks a significant transformation in the telecommunications industry, as companies expand their focus from traditional voice and data services to a broader array of technology-driven solutions.

"The shift from telco to techco is crucial for African operators because it allows them to diversify their revenue streams beyond traditional connectivity services," says Nitesh Singh, MD and Communications Media and Technology lead for Africa at Accenture. "This is particularly important in Africa, where many operators face challenges such as low average revenue per user (ARPU), high competition, and limited access to capital."

Aleksejs Beljakovs, CEO of Digital

Tide, echoes this sentiment, pointing out that traditional growth avenues are running dry: "growth won't continue forever. Even now, the SIM card penetration rate is high. At the same time, competition drives telephony and internet ARPU too low. It seems to me that additional services, especially in B2B, are the only way to increase ARPU."

Umair Siddiqui, Head of Telco and Service Provider GTM for EMEA at Quintica, highlights how value is shifting: "traditional revenue streams from voice are drying up. Real value and revenue are being generated on the business services and managed services side of the modern telco. This market opportunity is going to be triple their traditional voice and data ARPU, which is still very low in Africa at around \$2 compared to US

equivalents at around \$18-22."

"For Africa specifically, transforming into a techco will give operators a massive advantage in their market beyond just connectivity services," says Ari Banerjee, Chief Strategy Officer at Netcracker. "As the demand for digital services grows, operators will need to upgrade their networks and IT infrastructure to support these next-generation offerings and compete with technology companies that are making forays into these markets."

The biggest benefits

Transitioning from telco to techco allows operators to diversify their revenue streams, moving beyond traditional voice and data services to offer high-value digital solutions such

as cloud computing, mobile money, and IoT. This shift enhances customer experience, fosters innovation, and improves profitability by tapping into new markets with higher margins.

"The biggest benefit for telcos in making the transition to techcos is the ability to diversify and expand their revenue streams," Singh states. "This transition positions telcos to be key players in the digital economy, enabling them to capitalise on emerging opportunities and drive sustainable growth."

Beljakovs agrees that the biggest benefit for telcos is the "additional revenue! But not just that - when competition gets stronger, services become similar, and prices drop at every operator, the only real way to compete is by offering services that are valuable for businesses. That's

the only way forward.”

Siddiqui highlights how telcos can leverage their customer base for profitability: “they can cross-sell and upsell commercial and business customers onto long-term contracts where the upside is much bigger and more profitable. More predictable revenue and investment models based on fixed services over a longer term will also provide stability.”

Additionally, the increased agility that results from the shift to techco enables telcos to rapidly develop and deploy new digital services, keeping pace with evolving customer demands and market trends. It also enhances operational efficiency, allowing for quicker adaptation to technological advancements and competitive pressures.

“One of the main results of a telco shifting to becoming more of a technology company is the ability to more quickly develop and roll out new products and services,” adds Banerjee. “This high level of agility is only possible with streamlined internal technology and business processes and a robust partner ecosystem.”

Transitional challenges

The transition from telco to techco comes with challenges such as legacy infrastructure, the need for new digital skills, and resistance to change. Telcos must also navigate intense competition, regulatory complexities, and significant investment requirements to ensure a successful transformation.

Beljakovs warns against overcomplicating the process: “it’s important to be realistic. Let me give an example: a telco launches a cloud CRM for its customers, but the sales cycle is completely different from products like telephony and internet. As a result, telco sales representatives simply can’t start selling it effectively. I strongly recommend beginning the transformation with the simplest products — those that are clear to both end users and salespeople. Sales will be the biggest challenge here.”

Meanwhile, Siddiqui advises telcos to focus on their strengths: “understand your core strength. Taking your eye off the ball if core network is your strength will be a challenge. Many telcos have opted to acquire rather than build in order to create new service offerings.”

Indeed, industry standards like TM Forum have become key in driving standardisation across the tech stack. By adhering to these standards, telcos can streamline service provisioning, accelerate digital transformation, and seamlessly integrate new technologies such as AI, automation, and IoT. This standardization also fosters collaboration between telcos and technology partners, reducing operational complexity and ensuring scalability in an increasingly digital and competitive landscape.

“The winners will be those who can manage complex and bespoke CPQ on the customer side with speed to provision and slice up their network on the back end. Balancing the revenue, performance and service delivery is the art of the possible for the next gen telco,” adds Siddiqui.

Indeed, collaboration with technology partners, startups, and ecosystem players accelerates innovation and helps telcos access the expertise needed for a seamless transition. Strategic alliances also enable operators to expand their service offerings and stay competitive in the evolving digital landscape.

“By partnering with trusted vendors whose products and solutions are well suited to digital transformation programs, telcos have a much higher chance of success than striking out on their own,” notes Banerjee.

For Singh, execution is the critical factor: “the transformation requires a clear strategic vision, strong leadership, and careful execution. Potential challenges include resistance to change, legacy systems, security concerns, market competition, and financial risk.”

Singh notes that legacy systems and infrastructure can also pose barriers to innovation, requiring careful planning for IT modernisation.

“Telcos do not have to entirely reinvent the wheel to undertake a techco transition, but they do need to ensure their IT systems are modernized and upgraded to be more agile and able to support future requirements. The only way to do this is through an open, standards-based, modular and cloud-native platform,” advises Banerjee.

Singh adds that telcos can leverage their existing legacy infrastructure effectively while

transitioning to techcos, but it requires a strategic approach.

“Starting from scratch is not always necessary, and in many cases, it is more practical and cost-effective to modernise and integrate legacy systems. While starting from scratch may be necessary in some cases, leveraging existing legacy infrastructure can be a viable and cost-effective strategy for telcos transitioning to techcos,” explains Singh. “By adopting a strategic approach to modernisation and integration, telcos can effectively utilise their existing assets while embracing new technologies and driving innovation.”

The role of automation

AI and automation can play a critical role in the telco to techco transition by enhancing efficiency, optimising network performance, and enabling personalised customer experiences. AI-driven insights help telcos predict demand, reduce downtime, and improve service delivery, while automation streamlines operations and lowers costs.

Siddiqui sees AI playing a major role in customer experience and network performance. “Highly flexible product offers can be generated based on a 360-degree view of customer behaviour. AI Ops will help align demand with uptake and stop revenue leakage through wasted availability.”

“AI and automation are essential for telcos transitioning to techcos, driving efficiency and unlocking new revenue streams. They enable enhanced customer experience, network optimisation and automation, streamlined operations, data-driven insights, and product and service innovation,” says Singh.

“Both AI and automation are critical to any digital transformation program. These help the telco with improvements to operational efficiency and the ability to easily manage complex data, allowing for real-time insights and better agility overall,” agrees Banerjee.

Beljakovs, however, remains sceptical of AI’s immediate impact: “right now, there’s too much buzz about AI. The future is here, that’s for sure. But from a telco perspective, revenue is the most important thing. We need to identify AI implementations that generate not just buzz but real revenue.”

Envisioning the next chapter

The future of Africa’s telecommunications landscape is poised for a transformative leap as traditional telcos evolve into dynamic techcos.

Beljakovs predicts a cloud PBX boom: “B2B customers need more — they need to control employee conversations, automate workflows, and integrate SIM cards with their CRM systems. We’re already seeing a boom in CRM adoption across Africa, and a cloud PBX boom will follow. In the next few years, every telco that wants to retain its customer base and increase ARPU will need to offer telephony bundled with a simple, cost-effective, and easy-to-use cloud PBX with a mobile app. I see no reason why this global trend wouldn’t take off in Africa as well.”

“We expect a bright digital future for Africa, with many signposts pointing towards a surge in startups and venture capital interest. This is driven by a decrease in the relative risk of African investments, regional resilience, and long-term structural trends like a young, urban, and tech-optimistic population,” says Singh. “Accenture suggests that global companies should partner with local governments and businesses to navigate the regulatory environment and understand local needs. They also highlight the potential of low-code solutions to democratise digital innovation in Africa, empowering local developer talent and creating new solutions for the African market.”

“The African telecom market is growing very rapidly, with new innovations and diversification into new areas happening on a daily basis. I expect operators in that market, including with help from various governments, are investing in their infrastructure through transformation initiatives to not just deliver improved connectivity to citizens in all areas of the continent but also to boost local economies,” asserts Banerjee.

The message from industry leaders is clear: Africa’s telcos must embrace the shift to techcos, or risk being left behind. By evolving their business models, investing in new technologies, and expanding their service offerings, operators can secure their place in Africa’s digital future. ■

Resolving the indoor connectivity problem



Luke Kehoe, Industry Analyst, Ookla

Network Design

One of the biggest barriers to good indoor connectivity lies in how networks are designed, and this challenge is becoming more common with the deployment of 5G. The trend towards higher frequency spectrum for 5G (e.g. 3.5 GHz mid-band) limits the ability of the existing mobile network site grid to provide high-speed mobile coverage deep indoors. This is due to the more constrained propagation characteristics of this spectrum. Simply put, the signals that mid-band 5G networks rely on struggle to penetrate the materials in their path when the user is indoors.

Lower frequency signals do not face this problem to the same extent, but their utility has become more limited over time. While the lower frequency spectrum (e.g. 800/900 MHz with 3G/4G and 700 MHz more recently with 5G) traditionally used to provide in-building mobile coverage previously sufficed, the significant increase in the density of devices and the intensity of their data traffic demands mean these frequencies

alone are unable to support the higher performance attributes often expected with 5G, particularly in dense urban settings.

Because of this, the traditional approach of outside-in network design, where signals are transmitted from the macro coverage layer of a lattice or monopole-based high site into a cluster of buildings, is no longer fit for purpose in the absence of investment in network densification if demands for reliably fast connectivity indoors are to be met.

Building Design

Network design is not the only contributing factor to the profile of signal propagation. While it is true that the signals typically used for 5G networks struggle to travel through buildings, some materials present a bigger challenge than others.

The use of modern insulation materials in new-build and retrofitted developments is posing a significant challenge for mobile operators. Take low-E glass, for example – a type of energy-efficient glass with

a microscopic coating designed to reduce energy consumption, which is becoming a commonplace alternative to double glazing. Low-E glass has a significant negative impact on radio signal propagation, and with its growing use in retail and office buildings, the indoor connectivity problem is set to worsen, especially with the use of higher frequency bands.

As these kinds of construction materials – those that significantly increase signal attenuation and effectively turn buildings into Faraday cages – become more widely used, network design and building design must go hand-in-hand. Otherwise, the ability of 5G signals to penetrate newer buildings will continue to be diminished.

Network Sunsets

The sunset of legacy network technologies like 2G (in markets such as Switzerland and the US) and 3G (in most developed markets) has introduced further challenges as operators seek to

As much as 80% of all mobile data usage originates from indoor environments like homes, offices and shops. However, mobile networks were initially designed with an 'outside-in' approach—relying on outdoor towers to deliver coverage, with the expectation that the signal would reach indoors without being specifically optimised to do so. This strategy helped minimise deployment costs and was based on the assumption that indoor connectivity could be provided by low-band spectrum layered over the macro mobile network, with higher data rate demands met by home broadband and public Wi-Fi networks indoors.

Consumers have come to rely on mobile data to serve their indoor browsing needs and expect performance parity as they move around from home, work, the shops, and everywhere in between. Even where Wi-Fi and related features like VoWiFi are available and sufficiently fast, in-building mobile coverage remains critical for last resort access to basic telephony features like calling and texting to ensure reliable access to emergency service networks. Indeed, in many advanced European markets, operators and regulators prioritise routing 112 emergency calls over mobile networks using VoLTE rather than Wi-Fi, as VoLTE offers greater reliability and quality of service through dedicated voice packet routing on mobile networks.

But if indoor connectivity is so important, why is it still so lacklustre? While there is no one easy answer, there are a few clear contributing factors.



preserve indoor coverage levels while upgrading equipment and repurposing frequencies.

The process of improving network performance and optimising long-term operating costs with technology sunsets is not as simple as removing and replacing outdated equipment. Operators need to ensure legacy end user devices are upgraded to take advantage of 4G and 5G networks and that older mobile sites are refreshed with modern radio equipment to ensure there is full continuity in coverage levels.

Analysis of Speedtest Intelligence data has revealed a concerning trend of increased time spent on 2G networks or with no service at all in several advanced markets where operators have been slower to repurpose spectrum employed by legacy technologies upon sunseting 3G. This has manifested in increased reports of dropped calls and other mobile connectivity issues, particularly in areas where decommissioned 3G coverage has yet to be fully replaced by 4G or 5G networks.

Policy Oversight

Governments and regulators around the world have historically focused headline policy goals on achieving outdoor population coverage targets. This model has overlooked the importance of indoor mobile coverage, contributing to poor outcomes throughout in-building environments and a lack of public data on the extent of indoor coverage gaps. Some countries, like Ireland and Germany, have made progress by mandating minimum coverage levels at buildings and infrastructure of national importance as part of spectrum licence conditions. In the Irish context, for example, this includes a requirement to provide a minimum 30 Mbps service across key infrastructure sites like train stations and hospitals, as well as community hubs and tourist locations.

These types of progressive policies, as well as those being adopted by city governments to increase building access for mobile sites through amendments to planning and zoning conditions on future renewals and large-scale commercial and residential developments, can play a positive role in stimulating better indoor coverage outcomes by re-aligning

deployment incentives and removing obstacles.

What's the solution?

While consumers expect consistently high-performing in-building mobile performance, the path to get there is not a simple one. There is no one-stop solution to the indoor connectivity problem.

That said, the neutral host model is emerging as a key solution to improve in-building mobile

outcomes, providing multi-operator access to promote fair competition and share deployment costs, typically based on small cell solutions like the Ericsson Radio Dot. Freshwave (UK) and Proptivity (Sweden) are early examples of neutral host specialists leading the charge in this space.

While the scaling up of small cell deployments at the street and building level, enabled by the neutral host model, is key to improving indoor performance, there are other factors at play. Operators must

prioritise repurposing the spectrum in the wake of 3G sunseting, and building developers and the planning system should take better account of the accommodations needed to host radio equipment. But if indoor connectivity is truly to see a material improvement, these changes should be underpinned by progressive regulatory policies that measure indoor coverage levels and provide better incentives to improve in-building mobile outcomes and remove barriers to deployment. ■



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Connecting Côte d'Ivoire with the RuralStar solution

Côte d'Ivoire, situated just above the equator and south of the Tropic of Cancer, enjoys a unique combination of geographical benefits and a favourable climate. The nation's flat terrain and low elevations, which do not exceed 400 meters, offer fertile plains and plateaus ideal for extensive agricultural development. The tropical climate ensures abundant sunshine throughout the year, creating optimal conditions for cultivating high-quality crops such as cocoa, coffee, cashews, and rubber — key products for both domestic and international markets.

Despite its agricultural potential, Northern Côte d'Ivoire faces significant challenges in network connectivity. With nearly 47% of the population living in rural areas, the agricultural

sector is crucial for both employment and economic stability. However, due to a lack of infrastructure, many rural residents are effectively cut off from essential communication services, including voice calls, text messaging, and internet access. This isolation hampers local economies, obstructs e-commerce initiatives, and stifles necessary digital transformations within the agricultural industry.

Tackling network gaps

In response to these pressing connectivity issues, Huawei has partnered with the Ministry of Communications of Côte d'Ivoire, supported by funding from the World Bank. The initiative aims to

erect 155 base stations across remote villages in Northern Côte d'Ivoire, using Huawei's innovative RuralStar solution. This low-cost, efficient system features a 2G+3G network architecture designed specifically for rural areas.

Huawei's RuralStar solution is designed for versatility and ease of installation. Its standardized architecture allows for deployment on poles ranging from 18-35m tall, tailored to the local terrain. This makes it an excellent choice for cost-effective construction without sacrificing quality. Additionally, the maintenance process is simplified through a base station controller (BSC) established in a central data hub, significantly reducing manual maintenance costs and complexities.

Contrary to the stereotype that lower cost equates to lower quality, Huawei's RuralStar delivers reliable performance at an affordable price. Each base station utilizes a low-power, outdoor baseband unit (BBU) alongside omnidirectional antennas, covering distances of 3-5km. With outdoor microwave technology, RuralStar maintains a remarkably low power consumption of only 60 watts, ensuring consistent data transmission and network reliability.

Sustainable and eco-friendly solutions

Huawei's RuralStar not only addresses connectivity needs but also promotes environmental sustainability. The solution harnesses Côte d'Ivoire's abundant sunlight to power stations using solar energy, boasting a standby time of up to 48 hours. This commitment to eco-friendly practices ensures stable network operations while supporting sustainable development goals.

The introduction of Huawei's RuralStar solution has transformed rural communities in Northern Côte d'Ivoire by providing vital internet access. Farmers can now communicate easily with family members and gain knowledge about agricultural practices, ultimately boosting productivity and income. The implementation of e-agriculture initiatives has enabled farmers to access broader markets, alleviating poverty and enhancing the overall quality of life.

As Côte d'Ivoire continues to harness the benefits of connectivity, the positive effects of Huawei's RuralStar initiative will resonate well into the future. By bridging the digital divide, Huawei is not only enabling local economic growth but also nurturing a more equitable and connected society. The impacts of this pioneering project showcase how technology can foster opportunities and uplift communities that were once left behind. ■





Widening digital horizons with Washa Wi-Fi

In the vibrant heart of Nairobi, Kenya, a transformative initiative called Washa Wi-Fi emerged, driven by Syokinet. With a mission to enhance digital accessibility, this community-centric project sought to provide high-speed Wi-Fi in public spaces. By doing so, Syokinet aimed to empower communities and foster economic growth in bustling areas such as bus stations and marketplaces, where connectivity was crucial for everyday activities and business transactions.

Facing the connectivity challenge

As Syokinet embarked on this ambitious venture, they quickly realized the challenges that lay ahead. To augment their existing fibre network, the company sought to install a high-speed Wi-Fi service across Nairobi's high-traffic zones. They aimed to offer affordable internet packages to a wider audience, yet the infrastructure deployment proved to be an uphill battle. One of the most significant hurdles was the lack of accessible AC power at the public utility poles designated for installation. Prior attempts to create an internal solar power solution with various components became costly and unsustainable, threatening the project's viability.

Recognizing the need for a more effective strategy, Syokinet formed a partnership with Optace Networks, the Kenyan distributor of Fuzion Power Technologies' FTP-300. Together, they implemented a cutting-edge solution tailored to the unique challenges of Nairobi's urban landscape. The FTP-300 device represented a breakthrough in solar technology: a smart,

rugged, and easily deployable product that seamlessly combined reliable solar power with Power over Ethernet (PoE) capabilities.

In addition to the FTP-300, Optace Networks collaborated with Syokinet to design a complete hotspot solution using Cambium Networks' cnPilot e510 Wi-Fi access points. These access points were expertly integrated with the FTP-300, enabling both power and data connectivity. Enabled by solar energy, this setup empowered swift and efficient deployment of Wi-Fi networks with fibre backhaul wherever sunlight was available. The streamlined installation process required minimal planning, allowing Syokinet to quickly affix the equipment to poles and activate services.

Central to the success of this initiative was the Cambium ONE Network, a comprehensive platform that streamlined network management across diverse environments. Bringing together an array of technologies from the edge to the cloud, this robust framework integrated Wi-Fi, switching, network security, SD-WAN, and outdoor fixed wireless infrastructure. Managed through the cnMaestro™ system, Cambium ONE Network provided a single pane of glass for intelligent automation, application visibility, and control. Its automation features were designed to speed up deployment and enhance operational efficiency, addressing the IT resource and skill shortages faced by many enterprises. Proactive problem detection and resolution minimized downtime, alleviating the troubleshooting burden on IT personnel and ensuring optimal network performance.

Transformative results

The integration of the FTP-300 and Cambium Networks' access points yielded remarkable improvements. One of the most significant benefits was cost efficiency; the solar power solution drastically reduced reliance on AC power, which not only lowered deployment costs but also increased scalability. The effort also facilitated quick deployment: the plug-and-play functionality of the FTP-300 and its seamless integration with Cambium's access points allowed for rapid setup with minimal planning. As a result, high-density access points provided robust and extensive Wi-Fi coverage in high-footfall areas, dramatically elevating user experiences and internet accessibility.

The collaboration with Fuzion and Cambium Networks created substantial benefits, both for Syokinet and the communities they served. Simplified management through the Cambium ONE Network afforded Syokinet the ability to focus on customer service rather than technical issues, enhancing operational efficiency. This newfound connectivity in public spaces not only fostered economic growth but also championed digital inclusion and empowerment for local residents. Additionally, the three-year warranty on FTP-300 products reassured Syokinet, allowing them to invest confidently in long-term infrastructure projects that would shape the digital future of Nairobi.

"We are thrilled to partner with Fuzion and Cambium Networks in deploying cutting-edge, sustainable Wi-Fi solutions across Nairobi and Mombasa. This initiative is not just about connectivity; it's about empowering communities and driving economic growth through," says Ian Kasyoki, CEO of Syokinet. ■



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Advantech advances modular IoT gateway series

Advantech has unveiled the UNO-2271G V3, an advanced addition to its UNO-2000 modular IoT gateway series.

Powered by the Intel® Atom x7211RE processor, this compact gateway offers robust edge computing capabilities and flexible stackable expansion options, designed to meet the evolving demands of Industry 4.0 for real-time analytics and connectivity.

With dimensions of 100 x 70 x 40 mm, the UNO-2271G V3 features an innovative modular architecture that supports three stackable expansions for Power over Ethernet (PoE PD), COM ports, and iDoor modules. This design facilitates various mounting options, including DIN rail, rear DIN rail, stand, wall, and

VESA, streamlining installation and maintenance while optimizing space in manufacturing environments.

Equipped with a dual-core Intel® Atom x7211RE processor, 8GB LPDDR5 RAM, and 64GB eMMC storage, the UNO-2271G V3 delivers powerful computing capabilities. It includes versatile I/O options such as two i226 LAN ports, one HDMI 1.4, one USB 3.2 Gen2, and one USB Type C, ensuring seamless integration with a wide range of industrial devices.

Additionally, the UNO-2271G V3 supports wireless networking through WiFi modules and an industry-standard B+M to E key converter interface, enabling LTE, 4G, and 5G connectivity for fast mobile networking. Its

compatibility with Advantech's DeviceOn IoT platform allows for centralized device management and over-the-air updates, enhancing operational efficiency.

In manufacturing, the UNO-2271G V3 serves as an edge gateway that connects factory equipment to cloud services, facilitating real-time

analytics and remote monitoring. It supports predictive maintenance and production optimization through comprehensive device management. Furthermore, in smart building applications, it excels in optimizing HVAC management and energy efficiency while providing real-time space utilization analysis.



End-to-end 5G Non-Terrestrial Network connectivity

Myriota has launched its groundbreaking 5G compliant Myriota HyperPulse™ network, operating on Nordic Semiconductor's low-power cellular IoT solutions. This collaboration delivers end-to-end 5G Non-Terrestrial Networks (NTN) standards-based connectivity solutions tailored for battery-constrained IoT applications.

HyperPulse stands out as the first solution of its kind powered

is changing the game globally, unlocking better outcomes through intelligence gathered from the field. This transformation is possible because traditional barriers related to satellite-based hardware and connectivity costs have significantly diminished. The industry is now able to deploy secure, low-power sensor devices at the necessary scale to have a real impact," said Ben Cade, CEO of Myriota.



by Viasat's dynamic leasing capability, enabling Myriota to adjust the network's performance dynamically based on the specific needs of customer devices deployed in the field. By utilizing Nordic Semiconductor's nRF9151, the smallest and lowest power System-in-Package (SiP) module for IoT deployments, device manufacturers can seamlessly upgrade their connectivity to Myriota HyperPulse.

"Myriota's connectivity, designed specifically for the Internet of Things,

The collaboration with Nordic Semiconductor enhances Myriota's existing IoT connectivity platform by introducing a 5G standards-based network that opens doors to a multitude of new applications.

"Myriota is an established player in the satellite market, and our partnership is bringing 5G NTN compliant solutions to the market, unlocking new possibilities for device makers," said Oyvind Birkenes, EVP of Nordic's Long Range Business Unit.

CMX500 AI Scripting Assistant changes the game for 5G

Rohde & Schwarz has introduced an innovative solution called the CMX500 AI Scripting Assistant, designed to automate test script generation and functional testing for mobile device manufacturers. This tool utilizes generative AI and natural language processing to help test engineers streamline their workflows, reduce errors, and accelerate the time-to-market for their products.

Test engineers often face significant challenges when it comes to manually generating test scripts, as this process typically requires them to compile inputs from various sources—including 3GPP specifications, XLAPI scripts, Python code, and the CMX500 user manual—under tight deadlines. The CMX500 AI Scripting Assistant addresses this issue by providing targeted, AI-driven support for scripting tasks.

The assistant benefits from

exclusive access to proprietary data from Rohde & Schwarz and is specifically designed for domain applications such as R&D 5G NR protocol testing, application testing, and CMX instrument automation. This enables users to generate accurate XLAPI scripts more efficiently, saving time and effort. Additionally, the tool can extend existing scripts and offer explanations for each script, which is particularly useful for less experienced users who may be unfamiliar with the structure and logic of scripting.

Rohde & Schwarz has ensured that the CMX500 AI Scripting Assistant is optimized for performance by training it on relevant data from the company's expertise. The solution is further enhanced by automatic updates that keep it current, ensuring users always have access to the latest information and best practices in script generation.



Upgrading contextual awareness capabilities

Nokia has launched MX Context, a groundbreaking solution that harnesses sensor fusion technology to offer AI-powered contextual awareness for industrial enterprises.

This new tool is integrated into the Nokia Edge Compute and AI platform for industrial sites, enabling it to process vast quantities of data from various sources. MX Context provides real-time actionable insights and intelligent automation, aiming to enhance operational excellence and improve decision-making processes. Its unique offering in the market lies in its ability to deliver both situational and contextual awareness.

Leveraging sensor fusion technology, MX Context combines multimodal data from diverse sources to generate real-time, AI-powered insights tailored for Industry 4.0 use cases. The solution utilizes Nokia's on-premise edge industrial computing capabilities, specifically the MXIE and MX Grid solutions, for data processing, alongside the MXIE Data Lake for storing both structured and unstructured data for historical analysis and application data access via APIs.

MX Context features low-code visual development capabilities, allowing users to quickly create logical workflows and design dashboards with minimal coding

expertise. It integrates seamlessly with Nokia MX Workmate, an advanced AI assistant that enables natural language interactions with connected workers. The MX Context solution is modular, allowing for the creation of use case-based contextual awareness solutions. The initial two MX Context suites focus on tracking and positioning as well as worker safety.

In terms of tracking and positioning, MX Context is noted as the first industry solution capable of ingesting and fusing data from multiple tracking technologies, including Bluetooth Angle-of-Arrival, video-based positioning, GPS from worker devices, and other third-party tracking technologies such as HERE HD GNSS and Nordic ID. This integration results in more precise

and reliable positioning, ensuring continuity in tracking across mixed industrial environments to optimize asset utilization, inventory management, processes, and material flow.

For worker safety, MX Context processes and fuses diverse data types from Nokia's sensory solutions, including Nokia VPOD, device sensors (gyroscopes, accelerometers, microphones), and third-party applications. This real-time AI-based data fusion facilitates the first instances of situational awareness and contextual information, enabling the detection of potential accidents or incidents and facilitating effective responses, such as triggering alerts, notifying emergency services, or providing real-time guidance to workers.



AI streamlines telco operations

ZIRA Group's AI Telco Platform is a new cutting-edge solution designed to empower Communications Service Providers (CSPs) by transforming Business Support Systems (BSS) data into valuable insights.

The AI Telco Platform is a versatile tool that enables CSPs to extract predictive and actionable insights from BSS data, facilitating proactive decision-making. It offers customization to accommodate various telecom use cases, catering to the specific forecasting and business intelligence needs of CSPs. This platform allows for the delivery of tailored customer offerings based on real-time analytics and integrates smoothly with existing IT infrastructures and BSS solutions through APIs or database connections, enabling large-scale AI adoption.

Featuring predictive analytics, the platform combines forecasting capabilities with a generative AI agent that generates actionable insights across the organization. For wholesale operations, CSPs can utilize the platform to optimize routes, pricing, and traffic volumes in real-time, helping to protect profit margins, prevent service disruptions, and ensure a seamless customer experience. Additionally, the platform can accurately forecast supplier prices up to six months in advance. It has already garnered several industry awards for its positive impact on telecommunications operations and business processes.

While AI and machine learning are increasingly being adopted in telecom networks and infrastructures, there has been a lack of viable solutions

specifically targeting the BSS layer. CSPs require access to data and insights that enable smarter, more responsive decision-making in a rapidly changing market environment. Traditional analytics tools often struggle with the complexities of real-time data, where even minor percentage changes can significantly affect wholesale revenues.

Zira has also outlined the platform's forecasting capabilities, which help CSPs manage capacity, pricing, and traffic fluctuations, thereby removing risks and uncertainties. By analyzing vast volumes of complex network and billing data, the platform supports informed decision-making and helps identify new business opportunities. ZIRA Group is actively collaborating with CSP customers on live projects to explore new use cases for the platform.

Look out for...

NB-IoT and NTN to transform connectivity

The integration of Narrowband Internet of Things (NB-IoT) with Non-Terrestrial Networks (NTN) is set to transform global connectivity, particularly in remote and underserved regions. By allowing IoT devices to communicate directly via satellites, this advancement ensures seamless coverage in areas where traditional terrestrial networks are either limited or entirely absent.

A significant breakthrough in this field occurred earlier this year when Mavenir and Terrestar Solutions Inc. successfully completed the industry's first Voice over NB-IoT (VoNB) call in NTN mode. Conducted over a 3GPP-standardized NTN S-band spectrum, the call utilized Sony's Altair ALT1250 module along with Mavenir's Open RAN and Converged Packet Core technologies. This achievement not only demonstrated the feasibility of integrating voice services over NB-IoT in NTN environments but also paved the way for broader adoption of satellite-enabled IoT solutions.

The future application of NB-IoT in NTN mode spans multiple industries, each benefiting from the ability to maintain reliable, low-bandwidth communication over vast distances. In agriculture and environmental monitoring, farmers can deploy IoT sensors in remote fields to track soil moisture, crop health, and weather conditions, while environmental agencies can use similar technology for wildlife tracking and early detection of forest fires. With satellite connectivity, these sensors remain operational regardless of terrestrial network limitations. In the logistics sector, global supply chains can use NB-IoT to track goods in real-time, even when they move through regions with poor cellular coverage.

Disaster response and emergency services also stand to benefit greatly. Terrestrial networks often fail during natural disasters, leaving affected regions disconnected. With NB-IoT over NTNs, emergency responders can maintain critical communication, improving coordination and resource allocation when it is needed most. Similarly, the maritime and aviation industries can leverage satellite-based NB-IoT for telemetry, safety updates, and operational data transmission, enhancing overall safety and efficiency.

The convergence of NB-IoT with NTN represents a major leap forward in global connectivity, making the concept of a truly ubiquitous IoT a reality.

Newmont implements Ericsson Private 5G at Cadia Mine in Australia



Newmont has officially deployed Ericsson's Private 5G technology at the Cadia gold-copper mine, Australia's largest underground mine and a premier Tier One asset. This implementation marks a groundbreaking advancement in the mining sector, enabling the first use of private 5G technology for teleremote (remote control) dozing operations.

By leveraging the robust capabilities of Ericsson Private 5G, Newmont has successfully addressed the challenges previously faced with Wi-Fi connectivity, such as limited coverage and stability issues. Prior to the implementation, Newmont struggled to connect more than two dozers at distances up to 100m due to unstable Wi-Fi, which often resulted in significant downtime — sometimes lasting half a 12-hour shift while troubleshooting connectivity problems.

With Ericsson's Private 5G solution, Newmont can now connect its entire dozer fleet across a width of up to 2.5km from a

single 5G radio, achieving uplink throughput of up to 175 Mbps. This impressive capacity enables the operation of multiple dozers without interruptions, enhancing productivity and safety. According to reports, this transition to 5G has led to increased earth-moving efficiency per shift compared to previous Wi-Fi operations.

"Ericsson's Private 5G network gives us a scalable and high-performing solution that provides the coverage needed and keeps our people safe. It's also enabling our long-term digital transformation vision to use 5G for smart mining at our Tier One surface and underground mines globally," said Chris Twaddle, Newmont's Director of Process Control, Networks, and Operational Cellular.

Newmont employs Ericsson's 5G Antenna Integrated Radio along with Ericsson Massive MIMO (Multiple Input/Multiple Output) technology to facilitate high uplink connectivity required for teleremote dozing. The use of



Massive MIMO allows the company to maximize network capacity over extended distances using mid-band spectrum, thus enhancing uplink throughput compared to traditional radio technologies. Additionally, the Ericsson Uplink Booster feature, enabled by advanced microprocessors within the radios, can amplify uplink signal strength by tenfold, further optimizing performance.

"The deployment with Newmont at Cadia demonstrates the power of 5G for industry, where Ericsson's

industry-leading radio portfolio can reduce the amount of infrastructure that needs to be deployed and operated to cover an industrial site or area. This also allows enterprises to use private 5G networks they own to achieve high levels of performance for advanced video-based control and computer vision initiatives without large amounts of spectrum. This is especially valuable to organizations that are operating in spectrum-constrained markets," said Manish Tiwari, Head of Enterprise 5G at Ericsson.

Alba Smelter deploys first 5G private network with Batelco and Nokia



Batelco and Nokia have partnered to deploy Bahrain's first 5G private network, dedicated to the industrial needs of Alba, the world's largest single-site aluminium smelter. This marks a significant step towards embracing Industry 4.0 applications within the industrial sector.

The bespoke 5G network will empower Alba with ultra-low latency connectivity will enable real-time data analysis and control of industrial processes, fostering quicker decision-making and optimized workflows. The network supports AI-powered predictive maintenance, enabling proactive identification and resolution of potential issues before they impact production. Integration of IoT safety devices enables real-time monitoring of hazardous conditions, leading to improved worker safety. The network supports

the implementation of autonomous systems for greater efficiency and precision in industrial operations.

Robust security features are critical for safeguarding sensitive industrial data within a high-risk environment, while seamless integration of Industrial IoT and smart machinery optimizes operations, reduces downtime, and maximizes overall productivity.

This collaboration is expected to significantly boost Alba's operational performance, safety, and overall sustainability. Executives from both companies highlight the potential for digitalization and automation through the implementation of this advanced technology. Alba's CEO emphasizes the network's potential for revolutionizing operations, enhancing safety, and driving sustainable growth within the global aluminium industry.

Anatel approves SpaceX to operate additional 7,500 Starlink satellites



As per Reuters, Brazil's telecommunications regulator, Anatel, has granted SpaceX approval to operate an additional 7,500 Starlink satellites in the country's airspace, further expanding the reach of its satellite internet service.

As of now, Starlink has 4,408 active satellites operating in Brazil, providing internet connectivity across the nation. The recent regulatory approval not only allows for the deployment of more satellites but also includes the expansion of frequency bands, which is crucial for optimizing the performance of the satellite network. Despite this expansion, SpaceX's existing authorizations will remain valid until their expiration date in 2027.

Alongside the approval for additional satellites, Anatel emphasized the necessity for Brazilian lawmakers

to update the country's regulatory framework. The agency pointed out existing gaps in legislation concerning market regulation, space sustainability, and digital sovereignty that need to be addressed to effectively accommodate emerging technologies such as low Earth orbit (LEO) satellites. This call for regulatory reform reflects a broader trend seen globally as countries seek to adapt their legal frameworks to better integrate new technologies and market dynamics.

The approval in Brazil marks another significant milestone for SpaceX's Starlink, which has been rapidly expanding its global presence. Earlier in the month, the company also secured regulatory clearance to establish a ground station in Vietnam, indicating its ambitions to broaden its footprint in emerging markets.

Bharti Airtel partners with Blinkit for 10-minute SIM card delivery in 16 cities

 Bharti Airtel has partnered with e-grocery delivery platform Blinkit to offer a revolutionary 10-minute SIM card delivery service in 16 Indian cities. This innovative service is a first-of-its-kind for an Indian telecom operator, highlighting the highly competitive nature of the Indian market.

Customers can receive their Airtel SIM cards delivered to their doorstep within ten minutes through

Blinkit's extensive network. A small convenience fee of INR49 applies. After delivery, customers can activate their new number using a simple online process, including options for postpaid or prepaid plans, or mobile number portability (MNP) to port existing numbers. A helpful activation video is also provided to guide customers through the process.

Importantly, customers have a 15-day window to activate their SIM

after delivery to ensure a smooth transition. Initially, the service is available in 16 major cities across India, including Delhi, Gurgaon, Faridabad, Ahmedabad, Surat, Chennai, and others.

This partnership strategically leverages Blinkit's existing infrastructure and customer base, significantly enhancing Airtel's customer experience and potentially increasing market share.



Emitel to build hundreds of new towers for Orange Polska


 Poland-based telecom infrastructure provider Emitel has entered into an agreement with Orange Polska to construct several hundred new mobile towers across the country.

These new towers will be utilized for the installation of base stations and other telecommunications equipment, with the infrastructure set to be rolled out nationwide under a Build-to-Suit model over the coming years.

"We are pleased that Orange Polska has once again placed its trust in us by commissioning a significant infrastructure project. As an experienced technology partner, we guarantee the highest standards of execution and efficiency in delivering even the most demanding investments," said Emitel's CEO, Maciej Pilipczuk.

As of the end of 2024, Emitel operates a total of 762 towers and serves all of Poland's major mobile network operators as tenants. Pilipczuk emphasized the company's extensive experience in building and managing telecom infrastructure, noting that it enables Emitel to effectively support the expansion of mobile networks in Poland and meet the increasing demands of both operators and end users.

SkyFive to provide inflight connectivity with Freedom Telecom

 SkyFive has signed a Memorandum of Understanding (MoU) with Freedom Telecom to provide inflight connectivity for airlines and other aircraft operators using SkyFive's air-to-ground (A2G) solution. This partnership aims to deploy A2G coverage along Kazakhstan's main air route, which also serves as a critical overflight corridor for flights between Europe and Asia.

The collaboration will enable foreign airlines equipped with A2G technology to seamlessly connect to the newly established network, which will be compatible with other SkyFive A2G networks. Dirk Lindemeier,

Chief Commercial Officer of SkyFive, remarked that this agreement signifies the company's entry into the Central Asian aviation market.

"Kazakhstan is important in its own right, represents a significant step toward a contiguous A2G corridor across the Eurasian supercontinent, and is a major addition to our global A2G footprint," said Lindemeier.

Freedom Telecom has recently obtained regulatory approvals to provide A2G connectivity and is aligning this initiative with its broader strategy to enhance connectivity to airports throughout Kazakhstan. CEO Kairat Akhmetov

mentioned that Freedom Telecom has already provided free Wi-Fi coverage at major international airports in Almaty and Astana, with plans to extend this connectivity to all airports in the country by the end of the year.

The operator reports that it has launched free Wi-Fi services in 150 locations across Kazakhstan and is focused on achieving comprehensive Wi-Fi coverage in all cities. Additionally, Freedom Telecom has constructed over 2,500km of fibre infrastructure and connected 24,000 households to high-speed broadband internet in the past two years.

MobiFone seeks national security role

 MobiFone has reportedly applied to Prime Minister Phạm Minh Chính for permission to operate within Vietnam's national defense and security sector.

The move is part of MobiFone's broader strategy to expand its role in the country's digital transformation, a key initiative under the government's 'Project 06.'



MobiFone's application, made during a recent meeting with the Ministry of Public Security, includes proposals for a revised organizational charter and updated financial regulations to accommodate its new operational role. The company, recently transferred from the Commission for the Management of State Capital at Enterprises (CMSC) to the Ministry of Public Security in February, is currently working with relevant government bodies to finalize these changes.

Public Security Minister General Lương Tam Quang emphasized the importance of a robust legal framework for MobiFone's operations in the national security sector, urging the company to focus on developing its core strengths in

telecommunications and technology to serve both its own growth and national interests. He highlighted the need for stability and sustainability in the face of this expansion.

MobiFone's recent financial performance, released by the CMSC at the end of last year, shows strong growth potential. Profit before tax in 2024 exceeded VND2 trillion, surpassing the company's annual target by 20.6%. Furthermore, growth in digital services, such as cloud computing, digital agriculture, and video conferencing, suggests significant opportunities for future development within this sector. This expansion into the national security sector reflects the government's wider ambitions for digital transformation across the nation.

Altel Digital to integrate satcoms with 4G



Altel Group and Zhejiang Geespace Technology have established a joint venture named Altel Digital, aimed at creating regional industrial communication solutions that integrate satellite and 4G technologies.

Altel Digital will leverage Altel's existing LTE infrastructure alongside Geespace's low Earth orbit (LEO) satellite constellation to provide a variety of services across Malaysia and Southeast Asia. These services will include LEO satellite connectivity, satellite IoT capabilities, high-precision positioning, and the development of localized ground infrastructure.

The joint venture plans to implement crucial satellite and communication services infrastructure in Malaysia. This includes the establishment of two ground earth stations, two telemetry, tracking and command (TT&C) centres, application data centres, and a PPP-RTK network aimed at providing centimetre-accurate positioning services.

Khoo Yuen Hing, Deputy Chief Executive Officer of Altel Digital, indicated that while the infrastructure will be rolled out in phases over the next 24 months, commercial operations are set to commence this year. The initial solutions will cater to key sectors such as maritime, agriculture, transportation, and energy.

During the launch ceremony, Malaysia's Communications Minister Fahmi Fadzil highlighted that Altel Digital will collaborate with key government agencies on substantial national projects that align with frameworks such as the National Space Policy 2030, the Governance National Digital Network (Jendela) plan, and the Cybersecurity Act 2024. He noted that the focus areas of Altel Digital correspond closely with the government's ambitions for the Fourth Industrial Revolution.

In the joint venture, Altel holds a majority stake of 51%, while Geespace owns the remaining 49%. This collaboration builds upon a



prior agreement made in September 2024 between Geespace and Altel Communications to establish a research and development centre and a centre of excellence focused on developing use cases for direct-to-device (D2D) satellite communications technology.

Looking ahead, Geespace has a roadmap that includes the deployment

of 72 LEO satellites by the end of 2025, marking the first phase of its satellite constellation targeting connected vehicles. Currently, 30 LEO satellites are in orbit, with plans for a second phase that will add 264 satellites for D2D communications, and a third phase that will launch an additional 5,676 satellites dedicated to high-speed broadband services.

OmanSat receives Category 1 telecoms license



Oman's Telecommunications Regulatory Authority (TRA) has announced that Sultan Haitham bin Tariq has approved the issuance of a Category 1 telecoms license to Omani Space Communications Technologies (OmanSat) for the provision of fixed communications services. This license allows OmanSat to offer broadband internet services and satellite connectivity for communication stations, with a focus on enhancing connectivity options for rural areas.

Mahmood Omar al Zadjali, the acting executive manager for TRA's strategic planning unit, explained to the Oman Observer that the Category 1 license enables OmanSat to provide fixed broadband services using its own infrastructure, similar to existing licenses held by major telecom operators in Oman such as Omantel, Ooredoo, Vodafone, and Awasr. In contrast, Category 2 licenses are designated for operators that lease infrastructure from others to provide services.

Although OmanSat was established by the government in 2018 to develop the Sultanate's satellite communications infrastructure, it currently does not own its satellite but instead leases capacity from other satellite operators, which is

permissible under the Category 1 license. In June 2021, OmanSat issued a tender for the construction of its first communications satellite, OmanSat-1, with plans to place it in orbit by 2024, which has not yet materialized. Oman successfully launched its first satellite, an earth observation satellite called OL-1, in November 2024.

In related developments, SpaceX's Starlink received a Category 1 license last month to offer its low Earth orbit (LEO) satellite broadband service in Oman. Additionally, Chinese LEO satellite operator Geespace is positioning itself to provide services in the country; in July 2024, it announced that it was testing its network in collaboration with local satellite service provider Azyan Telecom, with intentions to launch services later this year.

The TRA has indicated that satellite broadband is vital for extending broadband connectivity to remote areas and providing backup connectivity during terrestrial network outages. The TRA remarked that granting the OmanSat license is part of its broader efforts to attract investment in innovative technologies and services, ensure the availability of accessible and secure infrastructure, and develop a regulatory framework that adapts to evolving technological landscapes.

Peru to allocate 3.5GHz band for public telecommunications in 5G



Peru has initiated the allocation process for the 3.5GHz frequency band designated for public telecommunications services utilizing 5G or higher technology. Specifically, the call encompasses frequencies within the 3300-3800MHz band.

The country's Ministry of Transport and Communications (MTC) will be offering these frequencies directly to telecommunications operators, providing blocks of 25MHz. Each operator or group is limited to acquiring a maximum of four blocks.

The allocation process is unique; while each 100MHz package is valued at approximately \$127 million, the price alone will not determine the award recipients. Instead, the MTC will evaluate allocations based on mandatory investment commitments from the participants. These commitments are expected to focus on enhancing connectivity, including the rollout of 4G services along road corridors, as well as in regions currently lacking mobile connectivity or limited to 2G or 3G coverage.

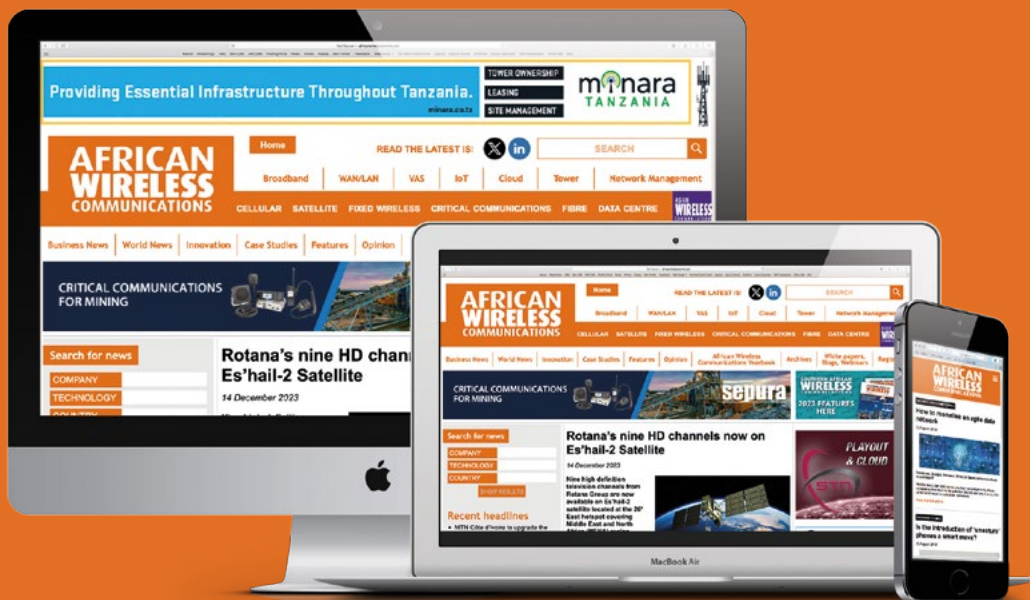
Further requirements for applicants will include ensuring outdoor coverage

in sports facilities, educational institutions, and healthcare centres. The exact criteria for what constitutes a successful submission remains unclear, but it appears that points will be awarded based on the additional commitments proposed by participants.

Interested companies must submit expressions of interest to the communications programs and projects authority (DGPPC) between 7 May and 3 June. The qualification phase will take place from 25 June to 1 July, followed by the submission of envelopes containing additional deployment commitments. The results of the allocation process are anticipated to be announced on 11 August.

It is noteworthy that part of the frequency band, specifically between 3400 and 3600MHz, is already allocated to operators such as Entel, Telefónica, Americatel, and América Móvil for local carrier services, personal communications, and fixed telephony. Additionally, in the 3600-3800MHz frequency range, four private and public operators currently utilizing fixed satellite services will transition to the Ku or extended Ku band.

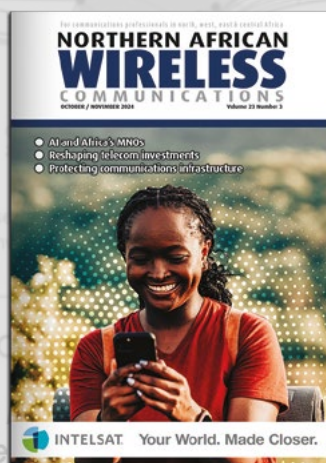
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