For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

JANUARY/FEBRUARY 2024 Volume 28 Number 4

- Does Africa need 5G?
- Lessons in monetising mobile
- Connecting Africa via infrastructure sharing

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Schalk Erasmus
Chief Executive Officer: Paratus Group

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MTN South Africa halfway through renewable energy project

MTN South Africa is making significant headway in its Head Office Solar Renewable Energy Project at 14th Avenue.

The company announced the energisation process of its solar renewable energy phase one project. With over 50% completion, MTN has switched on 5,418 solar panels out of the planned 9,000. This phased approach will inject 700kW into the 14th Avenue micro grid, making the head office 40% less reliant from municipal grid. The battery storage facility set to be installed by end-March.

This progress builds upon MTN's groundbreaking move as a standalone Independent Power Producer (IPP), deploying five different generation technologies in a singular plant at its head office in Fairlands, Johannesburg.

In 2023, MTN initiated the phase one of its solar renewable energy project, transforming the head office into a Solar Park with 4.9MW of Solar PV and 2MW of Battery Energy. This strategic move not only positioned MTN as a significant IPP but also promised substantial annual energy consumption savings of 9,300,000 kWh and a reduction in CO2 emissions by 9,672 tons.

The head office now boasts multiple energy sources, including municipal/Eskom grid, gas generators, diesel generators, solar PV, and a battery energy storage system. Intelligent controllers enable dynamic energy management under various scenarios, ensuring optimal utilisation.

"MTN SA set its sights on achieving Net Zero emissions by 2040, a decade ahead of industry objectives," said Charles Molapisi, CEO, MTN South Africa. "The Solar Park, a 4.9MW solar embedded generation plant, and the groundbreaking Island Mode Project, which will see MTN leveraging a combination of gas, solar, battery and diesel technologies working in cohesion to create a micro grid are pivotal in positioning MTN to go off the grid during load shedding."

Anticipated completion of the Island Mode Project is set for April, combining solar, battery storage, gas trigeneration, concentrated solar power, and diesel generators.

"Looking ahead, MTN SA remains committed to the net-zero journey, planning subsequent phases to solidify its commitment to the SBTi pledge and achieve the 2030 target. MTN SA remains at the forefront of sustainable practices, driving positive environmental impact while embracing groundbreaking technologies," said Molapisi.

Ghana calls for Africa-wide mobile phone interoperability system for roaming

Ghana's president Nana Akufo-Addo has urged members of the African Union (AU) to work towards the implementation of a mobile phone interoperability system in Africa.

According to the president, this initiative should help accelerate the effective implementation of the African Continental Free Trade Area (AfCFTA), making it easier to reduce or even eliminate roaming charges across the continent.

Efforts are being made at the sub-regional level to eliminate mobile roaming charges, among others. Southern African Development Community (SADC) countries are seeking to establish a Single Network Area (ONA) to move closer to a single digital market. East African Community (EAC) and Economic Community of West African States (ECOWAS) countries have also implemented similar projects. Meanwhile, Ghana and Côte d'Ivoire became the first two countries to implement Regulation No. C/REG.21/12/17 relating to roaming on public mobile communications networks in July 2023. Countries such as Benin, Togo, Mali, and Burkina Faso have also taken steps to comply.

Once implemented, the interoperability of mobile telephone networks in Africa should make it possible to facilitate communications between the countries of the continent.

Vodacom SA alleviates consumer cost of living

Vodacom South Africa has announced annual price adjustments to postpaid and fibre tariffs that will become effective from 1 April 2024.

This year's adjustment equates to an average increase on a customer's total bill of 4.6%, which is lower than the 5.3% increase in headline inflation announced by Stats SA for January.

The decision comes at a time when Vodacom continues to invest heavily into maintaining network resilience to deliver an enhanced customer experience and in response to various challenges faced by the industry that has resulted in increased operational costs for operators including base station vandalism and battery theft, loadshedding, currency weakness and high inflation.

"We are fully alert to the financial pressures on customers caused by the high cost of living and remain committed to delivering innovations that enhance the value we deliver to customers to help alleviate cost of living pressures," said Rishaad Tayob, consumer business director, Vodacom South Africa. "To help cushion customers from impacts of higher increases, the likes of insurance premiums, hardware and device costs, valued-added-services (VAS), out-of-bundle (OOB) rates remain unchanged."

Customers on selected RED Integrated and RED VIP plans get up to 11% extra data, whereas customers on Flexi plans continue to get additional airtime, to enable them to stay connected on SA's most reliable network. Postpaid tariffs, recurring and once-off bundles will be adjusted by an average of 8%, during the month of May 2024 while fibre customers can expect a 5% average increase on selected fibre plans.

"We remain committed to contributing to the growth and resilience of the country's economy while offering customers the best value, a robust network, affordable pricing structure as well as an exceptional customer experience," said Tayob.

Vodafone M-PESA Mozambique and IFC boost small-holder farmer inclusion

To boost financial inclusion for small-holder farmers in Mozambique, IFC has signed a cooperation agreement with Vodafone M-PESA Mozambique.

IFC will support M-PESA in several key areas, including revamping and strengthening its existing agent network and conducting comprehensive countrywide training for M-PESA's sales team and agents. IFC will also assist M-PESA to review and expand its merchant acquisition and management strategy in Mozambique, and support M-PESA's activities across different regions.

The IFC and M-PESA Mozambique will work together to explore and pilot new ways to expand mobile money services in rural areas, with the aim of increasing financial inclusion for smallholder farmers. Mozambique's economy relies on smallholder farmers who are responsible for 93% of the country's total agricultural production.

Some 40% of adults in Mozambique currently have a mobile money account, compared to the regional average of 64%. Work under the agreement is expected to increase financial inclusion across Mozambique, providing customers with a safe, secure, and affordable way to send and receive money, top-up airtime, make bill payments, receive salaries, and get short-term loans.

This agreement comes on the back of a successful, initial collaboration between IFC and M-PESA Mozambique that saw the number of active registered M-PESA users triple from 1.9 million to 6 million in the four-year period between 2018 and 2022.

"We have seen very positive results since MPESA was launched in Mozambique in 2013 having paid about 9 billion Meticais ($ 142 million) in commissions to agents just in the last 5 years," said Sergio Gomes, director, Vodafone M-PESA Mozambique. "The new phase of MPESA will focus on expanding our value proposition and use cases to limit the use of cash in the economy. One important vertical where we want to intervene is in agriculture where payments are dominated by cash. We believe that through this partnership with IFC, we can have an impact on farmers by digitizing their value chains beginning with payments received for their produce and moving out to developing more sophisticated products like insurance."

"This enhanced partnership between IFC and M-PESA Mozambique underscores our mutual commitment to fostering a more inclusive financial ecosystem and supporting the growth of the agricultural sector, particularly for smallholder farmers. This is vital for the country's economy," said Sergio Gomes, director, Vodafone M-PESA Mozambique.

IFC has an investment portfolio of US$191 million in Mozambique, with investments spanning across infrastructure, energy, mining, agribusiness, and forestry. IFC's Mozambique advisory portfolio is worth US$11 million, with projects focused largely on finance, insurance, and electricity.

Tigo tackles SMS fraud with Globe Teleservices

Tigo has signed a partnership agreement with Globe Teleservices to strengthen the security of its international application-to-person (A2P) SMS traffic.

The initiative should enable it to combat revenue losses caused by SMS fraud such as smishing, spam, SIM farming, gray routes, SMS pumping, etc.

"Our intelligent firewall solutions complement Tigo Tanzania's vision for secure and efficient international A2P transmission. We are proud to be part of this journey, and look forward to seeing the innovation and growth that this exclusive partnership will bring to both companies," said Ashutosh Agrawal, managing director, Globe Teleservices.

Tanzania's telco sector is seeing increased levels of fraud. According to the Tanzania Communications Regulatory Authority (TCRA), mobile operators recorded 21,788 fraud attempts on their networks during the second quarter of 2023/2024 (October to December). Tigo recorded the highest number of fraud attempts: 8,163 attempts, or 38.5% of the total number.

Strengthening security should allow Tigo to increase its revenues and improve the confidence of its subscribers.

Orange to deploy sleep mode for mobile networks to make energy savings

Nokia and Orange have unveiled a new energy-saving technology called Extreme Deep Sleep, which leverages Nokia MantaRay's energy saving automation with AI/ML to enable mobile networks to automatically go into standby during periods of non-existent traffic. Orange should deploy it in the second half of 2024.

According to Arnaud Vamparys, director of technological innovation at Orange Europe, this innovation reflects "the need for cooperation within the ecosystem if we want to reduce the environmental footprint of our industry and make our networks as efficient as possible. in energy as possible. This project is part of our ambition to reduce our CO2 emissions by 45% in 2030 compared to 2020 across all scopes 1, 2 and 3, as defined in our 'Lead the future' strategic plan."

The new saving mode, 'zero traffic, zero watts,' detects when the network has low traffic and shuts down key hardware elements of selected radio units to reduce energy costs. Nokia estimates that this solution can divide the consumption of radio units by eight. This is the latest project on which the two companies have collaborated to achieve their shared sustainability ambitions.

According to the Global Association of Telephone Operators (GSMA), energy costs represent 20-40% of a telecommunications company's operational expenses. An even higher figure in regions with high diesel consumption such as Africa. This is a trend that is likely to increase as 5G deployment continues, since a typical 5G site requires up to 70% more power to operate compared to a 5G station. base deploying a combination of 2G, 3G and 4G radios.

In Africa in particular, where energy supply issues remain one of the obstacles to the provision of telecommunications services, the Extreme Deep Sleep solution represents an operational asset. Not only does it guarantee consumers availability of the mobile network and telecoms service when needed, but it also allows a reduction in energy-related charges for the operator.

MTN Zambia to upgrade 50 towers to 4G in 2024

MTN Zambia plans to upgrade 50 network towers to 4G from 2G/3G this year, coinciding with government attempts to phase out older infrastructure.

MTN has built 110 towers in rural areas during the last two years, 18 of which have been upgraded to 3G.

"MTN is committed towards universal access and rural coverage," said Abbad Reda, MTN Zambia chief executive officer.

"The private sector must work together in order to increase connectivity to the Zambian people," said Felix Mutati, minister of science and technology. "MTN is demonstrating practical partnership by delivering and upgrading its towers.

Zambia's goal is to achieve 96% connectivity across the country. Most of the planned tower upgrades are in the North Western province, where this year the government wants 19 4G towers constructed and 41 upgraded.

"This is meant to break the digital divide and increase connectivity on both voice and data calls," said Mutati.

Malawi cuts withholding tax for mobile money agents to 1%

Malawi decreased the withholding tax for mobile money agents from 20% to 1%, as per Simplex Chithyola Banda, minister of finance.

According to Chithyola-Banda, this will comply with the current withholding tax rate for banks and insurance brokers, which is 1%: "this is being done to align with the prevailing withholding tax rate for banks and insurance agents, which is at one percent. In addition, most of the mobile money agents do not make enough money to pay personal income tax as their income falls below the minimum threshold of paying personal income tax."

Lumbani Gondwe, country manager at Flutterwave, applauded the reforms, saying that majority of mobile money agents were not making enough money, which impacted the profitability of their businesses.

"What this means is that they (agents) will be able to earn more money from commissions, making their business more successful. They will be able to finance their expansion and hire more employees," said Gondwe. "Mobile money is the most popular digital payment method in the country. I'm betting that eight out of ten transactions are mobile. Even while mobile money is higher than card payments around the world, it is certain that it will continue to develop in our country because it is the only digital payment channel with a nationwide presence."

Econet Lesotho launches commercial 5G

Econet Lesotho has launched 5G mobile technology in the country, becoming the second Lesotho mobile operator to launch 5G after Vodacom Lesotho in 2018.

The adoption of commercial 5G should allow Econet to respond more effectively to its customers' growing demand for high-speed connectivity. This should also allow the company to attract new subscribers and strengthen its competitiveness in the national telecoms market, particularly in the Internet segment.

Democratizing access to 5G is expected to help accelerate the realization of the Lesotho government's digital transformation ambitions and the development of the country's technology ecosystem.

rSIM: 43% of businesses suffer critical IoT connectivity loss every week

Global businesses are suffering major financial and human costs from critical IoT connectivity failures with almost two thirds losing sales and customers as a direct result, according to a new report from rSIM.

The rapid growth of cellular-based IoT devices is set to explode as 5G networks roll out worldwide, with 7 billion expected to be online by 2033. However, this is increasing pressure on network providers and businesses are struggling to cope with the current lack of resilience, with two-thirds stating it has become more business-critical in recent years.

The survey found that reliable connectivity is essential for operations in 87% of companies. In fact, connectivity was stated as the number one issue currently faced by businesses in every region, deemed more problematic even than securing and retaining business or staff.

Almost all the businesses in the survey revealed they suffer from some form of connectivity loss every month, with 16% experiencing a network incident every day and 43% at least once a week. The total outage time during a month clocked up to an hour for 60% of the respondents, with more than a third (37%) experiencing even more time offline, and a quarter (25%) saying that they have been hacked due to connectivity issues.

Almost 1 in 2 (43%) of those surveyed also said that connectivity problems have caused "life affecting changes" to either staff or the users of their products.

The biggest concern is with the connectivity of IoT devices, which businesses and individuals increasingly rely on for day-to-day tasks. More than 80% of these are deemed either mission, business, or life critical, yet over half of the companies surveyed (58%) revealed they have suffered connectivity problems with their IoT devices (e.g. payment machines and remote patient monitoring devices).

"The results of the survey did not come as a surprise. Our business lives and breathes connectivity and we understand the pain points that companies experience when they are without it," said Richard Cunliffe, director, rSIM. "The incredible growth of IoT devices that we have experienced is putting huge demands on network resilience, and future expansion will be simply impossible with the current levels of reliability provided. The results of the survey back up that view, and the call to arms to do something about it is a challenge we have been delighted to take on. People currently accept that mobile connectivity is just not reliable. That is the norm. And that is why the term 'critical connectivity' has come up. In the past, the requirement for always on, real-time data from devices has not always existed; there was a time where businesses could live with bad connectivity. But the more connected the world becomes, the less we can live with the outages we see day to day, and the more critical connectivity becomes to daily life. New solutions are never usually developed until the pain points become bigger and need fixing."

Telecom Namibia appoints Qvantel for digital transformation

Qvantel has been awarded a contract by SATEC Group to provide Qvantel Flex BSS to Telecom Namibia to support digital transformation.

SATEC Group will implement Qvantel Flex BSS for all services (mobile, fixed, and value-added services) for all consumers and business customers. The solution enables the addition of many new services, such as content and ICT offers and helps Telecom Namibia to achieve its goal of providing innovative services to its customers and to grow its market share.

"By implementing a single convergent BSS means that we can provide the best experience to our customers as all information on all services are on a single system," said Stanley Shanapinda, Telecom Namibia CEO. "We will also increase efficiency as we consolidate systems onto a single BSS. This helps us grow the business as we can more effectively bundle convergence offers with value-added digital services which helps digital transformation and increases digital inclusion in Namibia."

"We are delighted to work with Telecom Namibia to drive digital transformation. We are also proud to be working with our partner Qvantel to provide a one-stop shop for BSS and a convergent platform that supports all services for all customers," said Miguel Angel Sanz Sacristán, head of telecoms at SATEC Group.

Telecom Namibia will have the business foundation on which to enable digital transformation. This will result in increased operational efficiency and growth as they can expand their portfolio to offer a wide range of digital products and services to consumers and business customers.

Africa's internet use down YoY in 2023

According to data from the ITU's 'Facts and Figures 2023,' 37% of the African population used the internet in 2023.

While the 2023 usage rate is down compared to 2022 where it was 40%, the analysis of the organization's data shows constant progression over the last decade.

From 16% in 2013, the internet usage rate rose to 25% in 2016, before progressing regularly to reach 40% in 2022. Before the drop in 2023, the only decrease observed over the last decade dates from 2017 when the rate lost 3.3 percentage points.

Several factors can explain the progression between 2020-2022, including the COVID-19 pandemic.

Despite 25 submarine cables and 1.2 million km of terrestrial fibre, the continent's optical fibre footprint remains small. Some countries still lack high-speed telecommunications infrastructure. Further, fixed broadband access prices in Africa are the most expensive in the world: 14.8% of gross national income (GNI) while the ITU recommends 2%.

To improve access to the Internet in Africa, the Internet Society has made several recommendations, including reforming the telecoms market to encourage the emergence of competing access networks; and extending national basic infrastructure beyond the main landing points of submarine cables and the main population centre towards other population centres.

SA to connect almost 22,000 public institutions

The South African government plans to connect more than 21,878 public institutions in the country to the internet over the next three years in partnership with mobile operators, according to Mondli Gungubele, minister of communications and digital technologies.

The institutions covered by the new project are public basic education establishments, health centres and clinics, public libraries, and offices/residences of traditional leaders.

This initiative is part of the actions undertaken by the South African government to accelerate broadband coverage of the country as part of its digital transformation ambitions.

"A digitally disconnected South Africa automatically deprives itself of its participation in the global community of tomorrow. The social and economic impact will be catastrophic," said Gungubele.

Furthermore, the duration of the project coincides with that of the implementation of the second phase of SA Connect, the national broadband policy. Launched in November 2023, it aims to provide 80% of public administrations, communities, and homes with access to broadband in three years.

Sateliot to support EWT's Eye In The Sky project for wildlife protection with NB-IoT

Sateliot has finalised an agreement with South African NGO Endangered Wildlife Trust (EWT) to deploy 5G IoT sensors on vultures as part of a broader effort to combat poaching in Africa.

Under the agreement, Sateliot will provide 5G IoT LEOsat coverage for EWT's 'Eye In The Sky' project, which uses vultures outfitted with GPS sensors as a poisoning detection system in southern and east Africa.

Illegal trade has seen thousands of vultures poisoned across the continent, devastating populations and driving them rapidly towards extinction in the wild. Scavenging mammals like lions, hyaenas and leopards, are also severely impacted by poisoning.

The 'Eye In The Sky' system uses EarthRanger software to monitor the behavioural signatures in GPS-tracked vultures to remotely detect the presence of poison sources and feeding events associated with potentially poisoned-laced carcasses. The GPS-equipped birds send alerts to various front-end platforms, enabling rapid response teams across Africa to react swiftly to poisoning events and decontaminate the sites.

The system presently covers approximately 15 million square km with over 380 vultures of five different species. In the past 12 months, the system has successfully identified 15 poisoning events, enabling response teams to rescue over 100 highly threatened vultures, swiftly eliminate the poison sources, and decontaminate the scenes.

The addition of 5G IoT sensors enables EWT to leverage NB-IoT in terrestrial cellular networks to track the vultures. Meanwhile, Sateliot's satellite network will provide continuous coverage outside of terrestrial coverage via standard roaming agreements with operators.

That means EWT and other NGOs can connect IoT sensors via satellite using standard cellular-compatible gear and SIMs, which is overall much cheaper than using specialised satellite equipment.

"This financial relief will enable us to allocate these funds to other critical conservation work," said Alison Janicke, EWT's head of business development. "Beyond the monetary savings, partnering with Sateliot will also spare us some time and effort spent on fundraising, allowing us to invest that time in on-the-ground conservation activities."

Seacom needs $563 million to expand through sub-Saharan Africa via acquisitions

Seacom is expected to begin expanding its operations in West and East Africa shortly, reported Alpheus Mangale, managing director.

The company has expressed a financial need of approximately $563 million. In June 2023, it had already obtained a loan of $207 million from the International Finance Corporation (IFC). For the expansion, Seacom plans to rely mainly on acquisitions.

Seacom's expansion into sub-Saharan Africa is expected to enable the company to support the digital transformation of 24,000 businesses in the region by 2027, while helping to increase access to the internet and services, according to IFC. cloud and cybersecurity. The company could also increase its revenue by banking on the expected explosion in demand for broadband connectivity, among other things.

Congo Telecom aims for the top

Congo Telecom plans to launch into the mobile telephony and mobile money segments in 2024, according to Yves Castanou, general director of the company.

This initiative is part of Congo Telecom's ambition to be, by 2030, the leading digital operator in the Republic of Congo and a major player in the Central African sub-region. The company has developed a four-year strategic plan called 'Transform.' It is based on eight pillars which are the offers; customer experience; branding; cost optimization; corporate culture; human capital; technologies and networks; the ecosystem and partnerships.

The initiative should allow Congo Telecom to diversify its activities as well as its sources of income. Created in March 2003 following the dissolution of the National Post and Telecommunications Office, the company claims the status of dominant operator in certain segments of the telecommunications and digital market such as fixed telephony and optical fibre.

200 villages in Gabon to gain first mobile and internet services

Airtel Gabon and Moov Africa Gabon Telecom will provide radio coverage to 200 villages in Gabon located in 'white zones' still lacking mobile telephone and internet services.

This initiative is part of the second phase of ARCEP's universal service development project. The first phase of the project was completed over 2016-2018. It consisted of the installation of 18 radio stations which currently provide mobile telephone and Internet services in 33 villages.

The relaunch of the universal service development project after a hiatus of approximately six years follows the instructions given by Brice Clotaire Oligui Nguema, president of the Transition, to ARCEP to find lasting solutions to reduce the digital divide in the country. The regulator estimates that around 1,253 villages containing 6.5% of the Gabonese population have a deficit in mobile telephone and Internet coverage.

Coverage of white zones should make it possible to bring mobile phone and internet services to thousands of additional people. This will also allow telecom operators to increase their customer bases, as well as their revenues.

Tanzania launches Child Online Protection campaign for one year

Tanzania has established a national advisory council and launched a Child Online Protection (COP) campaign to promote awareness about the forms of criminality that children face online.

The campaign will focus on teaching children, parents, and teachers about their roles in protecting children online.

The COP will run for one year in electronic, print, outdoor, and online media to raise awareness and review child-related laws and regulations.

"Parents or guardians should limit the amount of time spent on electronic devices, especially television, to avoid the epidemic of addiction and give time to the child to do homework and study. Make sure the child uses electronic devices under close supervision so as not to get involved in networks that are danger to the safety of the child," said Dorothy Gwajima, minister of community development, women, and special groups.

The minister stated that research conducted by the government in partnership with UNICEF in 2022 for Tanzanian children aged 12-17 years revealed that 67% of youngsters use the internet, and 4% of those children have been subjected to various forms of violence online.

Africa calls for one continent-wide emergency number

Telecommunications regulators across Africa have called for the implementation of a single emergency number across the continent.

This collaborative endeavour aims to enable quick and efficient access to emergency services, considerably improving response times in crisis situations across Africa.

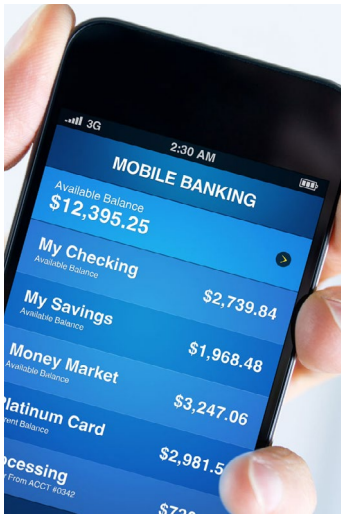
The regulators want member states to explore the idea of implementing a globally harmonised emergency number to supplement existing domestic emergency numbers, taking into account relevant International Telecommunications Union recommendations.

''Africa needs a common emergency telecommunications number so that countries can cooperate in responding to disasters such as floods," said ATU secretary general John Omo.

Kenya's cabinet secretary for information, communications, and the digital Economy, Eliud Owalo, who was also present at the summit, stated that telecoms standards are essential for ICT connectivity and industrial development: "I would like to thank the ITU for transformative standardization work across many areas of ICT, including advanced wireless, broadband, and multimedia technologies. Strong institutions such as the ITU, need to be nurtured and supported to continue redefining innovations in the rapidly evolving ICT sector."

GSMA and Visa team up for digital financial inclusion with mobile money

Visa and the GSMA Mobile for Development Foundation (GSMA Foundation) have launched the Digital Finance for All (DFA) Initiative to advance digital financial inclusion in developing markets.



The five-year initiative aims to advance digital financial inclusion for 20 million people, especially women, small holder farmers (SHF), and nano, micro and small enterprise (NMSE) owners across low- and middle-income countries in Africa, Asia, and Latin America.

While digital payments usage by adults in low- and middle-income countries is up 66% from 2014, women, SHFs, NMSE owners and globally displaced individuals continue to face barriers accessing the digital economy. Women in low- and middle-income countries are 20% less likely than men to hold a formal financial account. Meanwhile, most SHFs have limited or no access to formal financial services like credit, loans, savings, or insurance, despite being responsible for producing over 30% of the world's food.

"Mobile money can play a transformative role in advancing financial inclusion and resilience for the nearly 2 billion people who remain unbanked globally. However, poor digital and financial literacy is a key barrier to accessing digital financial services, especially for certain population segments like women, farmers and micro-merchants," said Ashley Olson Onyango, head of financial inclusion and agritech at GSMA.

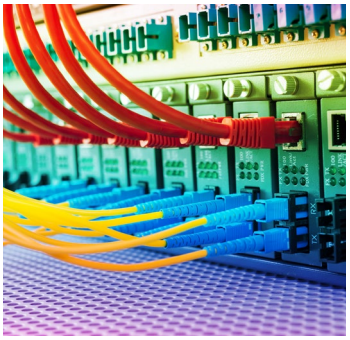
The DFA Initiative aims to tackle these issues by delivering financial education resources via a jointly developed mobile financial literacy toolkit that will enable easy delivery and scaling across markets to help enable access to mobile money services. The initiative will also help digitise SHFs and NMSEs to support their adoption of digital financial services.

TelOne opts for fibre

TelOne plans to decommission part of its copper cable infrastructure to combat acts of vandalism on its network infrastructure and improve the quality of its services.

TelOne managing director Lawrence Nkala said that copper cables would be replaced by newer technologies such as fibre optics and wireless access solutions.

TelOne recorded 316 interruptions to its telecoms network due to numerous cases of vandalism during 2023. This resulted in a loss of approximately $1 million.



Tanzania to resell broadband to Burundi

Tanzania will resell broadband connectivity capacity to Burundi over the next five years as part of the terms of a partnership agreement between Tanzania Telecommunications Corporation Limited (TTCL) and Burundi Backbone System (BBS).

The value of the deal is estimated at $3.3 million. In October 2019, TTCL and BBS signed a $6 million, ten-year agreement for the provision of high-speed internet in Burundi.

Burundi is a landlocked country that cannot accommodate an undersea fibre optic cable, and therefore relies on coastal countries like Tanzania. The latter has three international submarine cables: 2Africa, Eastern Africa Submarine Cable System (EASSy) and SEACOM.

The initiative should enable Burundi to improve the quality and coverage of telecoms services, particularly the internet.

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Yahsat launches Project SKY for D2D in Africa

Al Yah Satellite Communications Company (Yahsat) has launched a new strategy called 'Project SKY' which aims to provide voice, SMS, and data services to smartphone users and IoT devices directly from satellites via Direct-to-Device (D2D), in Africa.

The project includes two phases. In the first phase, Yahsat plans to use its satellites in geostationary Earth orbit to deliver voice and messaging capabilities this year, before rolling out texting and IoT capabilities to smartphones in 2025. Called 'BlueStar,' the second phase will see the establishment of a constellation of satellites to provide complete D2D connectivity.

In Africa, this initiative should help improve access to mobile connectivity services. Space technology offers greater reach, making it possible to reach even populations living in rural, remote areas and difficult to access for the terrestrial network of telecom operators.

Meeting growing demand and connecting the previously unconnected is expected to enable Yahsat to increase its revenues as it accelerates efforts to venture into emerging sectors with high potential for lucrative growth. The company is one of the founding members of the Mobile Satellite Services Association (MSSA) launched on 9 February with the aim of promoting the D2D ecosystem across the world.

Talking critical

Harald Ludwig,
chair, TCCA Technical Forum

Mission critical services – ensuring a smooth transition

Amidst all development within 3GPP, and the mission critical broadband features emerging, national TETRA network operators and users are investigating and preparing to adopt the new mission critical technologies. However, it is accepted that TETRA will be needed to work in parallel with the emerging critical broadband networks, and for that to happen there needs to be a mechanism put in place for the two networks to operate in harmony.

Since 2021, stakeholders in critical communications have been discussing if an interworking function (IWF) is to be made available in the market so it can be used for the communication between the existing narrowband TETRA systems and the 3GPP MCX services. These are mission critical Push-to-Talk (MCPTT), mission critical data (MCData) and mission critical video (MCVideo) collectively known as MCX, running on 4G/LTE and 5G bearers. As mission critical broadband technologies are deployed, this requirement for interworking with existing TETRA systems is becoming increasingly important.

To facilitate the adoption of MCX, and to enable communication between users on each system, a connection between the two types of technology is needed. A means to provide this bridging functionality is under development by ETSI to standardise into a logical IWF that will be located within the TETRA network infrastructure.

TCCA has produced a white paper that describes the relation between the IWF and the TETRA infrastructure from the perspective of operators and users. The focus is on the usage during transition and what the expected features needed from this perspective are. It designates priorities in a clear overview of 1) must-have, 2) nice to have and 3) not prioritised. Included are use cases which are reflections from operators considering how the IWF can be managed during operation.

The white paper puts into an operational perspective how TETRA operators and users might want to use an interworking functionality for pilots, proof of concepts, migration, hybrid deployment and, at a later stage, the transition towards MCX.

From an operator perspective there could be several phases in the IWF deployment cycle. These phases will be part of planning the national migration projects and will have variable durations, hence they indicate the business and use case for the IWF. The four main phases (which have overlaps) can be categorised as:

- Pre- IWF Planning Phase: the pre-migration phase defines the outlines for the migration and deployment, including the definition of the national or international project deliveries for the MCX services, requests for information, definitions on use cases, pilots, test setup, user configurations and establishment on a small scale as the proof of concept before rollout. What are the available options in the market for LMR operators and users to facilitate per today and near future in the core infrastructure or command and control centres to connect both systems? What is the preferred scenario to start migration and deploy the different architectures to keep the TETRA networks in operation during transition? Here, the possible solutions are validated as strategies to make plans on how to migrate. The basic features to have available in and across TETRA and MCX to be able to provide critical communications in a time of transition are considered.

- Interworking roll-out Phase: the scale-up of the agreed connections to maintain during migration. It is the deployment phase where there is a functioning IWF between the TETRA and MCX systems to guarantee business as usual for critical communications for and with the end users in both the systems. It will be dependent on the user, operator, or network as to how long this phase will be, depending on many factors that will be part of the national migration plan and roll out. These include budgets, expectations, end user agreements, investments and maturity of deployment of the future technologies. The needed interworking functionality could be in a range from basic simple communication between systems to more sophisticated deployment.

- Interworking Phase: a hybrid phase where both solutions need to coexist, interwork and gradually move end users from the TETRA system over to the new ecosystem on the MCX servers. Again, this phase will be coloured by national rollout plans and timelines and could define the extend of functionalities required from the old and new network and the IWF in between. This could span between the absolute needed minimum up to what new features need to be in place from day one on the MCX platforms. These requirements may vary per national scenario, so the usage of IWF functionality could differ in deployment per operator.

- Retirement Phase: if an operator is considering replacing an existing TETRA network with MCX, an optional Retirement Phase can be added. This is the downsizing or dismantling of the IWF functionality and the TETRA system once most of the users are migrated over to the MCX services.

With all planning ongoing for migration to a next generation infrastructure and ecosystem, it is likely that most of the major TETRA operators will go through these phases when making this transition to MCX, although there are exceptions and not all providers and operators will follow these phases.

The IWF was added to the 7th ETSI Plugtests™ event hosted in Malaga in November 2022 for the first time. A standardised and preferable certified TETRA IWF solution supporting the basic set of voice and data services should be available in the market to facilitate the transition so operators and network owners can start dimensioning future scenarios of making the transition from TETRA to MCX. The white paper **'Service Overview: TETRA-MCX Interworking (TETRA IWF)'** can be read here

Airtel Africa to launch share buy-back programme of up to $100 million

Airtel Africa intends to launch a 12-month share buy-back programme of up to $100 million, running for 12 months, starting early March. The move results from its ongoing strong operating performance and outlook of growth.

"We continue to be well positioned to deliver on the attractive growth opportunities our markets offer and despite the challenge of rising diesel prices, ongoing currency devaluation and inflationary pressures across some of our markets, we remain focused on margin resilience," said Olusegun Ogunsanya, group chief executive officer.

During the last quarter of 2023, the operator's total customer base grew by 9.1% to 151.2 million.

Penetration of mobile data and mobile money services continued to rise, driving a 22.4% increase in data customers to 62.7 million and a 19.5% increase in mobile money customers to 37.5 million.

Mobile money transaction value increased by 41.3% in constant currency, with quarterly annualised transaction value of $116 billion in reported currency. Capital expenditure of $494 million was 8.2% higher compared to the prior period. Capex guidance for the full year remains between $800 million and $825 million as Airtel Africa continues to invest for future growth.

"We remain focussed on the execution of our growth strategy and, combined with our strong operational execution, this has ensured that we continue to see sustained, positive growth momentum across the business, despite the inflationary and currency headwinds," said Ogunsanya.

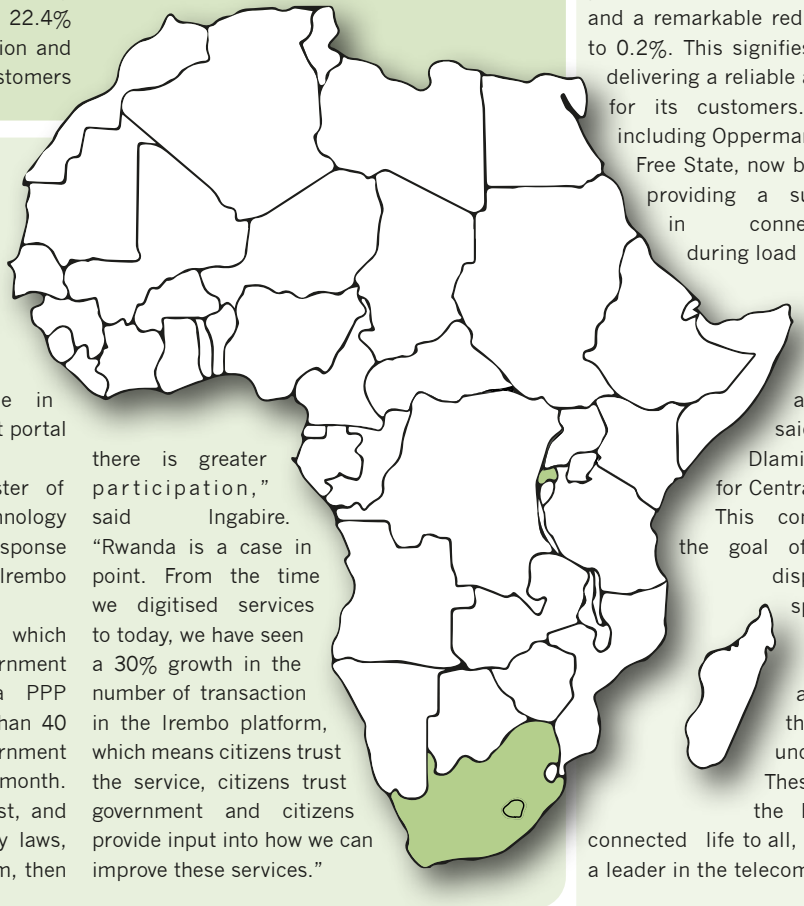
Rwanda: e-government transactions up 30%

Rwanda has recorded a 30% rise in transactions on its electronic government portal since its introduction.

According to Paula Ingabire, minister of information and communications technology and innovation, this reflects a positive response from citizens since the one-stop project – Irembo - was established.

Irembo is an eGovernment platform which enables the access and provision of government services in Rwanda, built within a PPP framework. Today Irembo hosts more than 40 e-services deriving from six different government agencies with more than 90,000 users a month.

"What we have seen is that with trust, and that's the beauty with data and privacy laws, once the citizens have trust in the system, then there is greater participation," said Ingabire. "Rwanda is a case in point. From the time we digitised services to today, we have seen a 30% growth in the number of transaction in the Irembo platform, which means citizens trust the service, citizens trust government and citizens provide input into how we can improve these services."



MTN SA achieves 98% network availability in Free State and Northern Cape

MTN South Africa has announced a significant milestone in its network modernization initiative, achieving an impressive 98% network availability in the Free State and Northern Cape regions.

The ongoing modernization drive has strengthened network resilience, enabling enhanced connectivity for users.

With over 50% of sites modernized, the network has demonstrated improved performance, with a throughput of 14.09Mbps and a remarkable reduction in drop call rates to 0.2%. This signifies MTN's commitment to delivering a reliable and seamless experience for its customers. Notably, rural areas, including Oppermansgronde in the southern Free State, now benefit from 4G coverage, providing a substantial improvement in connectivity, particularly during load shedding.

"We have extended 4G population coverage across Northern Cape and Free State to 96% and 99% respectively," said Machawe Victor Dlamini, acting regional GM for Central Region, MTN.

This commitment aligns with the goal of bridging connectivity disparities in rural, poor, and sparsely populated areas.

In 2024, MTN South Africa plans to upgrade all sites to LTE and expand the network to reach more underserved communities. These initiatives aim to bring the benefits of a modern, connected life to all, reinforcing MTN's role as a leader in the telecommunications sector.

Telkom to invest 5.9 billion rand in South Africa

Telkom plans to invest 5.9 billion rand to improve mobile connectivity in South Africa, particularly with the deployment of 4G and 5G network infrastructure.

"Our role is to connect more businesses — large and small — as well as more schools, homes, and individuals. Among our main objectives are the acceleration of the growth of mobile telephony, the adoption of broadband, the extension of the telecoms network," said Serame Taukobong, president and CEO of Telkom.

This 4G and 5G rollout acceleration program comes about two years after Telkom acquired 42MHz of spectrum in the 800MHz and 3,500MHz bands for R2.1 billion as part of the sale by auction of South Africa's high-speed telecoms frequency spectrum.

The initiative should enable Telkom to improve the quality of services and accelerate the coverage of its telecoms network, particularly in rural areas. These areas are rich in potential telecoms subscribers which will enable the operator to improve its market share and strengthen its position in the South African telecoms market.

COMESA to investigate Airtel Africa and ATC for competition rules

The Common Market for Eastern and Southern Africa (COMESA) has opened an investigation into a potential violation of competition rules by telecoms company Airtel Africa and infrastructure provider American Tower Corporation (ATC).

The investigation follows a complaint regarding a partnership agreement signed between the two companies in October 2022. Under the terms of the agreement, ATC will make its portfolio of telecoms sites available to Airtel Africa, as well as its capacities for the development of new sites and products. The partnership covers four countries, two of which are members of COMESA - Kenya and Uganda. The other two countries are Niger and Nigeria.

However, according to the complaint received by the COMESA Competition Commission, Airtel must take over a certain number of ATC sites each year and, in return, the latter will give it a financial rebate. This is deemed contrary to the provisions of the COMESA Competition Regulations which, in Article 16, 'prohibits all agreements likely to affect trade between Member States and having the object or effect of preventing, restricting or to distort competition in the common market.'

The commission will assess the behaviour of the two companies to determine its effects on the common market before applying, if necessary, the appropriate measures provided for in the current regulation. This includes suspension of the agreement and/or imposition of a fine.

Hatem Dowidar named Vodafone Group non-executive director

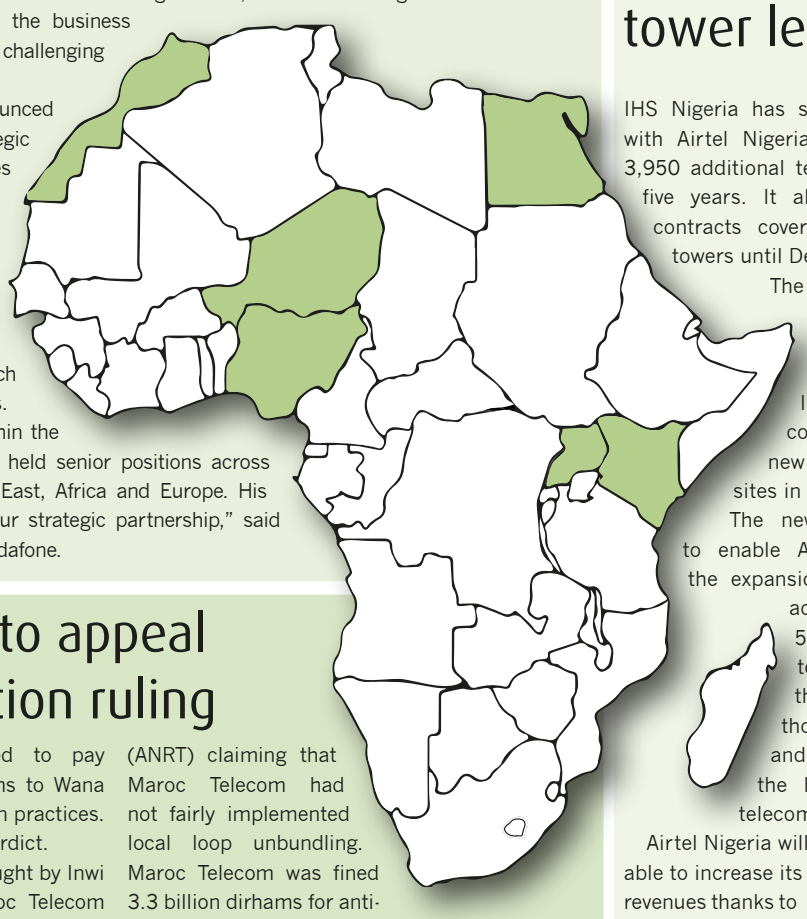
Former CEO of Vodafone Egypt Hatem Dowidar has joined Vodafone Group board as a non-executive director.

Dowidar joined Vodafone Egypt in 1999 as marketing director, before becoming CEO from 2009 to 2014, during which time he steered the business growth with benchmark profitability in challenging and competitive environments.

Vodafone Group recently announced that, after entering into a strategic relationship agreement with Emirates Telecommunications Group (e&), Dowidar would join the Vodafone board as a non-executive director, subject to e& obtaining the necessary regulatory approvals.

Dowidar has 30 years of experience in international corporations, 24 of which have been spent in telecommunications.

"He brings extensive experience within the telecommunications industry and has held senior positions across a range of companies in the Middle East, Africa and Europe. His appointment will further strengthen our strategic partnership," said Jean-François van Boxmeer, chair of Vodafone.



Maroc Telecom to appeal Inwi compensation ruling

Maroc Telecom has been ordered to pay compensation of 6.36 billion dirhams to Wana Corporate (Inwi) for unfair competition practices. Maroc Telecom plans to appeal the verdict.

This decision follows an action brought by Inwi in 2021, on the grounds that Maroc Telecom had unfairly restricted the company's access to fixed telephony customers from 2013. The operator had claimed 6.85 billion dirhams as compensation.

The dispute is linked to the unbundling of local optical fibre loops and sub-loops. Accused of confiscating these infrastructures, Maroc Telecom believes that they are the fruit of its investments and refuses to comply with the regulations for sharing telecoms infrastructures in force since June 2014.

In 2016, Inwi filed a complaint with the National Telecommunications Regulatory Agency (ANRT) claiming that Maroc Telecom had not fairly implemented local loop unbundling. Maroc Telecom was fined 3.3 billion dirhams for anti-competitive practices in 2020. In February 2022, the regulator imposed another fine of 2.45 billion on the telecoms company for similar reasons.

Additionally, the Moroccan Court of Auditors considers that Maroc Telecom's monopoly on fixed internet (ADSL) harms the development of online services due to the absence of competition. If Maroc Telecom agrees to unbundle its infrastructure, this would allow its competitors to rent its copper telephone lines to be able to offer their own ADSL services to customers. Such an initiative should guarantee more choice to subscribers.

IHS Nigeria and Airtel Nigeria commit to additional tower leases

IHS Nigeria has strengthened its partnership with Airtel Nigeria by committing to leasing 3,950 additional telecom towers over the next five years. It also extended current lease contracts covering around 6,000 telecom towers until December.

The deal includes 2,500 colocations, 5G retrofits and custom-built sites that will be owned and operated by IHS Nigeria. Both parties also committed to cooperating on new green initiatives at collective sites in the future.

The new partnership is expected to enable Airtel Nigeria to accelerate the expansion of its telecoms network across Nigeria, including 5G. The extension of the telecoms network will allow the telecoms operator to reach thousands of additional people and strengthen its position in the highly competitive Nigerian telecoms market.

Airtel Nigeria will also be able to increase its revenues thanks to growth in demand for broadband connectivity, as well as voice, SMS and mobile money services.

The new deal with Airtel is expected to help HIS Nigeria recover from the recent loss of a 2,500 telecom tower lease from MTN to American Tower Corporation (ATC).

Orange Cote D'Ivorie enhances capabilities with Enea

Orange Cote D'Ivorie is continuing to develop its network and data services; with the latest traffic analysis and policy control software from Enea, it will more effectively manage service assurance and user experience for the ever-increasing volumes of data traffic.

"The main focus for us is to run the best network and continue enhancing the quality of service for our users," said Rolly Ehouman, CTO at Orange Cote D'Ivorie. "To succeed, we need data from powerful analytics tools. Enea is a proven supplier with whom we are happy to build a long-term relationship for advanced and innovative software that matches our needs."

Moving to a cloud-native architecture will secure future expansions and provide a more agile, secure approach to service delivery.

"The flexibility of Enea's policy, classification, and analytics solution will enable Orange Cote D'Ivorie to continue delivering great quality of service in the face of an exponentially increasing demand for internet access," said Roland Steiner, senior vice president, network performance and applications, Enea. "Using a cloud-native, scalable solution will help gain valuable insights for planning and performance management, cost effectively."

The Enea Dual-Mode Policy Manager provides consistency and cost benefits through a single, common subscriber profile, and can scale to handle real-time policy decisions for fixed access including fiber to home. Its virtualized deep packet inspection engine enables operators to enhance service assurance and secure data access.

For the implementation, Enea will be working in close collaboration with Smart Innovation Centre.

Nigeria's FDI in telecoms falls 70% in 1 year

Nigeria's telecoms sector attracted $134.75 million in foreign direct investment (FDI) in 2023, according to the latest data from the National Bureau of Statistics (NBS). This is a decrease of 70.5% compared to the $456.8 million recorded in 2022.

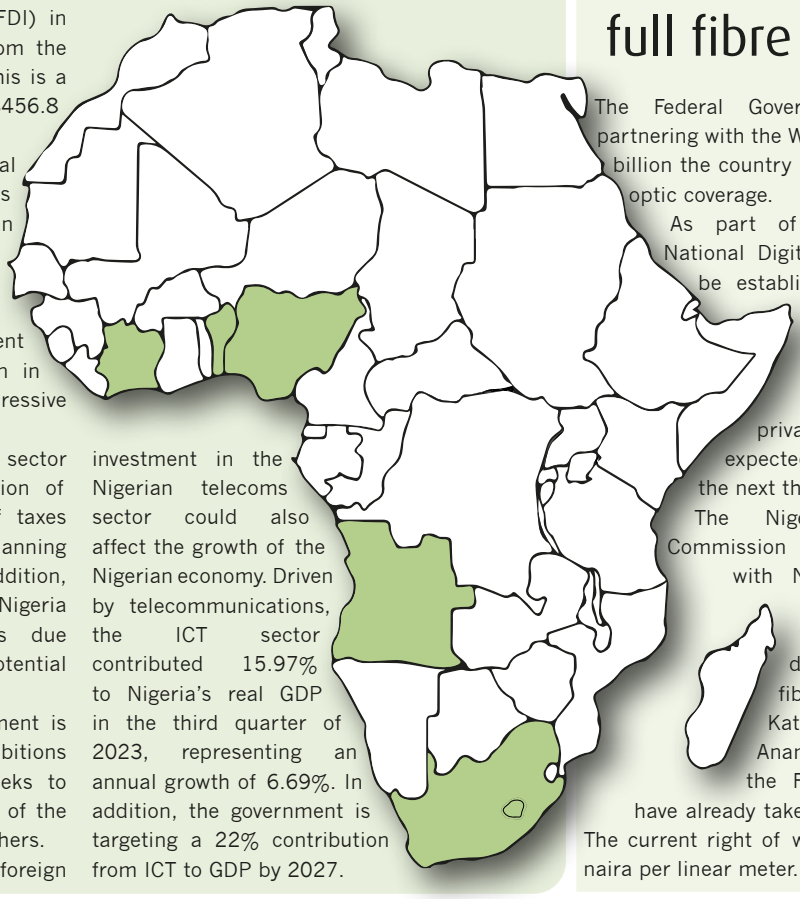
This decline comes amid a general decline in foreign direct investment across the Nigerian economy, a trend that began with the outbreak of the COVID-19 pandemic and has accelerated with the start of the war in Ukraine.

The total amount of foreign investment in Nigeria increased from $5.3 billion in 2022 to $3.9 billion in 2023, an impressive expansion by any measure.

Players in the Nigerian telecoms sector attribute this decline to a combination of factors, particularly the multiplicity of taxes which complicates the financial planning of companies in the sector. In addition, the fluctuation of the naira makes Nigeria less attractive to foreign investors due to uncertainties related to the potential repatriation of returns.

The decline in foreign direct investment is slowing the digital transformation ambitions of the Nigerian government as it seeks to raise funds to finance the strengthening of the national digital infrastructure, among others.

In the long run, the decline in foreign investment in the Nigerian telecoms sector could also affect the growth of the Nigerian economy. Driven by telecommunications, the ICT sector contributed 15.97% to Nigeria's real GDP in the third quarter of 2023, representing an annual growth of 6.69%. In addition, the government is targeting a 22% contribution from ICT to GDP by 2027.



Nigeria and World Bank to invest in full fibre coverage

The Federal Government of Nigeria is partnering with the World Bank to raise the $3 billion the country needs to ensure full fibre optic coverage.

As part of this collaboration, a National Digital Broadband Fund will be established. The funds raised will be used to deploy approximately 95,000km of fibre optic cable, in partnership with the private sector. The project is expected to be completed within the next three years.

The Nigerian Communications Commission (NCC) is campaigning with Nigerian states for the reduction of rights of way to facilitate the deployment of optical fibre across the country. Katsina, Nassarawa, Anambra, Ekiti states, and the Federal Capital Territory have already taken steps in this direction. The current right of way fee in Nigeria is 145 naira per linear meter.

Vodacom Group reports 27% revenue increase

Vodacom Group has reached 200 million customers, doubling its 2018 count in a trading update for the quarter ended on 31 December 2023.

In the fourth quarter of 2023, Vodacom Group recorded group revenue increase of 26.8% to R38.9 billion, driven by the positive impact of acquiring Vodafone Egypt; pro-forma group service revenue, including Vodafone Egypt, exceeded targets, growing by 8.8%; and the customer base, inclusive of Safaricom, reached 200 million, with over 75 million utilizing financial services.

Despite a challenging comparative period, South Africa's service revenue increased by 1.9%. Meanwhile, Egypt experienced a notable 29.1% growth in local currency for service revenue, with financial services customers up by 55.5% to 7.5 million. International service revenue rose by 10.7% (6.5%*), fuelled by increased data revenue from network investments.

Additionally, Vodacom reported a significant spike in group financial services revenue, which increased by 31.0% to R3.4 billion. This growth was further emphasized by a substantial US$98.2 billion transacted through mobile money platforms in the quarter.

SBIN exempt from entry duties and taxes

The Beninese Digital Infrastructure Company (SBIN) will benefit from an exemption from entry duties and taxes on equipment for the project to extend its telecoms network throughout the national territory.

The exemption granted by the specific investment regime does not concern the road tax, the statistical tax, the customs stamp, the community levy (PC), the community solidarity levy (PCS) and the solidarity levy (PS).

With this initiative, the Beninese government intends to make a stable and reliable internet connection available throughout the national territory as part of efforts to accelerate the country's digital transformation and make it a driver of socio-economic development.

A budget of 24.3 billion CFA francs has been planned for the projects of the Ministry of Digital and Digitalization for the 2024 financial year, compared to 31 billion FCFA in 2023.

The initiative will facilitate the expansion of the SBIN national network, helping improve the coverage and adoption of internet connectivity in Benin.

Unitel to be listed on stock market

Unitel will be listed on the stock market this year as a result of the first meeting of the year of the National Interministerial Commission for the Privatization Program (PROPRIV).

In April 2023 the Angolan government revealed its intention to privatize Unitel via a listing on the Angolan Debt and Securities Exchange (BODIVA). The state became the sole owner of the company in October 2022 after President João Lourenço nationalized the shares of Isabel dos Santos and General Leopoldino Fragoso do Nascimento who each held 25% of the company's capital.

Unitel's IPO is part of the privatization program for public companies initiated in 2018. The State has set itself the mission of selling its stakes in the capital of 195 companies to restructure and resize the public business sector in Angola. The IPO should improve Unitel's governance and make it easier to raise capital for expansion.

Talking satellite

Daniel Batty, space & policy analyst, Access Partnership

ESIMs in Africa – what do they have to offer?

Earth Stations in Motion (ESIM) are no longer considered a novel concept. ESIMs have been providing satellite connectivity to moving objects via small-mounted satellite antennas for countless years; in fact, the very concept of inflight connectivity has moved away from being a luxury to now becoming an expected service amongst many travellers. However, ESIM technology applications go far beyond inflight connectivity.

ESIMs can broadly be categorised into three groups based on the type of vehicle they are mounted on: aeronautical ESIMs mounted on aircraft; land ESIMs mounted on mobile land vehicles; and maritime ESIMs mounted on ships. Despite their specific classifications, these ESIMs share the common purpose of extending connectivity to moving objects where they would otherwise not have access to other network options. The primary focus of ESIM technology is to expand connectivity to otherwise unconnected areas, including remote areas of the ocean, high altitudes in the sky, or rural land regions.

ESIM regulation

At present, ESIMs are still working towards harmonisation in the global regulatory framework. National authorities, regional groups, and the International Telecommunication Union (ITU) all have a say in how ESIMs are regulated. Chiefly, at the international level, Resolutions 156 (WRC-15) and 169 (WRC-19) govern ESIMs communicating with geosynchronous orbit (GSO) satellites operating in the Ka-band. These harmonisations are narrow in scope and leave a wide range of applications uncovered.

It is also important to note that these Resolutions are not compulsory for national authorities to implement; each country has the discretion to decide whether or not to adopt them. However, Resolutions are generally complied with and marked as a standard for global collaboration and harmonisation.

ESIMs, by their nature, often traverse international borders, requiring collaboration and harmonisation between countries and regulators, particularly those with large and busy seaports and airports.

ESIM at WRC-23

The World Radiocommunication Conference 2023 (WRC-23) marked an important conference for ESIM, with Agenda Items 1.15 and 1.16 both seeing successful outcomes.

Agenda Item 1.15 sought to harmonise the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with GSO space stations in the fixed-satellite service (FSS) globally, in accordance with Resolution 172 (WRC-19). Agenda Item 1.16 on the other hand aimed to study and develop the technical, operational, and regulatory measures, as appropriate, to facilitate the use of the frequency bands 17.7-18.6GHz, 18.8-19.3GHz, and 19.7-20.2GHz (space-to-Earth), along with 27.5-29.1GHz and 29.5-30GHz (Earth-to-space) by non-GSO FSS ESIM, while ensuring due protection of existing services in those frequency bands, in accordance with Resolution 173 (WRC-19).

Agenda Item 1.15 in particular created a globally harmonised framework for aeronautical and maritime ESIMs communicating with GSO FSS in the 12.75-13.25GHz range.

ESIM for Africa

ESIMs play a pivotal role in bridging connectivity gaps, especially in areas with limited or unreliable traditional communication infrastructure. Given that Africa is a continent with approximately 30,500km of coastline as well as large regions that lack reliable or existing terrestrial connectivity, ESIMs could provide the following key benefits:

1. ESIMs by their nature are flexible and mobile – this means they can be rapidly deployed to where they are most needed. In the case of land ESIMs, this can be a temporary solution to connect a rural village, school, or government building before either more fixed satellite services or terrestrial services can be deployed. Additionally, this flexibility allows ESIMs to plug connectivity gaps in times of national crises, such as a natural disaster that has destroyed or damaged terrestrial connectivity infrastructure.
2. ESIMs enhance the transport and logistics sectors for all three categories of freight: land, sea, and air. ESIMs ensure these transport vehicles are connected and provided for real-time tracking to ensure the safety and proper functioning of logistics vehicles, regardless of how remote the terrain. The expanded connectivity brings added value to the logistics sector and minimises the risk of loss from accident, piracy, or any other event which results in the loss of freight.
3. ESIMs deployed to remote areas for short- to medium-term durations can bring access to a suite of internet and e-government services to the most remote villages and towns of the continent. This can facilitate government census operations, assist in the registration of citizens, and provide support to rural health care workers for vaccine tracking and other healthcare initiatives. These services are all enhanced by expanded connectivity and allow governments to plan service delivery operations more effectively and efficiently.

In summary, ESIMs have an important role to play in Africa, and ensuring the effective and harmonised regulation of their use and deployment across the continent should be a priority for African regional communities and neighbouring countries.

Paratus will bridge Africa's digital divide

Paratus Group has set some ambitious goals to double its footprint in the next five years. Unconstrained by conventional thinking, the group's latest strategy sets its sights remarkably high, embracing a bold and daring vision. Meet Co-Founder and Group CEO, Schalk Erasmus, who is leading the charge to massively expand the Group's operations in Africa.

Our plan is to establish Paratus in all countries south of the equator. We are the number one telco to work for in Africa", says Erasmus. "This is key to ensuring our goal is reached. Our people's passion, professionalism and commitment are the cornerstones of the Paratus Group's success to date. As we invest in new infrastructure, we are determined to equally invest in empowering our people, in motivating them and in leading them to personal and shared success – because we know that we cannot achieve our ambitious expansions and growth without our people fully sharing in the journey."

Erasmus and his team are busy focusing on realising the group's vision to transform Africa through exceptional digital infrastructure and customer service. From a start-up 21 years ago, Paratus is already a major telecommunications player with an impressive footprint in Africa. Major milestones to date include the fact that Paratus owns its own infrastructure, has built expert teams in seven southern African countries, and serves customers across the continent with a seamless quality network and top-quality service. Through its extended satellite network, the Paratus group also serves customers in more than 30 African countries. It has built four of its own Data Center facilities in three African countries; it already has teleports in four countries, on two continents; it has recently added another teleport in South Africa and a low earth orbit (LEO) teleport in Luanda; the group has laid thousands upon thousands of kilometres of fiber networks to create a continuous southern African network with unrivalled cross-border links for businesses in the SADC.

Paratus is now planning further fiber routes to Zimbabwe and to bridge connectivity gaps between DRC, Zambia, and Angola where the Paratus teleport will provide the additional necessary infrastructure to create a regional hub. Erasmus says: "This is designed to stimulate the digital economy, capitalise on the opportunities created by various subsea cable systems in the region and to consolidate the Group's strategy to create a viable communications hub in Angola, where Paratus is embarking on a project to build the first Tier IV by design data center (DC)."

Another key milestone for the group is that Paratus has signed African reseller and distribution agreements with major leading global LEO satellite providers.

With the building of its Trans Kalahari Fiber route and the recent completion of the company's Botswana Kalahari Fiber (BKF) route between Johannesburg and Swakopmund, Paratus has created a highspeed link to its landing station and the Equiano subsea cable. Erasmus explains: "With this route now completed, we are launching the continent's first lowest latency superhighway from Johannesburg to Europe. With Equiano, we are providing 20 times more capacity not only to Namibia but to the whole southern African region."

Another key strategic intervention has recently been to raise the funding needed to expedite this plan. In Q4 of last year, Paratus secured US$31-million in a deal that was facilitated by Cirrus Capital through Ninety One, a global asset manager, which mobilised capital from two of its funds: Emerging Africa Infrastructure Fund (EAIF) and Ninety One Africa Credit Opportunities. The capital is being used to enhance last mile connectivity and to introduce more reliable internet services across three sub-regions in Africa, including seven countries: Angola, Botswana, the Democratic Republic of Congo, Mozambique, Namibia, South Africa, and Zambia. It will also help strengthen the continent's core digital infrastructure, which is fundamental to building more advanced economies in Africa.

Erasmus says the investment is a strong and confident sign of the group's intent to greatly enhance cross border fiber connectivity and facilitate economic development in the region. "It is good news for African businesses, for entrepreneurs, and for consumers across the continent. We are all very excited about the opportunities we can now create for our customers and for our people."

Another major initiative is the current Rights Issue whereby existing Paratus Namibia Holdings (PNH) shareholders, including existing staff members who own shares, have first right to acquire additional shares and Paratus employees also have the option to buy shares and to become shareholders. The rights issue will double market capitalisation and shareholders will receive annual dividends (when declared). All staff are being given information sessions so that they may fully understand their options and opportunities to generate ownership. "This is a key intervention in raising more capital", explains Erasmus, "and for the Group to be able to inject more funds into other key projects ... and all while giving our staff a chance to become truly invested in the Group's and their own future success."

In his previous role as the Paratus Group Chief Operating Officer, he was responsible for many of the group's recent achievements. Having been at the coalface, he knows and understands every facet of the business and has an expert eagle eye focussed on the many and complex developments as they roll out.

Focused and steadfast in his mission, Erasmus is committed to ensure consistency and excellence of the Group's product delivery, anywhere in Africa. Along with his co-directors, shareholders, and colleagues, he is an absolute stickler for high quality and in not compromising on the Paratus promise to be Africa's quality network. "We are already well on our way to becoming the unequalled integrated network services provider in Africa in delivering high-speed and low latency connectivity routes across the whole continent.

"As we push through with our expansion into new territories, I believe that our people and our partners – both in Africa and around the world - are key to ensuring the delivery of excellent service. With our ongoing commitment to massive investment in our infrastructure and with our focus on customer delivery and service, we are poised for top billing on the African telecommunications stage." ■

Schalk Erasmus,
Chief Executive Officer: Paratus Group

The financial fusion: where banks, telcos and insurance unite

CG Selva Ganesh, VP, CEO South Africa, In2IT Technologies

In today's rapidly evolving financial services landscape, the once-distinct boundaries separating banks, telecommunications companies (telcos), and insurance providers have become increasingly blurred. This convergence is driven by a multitude of factors, including the proliferation of data, the growth of the Internet of Things (IoT), and innovative business models.

The driving forces

One of the primary drivers behind the convergence of banks, telcos, and insurance companies is the brand presence and wide-established infrastructure that telcos and insurance companies bring to the table. This provides a strong foundation for collaborative efforts in the financial sector.

Digitisation is another critical factor pushing this convergence. As customers increasingly embrace digital payment transactions and online banking, the financial industry must adapt to meet their evolving needs. Additionally, affordable telco connectivity services and technological advancements in connectivity speed are creating an environment ripe for collaboration.

Mobile penetration plays a crucial role in this convergence, particularly in rural and semi-urban regions. It allows banks and insurance companies to expand their customer base and provide services to previously underserved populations. As these driving forces continue to gain momentum, the lines between these industries will continue to blur.

The benefits and challenges

This convergence brings a host of potential benefits and challenges. Telcos see fintech as a lucrative revenue stream, while the finance industry views telco infrastructure as a means to expand its customer base and enhance loyalty. Digital banking, a key component of this convergence, significantly improves customer experience by reducing the need for physical branch visits, thereby cutting capital and operational expenditures.

Moreover, the convergence between mobile and fintech can empower small and medium-sized businesses, offering them access to services such as micro-lending, contactless payments, and business automation solutions. However, one of the main challenges is the vast amount of data that both industries possess. Robust cybersecurity measures are required to protect this data and ensure it is utilised responsibly.

The role of the digital revolution

The digital revolution, characterised by cheaper connectivity, data processing, and storage, serves as the catalyst for convergence. Innovative technologies such as mobile banking, online banking, AI-powered virtual assistants, and contactless payments through mobile devices are at the forefront of this transformation. Personal finance management tools empower customers to take control of their financial lives, further enhancing their experience.

Regulatory implications

Regulatory and legal implications are crucial in this convergence, especially in cross-border money transfers. Governments and industry stakeholders are diligently working on regulations to prevent anomalies in transactions, strengthen anti-money laundering processes, and secure mobile phones and SIM cards from potential compromises.

Disruption of traditional business models

Traditional telcos are transitioning into 'Techcos,' diversifying their revenue streams as traditional voice and data revenues decline. Financial services are contributing to telcos' revenue and brand loyalty, particularly within unbanked communities. Companies like Vodafone, MTN, and Orange are leading the way by building strong fintech customer bases and even establishing Mobile Virtual Network Operator (MVNO) setups.

Enhancing customer experience

The convergence of banks, telcos, and insurance companies directly impacts customer experience. Strategies that include leveraging data, understanding usage-based patterns, and creating a collaborative ecosystem are crucial to retaining and satisfying customers. These strategies enable cross-banking services and tap into previously underserved markets.

Future trends and developments

Looking ahead, we can expect to see further evolution in the convergence of these sectors. Digital banking will continue to grow, and AI-powered customer service and support will become increasingly prevalent. Trends like usage-based banking and business model innovation will reshape the financial services industry, ensuring a customer-centric, dynamic future.

The convergence of banks, telcos, and insurance companies in the financial services sector is driven by digitisation, data proliferation, and innovative technologies. While it offers numerous benefits, including enhanced customer experiences and financial inclusion, it also presents challenges in terms of data security and regulatory compliance. As the convergence continues to evolve, businesses must adapt to remain competitive in this dynamic landscape. The financial services industry of the future will be marked by digitisation, cybersecurity, outsourceable functions, business model innovation, and technology investment. ■

Is tower sharing the answer to connecting Africa?

Africa's tower industry remains in its infancy, blighted by economics, poor supporting infrastructure, unreliable power, and complex regulatory hurdles. Is infrastructure sharing the answer to the continent's extensive connectivity challenges?

Africa's tower market is booming as the race to connect the entire population with 3G, 4G and even 5G is well and truly on.

"The towerco industry in Africa and the Middle East is relatively nascent compared to the rest of the world and therefore we see plenty of opportunity in these regions, particularly as mobile remains under-penetrated today and populations continue to expand," says Tom Greenwood, CEO, Helios Towers.

"The vast number of tower infrastructure providers that are firmly entrenched in Africa, with more to come as the region continues to go through iterations of telecom growth, can only mean one thing," opines Sumedha Tatke, director – marketing and product management, Tarantula. "Tower sharing is not just prevalent, but it is also a necessity to support sustainable and profitable growth of tower infrastructure across the continent."

Africa's tower landscape

Infrastructure sharing offers a whole host of opportunities including CAPEX and OPEX savings; improved network coverage, particularly in remote and rural regions; and reduced environmental impact by minimizing the need for redundant infrastructure and energy consumption.

"We expect to see tower sharing grow across Africa as mobile network operators seek to reduce capex and accommodate growing mobile data traffic levels, particularly as they move up the technology curve, from 2G to 3G to 4G," confirms Greenwood.

"Several multinational companies have been involved in promoting tower sharing across the continent and most MNOs are taking the opportunity to sell off these assets and then lease them at a relatively low OPEX," says Andrew Edmondson, chief executive officer, Insite Towers. "Some countries have made significant progress

in adopting these practices, while others are still in the early stages but seem likely to join in with the tower sharing model."

"Operators can minimize capital expenditure on tower infrastructure and focus on growing their networks as well as providing customer satisfaction," agrees Tatke. "Towercos can benefit from having multiple tenants sharing their tower sites and optimize both capex as well as risk of deploying expensive towers. They can provide value-added services such as power and security to provide an attractive offering to MNOs. The environmental impact is also a huge benefit, with shared infrastructure contributing to environmental sustainability by minimizing the need for additional towers and reducing the overall carbon footprint of the telecommunications industry."

The model can, in some cases, also lead to improved competition and market growth: "tower sharing can foster healthy competition by allowing multiple operators to provide services in the same area, leading to improved service quality and options for consumers," says Edmondson.

Across the continent, governments have a key role to play in advancing the tower sharing model. According to Edmondson, some may implement policies to encourage tower sharing as part of broader initiatives to enhance connectivity and promote economic development.

However, "regulatory frameworks may not always be conducive to efficient tower sharing. Policies related to infrastructure sharing and colocation can vary across countries and may pose barriers," adds Edmondson.

"With regulatory requirements and government policies varying greatly over multiple markets in Africa, towercos must spend extra efforts in ensuring that tower sharing is both profitable and sustainable," says Sumedha Tatke, director – marketing and product management, Tarantula. "Rural areas in Africa frequently cannot support easy access or power to remote areas, making it difficult to deploy and share telecom infrastructure. Moreover, with limited connectivity across rural areas, ROI on shared infrastructure may be lower. For MNOs, tower sharing can be a challenge in areas where they may risk losing network coverage or market share."

Despite the wealth of opportunities and benefits inherent in the tower sharing model, hefty challenges remain, limiting its adoption. Myles Freedman, business operations director, Extensia, notes that although in most African countries (38 as of January 2024), "the sharing of mobile telecoms infrastructure has been integrated into market regulations, this common-sense approach is slow to fully materialize on the continent, due in particular to the attachment of operators to retaining their dominant positions and fears of anti-competitive practices on the part of regulators, underlines a report published on December 9 by Ecofin Pro."

According to Freedman, the telecom operators present above all want to gain as much market share as possible and establish their domination. "Having a larger commercial footprint is for them the guarantee of a larger subscriber base and therefore greater revenue. As a result, sharing a few physical telecom sites is still tolerable, but allowing competitors to exploit its technical presence to reach previously exclusive market niches is more delicate, even for a fee. The revenues generated as the only player present in a market niche are more interesting."

Sharing is caring

Moving to shared tower infrastructure is no simple task, and a significant decision for CSPs; as such, careful consideration is essential.

According to Edmondson, ensuring compliance with local regulations and policies governing shared tower infrastructure must be one of the first steps in any colocation deal. It's vital that CPS understand any legal requirements or restrictions related to tower sharing in the specific regions of operation.

"First and foremost, the regulatory landscape in the market of operation should be supportive of tower sharing agreements," agrees Tatke. "The relevant guidelines need to be studied and licenses must be procured in order to move to shared towers."

A clear business model is another must, which adequately defines the strategy for shared infrastructure – is the focus cost savings, enhanced network quality, or broader coverage? Clearly defined SLAs and agreements are needed between the involved parties, with parameters established for network performance, uptime, maintenance responsibilities, and dispute resolution mechanisms.

This includes "assessing the redundancy and reliability of the shared infrastructure; and implementing backup and failover mechanisms to ensure uninterrupted services in case of equipment failures or other issues," says Edmondson.

"MNOs need to develop robust and sustainable framework agreements with the tower infrastructure owners with ironclad dispute resolution mechanisms, simple exit clauses, and future-proof commercials," adds Tatke.

Technical compatibility must also be assessed, given the different network equipment and technologies at play. As per Edmondson, "operators must ensure that shared infrastructure can support the diverse needs of multiple service providers without compromising network performance."

"CSPs also need to consider the technical feasibility of shared infrastructure, making sure that it supports the required and future capacity, fibre backhaul, and technology requirements of the network," highlights Tatke.

Other factors that must be considered include safety and security measures to protect the tower sites; well-defined operations; and maintenance procedures from both the CSP and infrastructure providers to maintain the health of the site, and community impact of the shared infrastructure. Engaging with local communities and stakeholders to address any concerns they may have regarding shared tower infrastructure, and the environmental impact, are key to success.

"Last but not least, a thorough cost-benefit analysis is required to assess the financial implications of shared tower infrastructure, ensuring that it is both cost-effective and generates ROI," says Tatke.

"Mobile operators typically obtain efficiencies when transitioning to a shared tower infrastructure provider," adds Greenwood. "This is because the removal of duplicate generators, power systems and steel saves time and resources, which ultimately drives a more efficient partnership – both in terms of financial cost as well as reducing carbon emissions."

However, CSPs must fully "understand the financial implications of shared tower infrastructure and evaluate the potential savings in terms of capital and operational expenses versus the costs of implementing and maintaining the shared infrastructure," shares Edmondson.

Developments in design

Tower design has advanced in leaps and bounds in recent years, and with infrastructure sharing taking the African continent by storm, designs are changing with the times...

Edmondson believes that the infrastructure sharing model impacts modern tower design by emphasizing cost efficiency, space optimization, regulatory compliance, technological adaptability, aesthetic considerations, streamlined maintenance, enhanced accessibility, security, safety, and interference management.

"Designing towers with these factors in mind can facilitate the successful implementation of infrastructure sharing among multiple service providers," says Edmondson.

"The newest technological advances in tower manufacturing and construction have progressed rapidly to support the multi-tenant tower sharing model," asserts Tatke. "To start with, towers are well equipped to support multiple antenna mounts, equipment cabinets, and transmission lines from each of the operator tenants."

Modern towers are designed taking into consideration not only the physical dimensions of the equipment to be hung on the mast, but also environmental factors such as wind load and terrain.

"They can easily accommodate different technology standards, frequencies, and equipment configurations used by various operators. This adaptability ensures that the tower can support the evolving needs of multiple tenants," continues Tatke. "Additionally, shared cabinets can also be provided to install on-ground equipment. However, robust control mechanisms must be implemented to ensure secure and conflict-free access by each of the tenants."

"Towers designed for infrastructure sharing should be scalable to accommodate the evolving needs of multiple operators," agrees Edmondson.

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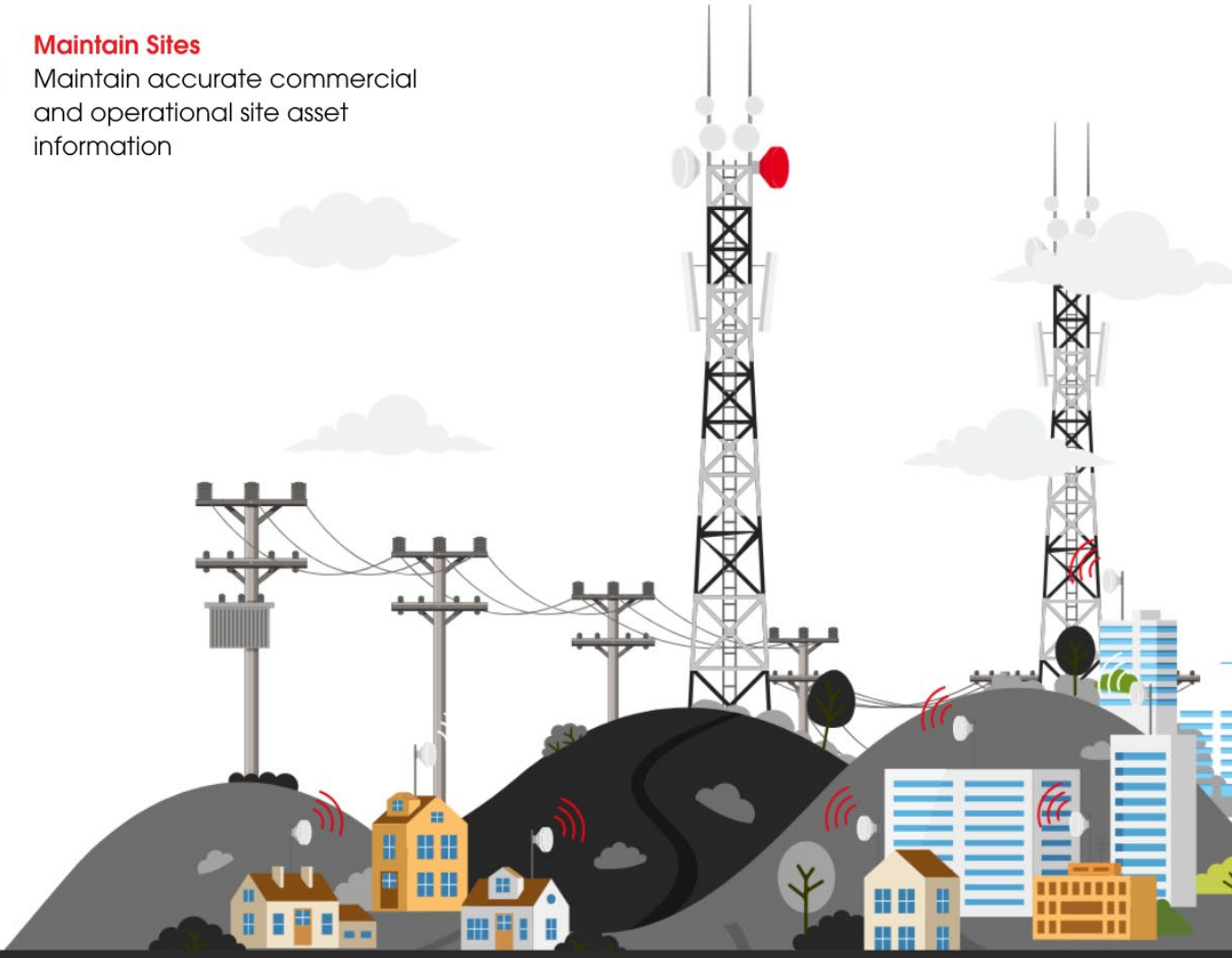

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"This includes considerations for additional antennas, equipment, and power requirements as technology advances."

One important tenet for shared towers and their design is the inclusion of interference management; designers must account for optimal separation between antennas to minimise interference between different operators' equipment, requiring stringent planning.

Edmondson explains how, "in some regions, regulatory authorities encourage or mandate infrastructure sharing to reduce environmental impact and avoid the proliferation of towers. Tower designs that facilitate sharing can expedite regulatory approvals."

The role of digital twins

While engineering design tools and structural analysis applications enable tower owners to design and build towers, newer applications such as digital twin software takes the tower fully into the digital world.

"These tools are able to record and capture actual tower data through drones, drawings, or Lidar, and render a digital, 3D view of the as-built tower," says Tatke. "They can identify equipment installed on the tower, simulate additions, moves, or changes of equipment on the tower, and provide an instant visual assessment of the tower capacity. When combined with centralized asset management systems, digital twin software can provide a visual source of truth for towercos and MNOs alike to identify tower sharing opportunities. This leads to a seamless and friction-free experience for towercos and MNOs to collaborate effectively on the shared infrastructure."

The implementation of digital twins can play a significant role in enhancing tower sharing opportunities throughout Africa.

"Digital twin technology will enable us and other tower companies to better understand the real-time structural capacity of each tower," says Greenwood. "This supports quicker roll-out of new colocations. It would also mean in-person site visits in advance of installation are no longer required."

Indeed, "advancing tower technologies like digital twins can lead to more efficient, flexible, and cost-effective tower management. This, in turn, can create a conducive environment for increased tower sharing opportunities, fostering collaboration and resource optimization within the telecommunications industry," adds Edmondson.

Providing efficient resource management, digital twins create a virtual representation of physical towers, allowing operators to monitor, analyse, and manage them in real-time. With this technology, says Edmondson, operators can optimize resource allocation, ensuring that each tower operates at its maximum capacity.

"Digital twin technology will support efficiency within the industry," agrees Greenwood. "For instance, it could help with predictive maintenance and imaging, which would be inputted directly into a digital database that more efficiently enables decision makers to view real-time information and make quicker decisions."

Notably for the tower sharing model, digital twins can facilitate interoperability between different network operators and technologies, making it easier for multiple operators to share the same infrastructure seamlessly. Meanwhile, enabling dynamic configuration to adapt to changing network demands means that tower sharing can be optimized by adjusting parameters such as antenna orientation, frequency allocation, and power levels based on real-time requirements.

Digital twins can also assist in ensuring regulatory compliance by providing a comprehensive overview of tower operations: "this transparency can streamline the regulatory approval process for tower sharing agreements," says Edmondson.

Will colocation meaningfully connect Africa?

Offering more efficient, cost-effective, and wider availability of mobile networks than ever before, infrastructure sharing heralds a new era for delivering meaningful connectivity to every African.

"Without a doubt, tower infrastructure is the answer to meaningfully connecting the continent, where the mobile penetration is only around 50%," declares Greenwood. "Tower sharing enables MNOs to rollout their coverage faster and more cost-efficiently than they could on their own."

However, Edmondson believes that "tower infrastructure sharing is a crucial component in improving connectivity in Africa, but it's not the sole solution. Africa faces challenges in terms of geographical diversity, economic disparities, and regulatory issues that require a multi-faceted approach."

"While tower sharing may not be the single answer to pan-African connectivity, it will play a crucial role to increase coverage and infrastructure across the continent and can help in minimizing some of the challenges," agrees Tatke. "Shared telecom infrastructure enables operators to grow at scale while realizing economical efficiencies by sharing the infra costs."

When it comes to delivering truly meaningful connectivity, engaging with local communities to identify the specific needs and challenges of different regions and stakeholders is crucial.

Here, digital inclusion programmes are required. "Addressing the digital divide requires not only physical infrastructure but also initiatives that promote digital literacy and affordable access to devices. Connectivity is only meaningful when people can effectively use the available resources..." shares Edmondson.

Shared tower infrastructure facilitates faster and more efficient network deployment, enabling operators to quickly extend their coverage, especially to underserved and remote/rural areas. But that's not the only benefit of

infrastructure sharing specific to meaningfully connecting Africa.

"It allows for the efficient use of resources such as land, power, and backhaul connectivity. This optimization helps reduce the environmental impact and makes infrastructure deployment more sustainable," explains Tatke. "Sharing towers reduces environmental impact, and it also provides a fail-safe mechanism to support load balancing in case of failures. Lastly, the cost savings associated with tower sharing can free up resources for additional investments in expanding network capacity and improving the quality of services, further enhancing connectivity."

While tower infrastructure sharing is an important aspect of improving connectivity in Africa, "a comprehensive approach that considers technological advancements, regulatory frameworks, community engagement, and digital inclusion programs is necessary for meaningful and sustainable results," concludes Edmondson. ■

Does Africa need 5G?

5G has long been touted as a key tool to levelling up connectivity on the continent, but is it all it's cracked up to be?

The digital divide remains a huge issue across Africa, with 74% of the continent's population remaining unconnected to the internet, according to the GSMA.

"The digital divide in Africa is staggering. The substantial capital expenditure required for 5G deployment means that the return on investment (ROI) is targeted primarily at major towns and metropolitan areas," says Paul Colmer, EXCO member, Wireless Access Provider's Association (WAPA). "Paradoxically, this exacerbates the digital divide, especially in outlying regions where the divide is most pronounced, widening the gap even further."

"While 5G's primary purpose is certainly not to expand coverage to areas that don't already have it, it doesn't have to be one or the other," reports Abdelkader Najja, managing director Middle East and Africa, BICS. "In some regions where connectivity is more established, 5G promises to open up huge commercial opportunities. Countries that depend on tourism, like Egypt for example, will need 5G to offer a seamless roaming experience to inbound travellers. Alternatively, regions with a strong enterprise or industry focus will benefit from 5G use cases across industries including logistics, agriculture, or security."

Select markets throughout Africa, including South Africa, Kenya, and Nigeria, are rolling out 5G networks because the customer bases can afford to purchase these services and finance the costs of building the necessary infrastructure.

"Most of the continent, however, is very price sensitive. In these areas, the goal remains bringing 3G and 4G networks online and giving citizens access to basic online services," says Vaibhav Magow, vice president, international division, Hughes. "It's important that reliable connectivity be available to anyone who wants it. Satellite plays a critical role in bridging this gap by backhauling cellular traffic to extend network reach to areas where cable and fibre cannot."

Money money money

The greatest potential obstacle to consumer 5G adoption and usage in Africa is device cost and availability. According to the GSMA, some 60% of the sub-Saharan African population lives in an area with mobile coverage, but does not use mobile internet, with device affordability the biggest concern.

"The affordability of mobile devices in some parts of Africa is an obstacle to getting paying customers on 4G networks. Unless the price of handsets drops, we expect this to hold true for 5G networks as well," says Magow.

Very recently we've seen an influx of suitable devices on the market at $100, however, this remains well beyond the means of the majority. Moreover, on top of the device cost is 10-30% extra in taxation and duty fees. Many are now calling for an exemption for low-cost devices to enhance uptake and support socioeconomic progress.

Additionally, "given the impact of device affordability on 4G adoption, device financing schemes will likely be necessary to improve affordability," adds Najja.

Meanwhile, from the MNO viewpoint, Najja reports that the greatest challenge is engaging in 5G investment where the ROI on 4G networks is still not covered: monetisation will be key for this process: "however, the decline in 2G and 3G connections creates an opportunity for network shutdowns and the transfer of resources to 4G and 5G networks."

"Cost is an issue for both 4G and 5G deployments, but the added costs associated with 5G is the biggest challenge," agrees Magow. "5G networks need significantly more cell towers compared to 4G networks. While this infrastructure can feasibly be built in big cities with a high density of people, the business case does not hold up in sparsely populated areas. Additional components, like new infrastructure designs and core networks, make 5G even more costly."

Additionally, "while 5G is technically more energy-efficient than 4G per byte, the power-hungry nature of 5G poses a significant challenge in regions with power shortages and frequent loadshedding, such as South Africa," says Colmer. And with no solution to grid brownouts and blackouts in sight, power sustainability is expected to remain problematic for the foreseeable.

Rolling out 5G across Africa will also be a big challenge in terms of building out the infrastructure "due to the size of the territory and 5G's higher

bandwidth meaning it has a shorter range than 4G and so requires multiple radio sites to support it," says Najja. "Since enterprises are the main drivers of 5G Standalone (SA) adoption across Africa, this means most 5G deployments will be focused on cities and densely populated areas. The rest of the landscape will operate on lower frequencies (reusing 2G/3G) and will offer different 5G coverage, but still 5G."

Notably, 5G requires a complete change in RAN and the core network: "non-standalone 5G requires an update to the Radio Access Network (RAN) and relies on fully deployed 4G networks, which presents its own set of challenges," explains Najja. "In contrast, 5G SA demands a complete overhaul of the core networks as well."

Spectrum, too, has proven a significant limiting factor, with most countries only just beginning to look at policy and spectrum auctions.

"The acquisition of high-demand International Mobile Telecommunication (IMT) spectrum has been a prolonged process, with operators incurring substantial costs," says Colmer. However, here things are looking up as "more spectrum auctions are anticipated in 2024; and the transition from terrestrial to digital TV has also facilitated the availability of the sub-1GHz band for 5G use."

5G – the next damp squib?

On the lips of almost every mobile industry professional, 5G is a true stalwart hot topic for operators and service providers. Although constructed around different architecture, 4G and 5G share more similarities than 4G does with 3G.

"5G is more of an evolution and while it offers more advanced connectivity, operators see a lot of additional benefits in more advanced network protocols," explains Najja. "It makes 5G networks more efficient with better network provisioning, resource allocation and advanced features like network slicing. This translates into greater cost efficiency which will help deliver faster return on investment for operators and should support further 5G rollout across the operator's region."

Further, from a market share point of view, 5G is a fantastic boon for operators: "in markets where there is significant demand for fast, low-latency connectivity, operators with 5G networks can afford to attract consumers with better average revenue per user (ARPUs) and become more profitable," says Magow. "In the enterprise segment, these operators will also be able to pursue new customers in the professional services vertical that depend on latency-intensive cloud applications to support the flexibility of remote work."

However, according to Colmer, "operators stand to gain relatively little by prioritising 5G over 4G, aside from retaining clients who still believe in the initial hype surrounding 5G..."

For Africa's consumers, 5G offers higher quality connections - more speed, more bandwidth, greater reliability: "while in some countries like South Africa or Egypt, there is a growing demand for this, the difference between 4G and 5G is far more significant when it comes to enterprises," says Najja. "We've already seen this play out in other markets around the world - with the benefits and use cases available to businesses driving most of the adoption and growth of 5G SA. Across Africa, 5G could support businesses with its higher data speeds and greater capacity. It will enable the deployment of large-scale IoT solutions and provide low-latency communications for real-time data processing in developing cities and regions. For enterprises and industries, this will mean more efficient operations and the unlocking of new applications and services."

Colmer, however, remains unconvinced about the achievements of 5G, both on the continent and abroad.

"Initially hyped as a revolutionary technology with claims of transforming self-driving cars, enabling remote robotic surgery, and serving as a catalyst for the Fourth Industrial Revolution (4IR), 5G has faced a reality check in recent years," opines Colmer. "Many of these grandiose claims are being exposed, particularly given the practical challenges associated with achieving multi-gigabit low-latency connectivity, which is primarily possible using mmWave spectrum (above 26GHz). However, this technology demands high population densities and small cell technology, making it impractical for vast regions. Even in advanced countries like South Korea, 5G has faced setbacks, and in South Africa, LTE remains faster than 5G in many areas."

Helping society grow

Whatever your view on the specifics of 5G, reliable access to the internet is crucial for creating more connected communities and advancing business growth.

"The narrative of 5G connectivity in Africa is largely driven by original equipment manufacturer (OEM) giants manufacturing the equipment," says Colmer. "However, meaningful connectivity, in my perspective, revolves around providing affordable access for all. 5G, given its current limitations and expense, may not be the most effective solution in bridging this connectivity gap."

Najja believes that meaningful connectivity is any technology that can connect communities and create opportunities, regardless of the generation of connectivity this is built on – and not necessarily 5G.

"5G will certainly be a part of this, but it will be a part," explains Najja. "Some markets across Africa will be better served currently by the older generation networks. Rather than getting lost in the weeds, it's important to remember the purpose of mobile technology and focus on this mission - to help societies grow stronger by connecting together."

For sure, satellite will continue to play a vital role in the connectivity ecosystem throughout Africa.

"To drive meaningful connectivity across the continent, three priorities remain," shares Magow. "For one, operators should look to build greater interoperability into their systems so that network deployment costs can shrink, allowing them to serve more customers. Secondly, governments should reduce fees and taxes associated with installing satellite ground terminals and provide ample funding for community WiFi programs. And finally, the International Telecommunications Union (ITU) should ensure there is enough spectrum available to support networks across the continent."

Colmer adds that "it's worth noting that as of now, there are no globally recognised success stories for 5G business cases. As we contemplate the role of 5G in Africa, particularly in the context of the existing digital divide, it's crucial to question the practicality and genuine benefits it brings to the continent."

Something worth considering considering the hefty 5G investments announced most days... ■

Paul Colmer

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Monetising 5G — lessons we've learned so far

Chantel Cary, director product marketing, Oracle

Five years on from the first commercial launch of 5G, the network has not exactly lived up to early expectations and the industry has collectively struggled to identify viable use cases and monetisation strategies, particularly for the consumer market. This may be especially disconcerting for those communications service providers (CSPs) who have yet to roll out the network.

According to GSMA Intelligence, only 27 operators across 16 markets in Africa have launched 5G as of September 2023, representing less than 5% of mobile network connections. Despite the general disillusionment with where the industry stands with monetising 5G, there are still some valuable lessons that we've learned along the way and that service providers should consider as they plan their deployments.

Many digital transformation and 5G monetisation programs are closely linked

While some may argue that 5G has been overhyped, I would argue that it's because the industry is intent on getting things right this time around. The world and market dynamics have drastically shifted since the rollout of 4G, and service providers are intent on learning from missed opportunities of the past. As such, we've seen over the better part of the last decade the industry entrench itself in a massive digital transformation effort. CSPs are sweating assets, consolidating IT, streamlining operations, and embracing new ways of working in a herculean effort to be more agile and better equipped to thrive in this digital era.

The ability to 'move fast' and adapt quickly is particularly important in the context of monetising 5G. Without a clear use case to drive the 5G monetisation strategy, CSPs must be prepared to try many different things (use cases, pricing strategies, business models, etc.) to see what works best for the customers in their market. This is where we often find that digital transformation and 5G monetisation efforts converge. At Oracle, we are often called upon to help our customers balance these two priorities – improving operations and the customer experience today with solutions and capabilities robust enough to support the monetisation strategies of tomorrow. We have also found that many service providers are undertaking substantial digital transformation programs that include consolidating and modernising IT systems like product catalogs, billing, and customer relationship management

systems while simultaneously exploring new 5G use cases and business models. Ultimately, these providers want to ensure that their IT investments can support their future monetisation strategies.

Success looks a bit different than expected

There are high expectations for 5G, including anticipations of the network spurring the next industrial revolution. While these are still very much a possibility, the slow pace at which 5G innovations have progressed thus far has caused the industry to become somewhat disenchanted. Be that as it may, there are still some successes achieved with 5G that we can tout, though they may be different than originally anticipated.

Foremost, I would be remiss if I did not mention the success of one of the early-identified use cases for 5G – fixed wireless access (FWA). To date, there have been more than 80 global deployments of 5G FWA, with the number expected to grow significantly in 2024. The technology's low barrier to adoption (i.e., no wires, availability wherever 5G mobile coverage is available) and its ability to drive usage of data-intensive services like online gaming and streaming back onto the network are just some reasons to be excited.

> "FWA is not the only 5G success. As we continue to see more 5G deployments around the world, new pricing trends and monetisation strategies emerge."

Service providers that have rolled out FWA are also starting to see its impact on key performance indicators. Early adopter T-Mobile reported 4.2 million 5G FWA subscribers at the end of Q3 2023, with an average revenue per account (ARPA) of $139.83, a 1.70% increase year-on-year. Additionally, in regions like North America and the Middle East, where 5G FWA is widely available, service revenue growth is outpacing subscription growth, offering a beacon of hope to service providers in markets where FWA has not yet been deployed.

Quality over quantity

FWA is not the only 5G success. As we continue to see more 5G deployments around the world, new pricing trends and monetisation strategies emerge. A recent study by Juniper Research, 5G Red Cap, and 5G Advanced anticipate that CSP-billed 5G revenue will increase by 32% in 2024 to nearly $400 billion. This is expected in part due to shifting 5G pricing and monetisation strategies. Today, a significant proportion of the CSPs that offer 5G do so at either no additional charge or price based on data tiers. This trend seems to be changing quickly as CSPs seek to differentiate their offerings with 5G-rich app bundles and speed tiers. Verizon myPlan, for instance, combines 5G data plans with several 5G-rich apps. Customers can choose from pre-defined plans tailored toward customer interests, such as plans for sports fans or video streaming enthusiasts. Alternatively, customers can build a bundle of their choice by selecting a 5G data plan and their apps of choice.

> "There are high expectations for 5G, including anticipations of the network spurring the next industrial revolution. While these are still very much a possibility, the slow pace at which 5G innovations have progressed thus far has caused the industry to become somewhat disenchanted."

Beyond bundles, a growing number of CSPs are now introducing pricing based on 5G speed tiers. Telenor Norway takes a hybrid approach to 5G pricing, offering data plans that are priced based on data and speed tiers. Telenor's customers can select between data plans that offer 5G speeds of 1,000Mbps or 200Mbps. Based on these trends, we expect pricing strategies to continue to evolve.

In Asia, service providers are differentiating themselves with plans that include a guaranteed network experience or quality of service (QoS) for specific customer segments. Three Hong Kong (3HK), for example, offers two 5G Signature Plans. The 5G Live Connect plan is geared towards content creators and includes unlimited 5G streaming with a prioritised network experience to ensure high-quality live streaming. The 5G Stock Pro plan is geared towards day traders and includes a guaranteed QoS with two times the network resources allocated to users, enabling real-time streaming of stock quotes. The plan also includes advanced analytics tools, real-time news and market commentary, and a personal investment portfolio.

African CSPs would do well to observe how others across the globe are differentiating their 5G offerings to enhance monetisation.

Innovation is still to come – will you be prepared?

Throughout Oracle's many conversations and engagements with service providers on the topic of 5G, the biggest lesson that we have learned thus far is that there is much more innovation still on the horizon, and CSPs must be prepared to capitalise on these emerging opportunities. The delay in the rollout of 5G standalone (SA) is to blame for the dearth of compelling 5G use cases the industry has been awaiting. As 5G SA deployments pick up in the next few years, we can anticipate the pace of innovation to accelerate with it. In the coming years, we can look forward to revolutionising use cases like the metaverse disrupting our lives and the way we work. We foresee telecoms service providers becoming industry service providers with 5G fueling monumental transformations across industries.

Moreover, we anticipate that the network, supported by operations and business support systems (OSS/BSS), becoming a platform for innovation. Industry initiatives such as GSMA Open Gateway and CAMARA APIs will play a key role in standardising this platform approach, making it easier for external parties to develop on top of the network. To this end, by opening up the network to external developers, co-innovation, and the support of B2B2X business models will create new revenue opportunities for CSPs. When coupled with new features of 5G SA, such as the ability to configure, monitor, (via the NWDAF) and charge for a guaranteed quality of experience (QoE), service providers can create compelling offers that drive incremental revenue growth.

Who knows what the future has in store for the industry – could we have foreseen the app revolution and subsequent digital economy sparked by 4G? What else does 5G have in store for us? Regardless of what the future holds, ensure your organisation is prepared to rise to the occasion by investing in IT, network, and cloud capabilities that will support a variety of business models, pricing, and monetisation strategies with the agility to adapt and scale services seamlessly on demand. ■

LNX Solutions deploys rugged LoRaWAN devices for sporting events

LNX Solutions provides self-hosted infrastructure as a service and tailored solutions to resolve IT problems in a creative and effective way. By building their own LoRaWAN network, LNX Solutions is enabling a wide range of IoT solutions across South Africa.

Connectivity during blackouts

Cellular coverage in South Africa can vary widely depending on the region. Local users can find it spotty and unreliable. Moreover, the country has been in an energy crisis for more than 10 years and is now in its sixth period of load-shedding – sometimes lasting many hours - in an attempt to ration power between the different electrical grid areas across the country and urban areas.

During these blackout periods, cellular coverage can be lost. LNX Solutions' ability to build and temporarily deploy LoRaWAN networks is highly beneficial and well-suited during these periods due to its low-power, high-range communication capabilities. Moreover, given South Africa's many harsh environments, it can be extremely challenging to use standard off-the-shelf technologies, as they are not able to withstand the local surroundings for any reasonable length of time.

Large scale asset tracking

LNX Solutions has been providing tracking solutions for prestigious large scale sporting events across South Africa, such as the Cape Town Cycle Tour, the RMB Ultra Trail, and the Old Mutual Double Century, since 2021. During these large-scale events, the health and safety of participants is paramount.

Ambulances and logistics crews are provided with LoRaWAN trackers so that if an emergency situation arises, with lives at risk, the nearest resources are dispatched from the control centre. By deploying LoRaWAN networks during these events, LNX Solutions can provide reliable and consistent coverage during the entirety of the event in challenging environments where traditional GSM technologies do not work.

After trialling a selection of different devices, LNX Solutions found that Digital Matter's Oyster3 and Yabby3 were the best in terms of both quality and performance. The LoRaWAN devices feature a versatile and open payload format, which facilitates integration into third-party platforms. The devices integrate seamlessly into LNX Solutions' custom-built platform, allowing LNX Solutions to build and deploy LoRaWAN networks and effortlessly monitor their devices remotely.

Given the challenging terrain, a rugged solution is required. As such, LNX Solutions has deployed Digital Matter's ultra-rugged Oyster3 and Yabby3, which are placed inside the vehicles and participants' backpacks. They allow logistic crews to locate participants when they call for assistance and the nearest ambulance sweep truck can collect them. The battery-powered devices have been optimised to send location updates over the LoRaWAN network every minute, providing full visibility of the participants as they progress through the events.

"The hardware design of the device is extremely important. We rent out the devices for the events, so they are going to get thrown around, go through water, and dropped, and then we're going to have to find them," said Matt Feinstein, CEO, LNX Solutions.

The robust IP68-rated housing of the Digital Matter's devices means that they can withstand being knocked around whilst out on the courses, an absolute must. Additionally, these compact and lightweight devices fit easily inside the packs of cyclists and runners without causing any strain or – critically for the athletes - competitive disadvantage. ■

Ukhozi Tracker upgrades vehicle tracking via non-steered SIMs

Established in South Africa in 2012, Ukhozi Tracker is a telematics company that provides vehicle tracking and recovery in case of theft or hijacking. Its mission is to provide vehicle owners with an effortless and reliable way to monitor and track their vehicles, ensuring peace of mind.

Ukhozi Tracker is currently operating in South Africa, Eswatini, and neighbouring Mozambique, with aspirations to expand across southern Africa in the years to come.

Expanding network coverage

Accordingly, Ukhozi Tracker has deployed solutions from Onomondo to expand business coverage in line with demand. This has been made possible with Onomondo's Network Marketplace.

With Onomondo's coverage of over 650 networks across more than 180 countries and non-steered SIMs, Ukhozi Tracker has increased device stability and accuracy.

Onomondo's SIMs enable automatic access to multiple networks within a single area based on signal quality. Ukhozi Tracker now has far fewer issues arising from load-shedding events, a common occurrence within southern Africa. Indeed, operators in South Africa deliberately turn off the electricity to areas or consumers in a regulated way, to avoid blackouts or brownouts during periods of excessive demand.

Despite the challenge of today's load-shedding environment, Ukhozi Tracker's partnership with Onomondo has provided exceptional service and an IoT technology stack that empowers the entire team. The new technology and networks enable the team to confidently expand the business into new regions and countries.

Remote troubleshooting

Before partnering with Onomondo, the Ukhozi Tracker team spent a considerable amount of time troubleshooting on the ground. This hampered efficiency since reported incidents did not always turn out to be Ukhozi Tracker issues.

However, with Onomondo's Traffic Monitor and Network Logs, technicians are deployed only when required, and since they were able to diagnose problems remotely, they can arrive at the scene prepared. Given the size of the landscapes involved, in some instances, it can take many hours to send someone out to the field to reach a single device.

Ukhozi Tracker utilizes the Onomondo platform to diagnose devices remotely. Instead of waiting for hours to understand the issue, technicians can diagnose any problems within seconds. Platform features like Traffic Monitor and Network Logs provide insights into their devices' network activity and facilitate instant remote debugging.

The platform features facilitate on-demand monitoring and troubleshooting, but issues outside the ordinary can arise. Through collaboration with the Onomondo Customer Success team, Ukhozi Tracker can resolve unique problems promptly and efficiently. The team's experience and guidance has helped Ukhozi Tracker save time in development and debugging and achieve business goals.

"My experience with Onomondo's customer success team is that they are always on the ball," said Bheki Madide, CEO and co-founder, Ukhozi Trackers.

More time to focus on business

With Onomondo as its connection provider, Ukhozi Trackers have access to not just reliable and dependable connectivity, but also expert support services capable of resolving specific challenges, in addition to a technological stack that allows them to remotely troubleshoot devices on demand.

"We have less problems with connectivity than before, and it gives us more time to focus on other important things," said Madide.

The collaboration has allowed the Ukhozi Tracker team to streamline its existing operations and plan for the future with more efficiency. Ukhozi Tracker intends to expand and scale its operation across more countries in the near future, with southern Africa as the primary objective. ■

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CSPs to gain from AI-enabled pricing software

The new Amdocs CPQ Pro, a next-generation configure-price-quote software, enables communications service providers (CSPs) to offer advanced enterprise services for all business types by leveraging generative AI capabilities.

Underpinned by Amdocs' pioneering telco-grade generative AI platform, amAIz, CPQ Pro aligns with Amdocs strategy of advancing generative AI co-pilot use cases across the communications industry, bringing reduced time to market, enhanced efficiency, and next-level customer experience through service differentiation across its products and services portfolio. This launch also builds on previously announced strategic partnerships with Microsoft and NVIDIA, further bringing generative AI capabilities into Amdocs' CES portfolio.

"We believe in generative AI's ability to transform the telecom industry and enhance experiences for enterprises and consumers alike," said Anthony Goonetilleke, group president of technology and head of strategy at Amdocs. "CPQ Pro is one of the industry's first generative AI-infused CPQ applications meticulously crafted for CSPs. It empowers our customers to capture and accelerate enterprise revenue opportunities, extending beyond just connectivity to encompass new digital and e-commerce services and network-based value-added services."

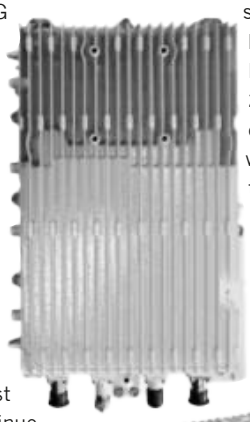
Designed specifically for CSPs, Amdocs CPQ Pro advanced capabilities include a telco-native generative AI co-pilot that delivers a streamlined enterprise sales experience, including the ability to easily create proposals with innovative solutions, optimized pricing, and summarized agreements with terms and conditions, reducing the overall sales process duration. Improved service delivery time and accuracy which may drive cost reduction, potentially resulting in enhanced profitability, bringing new, monetizable opportunities to life. CPQ Pro also offers partner ecosystem monetization, enabling CSPs to build compelling, partner-enriched B2B solutions, empowering sales teams to create unique offerings for customers; as well as certified pre-integration with sales, ordering, fulfilment and billing systems to deliver a seamless end-to-end experience.

Nebula246 radio now supports 2G devices

Baicells Technologies' Nebula246, a high-power outdoor radio, now offers cellular connectivity for supporting 2G user devices. The low-cost, compact Nebula246 radio offers an attractive platform for mobile operators to continue supporting their legacy 2G customer base while offering them an attractive software upgrade path to 4G/LTE.

Many regional markets still rely heavily on 2G wireless services as their critical lifeline. These legacy connectivity services are used by large numbers of wireless subscribers and will need to be maintained until an eventual upgrade to next generation services is made.

Globally, 2G devices remain popular and in widespread use due to their broad availability and low-cost. As a result, service providers continue to balance the need for network upgrades to the next 'G' against the need to continue offering a 2G wireless service that many of their wireless subscribers still expect. The Nebula246 offers a network solution with an attractive ROI by enabling operators to bridge the support of legacy 2G subscribers today while providing an attractive upgrade path when customers are ready tomorrow.



The Nebula is an all-in-one, easy to deploy platform that supports 40W total power for extended coverage range. The functionality is based on the 3GPP R12 standards supporting GSM bands 3 (1800MHz) and 8 (900MHz) to user devices. It can also be used as a cost-effective platform for offering IoT connectivity.

The radio offers a TR-69 interface for integrating into existing management platforms allowing for a smooth introduction into an existing operating environment. Redundant BSC (Base Station Controller) configurations are supported to maintain a high service availability. Longer term, the platform's 2G subscriber capacity will continue to increase and with just a software upgrade, the ability to support 4G/LTE connectivity. The Nebula246 is an economic friendly 2G onramp to 4G services and beyond.

IoT multiband combination antennas for 4G/5G/WiFi/GPS

Fairview Microwave has launched an innovative series of IoT multiband combination antennas, setting a new industry standard for vehicle, fleet, and base station connectivity.

Designed to serve the crux of reliable mobile networks, these antennas come equipped with elements that cover 4G, 5G, WiFi and GPS bands, all unified under a single radome. This advancement is particularly crucial for critical service providers such as emergency teams, first responders and fleet management. By facilitating a steadfast link between moving vehicles and dispatch centres, Fairview Microwave ensures seamless communication even in the most challenging scenarios.

"Our aim has always been to ensure unhindered communication, especially for those on whom countless lives depend, such as first responders and emergency service providers," said Fairview Microwave product line manager Kevin Hietpas.

The antennas come with FAKRA and SMA connectors with 17ft cable leads, making installations and connectivity more efficient. An IP69K rating validates its indoor/outdoor compatibility, ensuring durability and resilience against challenging environmental conditions. Additionally, its MIMO capabilities signify a superior data transmission rate, and the UV stabilized ABS construction ensures longevity, available in both black and white to cater to diverse aesthetic preferences.

With dedicated ports for 4G/5G, WiFi and GPS (supporting up to 10 leads), network configurations become both versatile and robust. The inclusion of GPS/GNSS with an LNA, amplified by a 26dB gain, ensures optimal location tracking and precise navigational support. Moreover, the indoor/outdoor IP69K rating is a testimony to its durability and adaptability.

"These IoT combination antennas fortify our commitment to powering the next generation of mobile network solutions," said product line manager Kevin Hietpas. "Our aim has always been to ensure unhindered communication, especially for those on whom countless lives depend, such as first responders and emergency service providers. This product echoes that sentiment."

VSG supports HF wireless communications

Keysight Technologies has launched a new compact, four-channel vector signal generator (VSG) capable of signal generation up to 8.5GHz with 960MHz of modulation bandwidth per channel.

The N5186A MXG is the next-generation high-performance VSG in Keysight's X-Series signal generator portfolio, offering the multiple, individually complex signals needed for dense wideband multichannel applications.

Evolving technologies in wireless communications and radar applications demand higher frequency coverage using complex modulation schemes like MIMO, beamforming, and multiplexing to maximise data throughput. Testing these applications requires signal generation instruments that maintain excellent modulation quality when working with greater bandwidths. To achieve higher frequencies, greater bandwidths, and more complex modulation schemes, network and design engineers typically need more bench space for additional test equipment and fixtures.

The Keysight N5186A MXG addresses this challenge by simplifying complex setups with reduced external connections and up to four channels in a compact 2U form factor. As the world's first signal generator to feature an embedded reflectometer, the N5186A MXG delivers extremely accurate signals to the device under test (DUT).

By providing consistent and repeatable results, the N5186A MXG vector signal generator is an ideal solution for a broad range of applications. The MXG's custom DAC application-specific integrated circuits (ASICs) use DDS to deliver precise signals to minimise distortion and meet the evolving standards for component and module design. In addition, the embedded reflectometer expedites the setup process to correct for the match of the DUT, enabling a faster time-to-test.

World-first commercial release 17 5G RedCap modem-RF system

Qualcomm has launched the world's first commercial release 17 5G RedCap modem-RF system. The Snapdragon X35 5G Modem-RF System will enable the expansion of the 5G ecosystem by enabling global mobile network operators and OEMs to enable new devices, form factors, and experiences.

The Snapdragon X35 brings a new class of 5G that bridges the complexity gap between high-speed mobile broadband devices and extremely low-bandwidth internet of things (IoT) devices. RedCap will enable smaller and more cost-efficient 5G devices and provide longer battery life, thanks to their reduced complexity.

"5G RedCap is one of the primary pillars of 5G Advanced and is key to the evolution of 5G. It bridges the capability and complexity gap between the extremes in 5G today, and can enable a broader set of devices and services as well as enhance system performance and efficiency," said Gautam Sheoran, vice president and general manager, wireless and broadband communications, Qualcomm Technologies, Inc. "We're pleased to deepen our collaboration with global mobile operators and OEMs to advance the 5G ecosystem, enabling a new and wide range of premium- and entry-level use cases."

Commercial mobile devices powered by Snapdragon X35 are expected to launch by the first half of 2024.

Septentrio's smart antennas enable machine automation for heavy industry

Septentrio has launched new smart antenna for machine automation and control in construction, precision agriculture and logistics.

The AntaRx smart antenna is enclosed in a ruggedized housing, can handle high levels of shocks and vibrations and is ready for operation in harsh industrial environments. This multi-frequency receiver delivers high-accuracy RTK positioning down to the centimetre level. Equipment manufacturers and system integrators can benefit from the versatile offering including INS (Inertial Navigation System) integration, dual antenna mode, and 4G cellular communication.

"AntaRx combines the renowned positioning quality of Septentrio with a high-quality antenna, in a rugged and compact housing for simplified installation. The product targets industrial applications such as construction and mining, offering a high degree of robustness validated through extensive testing against industry standards," said Silviu Taujan, product manager at Septentrio. "AntaRx is available in several configurations, either as a GNSS smart antenna or as a GNSS/INS smart antenna system, integrating an industry leading IMU (Inertial Measurement Unit)."

Septentrio's full machine control GNSS receiver portfolio integrates Septentrio's GNSS+ algorithms, including advanced multipath mitigation, which allows uninterrupted operation in challenging conditions such as near high structures or machinery. High update rate and low latency ensure accurate plan execution during fast movement or rotation.

Look out for...

5G drones - the future of critical communications

In the wake of a disaster – be it natural or manmade – restoring communications is critical to relief and recovery efforts. While terrestrial technologies are often damaged or overloaded during such times, satellite has long proven a reliable (if pricey) alternative.

Today, a new option is on the horizon. High speed communications delivered by unmanned aerial vehicles (UAVs) or drones are under development across the world for application in disaster recovery, defence, government & military, utilities, agriculture, etc. The 'drone in a box' architecture features self-deploying drones that can be operated remotely, fulfilling their mission, before returning to the box to recharge.

One such company making great strides in this area is Nokia Drone Networks, which at the end of 2023, achieved the first FCC-certified 5G-connected drone-in-a-box solution with Rohde & Schwarz in North America. This represents a significant step in providing a proven, industrial-grade 4G/5G drone solution built for reliable Beyond Visual Line of Sight (BVLOS) operations.

Highly resilient connectivity is critical to remote drone operation, real-time streaming of data collected during a drone mission, and BVLOS operation using a large set of 3GPP spectrum bands. Research and development efforts have pushed the boundaries in terms of RF design and connectivity performance. Innovative features such as full network connection redundancy, multi-operator support and hot failover also feature.

Nokia and Rohde & Schwarz originally joined forces in 2022 with an MoU to embed Rohde & Schwarz QualiPoc 4.9G/LTE and 5G network measurement capabilities into the Nokia Drone Networks platform. Extending the cooperation to device testing and certification, Nokia collaborated with Rohde & Schwarz to complete the FCC's rigorous requirements for R&D component testing. The R&S CMX500 radio communication tester from Rohde & Schwarz was utilised in the Nokia Bell Labs Global Product and Compliance Laboratory for extensive radiated and conducted emissions testing.

Telenor installs Norwegian Polar Institute's base station

Telenor has installed a base station in Antarctica at the Norwegian Polar Institute's research station in Troll.

The base station, which Telenor claims to be the world's southernmost, is operated from Svalbard. The Norwegian research station, Troll, in Antarctica, has now gained extensive coverage in the surrounding area.

"There has been a fruitful dialogue with the Norwegian Polar Institute regarding the possibilities offered by a base station in Antarctica," said Telenor Svalbard in a statement. "Telenor, with its presence in Svalbard, has extensive experience in building and operating mobile networks in Arctic regions. Mobile coverage is crucial for two Arctic polar regions. For research environments, it is particularly attractive to be able to use mobile technology in the collection of data from fieldwork. Mobile coverage also provides new opportunities for research and environmental monitoring in Antarctica."

In addition to close collaboration with the Norwegian Polar Institute, Telenor Svalbard also collaborates with Kongsberg Satellite Services (KSAT), responsible for the communication service from the Troll station.

KSAT owns and operates TrollSat, one of the world's most important ground stations for collecting data from, among other things, climate, and environmental monitoring satellites, which is co-located with the research station on Troll. KSAT is responsible for satellite-based information being sent out from Troll to users all over the world.

"Full mobile coverage on Troll also benefits our users and simplifies communication with the outside world. We are therefore pleased that the satellite link from Troll can also be used for mobile phone traffic," said KSAT in a statement.

Movistar Colombia advances IoT operations with Cat M1 network

Movistar Colombia (Telefonica) has deployed a dedicated Category M1 (Cat M1) network through its Movistar Empresas unit, which enables companies to connect their Internet of Things (IoT) devices with greater energy efficiency, operating at low power and long range.

Telefonica Colombia offers this technology to traditional Machine to Machine (M2M) connectivity customers, in combination with its Kite platform. Kite is a managed IoT connectivity platform that allows companies to control and monitor their connected devices in real-time, from anywhere in the world.

The CAT-M1 network is designed for massive connections of industrial devices, ensuring the efficiency and technical reliability required for M2M connections in digital transformation initiatives. Use cases for this network include fleet management, telemetry, intelligent lighting, precision agriculture, intelligent metering, and smart cities, among others.

"The development of the CAT-M1 Movistar network is the evolution of communications between M2M devices, over the mobile data network, enabling the massification of the IoT. The CAT-M1 network covers the needs of companies in different sectors, since it allows the transfer of small data packets with low latency, coverage in areas of difficult access, savings in device costs and longer battery life, contributing to the operational efficiency and sustainability of our customers," said Movistar Empresas in a statement.

Movistar Empresas has over 6 million IoT connections in Latin America and extensive experience in IoT services globally. Colombia is the second country in the Hispam region to deploy this technology as part of Telefonica's evolution plan.

BSNL to swap out Tamil Nadu copper for fibre

Bharat Sanchar Nigam Limited (BSNL) has launched the 'BSNL Mission Mode Fiberization' project in Tamil Nadu with the aim of transitioning all current copper-based landline and broadband connections to high-speed fibre connections within six months.

As part of this initiative, around 1.2 lakh copper connections in the Tamil Nadu circle will be converted to fibre.

BSNL customers will receive a complimentary optical fibre modem and will not incur any installation charges. They can also retain their existing telephone numbers, ensuring a seamless transition to the fibre network.

BSNL said it is offering wired line internet services on Fiber to the Home (FTTH) technology in Tamil Nadu with high-speed unlimited data ranging from 30-300Mbps, along with unlimited voice calls, and Quality of Service (QoS) to suit diverse customer needs across business, commercial, institutional, and residential sectors. Additionally, BSNL also offers value-added OTT services to its customers.

With around 4.6 Lakh FTTH connections, BSNL has successfully extended its network to every corner of Tamil Nadu, including remote rural areas and challenging terrains. By transitioning from copper-based to fibre service, data services will significantly improve for BSNL customers with speeds ranging from a minimum of 30-300Mbps, compared to the previous 10Mbps.

Telstra boosts King Island's mobile connectivity tenfold

Telstra has announced the completion of a major network upgrade to King Island's mobile network infrastructure, providing a significant boost in connectivity.

This upgrade, done in partnership with Ericsson and claimed by Telstra to be a world-first, will bring close to a tenfold capacity boost for the island's community with the launch of an over-water microwave telecommunications link with a throughput capacity of 9.8Gbps and 99.99% availability.

The upgrade involves a 116km microwave link deployed across the Bass Strait from the Australian mainland to King Island's Cape Wickham — the longest over-water link of its kind in Telstra's national mobile network. With this achievement, Telstra claimed to have achieved the world's longest 10Gbps microwave link with Ericsson.

This project, featuring the deployment of long-haul microwave technology, provides essential backhaul support for the deployment of 5G on the island, further helping Telstra in expanding its network and delivering better connectivity for regional Australia.

With this deployment, consumers and users on King Island will benefit from increased mobile coverage, efficiency, capacity, and data speeds, along with greater network resilience, according to Telstra.

The project was funded through a joint investment of AUD9.8 million by the Australian Government, Telstra, the Tasmanian Government, and the King Island Council. It was announced in 2021 to deliver infrastructure to rural and regional communities.

"Improving the capacity of backhaul connectivity to our sites, particularly in challenging extremities of our network is always a key focus. Delivering greater mobile connectivity and network capacity to King Island is just the latest step in our commitment to improve our options for our consumer, small business and enterprise customers living or working across the country," Telstra said in a release.

Nokia and Telenet enhance services at Port of Antwerp with NaaS programme

Nokia and Liberty Global have announced a partnership in which Liberty Global's Belgian subsidiary Telenet utilizes Nokia's Network as Code platform with developer portal to enhance the operational efficiency and services offered at the Port of Antwerp.

To support the creation of new network use cases for the port, developers use Application Programming Interfaces (APIs) and Software Development Kits (SDKs) – accessed via Nokia's Network as Code Platform with developer portal – to obtain network functionality and data. This access enables developers to build new applications for use cases that they can sell to their own customers.

In a recent trial at the port, the two companies demonstrated how Liberty Global via Telenet's 5G standalone network with slicing capabilities can allow remotely located captains to operate vessels more safely and efficiently, supported by real-time data made available through ultra-low latency network capabilities and zero-touch automation.

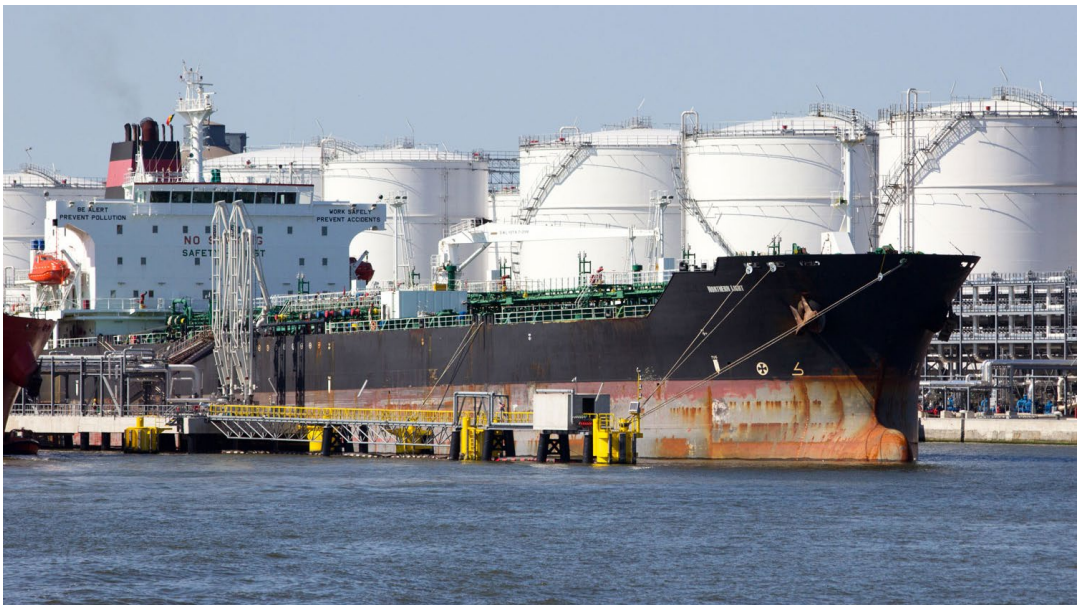
The trial – which represents a part of Liberty Global's Network as a Service program (NaaS) - was conducted with Belgian partners Seafar NV, a shipping entity, and imec, a research and innovation hub for nanoelectronics and digital technologies. The trial used Nokia's Network as Code Platform with developer portal, in combination with imec's edge application middleware that bridges the gap between the vessel's real-time requirements and the 5G network. These were integrated into Seafar's Shore Control Center to address its need for reliable, high-quality, low-latency connectivity, which existing commercial networks do not provide.

Dynamic geofences using high-definition cameras and sensors onboard vessels, which will be combined with AI and machine learning algorithms in future, were deployed by imec to identify areas where situational awareness is most crucial. As vessels approached areas that require increased situational awareness, network capacity was automatically prioritized to guarantee high-quality live video feeds. This allowed Seafar's captains to manoeuvre vessels through these areas safely, without having to slow down or wait unproductively during loading and unloading, improving efficiency, and reducing fuel consumption. It also enabled them to work across multiple vessels at the same time.

The use of NAAS technology helps create an ecosystem which integrates standardised CAMARA APIs on imec's applications. This allows an effective and reliable use of network resources, which are available on demand, while also avoiding the need to deploy a dedicated and expensive mobile communication infrastructure. By leveraging a 5G standalone network built in the cloud, customers only pay for what they need, while also benefiting from a granular level of control offering maximum flexibility.

"I am very pleased that Nokia is expanding the possibilities of bringing simplified network capabilities to developers at the Port of Antwerp that can be translated into new applications for their customers. We look forward to expanding our collaboration with Liberty Global and delivering on our strategic commitment to leverage the broader B2B digitalization ecosystem at the port," said Shkumbin Hamiti, head of network monetization platform, cloud and network services at Nokia.

"This multi-faceted trial simultaneously leverages the power of 5G standalone, cloud, edge computing and AI-driven computer vision applications. 5G-era networks are rich in capabilities that can now drive improvements to customer experiences for both enterprises and consumers in ways that were simply not possible just a few years ago. The framework we have developed in partnership with Nokia will give us the opportunity to access a large untapped market here, plus realize the development of even more use cases in many other sectors beyond shipping," said Madalina Suceveanu, managing director mobile & cloud technologies, at Liberty Global.



Vodafone Idea's O-RAN trial in final phase

Mavenir is in the advanced pilot commercial phase of deploying Open-RAN for Vodafone Idea (Vi).

The deployment started in September 2023 and is now in the advanced phase. Mavenir's O-RAN deployment is covering key launch sites and is also carrying live commercial traffic of Vi. The operator will partner with Mavenir for a large-scale deployment also.

With this pilot, Mavenir has initiated the first O-RAN-compliant deployment into Vi's network, utilizing the N78 and N258 mmWave spectrum bands and B1 supporting the NSA architecture.

"We are proud to be demonstrating our leadership in exploring next-generation radio solutions that can deliver sustainable advantages to our business and to our customers," said Jagbir Singh, chief technology officer, Vodafone Idea (Vi). "This Open RAN deployment, delivered through Mavenir's innovation and joint technological strategic initiatives, is in sync with our technology transformation roadmap and enriched vendor ecosystem. Working in partnership with solution of Mavenir, we see a major role ahead for Open RAN technology in delivering the network enhanced capabilities, better TCO and open interfaces that will push the industry forward in new ways."

"Vodafone Idea is leading the way in bringing the clear benefits of Open RAN technology to the Indian market, which is characterized by unique challenges and opportunities, including its very large subscriber base, high level of population density and diverse deployment environments. Mavenir is actively engaged in building out the ecosystem that will deliver next-generation Open RAN technology platforms enhancing customer experience across India – powering greater growth, flexibility, customisation and customer-focused innovation, while driving down CapEx and OpEx for operators," said BG Kumar, president access networks, platforms, and digital enablement at Mavenir.

Orange and MASMOVIL cleared for JV

Orange and MASMOVIL have obtained clearance from the European Commission to combine their operations in Spain, forming a 50-50 joint venture (JV) co-controlled by Orange Spain and MASMOVIL (LORCA JVCO).

This deal will create a single operator with the scale to invest in 5G and fibre, benefiting consumers and businesses across Spain. The transaction does not include TOTEM Spain and MASMOVIL Portugal.

The combined operator would serve over 7.3 million fixed customers, over 30 million mobile service users, and over 2.2 million TV customers. Mobile services in Spain include prepaid, contract, and mobile broadband voice and data packages.

The combined entity will manage network and IT assets to ensure nationwide coverage in FTTH and 4G/5G. Financially, the venture is projected to generate revenues exceeding Euro7.4 billion, with an EBITDAaL of over Euro2.3 billion and an enterprise value of Euro18.6 billion.

As part of the merger under a remedy package, 60MHz of spectrum assets will be divested to Digi, pending approval from the Spanish Government, and an optional national roaming agreement at market conditions will be proposed.

Orange and MASMOVIL plan to complete the transaction by the end of the first quarter in 2024. Until all closing conditions are met, both companies will continue to operate independently.

With its FTTH coverage in Spain, reaching over 29 million marketable households, and 3G, 4G, and 5G mobile networks covering 98.5% of the Spanish population, MASMOVIL employs a hybrid strategy combining its own infrastructure with that of third parties. MASMOVIL has also launched 5G services, now available in over 2,200 cities across Spain, serving close to 16 million customers by the end of the first nine months of 2023.

Tele2 Latvia achieves full 5G coverage

Tele2 Latvia announced that its 5G network coverage is available in all municipalities across the country with the last county, Varaklani, seeing a 5G base station installed in February.

By continuing its 5G network expansion, the company plans to have around 600 5G base stations operating on its network by the end of 2024. Tele2 Latvia provides 5G services on the 700MHz and 3.5GHz bands. Tele2 secured the right to use 25MHz of spectrum in the 3.5GHz band for 20 years.

Most 5G base stations are currently deployed in Riga and other large cities and regions of Latvia, where the network load is higher. At the same time, other regions of Latvia are also actively being developed where 5G base stations are being installed at the 700MHz frequency, which allows wider coverage.

"To some extent, this is a significant moment because the Tele2 5G network is available in all regions of Latvia. Of course, 5G coverage differs in regions, but 5G is available in the centers of regions and larger parishes," said Tele2 in a release. "We have started this year very actively, already installing 20 new 5G stations, both in places where the 5G network was already working and in places where it is now available for the first time."

Tele2 Latvia also reported an 18-fold increase during the year in the amount of data consumption by consumers on the 5G network. The company said some 170,000 5G devices are already operating on its network.

Transatel bolsters connected cars with data centre capacity from Telehouse

Telehouse has partnered with Transatel (a subsidiary of NTT DATA) to bolster the digital infrastructure for Transatel's expanding connected car business.

The collaboration will see Telehouse supply extended data centre capacities to aid Transatel in rolling out VoLTE and TG SA services, key to its connected car segment.

Transatel will deploy its services at the Telehouse TH3 Paris Magny campus due to its strategic location, technical capabilities, economic advantages, and commitment to sustainability.

Telehouse's data centres feature next-generation design, extensive connectivity, and a responsible approach to energy consumption.

The long-term partnership agreement is the first step in developing a relationship that will see Telehouse provide reliable and scalable services and support Transatel's full IoT and connected business.

"Colocation effectively serves IoT framework needs by delivering unrivalled connectivity to leading cloud providers and peering options, helping to ensure instantaneous access to data from sensors that connected cars need," said Sami Slim, chief executive and general manager for Telehouse France. "We're pleased to provide a scalable platform for Transatel to push forward the connected car industry. Transatel is well known for its ability to simplify international IoT deployments. Telehouse has a global network of highly connected data centres that are designed to provide the infrastructure and connected ecosystem to support IoT services. We are delighted to support businesses like Transatel and provide them with a sustainable and scalable home for their innovative business models."

"Transatel is scaling up its network infrastructure to support massive international IoT and IoV (Internet of Vehicles) deployments in the coming years. After almost 20 years of collaboration, Telehouse remains one of the trusted technology partners that support our global expansion." said Jacques Bonifay, CEO and cofounder of Transatel, on the groundbreaking new deal with Telehouse.

SmarTone deploys automated assurance to optimise performance

SmarTone has deployed Infovista's automated assurance solution, Ativa, across its 3G, 4G, 5G, and IMS networks, reportedly transforming customer experience and network performance.

SmarTone wants to deliver consistent and exceptional experiences to its customers and sought a solution to elevate service quality and overall customer experience while driving daily operations with a customer-centric approach. Infovista's Ativa solution was chosen for its comprehensive assurance capabilities and future-proof technology, highlighted by its cloud-native, virtualised, and open architecture.

Ativa is designed to provide SmarTone with enhanced monitoring and troubleshooting capabilities, offering insights into voice and data, including intelligence on OTT applications delivered over mobile and 5G FWA broadband.

The Ativa solution has facilitated the delivery of customised solutions aligned with SmarTone's specific requirements, while its support for Open APIs has enabled seamless integrations with third-party systems.

Infovista reported that the implementation of the Ativa Solution has resulted in tangible benefits for SmarTone, including the reduction of Mean-Time-To-Repair (MTTR), minimising trouble tickets, and significantly improving overall Customer Experience (CX), Net Promoter Score (NPS), and customer retention rates. The solution has also optimised team efficiency by reducing time and effort spent on operational processes.

Q&A

Jeremy Potgieter, regional director Africa, Eseye

Who was your hero when you were growing up?

I was a huge fan of Namibian sprinter, Frankie Fredericks. He was a trail blazer who combined considerable athletic ability with an unmatched work ethic, leading him to have an impressive career.

Going from winning the silver in 1992, to placing third 12 years later in Athens is a remarkable achievement, especially considering he set a world-record for 200m along the way. Fredericks demonstrated that anyone who works hard can belong, regardless of your background.

What was your big career break?

It would have to be my first opportunity to work in the technology sector as a support desk agent.

This entry level experience gave me not only a good understanding of the technology concepts, but also a first-hand contact with customers to address their real world problems directly.

You learn the importance of empathy, get hands on experience on pain points and issues with user experience, and learn about the product in a way that theory alone does not give you. This in turn provided me with a true appreciation for good customer service, which has stayed with me throughout my career.

What did you want to be when you were growing up?

I wanted to be a fighter pilot. Anyone who has seen Top Gun or read about The Battle of Britain will know the outsized role these people can play, and there is a lot to be learned from military strategy. Colonel John Boyd, one of the best fighter pilots in history, famously invented the OODA loop (observe-orient-decide-act), a model that is transferrable to technology business.

If you could dine with any famous person, past or present, who would you choose?

It would have to be Cat Stevens for me, I find his life story fascinating. He grew up in an immigrant family on London's West End, listening to musicals from around the corner on Denmark Street. Then he went on to nearly die of tuberculosis, have a spiritual reawakening, become a major star who sold over 100 million records, convert to Islam and step back from the music he was famous for. There is definitely too much there to get through over dinner, but I would like to give it a shot.

What's the best piece of advice you've been given?

Listen to understand, not to respond.

All of the best leaders are careful listeners in my experience, even those with larger than life personalities. We can learn something from everyone we meet regardless of our age or experience, and that requires listening actively.

Too many people cue up their response while others are talking, rather than giving them their full attention.

> "I wanted to be a fighter pilot. Anyone who has seen Top Gun or read about The Battle of Britain will know the outsized role these people can play, and there is a lot to be learned from military strategy."

> "I would love to start a field hockey academy. Since an early age, I've been captivated by the spirit of field hockey. The exhilaration of the game, the camaraderie with teammates, and the thrill of competition have not only shaped my character but also given me the determination to excel both on and off the field."

If you had to work in a different industry, which would you choose?

I would have to choose sports management. Sport has been a passion of mine from a young age and I'm fortunate enough to be able to pursue it alongside my professional life.

There are a lot of transferable leadership lessons, including around how to build, manage and contribute in a team environment. Camaraderie is particularly important in sport and in business, and I have transferred a lot of sporting lessons to my career.

It would be interesting to see whether I could do the same in reverse if I went into sport full time.

The Rolling Stones or the Beatles?

The Stones all day. They're technically superior musicians. The Stones draw from Blues while The Beatles are closer to Pop music.

What would you do with £1 million?

I would love to start a field hockey academy. Since an early age, I've been captivated by the spirit of field hockey. The exhilaration of the game, the camaraderie with teammates, and the thrill of competition have not only shaped my character but also given me the determination to excel both on and off the field. Just as Frankie Fredericks has given back to the sport he loves as an administrator, I would like to do the same for my favourite sport.

What's the greatest technological advancement in your lifetime?

The switch from dialup to dedicated data bearing access types like 2G, 3G and so on. For over a century we were only able to send data equivalent to the human voice across long distances. In a few short decades we have gone to 5G, where it's possible to download the entire library of congress on a mobile connection in less than a day. We are still seeing the technological possibilities that result from this emerging, which makes the sector an extremely interesting one in which to work. ■

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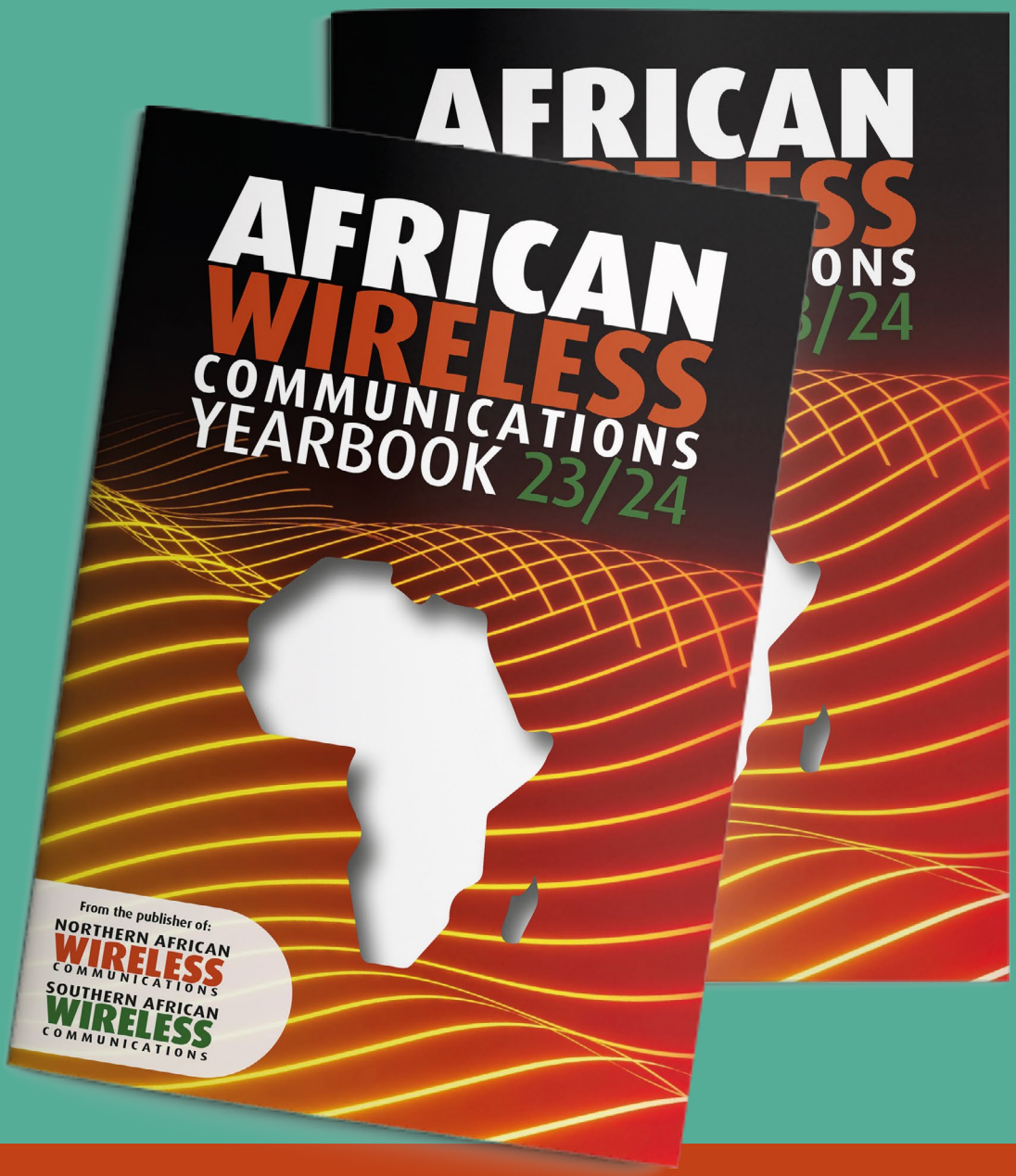

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