For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

SEPTEMBER/OCTOBER 2022 Volume 27 Number 2

- More money more problems: mobile money fraud
- Five must-knows on conversational commerce
- Streamlining tower creation with AI

Toni Pellegrino talks about the future of networks with no boundaries

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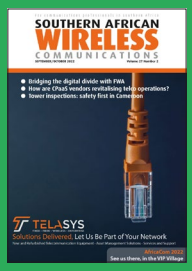

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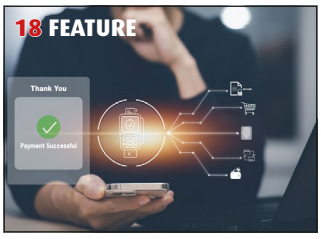
CONTENTS



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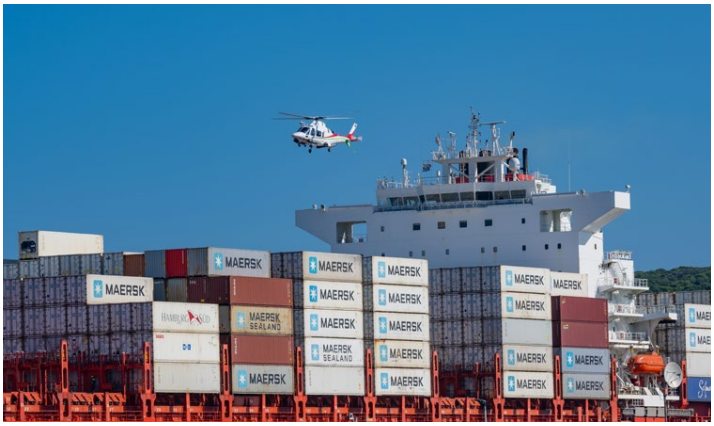
MTN building 14 private 5G networks in South Africa



MTN is currently building private 5G networks for a total of 14 companies in the mining and ports sectors within South Africa. In addition to providing data and voice services, the 5G private networks will support cloud computing, improved cybersecurity and unified communications.

"We are far ahead of many in terms of private network on the 5G side. We see this as a huge growth area," said MTN's CEO Charles Molapisi. "It's connectivity first; then we put [on] layers of other services. Any form of communication will be deployed. Globally, companies are moving aggressively into this."

MTN currently delivers 5G coverage to 20% of South Africa's population and 38 cities, with the aim of reaching 25% by the end of this year.

The company acquired spectrum in the 3.5GHz band during a spectrum auction in March. MTN plans to acquire additional spectrum during the second phase of Icasa's auction, which is expected to occur once the digital TV migration has been completed.

Starlink to connect Zambia

Zambia will be connected to fast internet services within the next six months after the government confirmed SpaceX's satellite internet constellation Starlink would launch operations.

Following a meeting with Starlink representatives, Zambian President Hakainde Hichilema said the company will soon offer its services in the country "in line with the Zambian government's quest to embrace internet revolution."

The Zambian government has prioritised internet connectivity and the need to address connectivity issues to enable Zambia to secure a fully functional e-government system.

"We expect that in under six months, we will have universal internet in the country. We are working around the clock to ensure that facilities such as technology are put to greater use so that jobs and business opportunities can be realised and this was what characterised our conversation with Starlink head Chad Gibbs," said Hichilema.

"We are looking forward to providing Starlink services to the people of Zambia," said Elon Musk, SpaceX founder and CEO.

In May this year, Mozambique and Nigeria became the first countries to grant regulatory approval for Starlink in Africa in a bid to ensure high-speed internet connectivity, especially to extend the service to underserved rural areas.

Vodacom South Africa goes green

Vodacom South Africa's Midrand campus is being equipped with solar photovoltaic (PV) panels as part of a sustainable strategy around energy management. The solution will allow Vodacom's headquarters to generate around 10.8GWh of its own clean power every year, around 21% of the HQ's power consumption, reducing its reliance on coal-generated electricity from the national grid.

"Everything we do is driven by our purpose to shape a digital society that is not only inclusive but sustainable, too. Reducing our environmental impact is woven into this purpose. That's why we've committed to halving our greenhouse gas (GHG) emissions by 2025 while carrying out our important work of connecting all citizens for a better future," said Sitho Mdlalose, managing director, Vodacom South Africa. "Vodacom South Africa is fully committed to our country's sustainability journey. We're doing our part to support government in its transition to a low-carbon economy under the Paris Agreement, which calls for countries to reduce GHG emissions to keep global temperatures in check, continues Mdlalose."

The solar system should be completed by March 2023. Phase one of the installation will deliver an energy generating capacity of 2MWp, increasing to 6.5MWp after phase two and three of the project rollout across the rest of the campus.

Since electricity consumption is the main source of Vodacom's GHG emissions, the amount of power generated through the Midrand project will help Vodacom reduce its GHG emissions by around 11,448mt CO_2e. The operator also has other plans underway to pursue more initiatives like these across its operating footprint. Vodacom South Africa will continue to prioritise energy efficient practices, such as consumption monitoring through its Internet of Things (IoT) technology. It will also increase the amount of energy it secures from independent power producers through various power purchase agreements.

"These measures will boost our energy security so we can continue to deliver top-quality connectivity to our customers while helping drive sustainability targets that tackle climate change. If South Africa is to fulfil its decarbonisation goals, businesses must lead by example," said Mdlalose.

Airtel Tanzania acquires new spectrum

Airtel Africa's Tanzania subsidiary, Airtel Tanzania plc, has purchased 140MHz of additional spectrum spread across the 2600MHz (2 blocks of 2x15MHz) and 3500MHz bands from the Tanzania Communications Regulatory Authority (TCRA) for a gross consideration of $60.1 million.

This additional spectrum will support its network expansion for both mobile data and fixed wireless home broadband capability, including 5G rollout, providing significant capacity to accommodate our continued strong data growth in the country. This investment reflects our continued confidence in the opportunity inherent in the Tanzanian market, supporting the local communities and economy through furthering digital inclusion and connectivity.

CRAN cuts call termination rates by 50%

The Communications Regulatory Authority of Namibia (CRAN) has reduced local mobile and landline call termination rates by 50%.

The measure came into force on 1 October to reduce operational costs for Namibian operators. The reduced local call termination rates on mobile and landline will be 0.05 Namibian dollars per minute, compared to 0.10 Namibian dollars previously.

Of the 2.9 million subscribers in Namibia, 90% are Mobile Telecommunications Company (MTC) subscribers, while the remaining 10% comprise Telecom Namibia, Paratus Telecommunications Ltd and MTN Business Namibia. Thus, other carriers pay MTC more for calls made to its network than for calls made from MTC to other networks, because its network carries most of the outgoing traffic. The initiative is expected to help the other operators reduce their operational costs and be more competitive with MTC.

Malawi to gain Starlink connectivity

The Communications Regulation Authority of Malawi (MACRA) has granted its first high-speed low latency broadband satellite internet service licences to StarLink Lilongwe Limited.

"StarLink has been issued with the following licences: network facilities, network services and application service which will be effective on the day when they will be published in the government gazette," said MACRA director general Daud Suleman.

The Malawi government is hoping that the new entrant will help the country tackle ongoing internet challenges, specifically the high cost of data. Consumers have initiated online campaigns to lobby for a reduction in the price of data and in April 2021, the government directed MACRA to engage MNOs to reduce their prices. While there has been some reduction, further concession demands on pricing continue.

"New internet players in the sector must know this as the government aims at ensuring that data services are affordable to all Malawians," said minister of information and digitalisation Gospel Kazako.

Malawi becomes the third country in Southern Africa after Mozambique and Zambia to grant regulatory approval this year for StarLink's internet connectivity.

Airtel Gabon looks to extend network

Airtel Gabon is negotiating with the Gabonese government to obtain 165 plots to extend its network coverage in the country.

The extension of its network would enable Airtel Gabon to improve the quality of the services provided to its subscribers and to acquire new ones. This comes amid increased competition in the local market where the coverage rate of services remains a major challenge despite the high penetration of mobile at 165.5%.

"We have requested the support of the authorities to see to what extent they can support us so that the allocation of its sites can be done as quickly as possible, so that we can launch our construction projects for these sites," said Amade Koussoube, CEO of Airtel Gabon.

According to the Market Observatory of the Electronic Communications and Postal Regulatory Authority (ARCEP), for the first quarter of 2022, Airtel Gabon had 1.4 million subscribers or 48.62% of the market share. Moov Africa Gabon Telecom controls 51.38% of the market with its 1.5 million subscribers.

Airtel and American Tower partner on network deployment

Airtel Africa has signed a multi-year partnership agreement with American Tower Corporation Africa (ATC Africa) to continue the deployment of its network in Africa. ATC Africa will provide Airtel Africa with its portfolio of telecom sites in Kenya, Niger, Nigeria and Uganda, as well as its capacity to develop new sites and products.

The partnership should increase connectivity in Africa, extend digital inclusion to underserved communities and contribute to the reduction of greenhouse gas (GHG) emissions. In addition, ATC Africa plans to use renewable energy sources to power its sites.

Airtel Africa has embarked on an extensive asset monetization program as of 2021 which includes the sale of part of its tower portfolio. According to the International Finance Corporation (IFC), this is part of the company's new strategy to reduce ownership of its infrastructure in favour of leasing. Airtel Africa plans to partner with independent telecommunications tower companies to expand its network, either by leasing space on their existing infrastructure or by contracting them to build towers specific to network coverage needs.

Tanzania: 80% online by 2025

The Tanzanian government plans to connect 80% of the population to the internet and to increase broadband internet usage from 45% to 80% by 2025.

To support this goal, the government is providing subsidies to mobile operators to enable them to upgrade their telecom infrastructure and extend their network coverage in unserved and underserved regions. The support comes to help accelerate the country's digital transformation, which requires access for as many people as possible to quality connectivity, capable of supporting new uses.

"We have taken several initiatives, including recognizing and building the capacities and skills of ICT professionals, providing ICT forecasts and trends through research, working with stakeholders of ICTs, and encouraging strategic investments in ICTs," said Kundo Mathew, deputy minister of information, communication and information technologies.

Raxio breaks ground on Mozambique DC

Raxio Group has broken ground on the construction of its premier Tier-III carrier neutral colocation data centre (MZ1), located at Beluluane Industrial Park (MozParks) in Maputo, Mozambique.

In addition to providing much needed colocation capacity to the country's digital backbone, Raxio MZ1 will nurture interconnection through redundant meet-me rooms. MNOs, ISPs and carriers will be able to interconnect to each other and their customers, reducing the cost of access to content across the country, at a time when new submarine cables will also be providing Mozambique with enhanced international connectivity.

Raxio MZ1 will be fully equipped with industry best in class cooling technology, security, AC/DC power compatibility and redundancy in an 'always-on' environment. The facility will keep with Raxio's core sustainability principles to minimize the environmental footprint through optimal equipment selection and sustainable design. In addition, the MozParks location will provide Raxio MZ1 the possibility to meet its electricity requirements from renewable sources.

"We're delighted to break ground on another facility, which demonstrates Raxio's commitment to serving the region's economy and digital transformation journey. More and more Mozambican individuals and businesses join the digital community every day, and this number continues to grow at a fast pace. This is why access to stable, mission critical environments in Mozambique is more important now than ever before," said Robert Mullins, CEO of Raxio Group. "We are looking forward to supporting the country's digital growth by developing the first hyperscale ready colocation data centre that will be operated by a team of highly skilled Mozambican professionals. Our site at the MozParks Industrial Park provides us with an ideal operating environment, with prime access to connectivity and power infrastructure, as well as the possibility to supply our site largely from renewable energy sources, allowing us to further our ambitious ESG goals."

ITU elects council for ICT

The International Telecommunications Union has elected its 48-member council to enforce global regulation of ICT. 13 African countries were elected to the council to serve from 2023-2026: Kenya, Ghana, Egypt, Tanzania, Algeria, Morocco, Senegal, Nigeria, Tunisia, Mauritius, Uganda, Rwanda and South Africa, and Zimbabwe was appointed to a key position as the director of Telecommunications Development Bureau.

African countries appointed to the specialized agency of the United Nations are entrusted with driving digital transformation as well as other matters related to ICT. These elections place African states in key decision-making positions at the ITU.

"After months of intense lobbying, South Africa yesterday was re-elected to its seat on the ITU Council, which is currently taking place in Bucharest, Romania," said South African communications and digital technologies minister Khumbudzo Ntshavheni in a Tweet. South Africa, however, could not secure a seat on the Radio Regulations Board (RRB). "Accepting this hard-won victory, South Africa will ensure it redoubles its efforts to also regain a seat on the RRB at the next Plenipotentiary Conference, which will be held in four years."

Econet Wireless Zimbabwe eyes expansion

Econet Wireless Zimbabwe plans to upgrade its network infrastructure and roll out new infrastructure in the Matabeleland region in the coming months. This initiative should enable it to improve the quality of services provided to subscribers in the region.

"We are embarking on a network refurbishment program in Bulawayo by modernizing more than 150 sites in Bulawayo with the latest technologies," said explained Kezito Makuni, COO of Econet. "We will also renovate our backup power systems and expand coverage in urban and rural areas of Matabeleland. Customers should begin to feel the impact of these upgrades early in the new year."

The investment is part of a program to expand Econet's network in rural communities, improve 5G coverage and restore vandalized network infrastructure.

Capitec Connect launches with new MVNO services

South African bank Capitec has launched its own mobile virtual network operator (MVNO) service, Capitec Connect.

Capitec Connect plans to disrupt the local prepaid telecoms market with data prices it claims are "on average 50% below the normal market price" and rates that "remain flat whether clients buy small or large quantities of data."

In South Africa, data bundles are usually valid for 30 days, but some promotional offers can be valid for shorter windows if you pay a lower price. However, Capitec Connect's MVNO data will not expire, provided the SIM is used at least once in six months. Capitec Connect SIM cards will be available to clients at all Capitec branches, with up to five SIM cards available per client.

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Liquid Dataport acquires new fibre

Liquid Dataport has acquired a pair of fibre cables on Equiano, the new west coast submarine cable, capable of delivering up to 12Tb of new internet capacity, providing South Africa with a boost for digital transformation.

The additional capacity augments Liquid Dataport's existing pan-African fibre network, global satellite connectivity and subsea cable backbone that ensures businesses on the continent have access to affordable and reliable high-speed connectivity. The Equiano sea cable is the highest capacity cable landing in South Africa. Liquid Dataport foresees a much-needed drop in internet connectivity prices and improved quality in South Africa and numerous sub-Saharan countries.

"Lack of access to affordable internet connectivity across the continent, be it in the largest cities or the remotest villages, is a significant hurdle for Africans and organisations adopting digital technologies," said according to David Eurin, CEO of Liquid Dataport. "Therefore, the landing of Equiano capacity by Liquid Dataport in South Africa will significantly foster the development of businesses in Southern African countries through improved access to high-speed connectivity and increased access to digital technologies like Cloud and Cybersecurity, to name a few."

The Equiano subsea cable has landings planned in Sesimbra (Portugal), Lomé (Togo), Lagos (Nigeria), Swakopmund (Namibia), Rupert's Bay (Saint Helena) and Melkbosstrand (South Africa), with more landing stations planned in the future. The move extends Liquid's One Africa Digital Network's reach, and Cassava's Africa Data Centres will host Liquid Dataport's equipment for the Equiano subsea cables. The Equiano cable system will be available in all Africa Data Centres' facilities and give Liquid Dataport's customers access to vast amounts of capacity at a reduced price. Liquid Dataport plans to interconnect the Equiano landing stations to its East-West network across Africa, strengthening further its global IP route between Asia, Africa, and the USA.

COMESA: Governments should subsidise telco infrastructure

The Common Market for Eastern and Southern Africa (COMESA) has urged member state governments to subsidize the construction of telecommunications infrastructure, particularly for MNOs, in order to provide better quality services at affordable costs.

"We are developing guidelines on infrastructure sharing. These are some of the questions we try to address. In fact, some countries in the region have granted licenses to operators to use the same," said Jean Baptiste Mutabazi, director of infrastructure and logistics at COMESA. He added that operators could also consider colocation of their transmitters on the same tower to further reduce costs.

The Malawi government is contributing to investment in telecommunications infrastructure through the Universal Service Fund (USF), a strategic programme promoting the uptake of ICT services in rural and underserved areas. USF is, among other things, used to largely subsidize investment in towers in areas that may be considered unmarketable by telecommunications or broadcasting companies for the deployment of their services.

How a recent merger partnership will connect more of Africa than ever

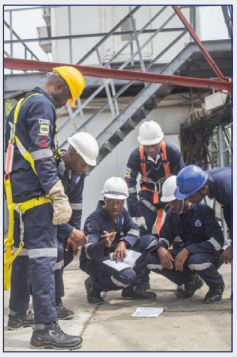
In early October, Curvalux and CBNG announced a merger which signifies a turning point for both companies. CBNG, established for over 20 years, is a provider of VectaStar, a licensed-band fixed wireless access (FWA) solution used for Enterprise, 3G and LTE backhaul as well as smart city connectivity throughout the world. Curvalux, an exciting newcomer to the market, brings innovative multi-beam antenna technology to enhance Wi-Fi and 5G radio technologies and allow long range, high-capacity coverage at a fraction of the power consumption of equivalent RAN technologies. The merger now means that both companies can leverage each other's new technology and heritage to bring some truly exciting solutions to the market.

Adding to this duo, CBNL Africa, is an independent business founded from a spin out of CBNG in early 2020. CBNL Africa have been continuing to successfully sell VectaStar to tier 1 operators in their market and have grown their business significantly because of the ever-increasing demand for reliable, high-capacity broadband across a continent with major infrastructure challenges. They now have offices with sales, support and services capabilities in Nigeria, Ghana, Cameroon and Kenya.

CBNL A Africa, Curvalux and CBNG have now embarked together on a new strategic partnership to gather all the synergies of established and innovative technologies, along with a "feet on the ground" approach in Africa, to forge ahead towards making Curvalux and VectaStar network solutions a highly scalable and stable connectivity option for operators to bring to businesses, communities, and end-users across the continent.

"CBNL Africa is thrilled to be able to work alongside Curvalux and CBNG in order to enhance choices available for our customers in the region" says Obehi Okosun, Managing Director and CEO of CBNL Africa. "Ultimately we want to be able to help operators rollout out these highly capable solutions in order to bring high quality, high bandwidth and cheap connectivity to all those in our continent who are currently facing the challenge of joining the internet age".

Obehi Okosun acknowledges there are also challenges to be faced by those technology providers wishing to play a part in the African market. "Many vendors have tried to gain a foothold in Africa and have struggled to gain traction because the technology is new and so it can be more challenging to deploy and integrate properly and consequently becomes difficult to gain a positive reputation for delivering on those promises made by the technology. CBNLA's on the ground presence and capability to effectively plan, deploy and continuously support the technology has made it become a win:win:win for the operator, the vendor and the end user".



"CBNL Africa have been the ideal partner for us over the years" says Paul Wright, VP Sales and Customer Operations at CBNG. "Their supportive presence and long reach on the ground in all the countries where we have sold our solutions has made all the difference, not only to CBNG but to those operating VectaStar networks. We now look forward to extending this great advantage alongside Curvalux in the new era for our respective companies".

"Curvalux's mission is to connect the unconnected and neglected. We are excited to expand CBNG's close partnership with CBNL Africa to include Curvalux in our efforts of accomplishing this critical mission in Africa" says Richard Pak, CEO of Curvalux Group. "Not only will working alongside Obehi Okosun and his team in Africa help to spread the word about how Curvalux is working towards changing the technological landscape in order to catapult African homes, businesses and individual's opportunities into a newly attainable prosperous age, but working with CBNL Africa will bring additional synergies to our other African partners in the successful adoption and deployment of our Curvalux solutions".

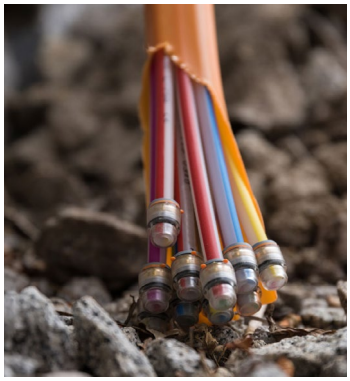
CBNLA senior management team

Zimbabwe looks for US$40 million for fibre network

Zimbabwe is looking for a US$40 million investment to expand its nationwide fibre optic network as part of a massive infrastructure investment project.

"The projects we are considering are those in the ICT sector, particularly those involving fibre optics, and the development of fibre is in line with the national development strategy (NDS 1), which makes the digital economy an area priority," said Clemence Chiduwa, Zimbabwean deputy minister of finance.

Unveiled in 2020, this plan aims to move Zimbabwe into the category of upper middle-income economies by 2030 through the use of ICT and digital technology. The fibre optic network will provide the high-speed connectivity needed for the digital transformation of public administration and private companies. It should also promote the active participation of populations in the digital economy.



Tanzania scraps MoMo transfer levy

Tanzania's government has scrapped its mobile money transfer levy from 1 October, just three months after the government slashed the levy by 43%.

Aside from mobile money transfers, Tanzania will remove the fee for bank transfers and waive the transaction fee on cash withdrawals through bank agents and ATMs for values less than TZS30,000.

Scrapped levies will also include those on money transferred from bank accounts to mobile networks, money transferred within the same bank, as well as money transferred from one bank to another. In order to cover the revenue lost from the cancelled levies, the government is looking to cut expenditure on things such as conferences, training, refreshments, and trips.

"We have decided to review the levies to reduce the burden on society, to foster cash transactions and avoid double taxation," said finance and planning minister Mwigulu Nchemba.

The minister also announced a 10-50% cut on mobile money transaction costs. The maximum levy currently stands at TZS4,000 and with the cut, the maximum levy will be halved to TZS2,000.

The levy slashes come as the government aims to encourage its citizens to return to using mobile money services. People stopped using the services when the government introduced a transaction levy in the financial year 2021/2022.

Vodacom targets mobile fraud in South Africa

Vodacom has partnered with cybersecurity for mobile payments company Evina to deliver a step forward in mobile user safety in South Africa.

The South African mobile industry has attracted many bad actors leading to a substantial increase in user complaint rates in recent years. These frequent fraudulent attacks stem from the large proportion of the African population using cellular phones as a mobile payment method. In South Africa alone, the country fraud rate recorded by Evina's fraud sensors was 23.53%, with clickjacking being the most fraudulent technique used to defraud mobile users in the first quarter of 2021. This region is a playground for new and extremely sophisticated fraud techniques that are difficult to spot unless using advanced technology.

Thus, Vodacom has partnered with Evina to secure mobile transactions with Evina's set of anti-fraud solutions, which include DCBprotect and Eyewitness. DCBprotect detects bots that attempt to make fraudulent transactions, whereas Eyewitness records fraudulent behaviour on payment pages to provide proof to Vodacom's partners of any bot-related activity.

"We strive to work with mobile players that share our vision of fraud being a serious issue that needs to be dealt with – and soon," said David Lotfi, CEO & founder of Evina. "By integrating our anti-fraud solution into its operations, Vodacom with its large African network of mobile users, has confirmed that it too shares our values and wishes to create a fraud-free mobile payment ecosystem. This makes deploying the best technology worldwide, for the protection of South African mobile users, effortless."

"The protection of our customers against all forms of fraudulent activity is our top priority. We are constantly striving to eradicate any potential mobile fraud on our network by updating and enhancing our controls to give customers peace of mind whilst enjoying seamless connectivity through their mobile phones," said Mariam Cassim, chief officer of Vodacom Financial and Digital Services. "Introducing DCBprotect as solution is testament to our efforts to stay ahead of fraudsters and create a fraud free digital environment. We believe that early detection and blocking of any form of criminality on our network is in the interest of our customers and ultimately the Vodacom brand."

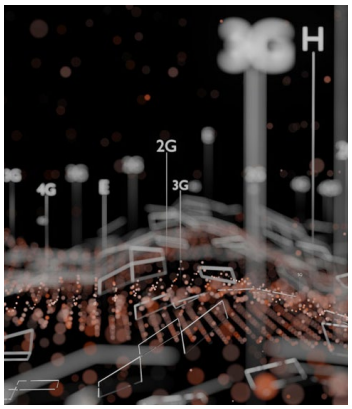
South Africa to turn off 2G and 3G by 2025

South Africa's government has outlined a roadmap to shut down the country's 2G and 3G mobile networks by March 2025. The plan is contained in the ministry's draft policy of Communications on the Next Generation Radio Frequency Spectrum and has been approved by the Office of the President.

Minister of communications Khumbudzo Ntshavheni announced the government's ambition to close the 2G and 3G networks to free up frequencies for 5G and 4G services back in 2021. According to the new policy, June 2023 will see the licensing of 2G devices prohibited. A ban on new connections or activation of 2G devices will follow in December, with a shutdown of 2G services and networks scheduled for the first half of 2024. A similar process for 3G would begin in the second half of 2024 and end in March 2025.

The approval of this policy comes six months after the country organized the auction of the spectrum of telecoms broadband frequencies. Following this sale, telecom operators acquired frequencies located in the 700MHz, 800MHz, 2.6GHz and 3.5GHz bands, suitable for the provision of mobile broadband services using 4G/ LTE and 5G.

While some telecom operators had already planned to switch off their 2G and/or 3G networks, obstacles remain, like the high cost of 4G and 5G compatible devices. Additionally, 2G and 3G networks remain widely used for machine-to-machine (M2M) and Internet of Things (IoT) applications.



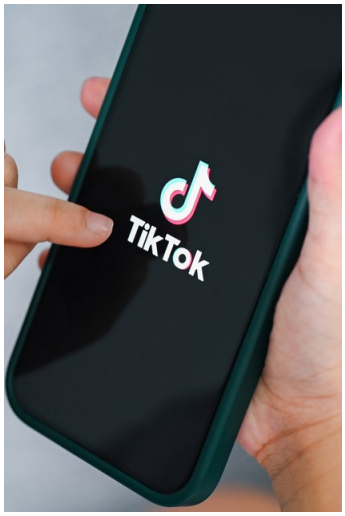
TikTok to provide free WiFi in South Africa

TikTok has announced a pilot partnership with ThinkWiFi for the deployment of 50 free WiFi hotspots in South Africa in order to promote internet access and reduce digital inequalities.

The 'TikTok Wi-Fi' programme's pilot phase is expected to last six months, and will be located in Soweto, Gugulethu, Khayelitsha and Bushbuckridge. According to digital marketing agency CSA Sha-Izwe, TikTok currently has 6.44 million active users over the age of 18 in South Africa, and interest across the entire continent is growing.

Lack of internet access and/or its high cost is thought to be currently preventing consumers from using the TikTok platform. According to DataReportal, South Africa had 41.19 million internet users in January 2022, a penetration rate of 68.2%. Thus, 19.21 million or 31.8% of South Africans were not connected to the internet at the start of the year.

"We understand that as an entertainment platform accessible on mobile devices, TikTok plays an important role in the digital world," said Fortune Mgwili-Sibanda, director of government relations and public policy for sub-Saharan Africa at TikTok. "Through this pilot, we hope to encourage more people to join digital spaces such as ours, not only to create content, but also to learn new skills and educate other members of the community about their passion and interests."



Talking critical

Harald Ludwig, chair of TCCA's Technical Forum

Reducing complexity and cost in future control room implementations

The ecosystem that first responders rely on to support them pivots around the control room and the operators carrying out their critical operations in front of their working positions (also called dispatchers or consoles). Control rooms provide essential communications, linking users in the field to a centralised command centre. Control rooms play a vital role as the bridge between the general public and the end users who utilise mission critical communications to protect people, property and communities.

For many years, narrowband LMR standards such as TETRA, Tetrapol, DMR, and P25 have successfully served these public safety agencies with voice and limited data communications applications. However, as time moves forward, so too does technology, and broadband cellular 4G LTE, 5G and beyond represent the next level of integration within the control room. While some agencies may already use these cellular connections in the event of a network failure or for special events, Mission Critical Services (Mission Critical Push-To-Talk - MCPTT, Mission Critical Data - MCData and Mission Critical Video - MCVideo, collectively known as MC or MCX services) represent a fundamental paradigm shift in capabilities. These MCX services have all been standardised in 3GPP.

While MCPTT field operation is relatively simple to understand, control room operations represent a more complex environment requiring interconnections to different management and support systems and various communication networks. Depending on the implementation approach, a significant amount of infrastructure may be owned and directly controlled by a commercial carrier. In order to increase understanding for public safety agencies, TCCA, in collaboration with other organisations and vendors, has created a Control Room Implementers' Guide.

However, while the standards have been written, the route to actual implementation can be confusing. Control rooms are not explicitly mentioned in the 3GPP MCX standards and it may be difficult to find the relevant parts in the standards. The aim of TCCA's Guide is to help control room vendors identify these parts and the best way to connect their systems to a 4G LTE and/or 5G MCX environment. The goal is to promote a common approach that will reduce both the number of variants and the level of proprietary interfaces.

Mission Critical standards development within 3GPP started in 2015 in 3GPP Release-13, following a major initiative from the public safety industry to create global standards with the collaboration of various government organisations, vendors and users from around the world. 3GPP Release-13 was the first to define a standard for MCX, and subsequent releases evolved the features and capabilities, maturing the standards specifications based on industry feedback. 3GPP Release-17 is the latest set of fully ratified specifications, and work is ongoing to enhance these both for 4G LTE and 5G.

3GPP Standards define the reference architecture for MCPTT, MCData and MCVideo separately, while utilising a set of common core services that are applicable to all three. The available interfaces will depend upon the MCX service provider being used, the policies in place, and the required functionality.

3GPP Mission Critical standards include specifications to interwork with legacy LMR networks via an Interworking Gateway Architecture (IWF) to enable the continued working of mission critical systems during the transition period from legacy LMR to 3GPP-based MCX systems. It may take several years for such transitions to fully complete.

Traditionally, cellular operators have operated the entirety of their cellular network. With the flexibility contained within the 3GPP standards, public safety agencies have the opportunity to develop alternative approaches. This allows the agency itself or the designated service provider to operate some parts of the network equipment, which ensures control and security remains with the agency.

TCCA's Control Room Implementers' Guide provides the foundation for creating a cohesive evolution from LMR to broadband-based control rooms. By following this guide in developing procurement requirements, it is hoped that vendors will not be given enough opportunity to design and build proprietary offerings, but rather will focus on standards-based solutions to reduce both complexity and cost.

Omdia: Control room market overview

Research from Omdia shows that in 2021, the control room market shrugged off the pandemic-induced delays from 2020. Global market growth came in at 9.6% in 2021, well ahead of previous expectations. However, this is a little artificial, with much of it due to revenues being recognised in 2021 that would have been recognised in 2020.

Residual pandemic impacts remain, with fewer new projects coming to market, dampening market growth through 2022. Combined with a worsening macroeconomic environment, with global growth expected to slow through 2022 and 2023, the control room market is expected to return gradually to pre-pandemic growth rates.

Artificial intelligence and machine learning are being applied to enhance control room solution offerings. AI video threat detection is one area that has improved greatly with the proliferation of 'AI' chipsets into the video surveillance market. These chipsets will suggest AI-powered rules and decision making based upon visual classification and meta-data/big data platforms.

The control room market continues to transition towards cloud-based solutions, relying heavily on infrastructure provided by hyperscalers such as Amazon and Microsoft. Omdia expects this element will become increasingly important within the control room market.

SBA Communications continues to develop its African strategy through successful regional management in Tanzania and South Africa

As SBA Communications extends its presence in Africa, Southern African Wireless Communications spoke with Nicholas Van Slyck, Senior Director, Africa and Asia to find out about the company's plans heading into 2023 and the challenges these plans will bring.

How has the Tanzanian operation influenced business during the last 12 months?

Tanzania's impact on SBA as an organization has been very positive. For one, it gave us a new market in Africa, our second after South Africa, which has enabled us to begin to think about a more regional management structure. We have very talented teams in both markets and they complement each other very well. We see a lot of potential synergies between the two teams. For example in South Africa, theft and vandalism is a big challenge and our local team has been developing creative solutions to combat this ongoing problem. These solutions can be shared with our operations team in Tanzania to address similar challenges. Likewise, Tanzania is a market where the towercos have the responsibility for power and our local team there is quite skilled at managing this part of the business. In South Africa, where power is just beginning to shift from the MNOs to the towercos, there is much for our local ops team to learn from their counterparts in Tanzania. These regional synergies are not just limited to Africa, and we expect it eventually to spread across multiple SBA markets and that's exciting.

Which of your infrastructure solutions has seen the greatest demand from the wireless service provider within Africa? Has this influenced your development in the region?

Well, that would undoubtedly be our towers. We have approximately 1,700 high quality, multi-tenant towers in South Africa and 1,445 in Tanzania. Demand for colocation has been strong in South Africa where we average 2.3 tenants per tower. In Tanzania, a market we only entered in January of this year, we are beginning to see real interest in colocation from all MNOs. We are enthusiastic about the growth prospects in both markets.

Is there a preference for lease or network ownership within this region? Can you explain why?

In Africa and from the carrier perspective, the preference seems to be to lease the infrastructure rather than own it. Clearly the number of sale lease back transactions all over the continent over the last decade supports this view. Over time, MNOs have come to accept that building redundant infrastructure is inefficient and not the best use of their capital. They've decided it's better to use their resources to invest in network improvements and expansion so they can attract more subscribers because that's their core business. From their perspective, why tie up all that capital and then have to deal with the headaches of ongoing operations when the whole process can be easily outsourced.

Do you feel demand for green solutions growing and can you give examples of where?

Yes, I do. There have been a number of technological advancements with solar power

over the last decade resulting in greater dependability at reduced costs. We now see solar power as offering a compelling alternative energy solution for carriers. In fact, we have an ongoing solar business in Jamaica where we are using solar power and batteries to provide backup power to one of our customers. Our solar solution has lowered this customer's energy costs by reducing dependency and power consumption from the grid. This can definitely be a model we export to other markets. In Tanzania, we have a number of sites that are located in areas that have either bad grid or no grid at all. Solar solutions are used at some of those sites, but not all. With fuel prices going up so sharply over the last 12 months coupled with the fact that carriers and infrastructure companies both want to reduce their carbon footprint, it seems to me there's a strong case here for more solar powered solutions in this market.

What have been the biggest challenges in this region?

Africa is a large and diverse continent with over 50 countries and our experience so far has been limited to just two of them. So speaking from that perspective, I would say the two biggest challenges we've faced so far are grid reliability, and theft and vandalism. In South Africa, grid reliability has deteriorated over the last few years resulting in daily load shedding. Historically, MNOs have assumed the responsibility for backup power, but that is changing. In a country with 40 percent unemployment, theft and vandalism are big problems resulting in substantial losses of batteries, fuel, and even entire generators. MNOs want to pass this responsibility over to the towercos for obvious reasons. The challenge for our industry is to develop a cost effective solution that is both reliable and has an effective anti-theft system built in to withstand the constant threat. That is where we all seem to be at the moment.

Do you have plans to extend your activities into other African countries and if so, how?

We always have our eyes open for new market opportunities, but they must meet our disciplined investment criteria. Our approach over the years has been to look for high quality growth in stable markets, so we are extremely selective in terms of the countries and assets we invest in because it matters. Our stock's performance seems to support that view. Having said that, we are a growth company as we've been for the last 33 years, so yes, we do have a vision that includes extending our activities into other countries. How we do it is a more complicated question because it varies from market to market. For example, expansion could come in the form of a sizable build-to-suit opportunity in a stable market with three or more healthy MNOs. This was our approach in South Africa seven years ago and the local team has executed on that strategy very well. Today, we have over approximately 1,700 sites, some we bought but most we built. Another approach is from a sale lease back transaction much like what we did in Tanzania. There we acquired 1,445 cell sites from Airtel which made us a significant player in that market overnight. The third option would be a hybrid of the first two. Here we would look to do a sale lease back with a commitment for decent volume of BTS over a defined period of time, two or three years.

Can you name some of the biggest deals you have signed during the last 12 months?

In Africa, certainly the biggest deal we've signed over the last 12 months is Tanzania with Airtel where we acquired 1,445 sites. Actually, this transaction was a joint venture between SBA and Paradigm Infrastructure Partners where SBA is the majority owner. The local entity is named Minara Tanzania which means "tower" in Swahili. We are very pleased with the way things are going in that country and the Paradigm guys have been great partners. The management team has a lot of tower experience all over Africa which has enabled us to hit the ground running and provided enormous benefits.

What are you looking to achieve over the next year?

As previously stated, SBA is a growth company so the obvious answer is more growth. We see sustained growth coming from our existing markets in terms of new builds and lease-up. In South Africa, growth has been steady because the team has performed well for our customers resulting in a lot of repeat business. In Tanzania, we are just getting started, but we like what we see so far. MNOs clearly embrace the shared infrastructure model so we see very good potential for lease-up on our existing portfolio. Additionally, we expect to have some new build opportunities. And we're always open to discuss M&A deals that are at price points that are rational and make sense for SBA.

What's been the biggest lesson over the past year?

Great question. As you know, the tower industry worldwide has been undergoing major changes in recent years. Carriers want a better value proposition, they want more for less from towercos without sacrificing quality of service. At the same time, the industry has attracted a large amount of investment and new entrants, both of which have had a profound impact, both good and bad. The investment strategies don't always appear rational in our view, and the new entrants usually have a big learning curve in front of them. The industry is changing, it's not the same as it was 5 years ago. Against this backdrop, the biggest lesson for us is to not be terribly concerned with what others are doing because that's a distraction. Rather, it's more of a reminder that we need to stay focused on the fundamentals of the business, something we've worked hard on for over three decades, while we seek to be more responsive to our customers' needs whether that be backup power, green energy solutions or edge data centers. We have an excellent track record of delivering high quality growth and I don't anticipate that will change as long as we stay focused on what we do best and block out the noise on the periphery.

How do you differentiate yourself from your competitors?

Well, there are quite a few companies invested in the tower sector in Africa. At last count, there were 30 just in South Africa alone. So in such a competitive environment, I see a few things that differentiate SBA from others. For one, once we enter a market, we take a long-term view of things. We're not interested in short-term gains at the expense of the long-term relationship with our customers. The combination of our substantial financial and operational capabilities coupled with its long term investment outlook gives us a great deal of flexibility and creates unique opportunities for us to work with our customers to explore different business lines and deal structures that simply may not be available to others who have a shorter investment horizon. Not only that, but our decision-making process is quick and smooth and once we decide that something meets our disciplined investment criteria, deployment of capital happens soon after. And we have local teams in South Africa and Tanzania that have proven track records in managing existing tower portfolios, developing new sites and overseeing power systems. We like to say that SBA has the resources of a large company but we are small and nimble enough to be effective in the individual markets where we have businesses.

SBA®

MTN SA to transform from telco to techco

MTN SA has announced a review of its executive structure as it gears up to deliver on its Ambition 2025 strategy to transform from a telco to a techco.

In line with this strategic shift, the company has appointed Ernst Fonternel as chief consumer officer and Divyesh Joshi as chief strategy and transformation officer, effective from 1 October. The new executive structure also sees the introduction of two new roles including that of chief commercial operations officer and chief risk officer.

"The current top-tier structure has been optimal to enable us to evolve and grow the business to where we are today. However, in pursuit of Ambition 2025, the current structure needed to be optimised to adequately support our strategic ambition," said MTN SA CEO, Charles Molapisi. "I am pleased to announce the appointments of Ernst and Divyesh, both of whom are internal appointments who bring a wealth of knowledge to these roles."

These appointments are designed to deliver agile ways of work to simplify cross-functional interfaces, enhancing focus on key and new revenue streams, and better aligning commercial and support functions and focused sales and distribution structures. As telcos move towards delayering and greater verticalisation of business units, the risk function requires particular industry depth and a thorough telco consideration from finance, pricing, commercial partnerships, network, and IT perspective.

"The fast-paced world of telecommunications and technology requires an agile, responsive, and pioneering leadership approach. To this end, our focus has been on defining, designing, and shaping a future-fit leadership model for MTN SA, leveraging the extensive experience and expertise within the senior leadership team," said Molapisi.

Airtel Malawi continues to invest despite challenges

Airtel will continue to invest in its mobile phone unit in Malawi despite currency weakness in the country.

In the first half of 2022, Airtel Malawi's costs increased by 199% as a result of 25% devaluation in the Malawian Kwacha. After-tax profits fell by 21.5%, attributed to a worsening foreign exchange position as a direct result of devaluation.

"The economy and company are exposed to continued impact of Kwacha depreciation and scarcity of foreign currency. Despite this we continue to focus on investing more, growing more customers and revenue, containing cost and diversifying currency sourcing to mitigate the exposures," read a statement released by Airtel Malawi.

Despite these challenges, Airtel Malawi has grown its customer base by 11.1% to 6.4 million subscribers. In local currency terms, revenue grew by 14.3%, boosted by a 20% firming in voice revenue and a further 5% uptick in data revenue. During the period, Airtel Malawi repaid a principal debt amount of US$7 million out of its US$40 million loan, which means it has a total principal amount outstanding of US$33 million as at the end of the period.

MTN Group executive joins TIP board

Amith Maharaj, group technology executive at MTN Group, has joined the Telecom Infra Project (TIP) board of directors as the company's representative.

"MTN has been a great contributor since it joined TIP in 2016. From its leadership in several Project Groups and other TIP initiatives, including DCSG, MUST, OpenWiFi and OpenRAN, MTN is a trailblazer of open and disaggregated technologies in Africa and globally," said Yago Tenorio, chairman of TIP and fellow and network architecture director at Vodafone Group. "MTN's appointment to TIP's Board of Directors further reflects the international profile of our community and we look forward to deepening our collaboration with the company and benefiting from Amith's extensive experience on the Board."

"I'm delighted to have joined TIP's Board of Directors and to meaningfully contribute towards driving infrastructure solutions to advance global connectivity. As a pan-African mobile operator, we see TIP is a critical part in realising our strategic intent of leading digital solutions for Africa's progress Forums such as TIP," said Amith Maharaj, group technology executive, MTN Group.

Amith Maharaj has extensive experience in the telecommunications market, having worked in senior roles at Telkom, Vodacom and MTN.

Cell C completes recapitalisation

After years of negotiations, Cell C has finally completed its recapitalization.

Blue Label Telecoms, the main Cell C shareholder, had to enter into 'binding long-term agreements' with Cell C and various financial stakeholders, including certain shareholders and creditors of the company. As a result, Cell C's debt has been restructured to certain secured lenders for a total amount of 7.3 billion rand. Blue Label will provide liquidity via a secured loan of 1.46 billion rand.

Cell C's recapitalization is the final post of its recovery strategy, undertaken by Blue Label, after its entry into the capital of the company in August 2017 for 5.5 billion rand. Douglas Craigie Stevenson, president and CEO of Cell C, said that the transaction "deleveraged the balance sheet, provided cash to operate and put the company on a path of long-term growth and sustainability."

DRC and Cameroon to gain 2.75G network via NuRAN

The European Investment Bank (EIB) has announced its proposed funding of NuRAN Wireless Inc. for an ambitious project which will see the deployment of mobile towers for affordable telecommunications services (voice and data) in underserved areas of the Democratic Republic of Congo (850 towers) and Cameroon (242 towers).

The project will ultimately connect people in rural areas to the digital economy with the rollout of a 2.75G network, supporting the countries' transition to the digital economy.

The US$36 million project falls under the COVID-19 Digital African Loan Envelope, which was designed to accelerate the deployment of digital infrastructure solutions in sub-Saharan Africa. The EIB would provide US$18 million in funding, with Euro8 million coming from DFI, and more than US$6 million has already been invested from NuRAN.

"We are now approaching final approval for the release of $26 million to further accelerate the deployment of rural sites in Cameroon and DRC," said Francis Letourneau, CEO of NuRAN. "To date NuRAN has essentially financed the sites built through its own equity. The plan has always been to primarily use debt at the African subsidiary level to deploy new sites. The DFI's mission is to invest in infrastructure projects that have major social and environmental impact for which we tick all the boxes. This financing will provide NuRAN with capital to reach up to 1100 live sites covering over 5 million population."

Acting CEO of Icasa appointed

Norman Gidi has been appointed as acting CEO of the Independent Communications Authority of South Africa (Icasa) as of 1 September. Gidi will assume leadership until the end of November, or until a permanent appointment is made.

Former boss Willington Ngwepe has departed to serve as MTN's chief of staff in the office of Group CEO Ralph Mupita. He had been at Icasa for eight years, joining first as COO.

"Gidi brings a wealth of Icasa-specific knowledge and experience to the acting role, having been with the authority for more than 12 years," said Icasa in a statement.

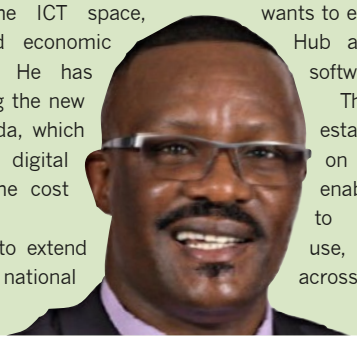
Gidi joined the Icasa in 2009, first as a senior manager handling licensing issues for broadcasters, telecom operators and postal services. According to Icasa, Gidi is an admitted advocate of the High Court of South Africa since 2009. Since joining, he has held several positions, namely executive: legal, risk and CCC (LRCCC) in 2017, and as of 2021, executive: policy research and analysis.

"On behalf of both myself and Council, I wish to extend my congratulations, support and well wishes to Adv. Gidi on his new role. I know that he can count on the cooperation and assistance of both staff at ICASA and the wider stakeholder community during this time," said the acting chairperson of Icasa, Charley Lewis.

Kenya: new cabinet secretary for ICT

Eliud Owalo has been named as Kenya's new cabinet secretary for ICT pending parliament's approval.

A new entrant in the ICT space, Owalo has a legal and economic consultancy background. He has been tasked with enforcing the new administration's ICT agenda, which includes expanding the digital economy and reducing the cost of ICT broadband.



The government plans to extend broadband through the national fibre optic connectivity network by increasing it to 100,000km in the next five years. It also wants to establish Kenya as an Africa Regional Hub and promote the development of software for export.

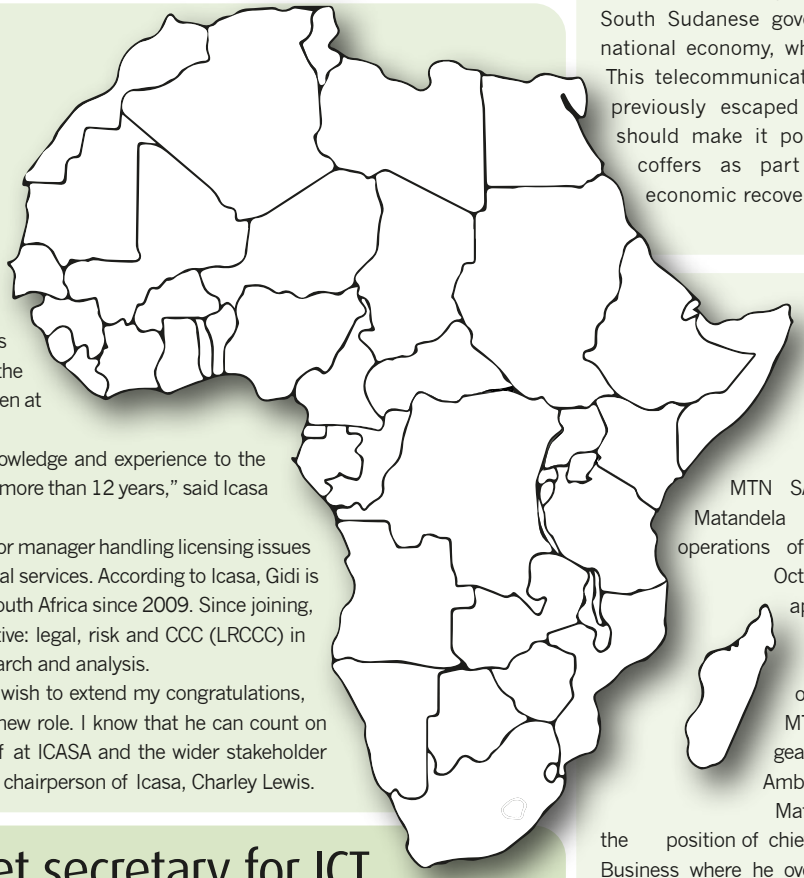
The government is also looking to establish a Presidential Advisory Council on Science and Technology Policy to enable a whole of government approach to technological development and use, and to build necessary capacities across government.

MTN and Zain still paying spectrum royalties and taxes in Sudan

MTN South Sudan and Zain South Sudan continue to pay spectrum royalties and profit taxes in Sudan, despite South Sudan being a sovereign state since 2011.

Both companies obtained their operating licenses in Sudan before the secession in 2011. Zain's licence expires in 2024, and MTN's in 2027.

South Sudanese lawmakers have now asked the tax authorities to start collecting business profits tax, excise and VAT from MTN, Zain and other digital service providers. This initiative is part of the efforts of the South Sudanese government to diversify the national economy, which is dependent on oil. This telecommunications revenue, which had previously escaped the tax administration, should make it possible to support public coffers as part of the post-COVID-19 economic recovery.



MTN SA appoints CCOO

MTN SA has appointed Wanda Matandela as chief commercial operations officer (CCOO), effective 1 October 2022. The appointment follows a recent announcement regarding the introduction of the CCOO role to the MTN SA Exco as the company gears up to deliver on its Ambition 2025 strategy.

Matandela previously held the position of chief enterprise officer at MTN Business where he oversaw business-to-business (B2B) offerings and services. According to MTN, Matandela has been instrumental in leading the turn-around and growth strategy of the enterprise business. As CCOO, Matandela will lead the company's pivot from TelCo to TechCo.

"As we strive to achieve our strategic objectives of driving business growth, transforming customer experience and overhauling employee engagement, it is important that we have the right individuals in place to achieve this," said Charles Molapisi, MTN SA CEO. "I believe that Wanda's wealth of experience will have a notable contribution towards enhancing our commercial and operational functions as seek to deliver an enhanced customer experience.

No foreign currency for Nigeria

Nigerian telecom operators have been struggling to gain access to foreign currency since the start of the year, slowing down investment in network infrastructure. The situation has been criticized by Gbenga Adebayo, president of the Association of Licensed Telecommunications Operators of Nigeria (ALTON).

"Virtually everything we use in the sector depends on imports. You talk about base station equipment, generators and batteries, among other things. But the impossibility of obtaining foreign exchange has an impact not only on the expansion, but also on the upgrading of existing infrastructure," said Adebayo.

ALTON members have called on the Central Bank of Nigeria (CBN) to prioritize their access to foreign exchange amid the continuing worsening shortage, which is now affecting all sectors of the economy.

"Now that we are rolling out 5G, operators need access to currencies if the service is to expand. Many members are struggling, they cannot fulfil this obligation," said Adebayo.

Talking satellite

Martin Jarrold, vice president international programme development, GVF

Capacity-building for Africa's space

I write this column at the close of World Space Week (4-10 October 2022), "an international celebration of science and technology, and contribution to the betterment of the human condition." With events held around the world, sub-Saharan Africa featured events in Cameroon, Ethiopia, Nigeria, and Zimbabwe, and GVF had a supporting relationship with Space Week Zambia in Lusaka, comprising exhibitions, presentations, and keynote speeches aimed at cultivating the mind of African youth towards interest in space education and the space industry.

Africa's aggregate space economy is small, and it is still relatively young. In 2021 African governments did increase aggregate space sector expenditures by some 9% to just over US$548m, with the continent's most advanced space market, South Africa, heading the budget list at US$154 million, followed by Nigeria at US$68 million, and Angola at US$24 million. More or less in line with these relative sums, South Africa has six satellites in orbit, Nigeria also has six; Angola just one. Ghana, Ethiopia, and Kenya also have sizeable budgets for space technology.

South Africa's first satellite, the Stellenbosch University-built SUNSAT, was launched in February 1999. Prior to SUNSAT, the continent had seen expansion in space activity with the establishment by the United Nations of Regional Centres for Space Science and Technology Education in developing countries, and with Nigeria chosen for anglophone Africa. More African nations started developing an interest in space and those already aware of the benefits of space technology in development started seeking means to procure satellites and acquire space-related knowledge. Since 1998 this Regional Centre has trained several hundred personnel from across Africa in such areas as the application of space technology in agriculture, transport, urban planning, environmental management, disaster management and natural resource management.

The next sub-Saharan African country into space was Nigeria, with NigeriaSat-1, built in the UK by SSTL; the third sub-Saharan country into orbit was Ghana, with the Japanese-built GhanaSat-1; AngoSat-1, manufactured by Russia's RSC Energia, was Angola's entrance into operating a satellite; Kenya followed with the University of Nairobi-built 1KUNS-PF; Rwanda's RWASAT-1, built by local engineers supported by the University of Tokyo, was lost to a decaying orbit.

One of the more recent of sub-Saharan countries to reach orbit was Ethiopia with the national Space Science and Technology Institute-built ETRSS-1. More recently still was the beginning of the space ambitions of the African island nation of Mauritius in the form of the nanosatellite MIR-SAT1, built to collect climate change data, and for weather forecasting, road traffic management, and maritime surveillance of Mauritius' Exclusive Economic Zone. The nanosatellite was built by researchers at the Mauritius Research and Innovation Council (MRIC), part of the country's Ministry of Information Technology, Communication and Innovation, with technical support from the United Nations Office for Outer Space Affairs (UNOOSA) and the Japan Aerospace Exploration Agency (JAXA).

Most of the above listed satellites – SUNSAT (South Africa), 1KUNS-PF (Kenya), RWASAT-1 (Rwanda), ETRSS-1 (Ethiopia), and MIR-SAT1 (Mauritius) – were in whole, or in part, the spin-off products of the development of national domestic academic space programmes, some of which covered such varied subjects as remote sensing, space weather, satellite communication, satellite geodesy, satellite meteorology and space law.

Where, as in the other example cases cited above, African countries have procured satellites with the help of foreign academic or commercial institutions there has been little or no technology transfer, and the technology and knowledge from externally funded programmes tend not to be domestically internalised with the impact that Africa loses human capacity and talent to non-African countries.

The 2022 EU Global Action on Space Market Report Africa noted that the continent's capability gaps benefit non-African space powers, such as China and Europe, with the more advanced space fairing countries increasingly projecting a mix of soft power and space-sector capacity across the continent. China is the largest beneficiary of space partnerships with African nations, enjoying huge commercial deals in building several satellites, and Europe has unveiled two investment initiatives worth US$29 million to develop the use of satellite technologies in Africa over the next few years.

Africa needs to develop a larger pool of local space experts in Earth observation, satellite communication, navigation and exploration. Earth observation in particular was identified in the WEF Digital Earth Africa Report, calling on African countries to leverage new-found satellite capacity to improve data collection and spur development.

Of course, science, technology, engineering and mathematics (STEM) are the underpinnings of technical careers in satellite but advancing human resource capacity to build space and satellite businesses encompasses skills beyond only technical expertise, and GVF – in partnership with SatProf Inc and the SSPI – has developed a resource to address these non-technical needs: the SBQ.

When writing previously in this column about the 'Space Business Qualified' certification, the Fundamentals Series of SBQ courses was still in development. Now the Fundamentals Series is complete and will be followed by a specialist series of courses covering satellite communications and broadcast, spacecraft and launch, and earth observation, navigation, and science, planned for release beginning later this year. Details of the five SBQ Fundamentals courses – which provide a broad introduction to all business aspects of key space industry sectors, including launch, spacecraft, communications, broadcast, earth observation, navigation, and exploration – can be found at www.spacebq.org. You can also follow SBQ at #SpaceBQ.

From 4G to 5G and beyond

Future networks removing traditional boundaries

By: Toni Pellegrino, Executive Director: Nokia South Africa and Vodafone MEA Customer Team Head

With the 4th Industrial Revolution (4IR) gaining traction in the region and industries actively embracing digtalisation, traditional business models continue to evolve. This has a significant impact on communications service providers, which is forcing them to re-evaluate their operating models to support the increased demand for connectivity. This demand in connectivity is being driven by a sharp growth in the use of technologies such as video conferencing, remote working capabilities, and access to remote education and telemedicine.

This new era of digitalisation is unleashing infinite new possibilities for industries, governments and cities that dream of building a more agile, digital, resilient, and sustainable future. It allows for physical operations to be re-designed and optimised for efficiency, productivity, and safety in real-time, and then put it all into action with the click of a button, supporting organisations in operating more effectively while meeting both their business and sustainability goals.

Through Nokia's mission-, business- and society-critical networks, we can remove traditional boundaries, transforming both industries and governments.

5G growth in Southern Africa

Operators across the Southern African region are stepping up their efforts to migrate existing 2G and 3G customers to 4G networks and the number of 4G subscribers is projected to reach 58% of the total number of subscribers by 2026. 5G adoption is also steadily increasing, with South Africa dominating the 5G market in the region. While currently most of the data traffic is still driven by 4G, 5G is expected to drive one fifth of data traffic by 2026. The region has also seen an increase in smart phone adoption, while feature phone subscriptions is on a downward trajectory.

Currently, almost all the 5G networks are deployed with non-Stand-alone (NSA) architecture and they are focused on providing fixed wireless access (FWA) or high-capacity mobile broadband solutions. However, the transition to 5G Stand-alone (SA) is required to achieve the full potential of 5G to enable ultra-low latency and extreme high capacity.

Stand-alone eliminates the need for an LTE anchor layer and connects directly to the cloud-native core network, supporting advanced network slicing functions. Since latency will be extremely low, this will facilitate new use cases such as mission-critical use cases, like autonomous driving. With carrier aggregation (CA) of mid band and low band spectrums, the coverage challenges in Stand-alone can be mitigated.

Nokia's comprehensive portfolio for CSP's allows the deployment of 5G SA networks for greenfield operators but also ensures smooth migration from NSA to SA networks as an overlay, i.e. providing seamless interworking to the legacy LTE/EPC network. Nokia has deployed one of the largest SA networks in the world with T-Mobile USA. Based on the recent studies, we expect to see more and more networks migrating from NSA to SA in the Middle East and Africa. This will start with a hybrid model (NSA + SA) and will gradually move towards complete SA architecture. Particularly in Africa, we will see 5G introduction happening in more and more countries.

Beyond 5G

It is expected that by 2030, 5G and 5G advanced will have transformed society through the many new and impactful applications and services it enables in the dimensions of enhanced mobile broadband (eMBB), Ultra-Reliable Low-Latency Communication (URLLC) and massive Machine Type Communication (mMTC) This will make mission critical and massive machine connectivity a reality, creating the need to look beyond what 5G can offer and look to new technologies with new capabilities. We have already started exploring the elements and challenges around 6G in preparation for its introduction to the market. Trustworthiness, sustainable development, and digital inclusion will remain key priorities in the 6G era and will be the foundational principles around which future networks will be defined and implemented. Artificial Intelligence (AI) and Machine Learning (ML) should be used to optimise networks, enable new services, and ultimately make our lives better, delivering immersive communication and cyber-physical systems that are versatile and flexible to meet our future needs.

Nokia will lead the Hexa-X-II project, the second phase of the European 6G flagship initiative. This new phase will expand the Hexa-X partner list to 44 organizations that are tasked with creating the pre-standardized platform and system view that will form the basis for many inputs into future 6G standardization.

Cloud at the edge

The edge cloud offers the flexibility needed to take communications into the 5G era and to take advantage of advanced, low latency applications that are set to transform our way of life. The Internet of Things (IoT) and 5G need low latency and high bit rates. To meet these needs, cloud capabilities must be distributed across the network. The edge cloud places computing resources where the traffic is at the edge of the network. Together with MEC (Multi-access Edge Computing), services can both be offered and consumed at the most appropriate locations within the network. For example, a sports stadium could use MEC to provide high quality video streams from the event to spectators and an airport could use MEC for advertising, location and augmented reality. An industrial plant could use MEC for video surveillance and as an IoT gateway for connecting IoT devices and a campus or conference centre could offer local services to residents and visitors. Distributed MEC is deployed close to the actual venue or within the venue, for example, an enterprise or stadium. We expect to see more and more edge cloud use cases become a reality in 2022.

Sustainability still a high priority for CSPs

Sustainability is high on the agenda for all the telecom industry players as industries across the globe look to reduce their impact on the environment in line with the ambitious targets set by the United Nations at COP26. Climate change is the greatest challenge of our time. The need to limit global warming to 1.5 degrees Celsius compared to pre-industrial levels was reaffirmed by the recent meeting of COP26, an event that highlighted just how crucial it is that everyone acts immediately to avert an environmental catastrophe.

At Nokia, we've set ourselves ambitious sustainability goals to reduce our environmental impact. In 2017, we were the first telecommunication equipment supplier to join the Science-Based Targets initiative, SBT provides companies a clearly defined pathway to take action on how much and how quickly they need to reduce their greenhouse gas (GHG) emissions. And in September 2019, at the United Nations climate summit, Nokia joined a select group of companies in committing to recalibrate our existing climate targets in line with the 1.5°C scenario. We are now targeting to cut emissions by 50 percent between 2019 and 2030 across our value chain.

Our new generation Reefshark SoC and Airscale systems increase energy efficiency, and our liquid cooled baseband will reduce the energy consumption by up to 60% in case of baseband hoteling. Nokia also has a series of energy savings features in 2G/3G/LTE and 5G to reduce energy consumption by 15-20%. Additionally, by activating zero touch implementation and Driveless optimisation, the site visits can be reduced by 15-20% and hence reducing CO2 emissions and with the proper recycling of e-waste and reusing refurbished equipment, most of the waste can be recycled or reused.

Accelerating to Airport 4.0

Airport 4.0 enables airports to embrace paperless operations, enhance operational and situational awareness, as well as reduce costs so they can become more competitive, outlines Mohamed Amin, digital transformation, Nokia MEA

The adoption of Industry 4.0 digital technologies, such as IoT, AI, machine learning and data analytics are expected to revolutionize the operations of airports, accelerating automation, reducing costs, and monetizing connectivity — all with the goal of improving the passenger experience and overall airport operational efficiency. Leading African airports are increasingly being supported by service providers to digitize their operations and improve their passengers' experience with a complete set of innovative technology solutions that will help African airports to transform to Airports 4.0.

The biggest challenge is the fast adoption of new technology solutions while focusing on the day-to-day operations. Airports CEOs and CIOs know that they must transform the way they used to operate airports. Going digital and paperless in Airfield & MRO operations is a must and this is becoming more obvious in the wake of the pandemic, which resulted in increasing pressure on airport operations to cater for the growing number of passengers and increased airline traffic.

Bleeding edge tehcnologies

The airport is the main smart city gateway, and the newly developed smart city's target is to attract and accommodate more visitors per year. That's why the first visitor experience on arrival at the smart city airport is key for the overall experience. Moreover, the airport is considered a small multinational smart city within itself with all its own services along with those from companies operating within the airport.

We cannot claim that airports are becoming testbeds for new technologies since they are highly regulated areas with intense security measures and critical operations. However, some leading European airports like Brussels Airport have been at the forefront of implementing new technologies like 5G-ready private wireless network. These new technologies have enabled them to accelerate digital innovation, facilitate the integration of future technologies to optimize the airport's overall operations, and increase the operational efficiency and reliability of airport systems by introducing technologies like IoT (Internet of Things), automated vehicles, mobile safety systems or track-and-trace technology.

Public vs private networks

Airports must provide broadband connectivity everywhere for wireless communications to function properly. The challenge in Africa is in encouraging telecom operators and regulatory authorities to provide more wireless spectrum to cater the broadband demand from passengers and for airport operations. This is in addition to allowing airports to use 4G/5G private wireless technologies for their operations.

The shared WiFi/public wireless networks in use today for passengers are susceptible to traffic congestion, cybersecurity threats and poor signal strength (resulting in unpredictable performance). The WiFi and public wireless networks are unable to prioritize bandwidth for critical applications. Moreover, WiFi does not support proper QoS (Quality of Service) management and public networks are engineered to meet non-critical customer needs. That's why they might be sufficient for passenger use but not for critical airport operations, which need private dedicated wireless networks.

Airport automation requirements are reliable, low latency, secure and scalable wireless infrastructure. This is especially true in the dense use case environment like the stand. Wireless connectivity should be guaranteed in this environment, including coverage, capacity and QoS, and to enable use cases such as automated gate bridge, turnaround optimization analytics and autonomous vehicles. These requirements can be addressed through dedicated private 4G/5G wireless networks for airport operations while keeping WiFi & public cellular for passengers and retail use.

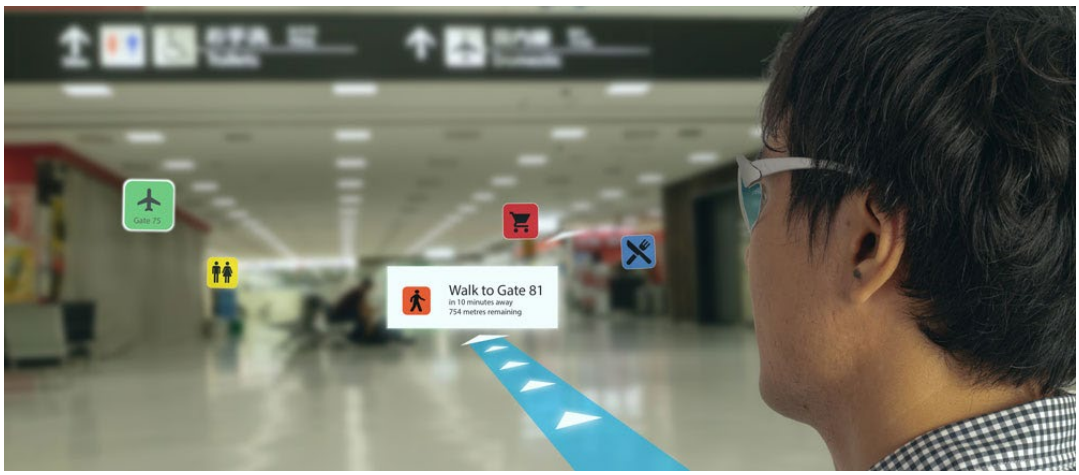
The foundation of Airport 4.0

Private wireless networks create the foundation for Airport 4.0.

Indeed, one of the key pillars in an airport's digital strategy is pervasive, reliable, and secure wireless communications able to support a diverse set of use cases and applications. Currently airports typically employ publicly accessible WiFi, which is shared by passengers and operations staff. They also have a choice of several locally available mobile operator services. Because neither of these wireless services is up to the task of supporting the digital transformation of airport operations, airports need to consider a separate, purpose-built private wireless network to support their digital operations and mission-critical communications.

Once this private wireless foundation is there, it will allow the usage of new technologies for Airport 4.0 such as IoT, AI, machine learning and data analytics, that hold great promise for accelerating digitalization, while lowering operating costs, and monetizing the services that airports can offer to partners and tenants.

Of course, if a private network is taken down, contingency plans must be in place to support mission critical operations. Robust equipment and network architecture that are resilient by design must be implemented. Moreover, potential network failover scenarios must be tested before accepting it to be operational. ■



More money more problems: Tackling mobile money fraud

Mobile money or MoMo is proving a versatile payment tool for receiving salaries, paying bills, accessing credit, online and in-store shopping, and sending money to family or friends. However, the vulnerability of MoMo services has left the door open to bad actors. Amy Saunders considers how MNOs and service providers can secure their MoMo offerings

Underbanked? There's an app for that

The MoMo market has boomed across Africa in recent years, with 70% of the world's MoMo value concentrated across the continent, amounting to a whopping US$701.4 billion in 2021.

Good old fashioned 21st century convenience has a major part to play in the rising rates of global MoMo adoption, with many regions edging increasingly closer to becoming cashless societies. Of course, global mobile banking uptake accelerated significantly during the COVID-19 pandemic when the call for socially distant methods of exchanging money surged.

In Africa, financial inclusion is a massive selling point for MoMo services. Banking infrastructure across the continent is incomparable to that of western nations, with massive proportions of the population remaining unbanked or underbanked even in 2022. Only around half of Nigeria's adults, for example, have their own bank account, whereas more than 80% have access to a mobile phone. MNOs and service providers have accordingly filled the void created by the banks, offering a full range of traditional banking services, including credit lines, via mobile money.

And it's about more than just basic access: MoMo services have proven popular even amongst groups with literacy challenges. The GSMA reports that 71% of adults in Senegal had used mobile money services within a 30-day period, but almost half reported either great difficulties reading and writing or had a complete inability to do either.

Further evidencing of how mobile money can help overcome complex barriers to financial inclusion is the fact that gender disparity is closing. With mobile money, women more frequently have access to family money, and with rising MoMo adoption, more families across Africa now have savings than ever before.

Looking at the numbers, the GSMA reported that the volume of MoMo accounts globally grew by 12.7% year on year (yoy) to 1.21 billion in 2021, with faster than expected growth attributed to the relaxing

of onboarding requirements that made it easier to open an account, and regulators implementing more flexible Know Your Customer (KYC) processes. MoMo account activity grew too; more than 300 million monthly active accounts exist, and for the first time, the global value of daily transactions exceeded US$2 billion. In total, more than US$1 trillion was processed for the entirety of 2021.

In sub-Saharan Africa, the GSMA says that transactional volumes grew by 23% yoy to 36.6 billion, transaction values grew by 40% yoy to US$697.7 billion, and the number of active accounts grew by 12% yoy to 183 million. Meanwhile, in the Middle East and North Africa, transactional volumes grew by 74% yoy to 242 million, transaction values grew by 49% yoy to US$13.7 billion, and the number of active accounts grew by 68% to 5 million.

The numbers back up the stories we're all reading. Mobile money services are not only a viable alternative to traditional banking, but indeed, possibly the future of banking entirely in select world regions. However, despite the huge success of MoMo services in Africa and elsewhere, factors limiting growth remain, including mobile phone ownership rates, policy and regulatory conventions, transaction taxes, expensive or inaccessible mobile data, and, naturally, security challenges.

More money more problems

With more than 173 live MoMo services available across the African continent and a trillion-dollar global industry, it's not surprising that bad actors have entered the fray. Indeed, mobile money fraud in Africa alone is estimated to be worth around US$4 billion a year, with Kenya and South Africa leading the way. Some 51% of transactions in Kenya were identified as suspect, 30% in South Africa, and 10% in Cameroon, according to Evina.

"Mobile money fraud is a growing phenomenon worldwide and Africa is no exception. The more the MNOs and financial sector use modern security measures to mitigate this risk, the more criminals find new ways that keeps them a step ahead," said Waheed Adam, executive chairperson, iTouch. "The lack of collaboration between the stakeholders such as the banks and MNOs, coupled with slow government intervention regarding regulation, adds to the problem."

Since MoMo services are delivered through such a complex ecosystem, each operator with their own unique quirks and delivery methods, providers and users alike are at high risk of cybercrime. Weak ID verification systems, inadequate security resources, poor training, limited access to fraud detection tools and poor customer awareness all add to the vulnerabilities inherent in mobile money. As such, phishing, vishing, SMiShing, clickjacking, malicious apps, identity theft, PIN sharing and agent-driven fraud are all very real challenges faced by providers and customers.

Mobile money fraud comes in several varieties. It might be customer acquisition fraud, where identity documents are used to create fake accounts on the platform, similar to identity theft, wherein fake ID is used to procure duplicate SIM cards for online transactions, resulting in account takeovers. Internal fraud, where merchants or employees with access to customer information, is another issue. Finally, MoMo services are ideal for money laundering: launderers can exploit mobile money services to transfer the proceeds of crime to co-conspirators located in other countries, or supporters of terrorist organisations can exploit.

"These perpetrators are part of organised crime syndicates with tentacles that stretch far and wide. Often these criminals are insiders that understand, for example, the banks processes and are a part of, or have access to the fraud and risk departments," said Adam. "Or they work for the MNOs and are able to intervene when security measures may block possible fraud, and as such allow the fraudulent transactions to continue. Banks are aware of this and are always on their guard to prevent it from happening."

Instances of MoMo fraud are growing faster even than the number of new accounts and transactions. It was big news in 2020 when Uganda saw an estimated US$3.2 million stolen by hackers utilising more than 2,000 SIM cards. However, this has been rather overshadowed by the US$53 million loss by MTN Nigeria's new MoMo Payment Service Bank (PSB) back in May 2022, when in just a few days after its inauguration, some of 700,000 unauthorised transfers to 8,000 accounts in 18 Nigerian commercial banks went undetected for several days. While the transfers were stopped (and the vast majority reversed) and services were suspended for 24 hours, MoMo PSB is reportedly suing the 18 banks involved for return of the money and asking them to outline how much of the money was received in their customers' accounts.

Clearly, much tighter defences are needed to protect mobile money providers and end users alike.

People; process; technology

For the MoMo sector to continue its projected growth path, security measures must be upgraded to retain consumer trust. Providers who fail to adopt stringent measures against cybercrime can expect to see lower customer uptake than their competitors; this is doubly concerning for MNO mobile money providers who, if faced with loss of reputation for inadequate MoMo security, may also lose core mobile business customers too.

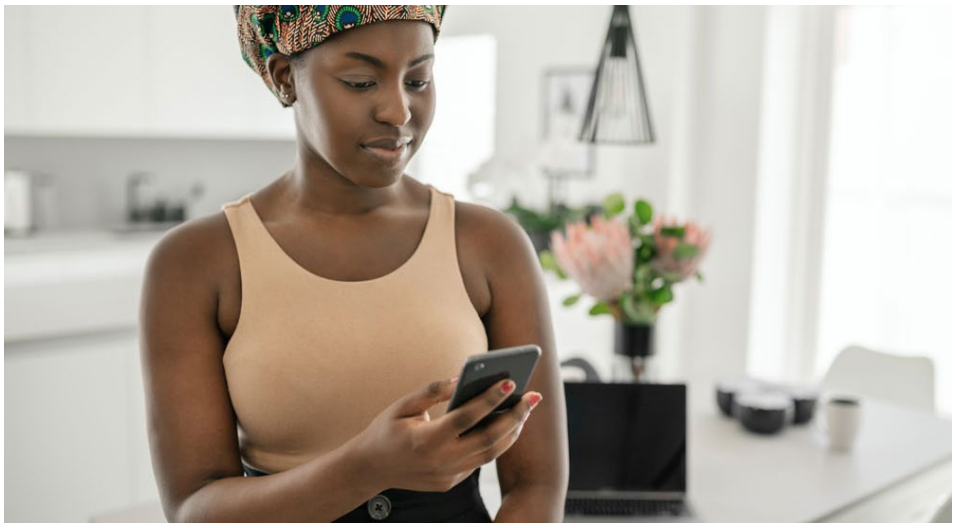
The GSMA claims that a holistic, multi-pronged solution is required, with three key areas addressed:

- People: consumers, third party participants, and the provider's employees
- Process: legal requirements, internal and supply chain management, incident response plans
- Technology: control of hardware and software assets, inventory

As for home and workplace computing, mobile money users have a significant degree of responsibility to protect themselves. Don't click on suspect links, don't download dodgy apps, don't share passwords/PINs, and so on. While this should be common sense to many, further unified customer education and awareness campaigns are required. However, this is a challenge in and of itself given the low literacy levels in some regions, where digital security and financial education are also low priority. Moreover, consumer education programmes can only go so far.

"Educating the public is a must and again we see disparate attempts rather than one voice. By bringing that voice as one, the power of the message may be lasting," said Adam. "In Africa where the average age is just 20 years old, it is obvious that most mobile money users are young. We have seen a significant rise of fraud in this area."

Regulatory frameworks on cybersecurity are also key. These vary widely country by country, but some nations are now creating frameworks specifically for the MoMo market. Kenya and Nigeria, for example, have adopted risk-based cybersecurity approaches which require regular assessments to identify all cybersecurity vulnerabilities, threats, likelihood of successful exploit, potential impact to information assets, and the associated risks. The creation of these frameworks is in its infancy for mobile money applications, and enforcement is challenging. In some countries with inadequate regulation, the Mobile Money Certification – a self-regulation tool – can be a good solution.



Industry standards on cybersecurity are fragmented, in part due to the continually changing environment. However, the lack of uniform global standards prevents collaboration and limits efforts to share security expertise between different operators. This fragmentation must be addressed in order to combat the pressing challenge of MoMo fraud. The GSMA recommends that global mobile money providers adopt industry-wide accepted standards on cybersecurity, including ISO and NIST frameworks, which will provide a unified approach, and be particularly helpful for those companies with multiple-country operations.

On the technology front, providers must continually upgrade their security mechanisms in the face of increasingly sophisticated attacks, an onerous task. According to the NIST security framework, the key elements of technology systems in cybersecurity should consider the ability to identify, prevent, detect, respond and recover from threats. For MoMo services, providers should apply principles of security by design and privacy by design to products, services, protocols, communications and processes, and conduct regular system assessments to identify gaps.

Another area to consider is the connections between services. Mobile money often moves across several different systems, and even if each of those systems has high-level security in place, the connections themselves may be vulnerable, allowing bad actors an easy way in to reroute funds. MNOs must establish ways of safeguarding the integrity of communications across the network, securing critical assets and preventing unauthorised access to any of the nodes in the networks. Preventative and detective measures should be implemented to protect both the integrity of mobile devices and their networks.

Combatting mobile money fraud

With more than a decade since the inauguration of the world's first mobile money service behind us, MNOs, service providers and governments have begun to address security challenges in earnest.

Like many traditional banks in the UK, a large proportion of MoMo services include caps on both volume and size of transactions, which reduce the risk of systematic failure and potential losses from fraud. Some providers have developed open-source fraud management and anti-money laundering systems that are both accessible and interoperable, and well-suited for a diverse digital financial service environment.

Meanwhile, some android mobile money applications can already validate the transport layer security (TLS) certificates through default certificate verification systematic mechanisms, which enables the systems to safeguard user data confidentiality and transaction integrity through user authentication of transactions. Other MoMo providers have adopted the utilisation of keys to encrypt the user PIN to enable a secure authentication process for the service.

"SABRIC (South African Banking Risk Information Centre) and the recently formed COMRiC (Communication Risk Information Centre) are bodies that represent the banking and MNO sectors respectively in South Africa," said Adam. "One of their main priorities is to tackle the question of fraud, while international bodies like Mobile Ecosystem Forum (MEF) have also been engaged in order to understand efforts abroad. This collaboration is precisely what is needed to mitigate fraud going forward. We sincerely hope that it is given the attention needed as more and more people are defrauded each day."

Regionally, several African nations have started to strengthen their regulatory and supervisory technological solutions to strengthen MoMo safety and security. The Nigerian Central Bank and Nigeria Inter-Bank Settlement System are creating a data stack incorporating data warehouses and dashboards to expand risk-based and immediate financial supervision. This also provides information for developing new policy frameworks to strengthen regulatory interventions and financial inclusion provisions on MoMo transactions.

Meanwhile, the National Bank of Rwanda is using an automated electronic data warehouse to streamline reporting and supervisory processes of more than 600 financial institutions like banking and microfinance institutions and savings and credit cooperative organisations. MoMo data is automatically retrieved every day to monitor transfer operations, enabling efficient tracking and identifying potential money laundering activities.

In other news, most African nations are now cracking down on unregistered SIMs in an attempt to fight a range of challenges, including MoMo fraud. Earlier this year, the Ghana Chamber of Telecommunications announced that the nation's telecommunications companies have collectively blacklisted some 28,000 SIMs and 17,000 identities as part of a joint program to reduce MoMo fraud. 35,000 fraud and scam incidents have been reported in Ghana since a common blacklist was created back in August 2021.

"Mobile money services in Ghana are secured. But the challenge has always been our cyber hygiene. Our call is that you do not disclose your passwords or pins to anyone," said Ken Ashigbey, CEO of the Chamber.

Lesotho and Namibia, too, have recently launched campaigns for citizens to re-register their SIM cards with biometrics and digital IDs, with South Africa expecting to do the same imminently. The Communications Regulatory Authority of Namibia (CRAN) announced in October plans to deactivate all SIM cards not registered by 31 December 2023.

"A registered card comes with security benefits; it helps prevent identity theft; forms the basis for systems that combat phone-based fraud; and it aids in combating cybercrime," said MTC's chief human capital, corporate and marketing officer, Tim Ekandjo. "Moreover, this is particularly essential given the high rate of these forms of crime committed. It also generally comes with convenience value of accessing electronic services, especially now that more companies are upgrading their service offerings to digital platforms."

The future *might* be mobile

The benefits of MoMo services need not be stated, for they are truly life changing to those unbanked and underbanked individuals with no viable alternative, and invaluable to promoting financial inclusion, particularly for women.

With mobile money on course for a staggering growth trajectory, MNOs and service providers must look to upgrade the security of their networks in order to protect themselves, their customers, and retain consumer confidence amidst an ever-evolving cyber threat environment.

"Gaining trust is the first challenge for mobile money," said David Lotfi, CEO at Evina. "For people to be confident enough to receive their salaries via mobile money or to leave larger amounts of money in their wallets, trust is mandatory."

As bad actors streamline their methods of attack, so too must cybersecurity solutions enhance and expand their security toolbox. In line with the GSMA's 'people, process, technology' multipronged approach, all participants in the mobile money ecosystem must educate and adapt to the rapidly-changing threats threatening the environment.

"Fraud is pervasive: for every direct victim of fraud, a hundred people are indirectly impacted," said Lotfi. "Fighting fraud is the fastest, easiest and most powerful lever to accelerate the adoption of this payment method." ■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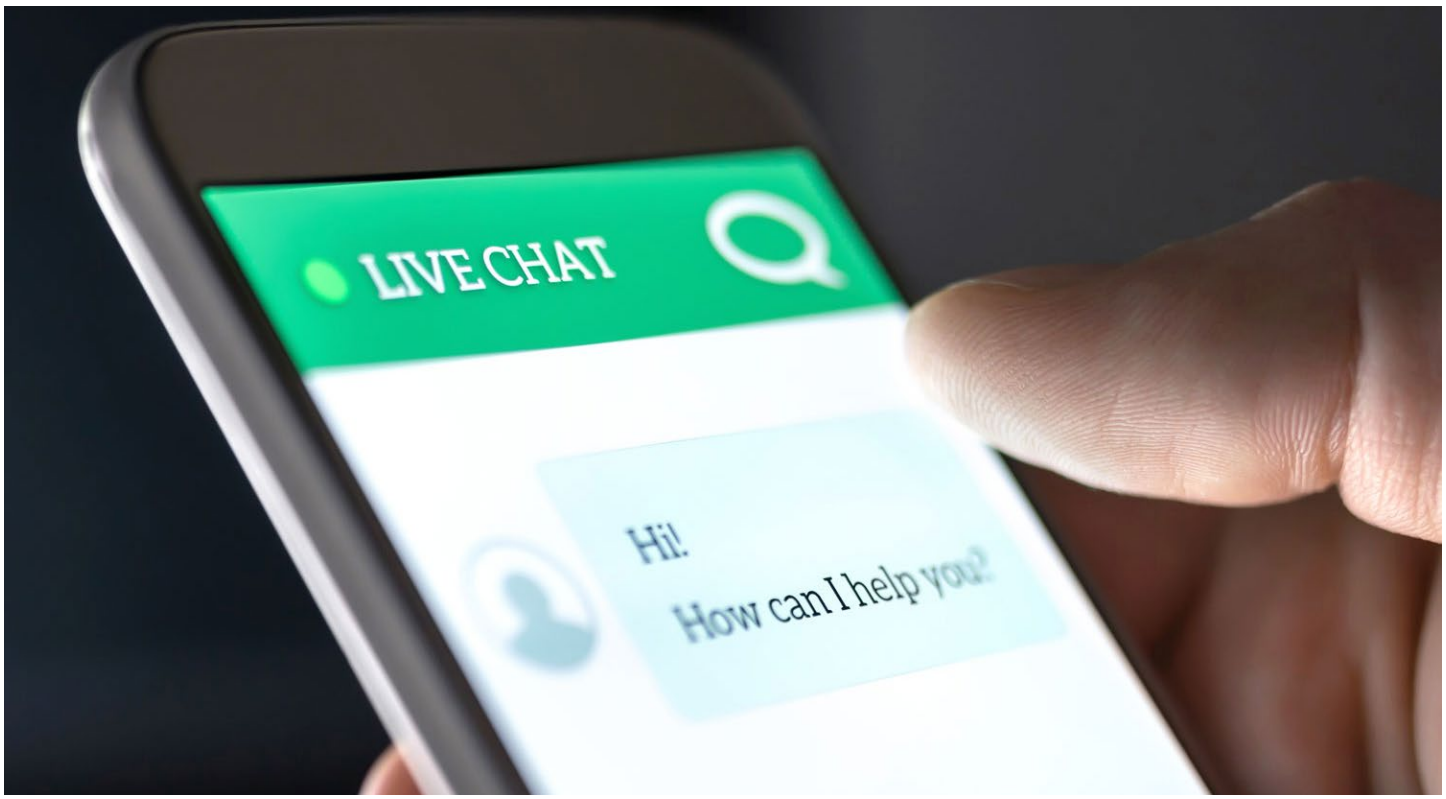

Five things you need to know about conversational commerce

With the shift to online commerce, expanded rapidly since COVID-19, businesses are exploring better ways to connect with consumers through conversational commerce, according to Dario Betti, CEO, Mobile Ecosystem Forum

Conversational commerce is all about mobile messaging, which has been steadily growing over the last decade. 25 billion mobile messages are sent every day by more than 3 billion people. This is a massive phenomenon.

We tend to use messaging platforms for personal conversations with friends, and, until now, they haven't been fully leveraged by marketeers and brands. This is about to change. So far, brands have been sending single messages – the 'I am here' message, but with true conversational commerce, brands ask you what you want, not tell you what they want. Indeed, conversational commerce is about ongoing engagement and deep interactivity with brands. It allows customers to speak to brands as if they are real people building individual relationships that stick.

Conversational commerce is an evolution of the app economy, representing the third wave of marketing strategy. The first wave was broadcast: advertisers broadcast a single message to all potential customers via selected magazines, radio shows, billboards and TV placements. The second wave was via internet, which enabled more personalised broadcast messaging via email and targeted ads.

This third wave, conversational commerce, elevates the interactivity offered by websites, apps and email to a new level, building lasting relationships through two-way individualised messaging via a unique mix of channels – the channels we use every day in our personal lives. It brings customer service full circle back to the level of individual customer service and engagement offered by traditional mom-and-pop shops.

Not all companies appreciate the full potential of conversational commerce, but at the Mobile Ecosystem Forum (MEF) we anticipate the market will grow rapidly as more businesses register the benefits. Conversational commerce will fundamentally change the way we buy, sell, and serve our customers.

To help you get ahead of the game, here are five things you need to know about conversational commerce.

1. Broadcast messaging is out

Broadcast messaging, sending the same message to everyone, works extremely well to build and establish a consistent brand but is terrible when it comes to interaction.

People now expect to have a meaningful conversation about products and services. They want to know what the experience of the brand is like, to really feel it. That's why influencer marketing is so popular – there is an opportunity to engage with a real person and understand the brand experience.

Several challenges are leading to the rapid decline of broadcast messaging: people skip ads by watching more streaming services, podcasts are on the rise, and email is so full of spam that it's almost impossible to get noticed.

2. Understand the new messaging channels

Conversational commerce will be delivered over a variety of messaging solutions, and the landscape continues to change – it is important to be familiar with the tools of this new trade. Some messaging solutions are familiar: millions of businesses already rely on SMS for simple communications with consumers, WhatsApp is known for personal messaging, and is also now joining the business communication with new features. Different markets show different take up: the USA prefers Facebook Messenger, WeChat dominates in China, Line in Japan.

One messaging channel that should be highlighted is RCS (Rich Communication Services). RCS can be considered an evolution of SMS. Over 1.2 billion smartphones are already RCS enabled, so the potential is huge. RCS is supported by big tech companies like Google, as well as mobile operators.

RCS has been designed to facilitate a host of new opportunities for businesses and brands to engage with their customers, build relationships and increase sales. It offers an upgraded experience with unique features to enable rich and meaningful engagements among users and businesses.

What will make RCS so popular is that it brings new benefits to consumers: you can send larger, higher-quality images; stream audio and video; provide better group chat capabilities; enjoy greater security than found with most apps; and make use of several in-call and post-call features.

With this popularity and growth among consumers comes opportunities for business to engage in true conversational commerce that will build lasting relationships with customers.

3. Persona marketing is in

To elevate their marketing and meet the needs of modern consumers, brands need to become personas. Through conversational commerce, brands can now both sound and behave like a person. They can be their own influencer. They can describe and explain products, engage potential users and discover their needs, convert people into loyal customers, and provide a fantastic ongoing service.

Imagine a retailer selling barbeques in bricks-and-mortar stores. Typically, they will sell lots of products in June and, if they're lucky, see customers again next year. With conversational commerce, this retailer can understand their customers' needs (e.g. having a garden party), can service those needs (e.g. informing customers when the weather is likely to be sunny or sharing recipes), and provide ongoing support (e.g. how to effectively clean and service the barbeque).

RCS allows the retailer to deliver a tailored mix of video instructionals, personalised messaging and two-way interaction. This can elevate a simple sale into an ongoing relationship with their customers. The retailer can better understand their customers and their needs to provide the very best service.

4. Data needs orchestration

To make conversational commerce work, companies need data. They need to understand what their customers want, need, and expect.

A typical support journey might start with web support articles, through to chat robots, and then a human agent. It's a frustrating and time-consuming journey for customers and an inefficient use of support staff. It's like having three different shop windows, there is no coordination. Brands need to rethink their communication and orchestrate their data to help.

Omnichannel orchestration is incredibly important – and RCS facilitates this. When we interact with people, we automatically choose the right channel for the job and can switch task, tone, and register at ease. With conversational commerce, brands can do the same.

By bringing the customer data along with them on their journey, the customer feels truly heard and service their needs in the way they want.

5. People are lazier than ever

Traditional transactional commerce is all about getting the sale as quickly as possible. The aim is to get the customer to do one thing fast.

But people become bombarded with sales messages, reducing the efficacy of calls to action. When you are told 20 times in a day to 'buy now' you start to tune it out. Even worse, customers begin to actively avoid your brand, feeling burnt by pushy sales techniques when what they need is support.

People no longer want simple transactions; they value conversation, being heard, and an understanding of who they are and what they've done. They have a wealth of information at their fingertips and don't have time for pushy marketing or waiting on hold. They're better informed yet lazier than ever.

Imagine, however, being able to bring the personal service of bricks-and-mortar shops, where assistants can help you achieve your aims, together with the efficiency of digital services and the functionality of RCS, allowing you to be helpful and engaging at scale. You could make every interaction count, make messaging stick, and provide a great customer experience.

6. Robots are our friends

Providing an orchestrated omnichannel conversation commerce strategy that looks after every customer's individual needs would be prohibitively expensive for most businesses. Fortunately, the robots are here to save us. AI can guide customers in the right direction and quickly learn what they need.

While chatbots have, historically, been unpopular due to their frustrating limitations, many of us are now speaking to chatbots without even realising. And they're getting smarter every day!

It's important not to outsource the entire process to robots, however. There is still an essential role humans play in conversational commerce. While AI could help and guide customers, it may get to the point where they need to speak to a human being. This is key to conversational commerce: giving people what they want and need at the right time in the most helpful way.

By bringing all the data the AI has already gathered along on the journey, the human operator can quickly and effectively deal with the issue, allowing call centre staff to get on with the job of customer care.

It's all about finding a holistic approach that brings information together to find the best way to help. It may be a simple SMS reminder, how-to videos, a quick call-back, or an ongoing text conversation. Sometimes we need immediate help, sometimes we want to peruse information at our own pace.

Conversational commerce is about listening, hearing, and helping. By understanding what your customers want and need, how and when they consume information, and opening the process up to two-way communication, you can create lasting relationships that transform simple sales into a complete service.

It may sound futuristic, but companies already implementing a conversational commerce strategy, and leveraging the functionality of RCS, are seeing ten times the efficacy of their marketing communications. This competitive advantage won't last long, however. In the next five years, conversational commerce will become the new paradigm in marketing communications. So, get yourself educated by attending events, learn about RCS, look for real-life case studies, and start putting conversational commerce into practice. Make sure you're not left behind. ■

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Streamlining tower inspections via drone

A tall order

With more than 39,000 communications towers spread across three regions and 11 countries, IHS Towers has its hands busy with the monumental task of monitoring each and every one. Each of IHS Towers' 2,217 towers in Cameroon must be regularly checked to evaluate antenna positions, faults and broken equipment.

Traditional methods see qualified specialists climb to the top of each tower – measuring as high as 300m · to take photos and make observations, which are then compiled into a report. The inspector risks serious injury and even death should they fall from such a height. Moreover, inspections can be time consuming, expensive, and provide only low quality or incomplete data.

SkyVue proves drones a boon for tower inspection

SkyVue trialled a project in 2020 to improve the inspection process of the IHS Cameroon towers.

The company performed a standard tower inspection using drones and created an intelligent 3D digital twin of the tower. The tower could be made available virtually for IHS Towers teams to use for their planning, including making measurements, new installations, or to explain engineering work.

By leveraging PIX4Dscan and PIX4Dinspect, SkyVue successfully inspected a tower in Douala, Cameroon, without utilising expensive equipment, and without sending an inspector to climb up it. The inspection took just one hour instead of a whole day.

Using PIX4Dscan, the image capture was automated by the tower flight plan within an iOS app, drastically reducing the time demands of both planning and taking the high-resolution photos. The cloud based PIX4Dinspect used automatic machine learning algorithms to process the data rapidly, measuring antennas to help identify them in combination with the pictures taken in an underneath orbit, which show the coaxial port entries underneath the antennas. This new, more time-efficient and accurate workflow means that multiple towers can now be inspected within a single day. The SkyVue team could then add their own notes to different elements of the tower directly from their browser.

"The accurate 3D model of the tower generated was exactly what SkyVue wanted: an intelligent digital twin, which displays automatically the height of the antenna and its angles (azimuth, downtilt and plumb)," said Raoul Fossi, CEO of SkyVue Solutions.

Risk-free tower inspection

SkyVue completed the tower inspection in a fraction of the time compared with traditional methods and managed to cut inspection costs by one third. The combined capture and process workflow of PIX4Dscan and PIX4Dinspect were, according to SkyVue: "a game changer for the inspection world because they are custom designed to address an industry specific pain point."

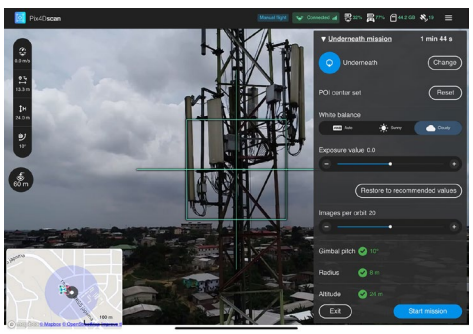
SkyVue highlighted the auto-generated inspection reports, automatic antenna detection, pre-planned tower flight mission in app, and generation of comprehensive reports as key features valuable for the project. However, the greatest win was the removal of the risk factors associated with tower inspections.

"This project was special to us because it made people safer. By performing tower inspections with drones, we cut completely the need for humans to climb on towers for inspections," said Fossi.

IHS Cameroon is reportedly now in talks to roll the solution out nationwide, in a major technological advancement for the communications tower sector.

"We are excited to see the developments of using drones for telecom inspections. It is an ever-changing industry," said Pablo Santos, business strategy Manager, Pix4D. "Since this project was completed, we have added various AI algorithms such as automatic rust detection that streamline the overall process of drone inspections and result in intelligent digital twins."

The original story was published on pix4d.com
Images courtesy of SkyVue Solutions



AI technology accelerates efficiencies and sustainability for new power deployments at sites in Angola

MEGMAR International provides infrastructure solutions to the telecommunications industry. The company engages with tower operators to enable the creation of new towers in half the industry standard time, while complying with the industry's evolving demands.

Redefining efficiency for hybrid solutions

Hybrid power systems for cell towers are essential for delivering high SLAs for mobile connectivity in geographies with poor grid infrastructure. A typical set up for hybrid systems relies on pre-programmed rules to switch between grid, solar, battery and on-site diesel according to a set of predetermined criteria.

While this approach delivers some improvements in power efficiency, reducing operating costs and cutting greenhouse gas (GHG) emissions, the programming is static and results in under-utilised power assets. Additionally, while equipped with some level of basic monitoring capabilities, the huge amount of operational data generated is too unmanageable to offer any actionable insight for optimisations for tower operations at scale.

MEGMAR has utilized PowerX's artificial intelligence (AI) tools, which have taken the industry forward in two giant technical leaps. First, the tools unlock data to redefine remote monitoring, site operations and maintenance for entire cell tower networks and their equipment. Secondly, self-learning AI is applied to drive autonomous continuous site-level improvement at scale, delivering significant reductions in power consumption and CO2 emissions, and providing a wealth of analytics that can identify previously hidden anomalies and inefficiencies.

MEGMAR – PowerX approach is a game-changer

MEGMAR's first application oft he PowerX platform ist he rollout of 100 power systems for tower operator Anglobal in Angola, to ensure most efficient operations of the power systems deployed with the lowest CO2 emissions from day one.

"The incredible, mind-blowing thing about deploying PowerX is that it's like having an accountant standing at the tower site, along with an operations manager, a technical guy, a sustainability consultant, a cell provider customer service rep and a data analyst all making decisions together to have this one little site in the middle of nowhere operating at the cheapest, most efficient, most environmentally friendly level possible," said Andre Herbst, CEO, MEGMAR.

Anglobal has a network operation center with multiple ways of investigating tower performance. "They've got one screen that monitors generators," said Herbst. "Then another that watches the power system, another for CCTV, another for grid power. The list goes on. What the PowerX platform does is bring everything together on a single dashboard - not only consolidating operations under one system but then using artificial intelligence to have all these components working together at a level impossible using manual processes."

Minimizing power consumption at tower sites is the priority goal of employing the PowerX platform. Whilst hybrid systems reduce power consumption by switching between grid, diesel, solar and battery power sources using pre-programmed rules, the PowerX system learns the behavior of each individual tower and adjusts its performance in real-time using on-site analytics.

"Take one aspect of a tower's operation - the number of people connected to the tower," said Herbst. "The more devices connected, the greater the power draw. PowerX's AI might look at that tower's operation and learn that on specific days power consumption is less than the rest of the week. So, the artificial intelligence will automatically be able to adjust the settings of the Hybrid power system to reduce fuel usage on that site. It doesn't sound much for a single tower, but when you multiply that by the 12,000 towers in a network, the reduction in fuel costs and CO2 emissions are astronomic."

The ability to remotely control aspects of a tower's operation, especially in developing regions, was a major draw for MEGMAR.

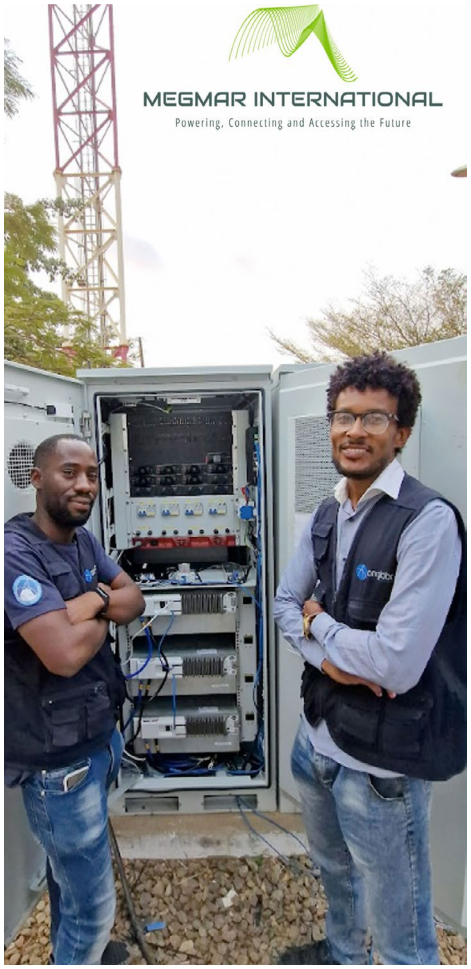
"You may be sending a field operations team to a tower every month or so," said Herbst. "First, when they get there, they're not going to be able to see the inefficiencies hidden in the data that this tower produces. There's no way any technician can do that in the short time they have on site. Secondly, you have to physically get your team to the site. You need a big 4x4 that's going to take a day and half to reach the location in some areas, over hard territory that may be in a conflict zone. That's time, mileage, fuel costs, wear and tear. It's expensive, inefficient and occasionally dangerous. Having these inefficiencies identified, and most importantly addressed immediately and automatically by PowerX on-site, means significant reductions in manpower, fuel costs, CO2 emissions, and technician risk."

But it's not just operations teams who will soon reap the benefit of PowerX's AI in Angola. PowerX's auditing and reporting functions give CFOs unparalleled insight into the long-term function of their network, creating accurate usage statistics for tenant billing and enabling better planning for capital expenditure over the tower's lifetime.

"The worst thing you can do to a CFO is walk into their office and say: 'Hey, I need $2 million to replace batteries next month.' That kind of financial instability and unpredictability makes the CFO's life very difficult. With the PowerX analytics however, we can look at the battery performance over its lifecycle and determine months in advance when it's going to need replacing. That's a happy CFO, because they're seeing more predictability in both revenue and capital expenditure," said Herbst.

MEGMAR's mission isn't simply helping clients reduce costs, inefficiencies and emissions. The big picture is connecting the people of Africa to each other and to the wider world.

"For example, mobile internet has a profound impact on children's lives, and their future prospects. The world is facing many crises at the moment, and we can give children the online education and tools they need to tackle these problems themselves in the future. That's not just life-changing, it's world-changing. The PowerX platform is going to be a major contributor to getting these towers installed and operating dependably and effectively," said Herbst.



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Ericsson solves network challenges with AI app suite

Ericsson has launched its **Service Continuity AI app suite**, the latest addition to its network support services portfolio, in order to simplify technology challenges for service providers. The suite utilises AI and machine learning (ML) to identify issues and provide predictive and pre-emptive support before they impact network performance.

The app suite is divided into five categories: insights; performance; assurance; self-healing; and energy efficiency. Each AI app is an intelligent algorithm created jointly with communications service providers to spot and address potential network issues quickly. The algorithms work within specific parameters to elevate performance in line with the goals of the service provider. An AI app is operational 24/7, ensuring complete oversight of the network, otherwise challenging without automation.

One of the apps is CPRI/SFP failure prevention, which identifies risks of service outage due to CPRI link failure that could adversely affect user experience. Usually, an outage would require an emergency site visit, but with the app, the service provider is able to monitor all relevant links path loss trends, and a site visit is only required once certain thresholds are passed. This can cut costs per site visit by around 30%, while the reduced downtime will enhance user experience and overall network performance and stability.

Other apps measure and analyse energy efficiency per site to deliver detailed insights into the root cause of any inefficiency. Ericsson has measured daily power savings as high as 15% with a European service provider by utilising the automated energy-savings function of an AI app that enables intelligent activation of the radio's deep sleep feature.

"Ericsson Service Continuity with its human-guided AI/ML network intelligence will empower our customers to think in data to constantly improve performance while adapting to changing market conditions," said Nello Califano, head of strategy & portfolio management, business area networks at Ericsson. "Our suite of AI apps will continue to grow as we create new ones together with our customers. We focus on the outcome, creating simplicity for scale."

Real Enablement Suite accelerates new IoT solutions to market

Globalstar's Real Enablement Suite is an innovative portfolio of satellite asset tracking hardware and software solutions, featuring a powerful application enablement platform for processing smart data at the edge.

With Realm, users can accelerate new solutions to market with AI-enabled applications that generate an advanced level of telematics data. Moreover, by defining smart data at the edge, clients only send the data they need over Globalstar's LEO satellite network, thus significantly reducing transmission costs.

"This newest innovation from Globalstar represents a continued commitment to IoT as a core business pillar. With Realm Enablement Suite, customers have the flexibility and agility they need to optimise data from their tracking devices and edge sensors," said Dave Kagan, Globalstar CEO. "Generating smart data at the edge for delivery to the customer endpoint makes all the difference in transmission efficiency and operational performance."

The Realm Enablement Suite comprises:

- Integrity 150 satellite solar-powered, long life asset tracking device. This delivers long-lasting, no-maintenance ownership for a variety of markets, including government agencies, transportation, energy, construction, agriculture and forestry. Integrated into the device is a GPS receiver, accelerometer, Arm CPU on Nordic Semiconductor's nRF5xxx SoC, standard and customizable messaging capability, tamper detection and BLE5 Bluetooth connectivity for a wide variety of sensors. Its flash memory offers 8Mb of storage for application data and firmware updates.
- ST150M satellite modem module. This helps partners create new products in a fraction of normal development time and cost. The module includes a GPS receiver, accelerometer, Arm CPU on Nordic's nRF5xxx SoC, 8MB external flash memory, integrated voltage regulator and BLE transceiver. Its low-power design enables integrators to minimise battery requirements. The ST150 Dev Kit provides an ST150M module with Arduino Uno Rev3 Form Factor and satellite and GPS patch antennas, the fastest way to develop and test technology designs before committing them to hardware.
- Realm enablement application platform. This is the key to unlocking the capabilities of field devices, slashing hundreds of hours of development time for new products and AI-enabled applications at the edge. The low code edge platform provides a lower barrier of entry for partners developing custom applications and solutions. Modular software features a Unified API for fast applications development and easy management

of all hardware, platform-specific, and value-added edge features. This includes the Globalstar BLE library and ela Innovation BLE (Bluetooth Low Energy) sensors libraries. The platform provides an ongoing applications development ecosystem as innovative solutions are added by Globalstar and shared by developers.

"The end-to-end design of the new Globalstar Realm Enablement Suite ecosystem removes the technology barriers to profitable innovation in the tracking and industrial IoT space," said David Haight, Globalstar's VP of IoT. "Realm delivers greater speed and lower cost in both development and deployment by providing the flexibility to innovate with the power to host applications and process data on edge devices for faster action and enhanced performance. The Realm Enablement Suite is what our partners around the world have asked us for."

SeeHawk Monitor automates network management

PCTEL recently launched its SeeHawk Monitor, an automated spectrum monitoring system for P25 public safety radio and other critical communications networks. The monitor also enables automatic testing of the uplink signal to determine whether in-building coverage complies with fire code standards.

The fully scalable monitor enables continuous monitoring of spectrum across multiple radio sites; rapid detection and characterisation service impacting noise and interference; investigation of issues with spectrum analysis in real-time or event replay modes; and automatic testing of the uplink signal during in-building coverage testing.

Composed of multiple Remote Test Units (RTUs), SeeHawk monitors spectrum and radio signals at each site, while the SeeHawk Monitor Platform Manager monitors and configures all RTUs. The monitor's uplink testing feature simplifies ensuring high-quality indoor coverage that complies with National Fire Protection Agency (NFPA) and International Fire Code (IFC) standards. The SeeHawk Monitor Platform Manager remotely manages automated uplink data collection on RTUs throughout the network.

Grandstream launches two dual-band WiFi routers, one with WiFi 6

Grandstream has announced the joint release of two new dual-band WiFi routers: GWN7062 and GWN7052. The routers provide 2x2:2 MU-MIMO to support mesh networking, wired AP connections, VPN, advanced QoS, and powerful security features.

The GWN7062 is powered by WiFi 6 technology and provides WiFi speeds up to 1.77Gbps for up to 256 concurrent users, while the GWN7052 is powered by 802.11ac WiFi technology to provide speeds up to 1.27Gbps for up to 100 concurrent users. By providing accelerated WiFi speeds with strong security protection and advanced features, the GWN7062 and GWN7052 are ideal for SMEs.

The GWN7062 and GWN7052 both provide enterprise-grade security features to ensure secure WiFi and VPN access, including unique security certificates and random default passwords. These routers support VPN to allow remote employees to securely connect to the corporate network from home or branch offices. To ensure easy installation and management, they include a built-in controller embedded within the product's web user interface. TheGWN7062 and GWN7052 will also be supported by GWN.Cloud, Grandstream's upcoming free cloud Wi-Fi management platform. For home use, the routers can support bandwidth-demanding applications, including smart office and home automation, video conferences, web meetings, 4k Ultra HD video streaming, online gaming and more.

The GWN7062 dual-band WiFi 6 router specifications include: dual-band 2×2 MU-MIMO with DL/UL OFDMA technology; 64-bit 1.2GHz quad-core processor; WiFi speeds up to 1.77Gbps to support up to 256 wireless devices; up to 32 total SSIDs, 16 per radio; 1x Gigabit Ethernet WAN port, 1x Gigabit Ethernet port (WAN/LAN configurable), and 3x Gigabit Ethernet LAN ports; 1x USB 3.0 port, 1x reset button, 1x sync button; embedded controller can manage itself and up to 50 Grandstream GWN Series Aps; supports mesh networks with Grandstream APs to provide network expansion; and built-in VPN support.

Meanwhile, the GWN7052 dual-band Wi-Fi router specifications include: dual-band 2×2 MU-MIMO; dual core 880MHz processor; WiFi speeds up to 1.27Gbps to support up to 100 wireless devices; up to 16 total SSIDs, 8 per radio; 1x Gigabit Ethernet WAN port and 4x Gigabit Ethernet LAN ports; 1x USB 2.0 port, 1x reset pinhole; embedded controller can manage itself and up to 30 Grandstream GWN Series Aps; supports mesh networks with Grandstream APs to provide network expansion; and built-in VPN support.

New VSAT service offered for small maritime vessels

Marlink has unveiled its new Ku-band VSAT service designed to meet the needs of smaller offshore, merchant and fishing vessels.

Sealink 60 is designed to provide flexible, regional connectivity to vessels seeking to upgrade from L-band services. The service offers clients the choice of two lightweight 60cm antennas with easy installation, available with a choice of service plans, with or without bandwidth guarantees. Sealink 60 can serve vessels in several regional coverage areas, as well as during transit between those areas.

"The introduction of Sealink 60 marks a further evolution of Marlink's VSAT services, since it will exclusively cater for vessels requiring reduced antenna size and maximum flexibility in terms of coverage and throughput," said Tore Morten Olsen, president, maritime, Marlink. "We understand that these smaller ships may regularly switch areas of operation or spend planned time in lay-up and we have designed our plans to deliver maximum value to our customers in these markets."

Users can enjoy unlimited usage with data speeds up to 5Mbps, and a choice of Maximum Information Rate (MIR)-only or combined MIR/Committed Information Rate (CIR) plans. The service can be upgraded from regional to global coverage, with short term bandwidth upgrades and up to six months of lay-up per year also available, to deliver full customer flexibility. Sealink 60 is hybrid-ready, combining the VSAT service with low latency, high-bandwidth terrestrial technologies like 4G to create a resilient hybrid network solution.

Marlink's onboard digital Xchange server oversees network management for crew and corporate connectivity, with prepaid 'crew calling' options for voice, email and web browsing on their own devices. This variety of options allows shipping companies to choose the right package to meet business and crew communication needs on board their vessels.

Look out for...

Streetlights deliver wireless connectivity via LiFi

Signify has recently completed a game-changing project delivering wireless connectivity via LiFi to a city in Finland. LiFi utilises light – visible, UV and IR - to transmit data between devices, with the transmission enabled by the modulation of light intensity; in contrast, WiFi uses radio frequency to induce a voltage in an antenna to transmit data.

Signify has installed its BrightSites solution delivering fast, reliable connectivity to every street corner in Tampere utilising the city's network of streetlights. The solution removes the need to dig and lay fibre connections, while needing only a fraction of the time and cost of traditional methods to get up and running. LiFi is expected to accelerate the deployment of current and future broadband IoT applications such as 5G, WiFi and smart city services.

"Tampere's ambition is to create the most sustainable society using the power of digitalization and technology," said Teppo Rantanen, executive director, Tampere. "It's a society that lives on real-time, data-driven actionable insights. We have partnered with two industry leading companies, Signify and Edzcom, to create the foundation of such a society. With their technology and services, Tampere aims to take a leap forward in creating the society we strive for."

Through Signify's BrightSites solution, lighting infrastructure becomes a platform for real-time sensors, cameras, and other digital technologies. In the future, this could include technologies that provide situational awareness data for autonomous vehicles and data streams for drones, both of which will require city-wide high speed data connectivity.

The LiFi market is booming, with solutions being rolled out in schools, hospitals, government, enterprise and military applications. The 'Light Fidelity (LiFi) & Visible Light Communication Market Research' report estimates the current market value at US$12,330 million in 2022 and expects a compound annual growth rate (CAGR) of 23.1% for 2022-2028 to reach US$42,910 million.

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Ericsson celebrates 125 years in Egypt

Ericsson has celebrated its operational presence in Egypt of more than 125 years with key industry players and H. E. Amr Talaat, minister of information and communications technology.

Ericsson reaffirmed its commitment to the country as part of its mission to support technology innovation and advancement. Under this commitment, Ericsson has established an Artificial Intelligence (AI) Innovation Lab at Sultan Hussein Kamel Palace in collaboration with Information Technology Industry Development Agency (ITIDA). The company also plans to expand its operations in the AI domain and enhance its activities related to stimulating technological innovation, robotics, and the development of interaction between robots and humans using AI technologies. In addition, Ericsson has emphasised increasing its efforts in developing young talents while supporting innovative thinking in the emerging technologies.

"Egypt's Telecoms and Information Technology sector has a combination of both modernity and rootedness," said His Excellency Amr Talaat, minister of information and communications technology. "Ericsson's celebration of the 125th anniversary of its presence in Egypt is a proof of how solid and stable the Egyptian market is, which contributed in enabling the company to implement its strategy and projects throughout this long period of time and to successfully continue as a partner in this promising sector, which carries with it more promising opportunities for all partners willing to invest and expand in Egypt to participate in building a digital Egypt."

Talaat highlighted Egypt's interest in developing the ICT sector under the umbrella of its vision for the sector as a traction engine for development and an essential element to achieve a real renaissance in all sectors. He also noted that the sector's budget increased in the current fiscal year by more than 22.6% year on year.

"We are proud to have achieved this milestone, along with our partners, as we push forward our unwavering commitment to Egyptian youth and talent. We have been present in Egypt since 1897 when we first connected Cairo to Alexandria and our journey continued over the years offering Egypt the latest technological innovations of the telecom industry," said Eva Andren, country manager Ericsson Egypt and vice president Ericsson Middle East and Africa. "Today, as we announce our plans to expand our AI Innovation lab, we aim to inspire the next generation of innovators as we maintain our commitment to the transformation of Egypt into a digital society in line with Egypt Vision 2030, working with entrepreneurs, professionals, academics, and university students from across Egypt to identify innovative and commercially viable solutions."

Ghana cracks down on unregistered SIMS

Punitive actions have been brought in for Ghanaians who have not registered their SIM cards as of 5 September.

Ghana's National Communications Authority (NCA) has stated that outgoing calls will be re-routed with a special message played before the call is connected, for subscribers who have not begun the registration process. Meanwhile, subscribers with an incompletely registered SIM have received a similar message from 7 September.

The actions came ahead of 30 September, when all SIM cards in Ghana must be linked with a national identity number as part of a year-long SIM registration campaign.

Punitive measures for data services came into play on 12 September, with non-registered subscribers facing a 48-hour block on their SIM cards once a week. From 30 September, SIM cards began to be fully blocked.

"Subscribers who have neither begun stage 1 nor stage 2 of SIM registration process will be allowed to reconnect their SIMs after duly completing the two stages of the registration process," said the NCA. "After September 30, 2022, these SIMs as described above will not have access to any service as their SIMs will be deactivated. Subscribers will have a period of six months to register to redeem their SIMs failing which their numbers will be churned – that is reassigned to the pool to be sold to potential new subscribers."

The SIM registration projects began in October 2021 and was originally planned for completion by March 2022, however, the deadline has since been extended. In August, an app was launched to make registration easier and more convenient. Stage one of the registration process sees citizens link their Ghana Card to their SIM cards, while stage two requires citizens to scan their biometrics at a physical store or by using their cameras via the SIM registration app.

Airtel Networks Zambia acquires extra spectrum

Airtel Africa's Zambia subsidiary, Airtel Networks Zambia plc, has purchased 60MHz of additional spectrum spread across the 800MHz and 2600MHz bands from the Zambia Information and Communications Technology Authority (ZICTA), for a gross consideration of $29 million.

Airtel is Zambia's largest MNO with almost 44% of the market share and 8.6 million mobile users.

This additional spectrum will support its network expansion for both mobile data and fixed wireless home broadband capability, including 5G rollout, providing significant capacity to accommodate its continued strong data growth in the country.

ZICTA plans to release more spectrum in the 700MHz band by the end of the third quarter of 2022, as part of its recently updated spectrum roadmap for Zambia.

Inmarsat delivers connectivity for Tonga mission USV

Inmarsat has provided SEA-KIT International's uncrewed surface vessel (USV) Maxlimer with connectivity services to transmit data and video from the site of the recent underwater volcanic eruption in Tonga.

The USV mapped the volcano's submerged caldera and measured local marine conditions as part of an international project to assess the environmental damage caused by the eruption.

Maxlimer was equipped with a Global Xpress antenna and Fleet LTE hardware back in 2021, adding to its pre-existing FleetBroadband antenna, enabling it to access full Fleet Xpress capabilities and seamlessly switch between networks. Following the eruption, SEA-KIT signed up for a high-upload plan with 99.9% uptime service level agreement via Inmarsat's Global Xpress Ka-band satellites to support the vessel's survey activities in Tonga. It also acquired the services of Videosoft Global; Maxlimer used Videosoft's streaming service to transmit live video from the site, as well as high-definition, low-latency CCTV enabling SEA-KIT to monitor the vessel's operations remotely.

"This project represented a natural evolution of Inmarsat's relationship with SEA-KIT and offered us an exciting opportunity to support an important initiative," said Scott Middleton, sales director EMEA, Inmarsat Maritime.

"This is our most remote mission to date, taking place in the Pacific Ocean 16,000 kilometres from our base in Tollesbury, Essex. In these circumstances, reliability is critical from our connectivity partner," said Ashley Skett, director of operations, SEA-KIT International. "Inmarsat provides us with world-class connectivity, allowing us to control and monitor Maxlimer's operations and access live-streamed video via a dedicated network. We will work together with Inmarsat as we continue to demonstrate the ground-breaking capabilities of our uncrewed surface vessels as a solution for safer and more sustainable maritime operations around the world."

Marlink connects Plastic Odyssey

Marlink is providing a free hybrid connectivity solution for the global Plastic Odyssey expedition, the world's first floating laboratory vessel dedicated to plastic waste recycling. The vessel will use recycling solutions to convert plastic to fuel, and act as a local recycling unit, showcasing waste reduction initiatives and promoting new thinking around plastic use.

"Plastic Odyssey is truly grateful to Marlink for its support of this project and its commitment to helping us reduce, reuse and recycle plastic around the world," said Simon Bernard, CEO, Plastic Odyssey. "Its innovative solutions will keep the ship connected, enabling us to share updates and video with supporters - and keeping us in touch with shore in case assistance is required."

The connectivity solution combines Sealink's VSAT connectivity with global 4G roaming and a package of solutions including the Xchange platform for smart connectivity management. The Plastic Odyssey will be equipped with a 1m VSAT antenna and an L-band backup solution. The Telemed service will be provided for remote healthcare care for crew safety.

"At Marlink we share the aims and objectives of the Plastic Odyssey team. Pollution is not just a threat to the oceans on which our customers depend; it threatens the future health of our planet's ecosystem, said Erik Ceuppens, CEO of Marlink. "As a shipping industry stakeholder, we have a responsibility to work towards the minimising and ultimately the removal of marine pollution of all kinds."

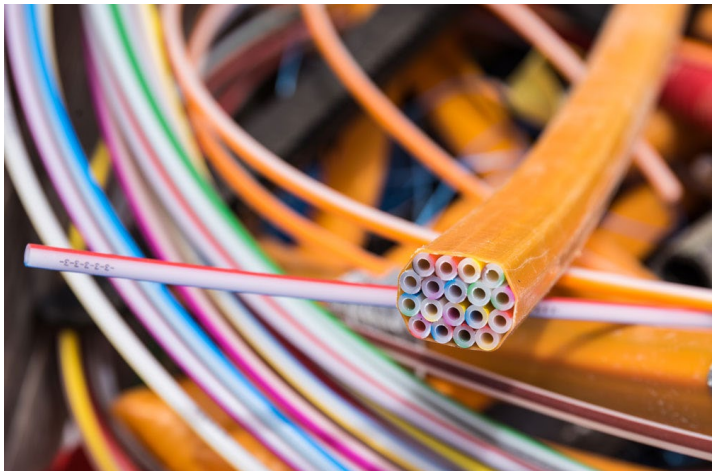
The Plastic Odyssey vessel was acquired late in 2019 before it went under complete renovations and embarked three years later on 1 October. The vessel will travel the world for the next three years, calling at 30 main ports and covering 40,000 nautical miles along the coasts of Africa, South America and Asia-Pacific. The project will also encourage coastal cities to use plastic waste as a raw material into local micro-factories, transforming it into building materials and fuel with low-tech and easily transferable technologies.

South Sudan-Djibouti cable announced

A memorandum of understanding (MoU) for a fibre optic interconnection between South Sudan and Djibouti has been announced. The ultra-high-speed connection will run from Djibouti to Juba, passing through Ethiopia, connecting South Sudan's capital to the rest of the world, and reducing the high cost of internet connectivity.

After the MoU, a technical team comprising nationals of South Sudan and Djibouti will be trained to complete the project. The additional data capacity acquired by South Sudan will enable it to successfully implement its digital transformation strategy, by making broadband internet affordable for its population.

South Sudan is already home to several high-speed connections, including a 200km fibre backbone connecting the Ugandan border to Juba via Nimule, courtesy of Liquid Intelligent Technologies, as well as a 630km fibre optic cable linking South Sudan to Kenya as a result of the Eastern Africa Regional Transport, Trade, and Development Facilitation Project.



The Gambia starts EMF monitoring

The Gambia Utilities Regulatory Authority (PURA) has acquired an electromagnetic field (EMF) radiation monitor with financial support from the World Bank. The acquisition comes in response to growing public concern about potential negative health effects of using mobile phones and base radio stations.

The EMF monitor will be used to check frequencies of 100Hz to 60GHz, which encompasses almost all frequencies used by telecommunications and ICT service providers nationwide. The initiative is part of PURA's remit to protect consumers under the Gambia Utilities Regulatory Authority Act 2001. The regulator is also responsible for ensuring and providing information on electromagnetic radiation from mobile phones and radio base stations to address issues that may cause alarm and panic to the general public.

"The assessment of possible health risks from exposure to electromagnetic fields is based on evidence from scientific studies and research," said Mamud Jobe, managing director of PURA.

PURA has already developed guidelines for electromagnetic radiation from electricity and telecommunications service providers in the country, which are consistent with those of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) regarding safe health exposure limits.

AI-powered cognitive software to advance Vodafone in Oman for 5G and mobile networking

Ericsson and Vodafone in Oman have partnered to empower Vodafone's network infrastructure development across multiple domains. Ericsson will provide AI-based cognitive software solutions for network optimization to facilitate data-driven decisions and support Vodafone in implementing zero-touch operations (ZTO) and anomaly detection capabilities.

The implemented solutions include Ericsson Expert Analytics (EEA) and network optimization cognitive software solutions. Combined, these solutions offer near real-time, multivendor, and cross-domain data analytics and optimization capabilities – utilizing a big data platform where scalability and performance are greatly enhanced.

"As we continue our digitalization journey, leveraging AI in network operations is critical to our business agility, customer satisfaction, and in simplifying decision-making processes," said Stelios Savvides, technology director, Vodafone in Oman. "Featuring advanced AI and automation capabilities, Ericsson's solutions are supporting our digital operator ecosystem utilize data-analytics to sustain growth, provide insights into network usage and drive improvements to ensure an enriching experience for our customers."

By correlating metrics and events from the network ecosystem, the solutions support Vodafone in assessing customer experiences, retaining, and upselling subscribers, and prioritizing network investments. EEA also supports Vodafone in obtaining essential insights to support, optimize and monitor 5G deployments and subscriber adoption.

"In expanding the automation and AI-based functionalities in its ecosystem, Vodafone is unlocking the full potential for zero-touch operations across its network in Oman," said Nicolas Blixell, vice president and head of gulf council countries, Ericsson Middle East and Africa. "Being a trusted partner in this journey, we are determined to support Vodafone continuously enhance its customer experiences. Together we are working towards the realization of the digital transformation goals of Oman Vision 2040 and strive to collaboratively boost the digital infrastructure in Oman. We are looking forward to future partnerships with Vodafone in Oman to drive digital efficiencies across the Sultanate. "

The implementation of AI-based solutions and automation increases operational savings, improves business efficiency, and raises productivity. By combining AI and automation capabilities with aggregated insights, Vodafone in Oman will be able to increase network agility, and customer satisfaction, develop more efficient business models and realize faster time-to-market for various services.

Airtel Kenya finalises MoMo separation

Airtel Kenya has finalised the process of separating its mobile money and mobile phone businesses, according to the Central Bank of Kenya (CBK), with the creation of a new entity – Airtel Money Kenya Limited (AMKL).

The process of separating Airtel Africa's mobile phone and mobile money business in Kenya began in 2019. The financial institution says it granted a payment service provider (PSP) license to Airtel Money Kenya Limited on 21 January 2022, in accordance with the National Payments System Act 2011. Airtel Kenya was also granted a transition period to complete the transfer.

The CBK stated that the separation enables Airtel Kenya to demarcate its operations and focus exclusively on its mobile phone business, while allowing it to improve mobile money business governance and strengthen its operations and services.

Other Kenyan telecommunications operators are expected to separate their mobile money activities from their mobile telephony activities shortly. Telkom Kenya is awaiting regulatory approvals for the separation, while Safaricom has reportedly not yet acted. The CBK has started negotiations with the telecommunications companies and the remaining separations might be carried out as early as January 2023.

The initiative is part of the implementation of the 2022-2025 national payments strategy, which aims to establish a secure, efficient and collaborative payment system that supports financial inclusion and innovations that benefit consumers.

Ericsson: 5G paving path to metaverse

New research from Ericsson reports consumers' growing commitment to 5G and their expectations on next generation uses cases.

'5G: The Next Wave' addresses the impact 5G has had on early adopter consumers since launching in various countries, as well as gauging the intention of non-5G subscribers to take up the technology – and their related expectations. The report forecasts that at least 30% of smartphone users intend to take up a 5G subscription within the next year.

Ericsson tracking data covering 5G launches since 2019, alongside the new consumer survey, has enabled Ericsson ConsumerLab to identify six key trends impacting the next wave of 5G adoption:

1. 5G adoption to be inflation resilient: At least 510 million consumers across 37 markets are likely to take up 5G in 2023.
2. The demanding next wave of users: The next wave of 5G users have high expectations on 5G performance, especially network coverage, compared to early adopters — who care about new innovative services enabled by 5G.
3. Perceived 5G availability is emerging as the new satisfaction benchmark among consumers. Geographical coverage, indoor/outdoor coverage, and congregation hot-spot coverage are more important to building a user perception than population coverage.
4. 5G is pushing up usage of enhanced video and augmented reality. Over the past two years, time spent on AR apps by 5G users has doubled to two hours per week.
5. 5G monetization models are expected to evolve: Six in 10 consumers expect 5G offerings to move beyond more data volume and speeds to on-demand tailored network capabilities for specific needs.
6. 5G adoption is setting the path to the metaverse. 5G users on average are already spending one hour more per-week in metaverse-related services than 4G users. They also expect two hours of more video content will be consumed weekly on mobile devices, 1.5 hours of which will be on AR/VR glasses by 2025.

More than 49,000 consumers in 37 countries were interviewed in the research – the largest global 5G-related consumer survey in the industry to date. The survey is representative of the opinions of about 1.7 billion consumers worldwide, including 430 million 5G subscribers.

"The scale of the research gives us an authentic insight into consumers' views and attitudes to 5G. The report shows that the next wave of potential 5G users have different expectations from the technology compared to early adopters. Overall, consumers see engaging with 5G as an essential part of their future lifestyles," said Jasmeet Singh Sethi, Head of Ericsson ConsumerLab. "It is interesting to note that 5G is emerging as an important enabler for early adopters to embrace metaverse-related services, such as socialising, playing and buying digital items in interactive 3D virtual gaming platforms. The amount of time spent on augmented reality apps by 5G users has also doubled over the past two years, compared to 4G users."

The report forecasts that 5G consumers with experience of using extended reality (XR) functionality are likely to be the first to embrace future devices as they are more positive about the potential of mixed-reality glasses. Half of 5G users who already use XR-related services weekly think that AR apps will move from smartphones to XR headsets within the next two years, compared to one-third of 4G consumers who hold this view.

Guinée Télécom to return in 2023

The Guinea Telecommunications Company (SOTELGUI), now Guinée Télécom, will return to the Guinean telecom market in the first half of 2023, according to Ousmane Gaoual Diallo, minister of posts, telecommunications and of the digital economy.

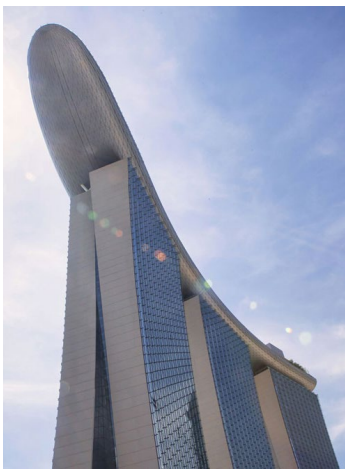
Guinea Telecom will be launched with 4G and 5G mobile technologies and is currently upgrading its infrastructure and raising the necessary funds after its bankruptcy due to mismanagement in 2012. In March 2021, the African Development Bank (AfDB) granted its support to Guinea within the framework of this project.

Guinea currently boasts 14.6 million subscribers spread across three operators. Orange holds the largest market share at 59.8%, MTN has 31%, and Cellcom has 9%. Once operational, Guinée Télécom will have to forge a place for itself within the market.

Telenor Asia targets mobile adoption

Telenor has announced the formation of Telenor Asia, a more independent regional entity with headquarters in Singapore. Telenor Asia will take on full oversight and responsibility for the company's operations in Bangladesh, Malaysia, Pakistan and Thailand.

"The strengthened team at our Singapore headquarters will add value to our operations and safeguard our interests in the region. This will also help us ensure value creation of our assets, and we will explore structural partnerships or, in the future, a potential IPO," said Jørgen Rostrup, head of Telenor Asia. "The foundation for our continued growth in Asia is how our services help improve people's lives and empower societies. In a recent survey we conducted of 8,000 people in South and Southeast Asia, a resounding 93% said that mobile connectivity improved their quality of life."



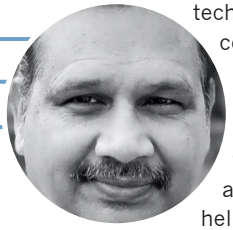
Each market will now have dedicated investment management teams which will take on an asset manager role and represent Telenor's interests in local boards. The team in Singapore will also be strengthened with expertise in finance, operations, risk management, governance, people management and responsible business.

In 2021, Telenor Asia signed merger agreements in Malaysia and Thailand. Once complete, Telenor Asia's portfolio will comprise leading telco players in three large Asian markets, with more than 200 million customers and US$10 billion in revenue. To achieve a target of US$1.2 billion in cash flow by 2025, Telenor Asia will realise synergies from the mergers and maximise opportunities across three areas:

- Increasing mobile adoption and data usage in Bangladesh and Pakistan. There are more than 150 million people in these two countries without mobile devices and 50% of the current customer base subscribe to voice services only.
- Growing business-to-business (B2B) revenue. Current revenue contribution to Telenor Asia from this sector is around 5%, with large growth potential. Throughout the pandemic, when the overall telco sector was contracting, Telenor Asia's B2B revenue was up by 10%.
- Expanding customer value by offering services beyond core mobile connectivity such as insurance, security and gaming products.

Q&A

Dr Junaid Syed
senior vice president, engineering and operations, Curvalux



What was your big career break?

My first career break came thanks to a so-called 'failure.'

I was training to become a pilot as part of my first degree in aero sciences, when I had a realisation; the world of academia was my strong suit, the cockpit, well, a little less so. Flying was not the right profession for me. I recognised this 'failure' as constructive feedback and changed my path.

This was a significant turning point. I returned to university to continue my studies, taking an electronics engineering degree with majors in microwave and aircraft electronics, graduating with a gold medal.

I spent several years working in academia and industry as a R&D designer producing patents for wireless communications and actively contributing to regulatory bodies. This led to my second eureka career moment; I decided to add commercial experience to my R&D background. That allowed me to talk to customers and have a better grasp of the problems in the real world. Suddenly I was faced with hurdles like climbing towers, network optimisation, budgets, and an array of constraints that operators must deal with daily.

Nowadays, I can wear an R&D or a business hat depending on the situation and can act as an interpreter that brings these two worlds closer together.

Who was your hero when you were growing up?

I am fascinated by the world of technical innovation. Scientists leading R&D have always had my admiration. As a young student, I learnt about James Maxwell, responsible for the classical theory of electromagnetic radiation. At that time, I did not really appreciate his works, however, later when I was working in industry and able to see the application of his theory, all clicked into place, and he became my hero.

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

I find artificial intelligence (AI) fascinating. AI is not a field on its own, in fact, intelligence is being applied and developed in every industry, including telecommunications, where it is enabling exciting developments. In the case of the antennas, it helps create software defined antennas that can dynamically adapt to changes in the environment.

Where would you live if money was no object?

Scotland has been my home for the last 20+ years, and I love it here. It is beautiful and peaceful, out of my window, all I can see are rolling fields and sheep. In the past, I thoroughly enjoyed living and working in many countries in Asia, the Middle East, America and Europe. It is enriching to meet people from different cultures, and I feel fortunate to now work alongside an international team spread across the world.

Which law would you most like to change?

Almost half of the world's population has no or poor connectivity. The pandemic has demonstrated ever-growing demand, that having internet access is no longer a luxury, but has become a necessary requirement for economic growth, education and entertainment.

To be able to serve the community without hindering other services, we need to look at the regulations to facilitate the use of new technologies providing connectivity to the unconnected. I'd like regulatory bodies to change the regulation for spectrum allocation and management to help companies expedite the development of innovative technology, to make more efficient use of the spectrum and be brought to market as soon as possible.

What's the strangest question you've ever been asked?

When I was a member of the ETSI TM4 committee, I highlighted the need for more innovative work in antenna development, including updating regulations from an antenna design perspective. As I was representing an antenna manufacturer, I was asked; "Why don't we see much change in the design of antennas?" I took that back to the manufacturer with the understanding that the ETSI would work to support antenna innovation through developing new standards. The response from my employer was extremely positive and triggered the beginning of a series of novel design works to design antennas more efficiently.

> "Ideas alone are not enough to drive innovation; turning concepts into solutions, financing the development, satisfying demand are some of the many factors required for ideas to take shape and materialise. "

What would you do to increase the speed of innovation?

Ideas alone are not enough to drive innovation; turning concepts into solutions, financing the development, satisfying demand are some of the many factors required for ideas to take shape and materialise.

We can accelerate innovation through a structured approach by using the TRIZ Matrix to formalise the process of innovations. It works by analysing how generic problems are resolved and then you can customise that method to your specific problem increasing the speed of the resolution.

I am also a firm believer that close collaboration between academia, industry and government is key to drive development of ideas and innovation.

What's the greatest technological advancement in your lifetime?

I may be biased but I think the biggest breakthrough in my lifetime is in telecommunications. The advancement in mobile & satellite communication technologies, devices, optical fibre, IoT is unprecedented and have reduced the world to a global village. The development of both terrestrial and satellite communications has changed our lifestyle, the way we do operate. It has opened a world of possibilities and empower people whose visibility may have been hidden or voice unheard.

What's the one possession you can't live without?

I have always believed that there is not one single physical thing I cannot live without at this stage in my life. I would miss open spaces of natural beauty though if I did not have access to them.

What would you do with US$1 million?

I'd happily get involved in scientific research to design and produce innovative solutions to solve the world's problems like connectivity for all.

I'd love to become hands-on in research facilities but also channel some of those funds towards charity organisations working to support clean drinking water and the education of gifted underprivileged students. ■

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