

For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

JULY/AUGUST 2023

Volume 28 Number 1

- Data centres - buy or build?
- Connecting a continent with eSIM
- Smart cities: the opportunities

Sean Alborough
General Manager, South Africa
at SBA Communications



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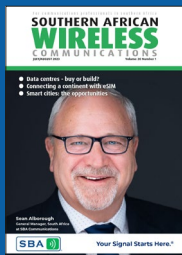
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Meet Sean Alborough, General Manager, South Africa, along with the SBA Communications team at TowerXchange Meetup Africa in Johannesburg, South Africa, which takes place October 17 to October 18, 2023.

Visit www.sbasite.com to find out more.



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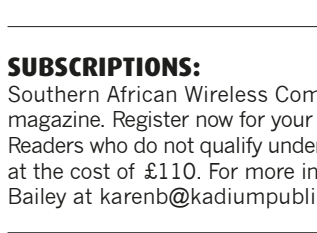
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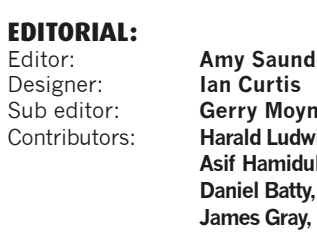
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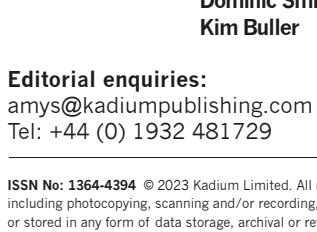
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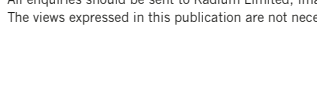
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Uganda Telecommunications Corporation rebrands to mark new era

Executives at Uganda Telecommunications Corporation Limited have promised clients a reliable voice, data, and related services following a rebranding exercise.

According to the company's chief operating officer, Maggie Lutwama, the rebranding exercise involved a new logo and tagline (your network our pride). The icon attributes signify that it's a brand with no limitations and boundaries which emphasizes its network focus to reach every Ugandan.

"We are very excited and delighted as we birth our new logo and tagline," said Lutwama.

The state minister for privatisation and investment Evelyn Anite described the rebranding as a new dawn of a new era in the government-owned telecom company. "We are happy for Uganda and Ugandans for having a national telecom," said Anite. "This redevelopment of the company will help provide employment opportunities to youth out there."

Chris Baryomunsi, the minister for ICT and National Guidance,

emphasized the need to collaborate with the Uganda Communications Commission to give the national telecom carrier a boost to upgrade from 3G to 4G and higher networks. Prime Minister Robinah Nabbanja said that UTCL will be supported to operate given its responsibility of providing communication services and contributing to the development of the country. UTCL is 60% owned by the Ministry of Finance while the Ministry of Information Communication and Technology and National Guidance owns 40%.

Vodacom Eastern Cape battles theft

Vodacom Eastern Cape is taking significant steps to address the escalating issue of vandalism and battery theft at base station sites in the region.

On average, 120 sites per month experience vandalism, while approximately 62 lithium batteries are stolen each month, with Kei County being one of the worst areas affected.

"We have seen a rise in vandalism and battery theft in the Eastern Cape region by criminal syndicates, which disrupts network services and causes periods of downtime for our customers," said Zakhele Jiyane, managing executive, Vodacom Eastern Cape region. "The cost of this criminal activity goes beyond the equipment, time and resources to restore and repair infrastructure. It can have a serious ripple effect on communities that rely on connectivity as a lifeline."

When incidents of vandalism and theft occur at these sites, they can

leave thousands of residents cut off from communications, having a severe impact on both small businesses and individuals, especially in emergencies when a call makes the difference between life and death. Restoring connectivity after these criminal incidents can cause further downtime and costs the region more than R5.35 million a year, which could be invested in network upgrades and rural expansion.

As Vodacom Eastern Cape has implemented additional backup power solutions to ensure connectivity during load-shedding, criminals are now targeting the generators, cables, and backup batteries at base station sites. This increasing trend has also resulted in the vandalism of generator vaults and battery cabinets.

"Vodacom Eastern Cape has been working closely with a specialised security firm, which handles cases where arrests are made. However, the fundamental challenge we are

faced with is in ensuring that the correct charges are brought against the perpetrators. Additionally, the granting of bail to criminals without valid addresses has been a hindrance to our efforts," said Jiyane.

To mitigate these challenges, Vodacom Eastern Cape has invested in robust security measures to protect base station sites and equipment. This includes deploying trained security personnel to safeguard sites actively and deter potential criminals. The company is also installing high-security battery cabinets and reinforcing and upgrading site containers to more hardened or vault-type containers to make it more difficult for criminals to access valuable equipment, such as generators. Where possible, copper cables are being replaced by aluminium, which is less attractive to thieves.

"While we have invested significantly in boosting our security measures at our base station sites, we acknowledge that the fight against vandalism and theft is ongoing with crime syndicates finding new ways to carry out their illegal operations. That is why we are appealing to all stakeholders, from law enforcement to communities, to play a part in curbing these offences. As part of these efforts, we are collaborating with residents, engaging with chiefs of different villages and encouraging community members to report criminal activity. Putting a stop to vandalism and theft is in the interest of everyone, ensuring uninterrupted access to the benefits of connectivity," said Jiyane.



Airtel Tanzania launches 5G

Airtel Tanzania has launched its 5G mobile network. The network is currently available in specific locations. It is accessible to subscribers with compatible smartphones or a dedicated router.

The rollout of Airtel Tanzania's commercial 5G network comes about ten months after parent company Airtel Africa acquired an additional 140MHz of telecom spectrum from the Tanzania Communications Regulatory Authority (TCRA) for US\$60.1 million. The company then expressed its ambition to use this resource to extend the coverage of its existing network and introduce 5G.

Airtel is the third operator to deploy commercial ultra-broadband after its competitors Vodacom Tanzania and Tigo. The two companies launched the latest generation mobile technology in September 2022 and February 2023 respectively.

The introduction of 5G services is expected to enable Airtel Tanzania to strengthen its position in the national telecom market by introducing more competition in the internet segment in a context marked by an ever-increasing demand for broadband connectivity and digital transformation.

Malawi and Zambia offer affordable internet

Malawi's government has joined up with Zambia to provide affordable internet connectivity.

Malawi's minister of information and digitalisation, Moses Kunkuyu, said that low-cost internet will present citizens with new opportunities. Meanwhile, Zambia's minister of technology and research, Felix Mutati, emphasised the importance of connectivity for economic advancement and opportunity expansion.

The agreement calls for the establishment of a 'Diplomatic Data Corridor' between Malawi's Electricity Supply Corporation and Zambia's Fibrecor, which will provide affordable internet access.

Ignition Group launches eSIM for its MVNOs

Ignition Group has launched an eSIM on its mobile virtual network operators (MVNO) uConnect and Me&you Mobile.

"In a strategic move to drive connectivity and bridge the digital divide, Ignition Group's mobile division has taken a momentous step by offering free eSIMs, as well as access to free data and airtime," said Ignition Group.

Mobile virtual network enabler MVN-X is among Ignition's ecosystem of business units. MVN-X supports Cell C's MVNO platform, which is

used by a large proportion of MVNOs in South Africa, including uConnect and Me&you. MVN-X also offers support for MTN's MVNO platform.

Ignition will allow prepaid and month-to-month subscribers to download their eSIMs. For a limited period, a complimentary 1Gb mobile data and R50 airtime will be rewarded to the customer after downloading and activating their eSIM. The SIM is free on uConnect and costs R1 to activate on Me&you Mobile.

Ignition said that providing free eSIMs represented a significant stride

towards ensuring that every South African can participate in and benefit from the burgeoning digital economy.

"One of the most transformative aspects of the digital economy in South Africa is its potential to democratise access to information and services," said Ignition. "With an increase in internet access, especially in rural and underserved areas, people can overcome geographical barriers and access urban and even global markets. This empowers local entrepreneurs to reach a wider customer base and connect with

international partners, fostering cross-border trade and innovation."



Malawi moves to connect schools, not constituencies

Malawi's government has changed the Connect a Constituency Project to Connect a School Project and targets to connect internet to 7,962 public schools, according to information and digitalization minister Moses Kunkuyu.

The targeted schools and their surrounding communities present the existing demand for internet and digital services, which is a potential effective mechanism to connect digitally side-lined communities.

The project change, according to Kunkuyu, has been affected because Connect a Constituency - implemented in the last eight years to bridge the digital divide - faced several challenges that affected the project's value for sustainable economic and social development. These included suitability of sites to the intended use of services of the telecentres; exorbitantly high construction costs of up to K80 million per centre; and persistent

procurement bottlenecks and rising costs of materials and equipment.

Therefore, Kunkuyu said the Connect a School Project is a turnaround strategy that will utilize existing schools to connect students and members of the community to the internet.

"The overall goal of the project is to expand ICT access and use by students and local communities including young people, the disadvantaged and vulnerable groups such as women and girls, older persons and those with disabilities," said Kunkuyu. "The main objective is to promote broadband internet connectivity, access and use of digital services in communities. This project will promote schools as community ICT centres in the country."

The project is founded on the premises of digitized economy as espoused in international, regional and national policy frameworks. The

minister cited the Malawi 2063 vision which states that the country will position itself as a global competitive player if it embraces ICT as a driver for development.

"This will be through adoption of a world-class globally competitive digital economy with sound e-commerce, e-learning, e-health and e-governance systems," said Kunkuyu. "There will also be promotion of investment in Science, Technology and Innovation (STI) infrastructure to increase digital access and adoption of robust telecommunications systems that are fast, reliable and affordable. Connecting schools provides many benefits including access to an ever-growing volume of educational content, online learning, use of online applications to participate in the evolving knowledge society and achieves cost efficiencies by automating manual tasks and reducing expenses associated with

textbook printing and distribution."

The Ministry of Education aims at connecting a total of 790 schools (primary and secondary) per year for a period of five years.

"On the other hand, MACRA will connect 250 secondary schools by 2026, targeting at least 50 schools per year. The Ministry of Information, through World Bank's Digital Malawi Project, targets 160 education institutions to be connected by 2025," said Kunkuyu. "MACRA, through the Universal Service Fund (USF), will also cover internet payments for a period of 5 years, only to the schools that will be connected by MACRA. In the interim, before the expiry of the 5-year internet support, the schools and communities will undergo digital skills and capacity building in order to enhance self-sustainability. In addition, Ministry of Education has also started budgeting for internet packages for some schools."

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Uganda launches 2023-2027 digital transformation roadmap

The Ugandan government has launched a roadmap for Uganda's digital transformation covering 2023-2027. The document was developed in collaboration with various stakeholders, including the United Nations Program for development (UNDP).

"The Digital Transformation Roadmap represents a bold vision for the future of our nation, one that is not only driven by technology, but in which technology serves as a catalyst for sustainable development, economic growth and improving the livelihoods of all Ugandans," said Chris Baryomunsi, minister of ICT and

national guidance.

The new roadmap includes extending the national backbone infrastructure to more than 73 additional districts and 20 major cities with internet connection in administrative units, schools, ministries, departments, agencies, and hospitals. The government also intends to put 95% of government services online; extend broadband to 90% of the national territory; bring online services to 90% of the population; and connect 90% of SMEs and other private institutions.

The implementation of the new roadmap is part of the actions undertaken by the Ugandan

government to accelerate the digital transformation with a view to supporting economic recovery, creating unlimited opportunities for the youth, and achieving 'Vision 2040.'

"This program will usher in a new era of sustainable social and economic transformation across Uganda. The pillars of our roadmap are the foundations on which Uganda will continue to rise, including digital infrastructure and connectivity, digital services, cybersecurity, data protection and privacy, digital skills, innovation and entrepreneurship," said Jessica Alupo, vice president of Uganda.

Airtel helps launch NextWowzi platform

Airtel, Uganda's first 5G network, joined Next Media and the Ministry of ICT and National Guidance to launch the NextWowzi platform, which will connect influencers with top brands, and utilize advanced analytics to create over 1.5 million jobs over the next five years.

Kin Kariisa, Group CEO of Next Media Services, said that the reason for launching this platform is to enable influencers to earn more and connect them to clients, cutting out the middleman.

"There is a problem with getting these jobs. It is hard to connect these people to jobs. Today, the middleman is cut, it is your phone connecting you. We are creating with boda riders, campuses, and women in the markets as long as you have internet. Airtel Uganda has launched #Airtel5G, and we want to plug in," said Kariisa.

Rt. Hon Justine Kasule Lumumba, the minister for general duties, said that ICT is a beacon of hope as it remains one of the critical rivers where government can pull and unlock the potential of youth.

"The concept of digital entrepreneurship is no longer a myth but is being used by the youth to improve their lives. For those who are taking advantage of it, please do," said Lumumba.

Airtel Uganda provided influencers with a test of 5G speeds by letting them experience Virtual Reality.

Mauritius gains 5G from Emtel

Emtel has become the second MNO to launch 5G services in Mauritius.

According to Emtel, its 5G network already covers 60% of the Mauritian population and plans to have full coverage all over the country by 2024.

"With the widest 5G network in Mauritius — and most probably the widest 5G network in Africa considering the population and the area that we cover — we are proud to be the first company to launch 5G across such a significant portion of the island," said Emtel

CEO Kresh Goomany.

The Mauritian fixed voice, broadband and mobile operator said users can expect speeds of up to 1.87Gbps on the 5G mobile network as well ultra-low latency, significantly impacting the mobile data browsing experience of customers.

The company also recently launched its new 5G broadband fixed wireless access (FWA) service, Airbox 5G, which covers 40% of the population. The 5G FWA coverage will initially be

focused on the capital Port-Louis as well as northern, western, and central areas of the country but the operator has plans to extend availability nationwide over the next two to three years under a phased deployment.

The Information and Communication Technologies Authority (ICTA) of Mauritius granted 5G licenses to the country's three MNOs — My.t mobile, Emtel, and CHiLi Mauritius — in July 2021 to enable the deployment of commercial services.

Array Networks and Luna Technologies to bring cybersecurity to Malawi

Array Networks, a multinational networking and security company, is expanding into Malawi through a partnership with Luna Technologies, a WAN and network solutions distributor.

Array Networks technologies like Web Application Firewall, AG Series SSL VPN, and DDoS protection will be introduced into the Malawi market with the agreement. Luna will offer Array's APV Series Application Delivery Controller, Web Application Firewall, AVX Series Network hyper integrated

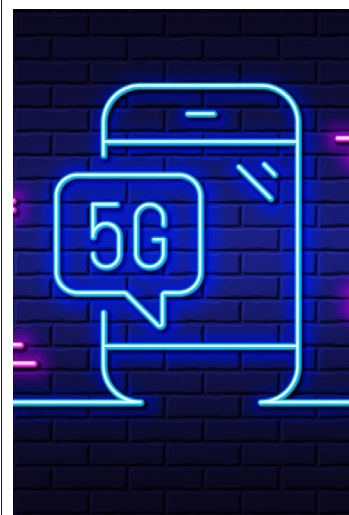
Infrastructure, and range of solutions to corporations, banks, and government organisations across its network in Malawi.

"As we grow and expand, this collaboration represents a significant milestone for both organisations in combining our strengths to deliver even greater value to our customers' evolving cybersecurity needs," said Array Networks Inc.'s regional sales head for Africa Region, Jayesh V.

According to Warren Nkonjera, managing director of Luna

Technologies, his company will now cover the threats and vulnerabilities that organisations face in data protection through their partnership with Array Networks products and services, as customers will achieve scalability, performance, and, most importantly, security.

"Our goal is to bring enhanced security to financial sectors, government, and customer data in a world where data is critical to the success or failure of enterprises," said Nkonjera.



Bayobab deploys 3,000km of fibre

Bayobab has now deployed approximately 3,000km of fibre, bringing its total proprietary fibre inventory to 108,000km - an impressive feat for MTN's fibre subsidiary.

The company has also been granted a National Long-Distance Operator licence in Nigeria, allowing it to facilitate long-distance traffic within the country's borders.

Reporting on Bayobab's performance for the first half of the

year, ended June, MTN Group CEO Ralph Mupita said that Bayobab's external revenue increased by 12.3% year-over-year (YoY) to \$172.5 million. He added that the communication platforms segment grew 11.9% year-over-year, bolstered by a five-year messaging agreement with a global hyperscaler and a resilient performance from international voice services.

"Bayobab partnered with global

mobile networks to launch over 5,700 roaming services and expand its footprint," said Mupita.

In six months, the fixed connectivity segment of Bayobab's business increased external revenue by 15.2% year-over-year, aided by new fixed connectivity infrastructure contracts worth \$8.4 million.

Earlier this year, Bayobab signed a \$320 million agreement with Africa50 to develop Project East2West, a

terrestrial fibre optic cable network. The project is due to connect 10 African countries to the cable network by 2025.

"Africa's connectivity relies on strategic and global partnerships coming together to build the much-needed large-scale backbone infrastructure to meet the explosive demand for digital services," said Bayobab CEO Frédéric Schepens in a statement following the results.

Uganda cuts data costs

The Ugandan government has cut the cost of the data it provides through the national backbone infrastructure fibre by 50% from \$70 to \$35.

"This price reduction means that government agencies connected to the NBI will consume the internet at the lowest price on the market," said Chris Baryomunsi, minister of ICT and National Orientation.

The measure is part of the actions undertaken by the government to accelerate digital transformation to support economic recovery, create

unlimited opportunities for the youth and achieve the 'Vision 2040.'

The project provides for the extension of the national fibre optic backbone to connect all rural areas and hard-to-reach areas.

"We expect the ripple effect of government price reductions to influence the average market cost and therefore lower prices for end users, whether businesses or citizens," said Hatwib Mugasa, director general of NITA-U.

Ayoba surpasses 28.3 million monthly active users

MTN Group's super app platform Ayoba has amassed 28.3 million monthly active users in just six months.

The leading markets for Ayoba are Nigeria with 7.2 million users, Cote d'Ivoire (2.8 million), Cameroon (2.6 million), and Ghana (2.5 million).

Ayoba's development coincides with the rise of super apps in Africa, which are attempting to capture the continent's unbanked population. As telcos seek to diversify their revenue streams beyond the traditional telephony and data, financial services have emerged as a crucial boon. MTN, Vodacom, Orange, and Safaricom, among others, have made significant inroads in the market.

"We have built an MAU (monthly

active user) base of 7.3 million in countries where MTN does not have GSM operations, demonstrating the scope of the messaging platform to scale as an OTT (over-the-top player)," said Ralph Mupita, MTN Group CEO. "Our growth was driven by improved user experience, most notably the introduction of an expanded and improved music service. In addition to its communication and social features, Ayoba continues to provide local and global content (music, games, channels, and micro applications) that is relevant and useful. Ayoba has also launched early monetisation proof-of-concept initiatives, such as display advertisements and premium sales."

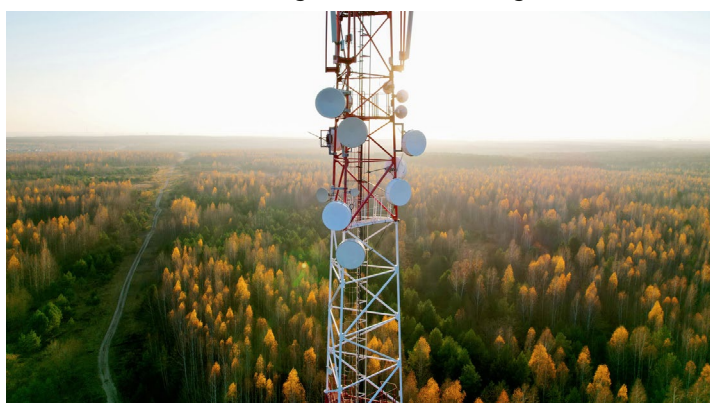
Huila to benefit from expanded Africell Angola coverage

Africell Angola has begun to extend the coverage of its telecom network to the province of Huila, in the southeast of the country.

While Africell's network is currently only available in the two towns of Lubango and Humpata, the MNO says that it is working on the infrastructure to establish itself permanently, extend the network and services to other parts of the province.

The launch of Africell Angola's

services in the province of Huila is part of the operator's gradual network expansion strategy, which launched its services in the country in April 2022. The company already provides its services in the provinces of Luanda, Kwanza Sul and Benguela. It plans to cover the provinces of Huambo and Namibe by the end of the year while Cabinda and Soyo should receive its signal during the first quarter of 2024. It is aiming for national coverage for 2025.



2Africa cable lands in DRC

The 2Africa fibre optic submarine cable from the eponymous consortium led by Meta has landed on the Congolese coast, according to Airtel Congo, which built the new modular landing station housing the infrastructure in Pointe-Noire.

This makes 2Africa the second international submarine cable to which the Republic of Congo connects, strengthening its national broadband infrastructure. It comes on top of the WACS (West Africa Cable System) cable to which the country connected in 2011 and on which it mainly depends for high-speed internet services.

"A single cable is not enough, the WACS will continue to operate, we will unload it and the Congo Telecom

network will always be in demand. However, we need all networks, redundancy will be mandatory for operators in the sector. We are going to refuse that an operator is subscribed to only one network in order to satisfy the needs in terms of capacity and to free ourselves from any form of cut," said Louis-Marc Sakala, DG of the Regulatory Agency Posts and Electronic Communications (ARPECE).

Once in service, the 2Africa cable should not only reduce the cost of internet services in Congo, but also extend the reach of these services to millions more people. According to the latest statistics from the regulator, the country has 3.05 million Internet users, a penetration rate of 54%.

Africa's internet speed remains disappointing

Despite the entry of Starlink, 5G infrastructure, and other steps to boost internet penetration, a study from Cable shows that Africa still has a slow internet speed.

According to the worldwide broadband speed league table, the sub-Saharan region occupies 12th place (second to last). Interestingly, Northern Africa is in last place. The data was collected within a 12-month period that ended on 30 June 2023. It conducted 1.3 billion speed tests in 220 countries and territories during that time.

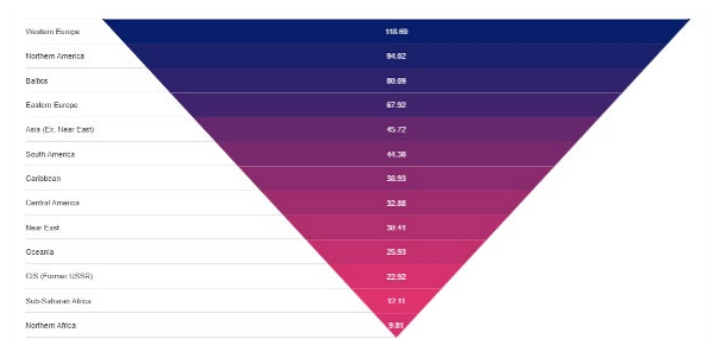
Countries in the bottom five of the list include Equatorial Guinea (2.7Mbps), East Timor (2.5Mbps), Syria (2.3Mbps), Yemen (1.79Mbps), and Afghanistan (1.71Mbps).

Based on the findings, SSA has an average download speed of 12.11Mbps.

30+ million speed tests were conducted while 3 million unique IPs were sampled.

Réunion (45.51Mbps, 79th), Rwanda (39.89Mbps, 99th), South Africa (36.46Mbps, 104th), and Burkina Faso (35.64Mbps, 108th) made it to the top half of the table with the best network speeds in the region. The remaining 43 countries occupied the slowest half. Nigeria placed 133rd globally with 20.83Mbps and an average download time of 32 minutes for a 5Gb movie. Among the 43 countries, Equatorial Guinea (2.70Mbps, 216th), Cameroon (3.16Mbps, 213th), Ethiopia (3.54Mbps, and 212th), Burundi (3.70Mbps, 211th) formed the list of the 10 countries with the slowest network speeds.

Meanwhile, North Africa has earned a new title: the region with the slowest



network speed. Cable gave it the title seeing as it averaged a speed of 9.81Mbps. Cable conducted 14 million speed tests for North Africa with 4.4 million unique IPs included. Of the six countries surveyed, Morocco (16.49Mbps, 144th) had the region's best internet speed. Egypt (9.75Mbps,

172nd) and Tunisia (9.60Mbps, 174th) place 2nd and 3rd respectively. Meanwhile, Libya offers the slowest network speed in the region with 6.32 Mbps. It sits in 195th place. Algeria (7.3 Mbps, 187th) and Mauritania (8.95 Mbps, 182nd) offer slightly better speeds.

MTN Group to receive AAI Corporate Social Responsibility Award

The Africa-America Institute (AAI) in New York will present MTN Group with the Corporate Social Responsibility Award in September.

MTN will be honoured for transforming communications across the continent, bridging the digital gap, catalysing economic growth, and enhancing living standards. MTN Group president



and CEO Ralph Mupita will accept the award on behalf of the company on 19 September at AAI's 70th Anniversary Gala.

"MTN is pleased to receive the Corporate Social Responsibility Award from AAI," said MTN in a statement. "More information on the award and how MTN is a catalyst for socioeconomic development by bridging the digital and financial divide across the continent will be shared closer to the time."

According to AAI – a 70-year-old organisation dedicated to fostering contact between Africa and America via education, training, and dialogue – nearly 23,000 Africans have earned scholarships and fellowships since its inception in 1953.

Powertel Communications boosts network with \$570 million investment

Powertel Communications has announced an investment of \$570 million in the extension of its telecoms network over the next seven years. The initiative is expected to help improve broadband connectivity coverage in the country.

The program will take place in several phases. Powertel intends to invest up to \$355 million in fixed access; \$112 million in mobile access; \$50 million in 4G LTE, 5G and national backbone network; \$4 million in Internet of Things (IoT). Connectivity will be provided by ZESA Holdings power lines.

According to Willard Nyagwande, acting managing director of Powertel, the investment is part of the company's strategy to improve

efficiency and profits. It intervenes in a context of digital transformation marked by a strong demand for connectivity in Zimbabwe.

"We discovered many marginalized and unconnected communities in rural areas. That is why we are working hard to improve connectivity in Zimbabwe to an acceptable level," said Nyagwande.



Vodacom Mozambique launches 2Africa cable in Nacala-Porto

Vodacom Mozambique says that it is the first undersea cable to land in the country's north, and a data facility has also opened in the same city.

According to the United Nations, Mozambique is one of the world's least developed countries, and this landing will assist to bring

faster, more reliable 4G, 5G, and fixed broadband internet services to the country in support of the Sustainable Development Goals.

2Africa, which was launched in May 2020, is a 45,000km cable system that will connect 19 African countries and 33 in total. China Mobile International Limited, Meta,

Bayobab, Orange, center3, Telecom Egypt, Vodafone Group, and WIOCC are the eight international partners. These companies have joined forces to deploy 2Africa.

2Africa is scheduled to be finished in 2024 and has the potential to provide an economic effect of US\$26.2-36.9 billion,

or 0.42-0.58% of Africa's GDP, within two to three years of its commissioning.

The arrival of 2Africa in Mozambique follows Vodacom's recent announcement of 5G services to commemorate the company's 20th anniversary in the Southern African country.

Zimbabwe: authorities throttle internet amid disputed election

Authorities are reportedly meddling with the internet as Zimbabwe stages what appears to be – reportedly – another disputed election.

NetBlocks, an international monitoring organisation that monitors cyber security and internet governance, revealed the internet had been affected.

“Metrics indicate that internet service in Zimbabwe has been degraded on the eve of elections,” said NetBlocks. The organisation added that the move impacted internet mobile network companies such as Econet, NetOne, TelOne, Telecel, and Liquid, potentially impacting citizens’ ability to stay informed.

This is the latest in a series of internet outages in Zimbabwe as the country struggles with economic and political issues.

“Zimbabwe authorities have previously shut down internet access prior to planned protests and during fuel price demonstrations,” said NetBlocks.

When Nelson Chamisa, the primary opposition leader, founded his Citizens Coalition for Change in early 2022, the internet was also throttled. In March, the service was also halted due to protests. Similar disruptions occurred in 2019, when a dramatic increase in petrol prices sparked protests and a harsh response by President Emmerson Mnangagwa’s government.



Talking critical

How broadband mission critical device certification is being led by GCF and TCCA

Mission critical services (MCS) and critical communications must be available when needed, reliably providing voice and data connectivity to first responders, public safety services, transportation sectors, and more.

These services and devices must also support the sectors’ unique needs and operational protocols and provide ubiquitous coverage that can handle high peak usage levels. Demand for broadband data services is increasing, as images and video become a central part of critical communications. Reliable voice communication, however, is still the core function that must be maintained at all times.

While TETRA remains the dominant mission critical standard for now, the next generation of MCS are being delivered over LTE cellular networks and evolving towards 5G. These newer technologies, based on standards maintained by 3GPP, deliver the bandwidth needed for effective emergency responses.

To provide reliable communications, mission critical devices and networks must be interoperable. The Global Certification Forum (GCF) and The Critical Communications Association (TCCA) have been working together over the past few years to deliver a certification programme for devices supporting 3GPP standards-based mission critical services. This is based on prioritising industry requirements and undertaking a gap analysis of required frequency bands and mission-critical functionalities against currently available functions and processes within GCF.

The programme will ensure that devices and applications are interoperable with mission critical networks and are compliant with the relevant standards and specifications.

The certification programme

To help deliver the certification programme, TCCA and GCF have created the Mission Critical Services Work Stream¹ (MCSWS), open to all TCCA and GCF members, and invited experts from industry. GCF and TCCA are working to include all the relevant industry players in the discussion about this new MCS landscape and its

¹ <https://mcsws.globalcertificationforum.org>

Harald Ludwig, chair, TCCA Technical Forum; and Asif Hamidullah, head of certification IoT & verticals, GCF



certification programmes.

The workstream is tasked with the development of a certification programme with launch targeted for the end of 2023. The current scope of the certification focuses on Mission Critical Push-to-Talk (MCPTT), Mission Critical Video (MCVideo) and Mission Critical Data (MCData). In each case, the scope covers the relevant 3GPP Rel 14 and Rel 15 standards.

Certification of MCX products will include both conformance and field trials testing. Conformance testing ensures that the appropriate 3GPP standards are being complied with and is mandatory for certification. Field trials testing is used to ensure interoperability between the device and commercial network, and is currently optional, given special authorisations required to access and test on commercial MCX networks.

To complete the certification programme, and to ensure a successful launch, GCF is responsible for validating conformance test platforms, while a TCCA sub-working group is progressing on development and verification of live network testing for field trials. An initial set of field trials test cases has already been developed, with finalisation and verification targeted for end of 2023.

To ensure the appropriate set of tests cases are targeted for validation, a survey to the MCS community has been undertaken, to understand the importance of MCX features required by the operators and the corresponding support from the supplier community. The feedback from this survey has been used to reprioritise certain test cases, to ensure the best targeting of the features required by industry.

How can agencies and companies engage and support this process?

Mission critical operators and authorities are invited to join the MCSWS to help develop standards-driven MCS, and to share their requirements regarding MCX products. They can also contribute to the ongoing technical development of the certification scheme and future roadmap planning, consider having field trials performed in their live networks, and help grow the certification scheme by requesting GCF certification for devices or clients in their commercial tenders.

Mission critical product suppliers are also invited to join the MCSWS. Device manufacturers and client vendors can work together in defining the scope of

the GCF Certification program to ensure interoperability on key MCS functionalities, and to support test platform validation activities in GCF with devices and clients implementing the latest specifications.

By working together, the mission critical industry can help build a certification programme that benefits all stakeholders and ensures the seamless interoperability of mission critical devices and networks.

Reliable and innovative communications

Mission critical services are constantly evolving, adding support for new technologies, and adapting to developments in the fast-moving communications industry. With huge advances reaching the market in LTE and 5G, the next generation of critical communications will bring revolutionary changes and will move from existing technologies to be delivered over these newer, 3GPP-based networks and devices.

As the 3GPP standards continue to develop, we can see new features and enhancements coming up, that will improve critical communications in the years ahead. Coverage will be improved, interoperability with other types of communications solutions, such as with satellite connectivity, will become more accessible, and the shift from narrowband to broadband will enable better working practices based on intelligent data, more accurate positioning services, and enhanced support for images and video.

But we must not abandon our industry’s commitment to standardisation and interoperability, which is the bedrock of providing reliable communications. Balancing progress with guaranteed conformance is a delicate task, and everyone’s input must be heard. GCF and TCCA are keen to ensure that all parties interested in ensuring the seamless interoperability of devices and networks in this new MCS world can contribute to the discussion and, in doing so, help to build a certification programme that benefits everyone.

Working together, TCCA and GCF are delivering the certification programme needed by the critical communications industry. By combining their experience, they are creating a practical, focussed programme, that is relevant to the industry’s needs, while also guaranteeing the highest levels of interoperability – and thus ensuring that new generations of mission critical services and devices deliver the reliability and performance needed.

The last year has seen SBA Communications continue to develop its African strategy by leveraging the experience it possesses and implementing industry best practices

As SBA Communications consolidates its presence in Africa, Southern African Wireless Communications spoke with Sean Alborough, General Manager, South Africa about the challenges the company will face as it pursues of its development plans into 2024.

How would you describe the past 12 months in Africa?

Over the past year, economic instability, erratic electricity supply, currency fluctuations, inflation and the increased cost of capital have created uncertainty for wireless service providers and industry investors.

In particular, the past 12 months in South Africa have been challenging due

to the continued load-shedding schedules implemented by the power utility, Eskom. The generation shortfall has seen power cuts reach Stage 6 on numerous occasions, resulting in blackouts more than once a day and lasting up to four hours on each schedule. This has severely impacted the telecom industry. With their current backup power systems, the Base Stations cannot sustain the up-time availability, as the sites were all originally designed as “grid power always available.”

These blackouts impact the quality of service to consumers.

Mobile Operators are burdened by increased costs to keep their networks running during power outages, having to deploy diesel generators and increase battery capacity. They have been struggling as Eskom’s extended power cuts deplete the batteries of the cell phone towers, leading to customers losing their signal and data speeds being reduced drastically. This severely impacts the consumers’ ability to conduct their business and reduces revenue for the operators.

Added to the blackouts, the ongoing theft of cables and batteries deployed on the Base Stations results in extended power outages and increased costs to maintain the sites. Operators and Towercos have had to invest more capital and implement more secure solutions to keep the networks on air.

South Africa is battling high crime rates, which are causing millions of rands of damage to telecommunications networks through copper theft, stealing batteries from cell towers, and stealing fibre to make certain products. The cost of these criminal acts extends far beyond the network damage. Operators face repair costs, loss of revenue, security costs, increased customer complaints, and network quality concerns. Consumers are also hit hard. The network damage results in service unavailability, an impact on emergency services, and a significant impact on businesses using the affected networks.

All the above has impacted the Operators’ planned coverage expansion. Instead of investing in new towers, they have had to reallocate their budgets to maintaining and upgrading existing sites.



Is the African region an important market now and why?

Yes, Africa is the world's second-largest continent by geographic area and second-most populous continent in the world. For these reasons, it is critical to ensure that digital access is affordable and widespread.

By the end of 2020, 495 million people have subscribed to mobile services in Sub-Saharan Africa, representing 46 percent of the region's population – an increase of almost 20 million from 2019. This figure is growing exponentially, and with the population in Africa growing at 2.4 percent per year, more Africans will require smartphone connectivity.

In South Africa, 78.6 percent of the population accessed the internet via a mobile device. This share is projected to grow to over 90 percent by the end of 2026. For this to be achieved, more infrastructure (Base Stations, Towers) will have to be built to support population growth and provide connectivity to the potential users of mobile technology.

5G technology implementation has been impacted by both the delays by the Independent Communications Authority of South Africa (ICASA) in issuing licenses for radio frequency spectrum and the current power situation as the Operators have reduced their project rollouts. These delays for 5G rollout have also impacted the Towerco Industry, as the nature of a 5G signal means that there is a requirement for far more cell phone towers. While the signal facilitates lightning-fast speeds, the high-frequency carrier waves are shorter and need more towers to travel. Of course, more towers require more land (site acquisition), more money and more time, which has proven another hiccup in the 5G rollout.

While there are still many opportunities for growth in Africa, much work remains to be done from a social, economic, and political perspective to increase levels of connectivity, especially in the rural sector.

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

There has been a higher demand for deep rural sites in South Africa. This is due to the ICASA licensing requirements placed on the Operators, as they are to provide improved coverage in these areas. Typically, these are single-operator sites, light towers, which do not meet the Towerco shared infrastructure business model.

What we have had to plan for is a single-tenant light tower for these applications to satisfy our customers' demands in the future.

Hardening of Base Station sites to secure the deployed equipment (standby power solutions) is required. To do this, SBA has also developed a PaaS (Power as a Service) solution, introducing a new site management model. To provide a secure, uninterrupted power backup solution, SBA will provide its customers on its Base Stations with a complete solution, which includes:

- Custom-made DC power system enclosed in a concrete structure
- Site hardening techniques applied to restrict unauthorized entry
- 24/7 Network Management Center, which will monitor power provisioning performance through a state-of-the-art remote management system
- Monitor alarms and surveillance systems deployed on sites with the use of Artificial Intelligence (AI) and Machine Learning (ML) for proactive action and performance engineering
- Control of site access through smart locking systems
- Deploying a fit-for-purpose field maintenance service; teams allocated to sites for rapid corrective actions and preventative maintenance
- Increased landlord engagement
- Procuring security company partnerships to safeguard the deployed assets

What differentiates you from the competition?

SBA Communications is a global company that develops, owns, and manages shared communications sites and passive infrastructure solutions in 16 markets, providing our customers with a strong support structure.

Leveraging the experience SBA possesses, we continuously implement industry best practices and can apply lessons learnt in other markets much faster than our competitors. This provides us with speed to market, and our customers benefit.

Adhering to all government regulatory requirements and our strong ethics and compliance programs have supported SBA growth internationally. The company is respected for doing the right thing, and this ensures that long-term partnerships are secured with our landlords and customers.

In addition, our commitment to innovative tower design, efficient solutions and reliable

maintenance services ensures that we provide wireless service providers with the best-in-class infrastructure to enhance their network coverage and quality.

How can you help optimise vertical real estate for wireless service providers?

SBA provides reliable infrastructure to its customers and has a solution for all the MNOs. We provide shared infrastructure built on a strong financial model, which ensures our sustainability in the industry and that our customers have a long-term lease on our towers.

We streamline network expansion and contribute to improved connectivity by selecting sites that maximize coverage and minimize signal interference. Our high-quality, strategically located, neutral communications infrastructure is designed to be shared by multiple service providers, reducing infrastructure costs and enhancing network reach.

As the need increases for more connectivity, SBA not only specializes in macro towers but has products for C-Ran, DAS, Small Cells, Camouflaged Towers and Light Towers for rural solutions. We continue to evaluate customer needs and stay attuned to technological advancements to deliver state-of-the-art, tailored solutions. Also, we provide the capital, resources, expertise, and operational capabilities so wireless service providers can focus their resources on their core business.

How experienced are SBA Communications' teams in the local market, and is experience key?

SBA Communications has been building and operating towers in South Africa since 2019. With the support structure from our International business unit, the company has more than 30 years of experience in the industry.

For Africa, SBA has assembled a team of experts in managing power and security to meet the demands of our customers. With the knowledge gained from our other markets, SBA will continue to perform at the highest level of professionalism required to succeed in this competitive industry. Experience is key in navigating the complexities of today's market and providing essential infrastructure throughout South Africa.



CompCom moves to block Vodacom's acquisition of MAZIV

South Africa's Competition Commission (CompCom) has recommended that Vodacom's acquisition of a stake in fibre operator MAZIV be blocked.

The acquisition would have brought Vumatel, the country's fibre-to-the-home (FTTH) network operator, and Dark Fibre Africa (DFA), which provides fibre services in the country's cities, into Vodacom's orbit.

Community Investment Ventures Holdings (CIVH) owns Vumatel and DFA, which merged and rebranded as MAZIV in September 2022. The competition watchdog said it has found no major benefits from the proposed transaction that were not already in existence.

In a statement, the CompCom said the telco's acquisition, valued at \$696 million, "is likely to substantially prevent or lessen competition in several markets and that the conditions offered do not fully address the resultant harm to competition. Further, the public interest commitments provided by the merger parties do not outweigh the competition concerns and raises several vertical and horizontal competition concerns."

CompCom felt that the proposed merger would result in the loss of direct competition between Vodacom and MAZIV in the areas where both have deployed fibre, offering an incentive for self-preferencing and discriminatory behaviour. That judgement also seems to imply that price competition would suffer and there might thus

be less benefit to underserved low-income and rural consumers, especially in relation to 5G fixed wireless access (FWA).

Vodacom has said it will fight the CompCom's block of its acquisition of MAZIV.

"Though we are disappointed, it is important to note that the Competition Commission's recommendation is not the end of the process. Instead, the next step is for the proposed transaction to be presented to the Competition Tribunal," said Vodacom in a statement. "This would have been the case even if the Competition Commission were to have recommended the proposed transaction for the Competition Tribunal's approval."

IFC and MIGA agree to support Safaricom Ethiopia

The International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA), both members of the World Bank Group, have finalized an agreement to support the activities of telecommunications operator Safaricom Ethiopia.

Safaricom Ethiopia will benefit from financing of US\$257.4 million and guarantees for US\$1 billion, to cover the investments of its shareholders over the next ten years.

World Bank support should make it possible to accelerate the growth of Safaricom Ethiopia, which aims to repeat in Ethiopia the success of Safaricom in Kenya. The company launched its commercial activities in October 2022 and continues the gradual deployment of its network which already covers 22 cities in the country.

These various initiatives should enable Safaricom Ethiopia to be more competitive

in the Ethiopian telecom market which is undergoing full liberalization. It is currently dominated by the incumbent operator Ethio Telecom, which had 72 million subscribers as of June 30, 2023, including 34.3 million subscribers to the Telebirr mobile payment service. In addition, a second private telecom operator should soon enter the market.

"With the arrival of IFC as a financing partner, its experience in global operations and the prestige of their investment bring much praise and respect to the Board of Directors. We look forward to their input to help us move forward in the Ethiopian market," said Michael Joseph, then Safaricom chairman of the Board.

Airtel Kenya to expand network with US\$150 million investment

Airtel Kenya has outlined plans to invest a minimum of US\$150 million into expanding its network across the next three years.

CEO Ashish Malhotra said that Airtel Kenya plans to install 649 new network sites nationwide – adding to its current portfolio of 3,200 – to bring its population coverage to 89%.

Last month, Airtel Kenya brought commercial 5G services to 16 counties across the country, deploying more than 370 dedicated 5G sites. The MNO plans to install a further 120 sites within the next three months.

"The response has been good, though the penetration of 5G-enabled devices in the country is almost 1% of our total devices. It is purely an issue of the cost of devices," said Malhotra.

Airtel Uganda to list 20% of shares for exchange

Airtel Uganda plans to list shares on the Uganda Securities Exchange's primary investment market.

Airtel revealed plans to proceed with a public offering of eight billion ordinary shares, representing 20% of Airtel Uganda Limited.

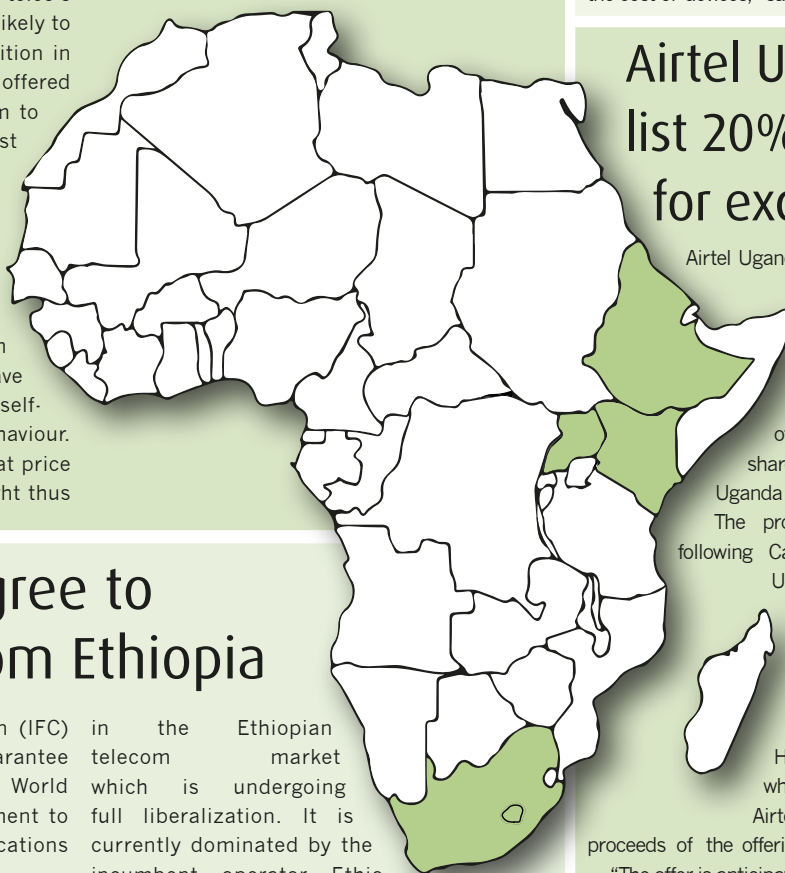
The prospectus will be published following Capital Markets Authority of Uganda (CMA) approval.

Airtel said that, if the CMA approves the prospectus, the offer will be made through the sale of ordinary shares by Bharti Airtel Uganda Holdings B.V. ultimately, a wholly-owned subsidiary of Airtel Africa will receive all of the proceeds of the offering, net of related expenses.

"The offer is anticipated to result in significant local ownership of Airtel Uganda Limited, with preference given to Ugandan investors, and to contribute to the growth of the capital markets in Uganda," said a statement.

To increase retail participation, the shares will be offered to retail investors via Airtel Money's platform in addition to traditional channels following CMA approval of the prospectus.

Airtel Uganda Limited is mandated by Article 16 of Uganda's National Telecom Operator licence to list at least 20% of its shares on the Uganda Securities Exchange. The Uganda Communications Commission has set a deadline of 16 December 2023 for meeting this listing requirement.



Telkom freezes salaries amidst ongoing financial challenges

Telkom and two unions representing most of its workers have failed to reach an agreement over salary increases for the 2023/2024 financial year.

An alliance consisting of the Communications Workers Union and South African Communications Union informed their members that they failed to agree with Telkom and Gyro Group following two dispute resolution meetings. The alliance originally sought a 15% wage increase but had reduced this to 9% during the last meeting.

Telkom is facing financial challenges due to the prevailing economic environment and could not afford any increases in fixed costs. CEO Serame Taukobong has reportedly said recently that the company will not offer increases or bonuses until it started performing well.

"We need to earn and make sure that delivery, and focus on delivery, is what we pay for," said Taukobong. "It is a tough decision that we had to make, but it

highlights that at the new Telkom, execution is first above everything."

In the year that ended 31 March 2023, Telkom reported big declines in EBITDA and profit. The company's free cash flow also dropped by a further R644 million during the period, to a negative R2.72 billion. Telkom has instead offered some improvements on variable cost items, and terms and conditions of employment. These include a 9% increase in the standby allowance from R1,166 to R1,266 per week, and converting the current ten days of unpaid paternity leave to paid paternity leave. It has also offered to increase long-service bonuses, paid out every five years, by roughly 10%.

Safaricom raises M-Pesa account limits

Safaricom has increased account limits on its M-Pesa mobile money service to KSh500,000 following approval from the Central Bank of Kenya.

In addition to the higher account limit, M-Pesa customers are also set to enjoy an increased daily transaction limit of KSh500,000 per day. The current per transaction limits of KSh150,000 will remain. However, customers can make as many transactions up to the daily limit as they wish.

Safaricom said that the move is set to be a boost for businesses in the country, especially SMEs, as the share of cashless transactions continues to

rise. In the last financial year to March 2023, more than 606,000 businesses were receiving payments through Lipa Na M-Pesa, with a total of KSh1.625 trillion transacted in the 12 months.

M-Pesa transaction limits were previously increased in March 2020 when the Central Bank of Kenya approved the doubling of transaction limits to KSh150,000 and daily and account limits to KSh300,000.

"We appreciate the role that the Central Bank of Kenya has played by constantly providing guidance on innovations and protections that we have put in place to strengthen M-Pesa's adherence to KYC, anti-money laundering and other financial regulations and safeguards," said Peter Ndegwa, CEO of Safaricom. "The increased account limits will provide customers and especially small businesses with increased convenience as the share of cashless transactions continues to rise."



Michele Gamberini resigns from MTN South Africa

MTN South Africa chief technology and information officer Michele Gamberini has resigned.

"MTN SA can confirm the resignation of chief technology and information officer, Michele Gamberini, who has exited MTN to pursue an opportunity that allows him to be closer to his family in Italy," said MTN SA's sustainability and corporate affairs chief Jacqui O'Sullivan.

Following Gamberini's departure, the MTN SA CTIO role has been split into two offices.

"We are delighted to have a long-time MTNer, Rami Farah, join us in South Africa as our new chief technology officer," said O'Sullivan. "Rami has been with the Group since 2001 and has served as CTO in multiple geographies including MTN Liberia, MTN Rwanda, MTN Uganda and recently MTN Iran, where he managed over 16,000 sites."

O'Sullivan said Farah had spearheaded MTN SA's power resilience project for the past eight months.

Meanwhile, Nomthi Nelwamondo was appointed MTN SA's new executive for information technology, effective from 1 May 2023.

"Nomthi has joined us from Assupol Holdings Limited, where she served as the Chief Information Officer," said O'Sullivan.

MTN sells minority stake to Mastercard

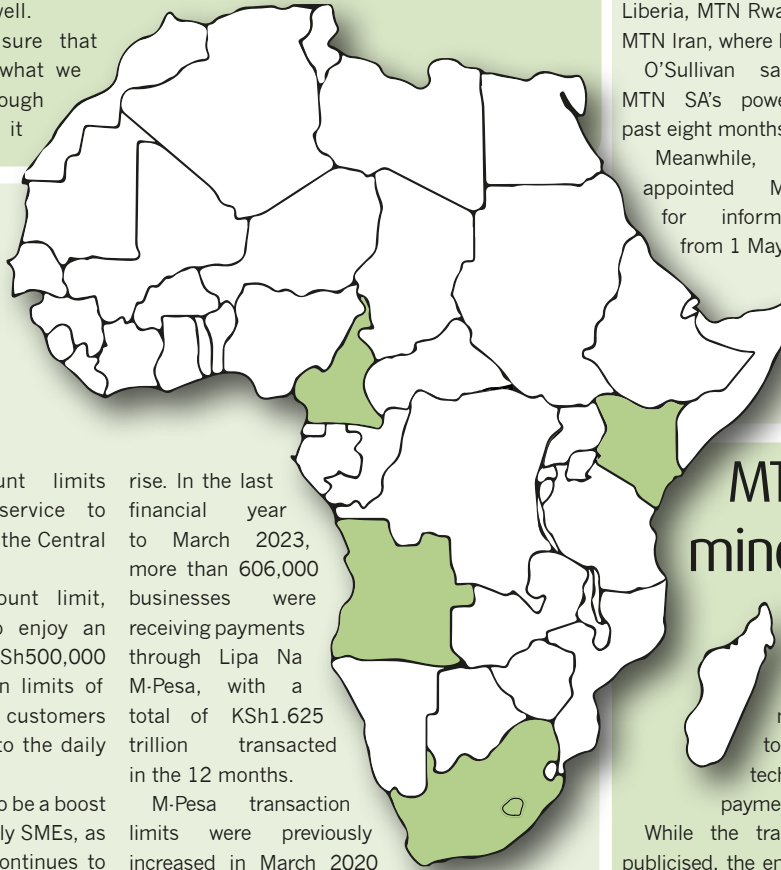
MTN Group has signed a memorandum of understanding to sell a minority stake in its financial technology activity to the American payment services giant Mastercard.

While the transaction value has not been publicised, the entire fintech branch of the group is valued at \$5.2 billion.

"The signing of the definitive investment agreements should take place in the very short term, as we approach the finalization of the usual due diligence," said MTN said in a release.

MTN managing director Ralph Mupita said that the stake to be sold to Mastercard "could subsequently increase to a maximum of 30%."

Mastercard's entry into MTN's fintech arm's round comes as mobile phones are increasingly used as a tool for financial inclusion in Africa, where nearly two-thirds of the population do not have access to mobile phones, a bank account or full access to financial services.



MTN Cameroon borrowed 91.5 billion FCFA in H1 2023 following accounts freezing

According to data from 'Investing in Cameroon,' MTN Cameroon borrowed 91.5 billion FCFA during the first half of 2023. These funds were mobilized in the form of syndicated loans from the banking sector. This amount is equivalent to nearly 98% of the company's operating expenses for this period.

However, the company closed the year 2022 without taking out new loans. It had ended that year by reimbursing nearly 18 billion FCFA of debt. In addition, it had a positive net cash of 29.15 billion FCFA as of 1 January 2023. However, at the end of last June, its cash showed a net debt of 13 billion FCFA.

This has been attributed to the impact on the company's cash flow of the freezing of its accounts. This situation is the consequence of the legal action initiated by Cameroonian billionaire Baba Danpullo, in reaction to what he considers to be "illegitimate expropriation" of his property in South Africa by the local judicial authorities.

Banking institutions have chosen to support MTN Cameroon. Its solid performance, with a turnover of 156 billion FCFA in the first half of 2023, an operating margin of 36% and a dominant

market share of 51.4%, reinforce its credibility with Cameroonian banks.

Financial data for the first half of 2023 shows that its liabilities with interest of 95.8 billion FCFA exceed its cash at 83 billion FCFA. In addition, part of this cash has been seized by the courts, making its use for daily operations impossible.

If the Cameroonian courts do not decide quickly on the merits of the case, MTN Cameroon could find itself in a situation of short-term liquidity deficit. Developments in the telecommunications sector will also be decisive for the operator. A slowdown in activity could accentuate its difficulties in honouring its financial commitments.

Safaricom loses former CEO from board

Michael Joseph has stepped down from the Safaricom board of directors.

Joseph left the board on 1 August to focus on other professional endeavours, including his role as chairman at Kenya Airways.

Joseph joined Safaricom in 2000 and held the CEO position twice, along with several other high-profile roles. As chief executive between 2000 and 2010, Safaricom highlighted Joseph's central role during its IPO in 2007. He was also influential in developing mobile money services M-Pesa and a foundation dedicated to improving education.

As interim CEO between 2019-2020, he also played a key role in Safaricom's push to enter the Ethiopian market.

The company's Ethiopian unit was also recently hit by the departure of its first CEO Anwar Soussa.



Telkom appoints Randall Abrahams as new group executive: digital solutions

Telkom is boosting its digital strategy by naming an executive for its digital platform division.

The telephony company has appointed Randall Abrahams as group executive: digital solutions, a move that the company says would strengthen its strategy. Abrahams will assist drive Telkom's transition to a fully digital firm, says the company.

Abrahams will be working with cross-functional teams of IT, marketing, product, and customer-experience specialists to align digital efforts with business needs and execute on its purpose of connecting South Africans.

According to the company, Telkom's digital strategy links with its PIVOT business plan and is focused on offering customers with API-powered services. Abrahams will also be involved in the development of Telkom's platform business in non-connectivity products such as fintech, advertising, content, Smart Homes, , smart homes, and small business enterprise solutions.

Abrahams will handle Telkom's Digital Platform business under its technology function. His responsibilities will include developing digital strategy and identifying and executing "innovative technologies to develop opportunities" for the Group.

"We are excited to have Randall joining Telkom," says Telkom Group CEO, Serame Taukobong. "His expertise in the digital and communications space is highly respected, and we look forward to working with him on our ongoing digital transformation to deliver value for our stakeholders."

"Joining Telkom is a proud moment for me, and I relish the challenge and the opportunities that the Group offers. It's a chance to really make a difference, by improving the lives of South Africans through Telkom's data-led capabilities," said Abrahams.

MTN reports strong performance in East Africa

MTN Group's East African operating companies consolidated gains in the last six months.

In Rwanda, MTN's mobile subscribers increased by 6.0% year-on-year (YoY) to 7.0 million, active data subscribers rose by 5.1% YoY to 2.3 million, while Mobile Money (MoMo) subscribers grew by 14.4% YoY to 4.4 million. Service revenue increased by 14.7% to Rwf 120.5 billion and earnings before interest, tax, depreciation and amortisation (EBITDA) grew by 4.8% to Rwf 55.0 billion.

In Uganda, MTN's mobile subscribers increased by 11.2% to 18.1 million, active data subscribers grew by 21.4% to 6.9 million, active fintech subscribers climbed by 11.6% to 10.9 million. Service revenue grew by 15.0% to Ush 1,250 billion and EBITDA jumped by 16.8% to Ush 641.0 billion, profit after tax increased by 17.8% to Ush 228.0 billion and interim dividend was up by 19.0%.



Vertiv reports 24% increase in net sales

Vertiv Holdings Co has reported financial results for its second quarter ended 30 June 2023. Vertiv reported second quarter net sales of \$1,734 million, an increase of \$335 million, or 24%, compared with last year's second quarter and a 25% organic net sales increase, which excludes the impact of foreign currency.

Foreign currency negatively impacted second quarter sales by approximately \$18 million as compared to second quarter last year. Orders declined 3% (excluding foreign exchange), which was better than anticipated, signifying end-market strength which helped offset continuing impacts from order normalisation and lead time improvements.

Second quarter operating profit of \$206 million increased \$180 million and adjusted operating profit of \$251 million increased \$169 million from the prior year second quarter. These increases were primarily driven by benefits from pricing and volume partially offset by material, freight and labour inflation and capacity and R&D growth investments. Second quarter 2023 adjusted operating profit was above the prior guidance range primarily due to additional price-cost favourability and higher volume from continued operational execution and supply chain improvements.

Vertiv sees signs of accelerating market conditions for the second half of 2023 as sales pipeline activity remains healthy. The company believes AI will be a long-term secular tailwind for the industry and increase the size of the addressable market.



Talking satellite

Daniel Batty, space and spectrum policy analyst, Access Partnership



The African position – what's at stake for satellite in Africa at WRC-23

With the 8th Sub-Saharan Spectrum Management Conference recently ending, and the 4th African Preparatory Meeting now underway, discussions around bridging the digital divide and the role of different communications typologies in providing solutions to the continent are rife. The long saga, which involves international mobile telecommunications (IMT), fixed wireless access (FWA), and satellite communications still goes on, especially as consensus is still being sought on key Agenda Items, such as 1.2 and 1.3.

Setting the scene on the continent

Over the preceding decade, Africa has seen significant developments in the availability of communications infrastructure and the deployment of next generation mobile communications infrastructure, including 4G and 5G. All the while, satellite networks continue to provide a suite of services, including broadcasting, communications (both direct and backhaul), and internet. Additionally, advances in satellite services, such as direct-to-device (D2D), seem poised to revolutionise rural and last mile connectivity.

While connectivity solutions continue to evolve on the continent, so does the nature of the digital divide. The coverage gap, referring the percentage sub-Saharan Africans who do not have access to network services, has continued to shrink, now down to 19%. However, it should be noted that much of this coverage is comprised of older generation IMT, such as 2G and 3G services, and is focused on urban population centres – highlighting that although the coverage gap in Africa has decreased, there remains a gap between urban and rural areas of the continent.

As the coverage gap has shrunk, the usage gap has grown, increasing to 49% across sub-Saharan Africa. This refers to the number of users actively utilising the networks available to them. Several causes are responsible for the usage gap,

with infrastructure constraints as well as the affordability of communications devices and connectivity services, such as data plans, serving as key obstacles.

What's more, when defining connectivity, it is vital to outline its meaning. Closing the coverage gap entirely does not mean sub-Saharan Africa will suddenly benefit from the promises of expanding connectivity. Meaningful connectivity means connection to the internet that is "safe, satisfying, enriching and productive at an affordable cost" (WTDC, 2022), in alignment with the short and mid-term goals of the continent.

Satellite in Africa

Satellite connectivity is a vital component for sub-Saharan Africa connectivity, both present and future. This has been facilitated through enabling satellite broadcasting, communications networks, and more recently, internet and D2D. These are, however, only the communications aspects of satellite services. Satellites over Africa continue to provide invaluable weather monitoring, Earth observation, tracking, and Internet of Things (IoT) services. These provide commercial and institutional advantages to the continent.

Satellite connectivity has seen a marked decrease in cost, following advancements in antennas, satellite services, and capabilities. The existence of geostationary orbit (GSO) and non-geostationary orbit (NGSO) cohabiting satellite systems allows for the expansion of services across their entire orbit path around the globe. The expansion of low Earth orbit (LEO) has translated into reduced user service costs – LEO constellations are significantly lower than their large GSO cousins, which makes them cheaper to build, deploy, and operate, while also decreasing their ping and increasing connection speed. Today, LEO constellations can provide stable internet at about 150Mbps speeds.

Outside the scope of connectivity, Africa has revealed its interest in revitalising national space programmes, amid hopes of attracting investment from foreign launcher companies for whom sub-Saharan Africa's large equatorial region could be utilised to maximise launch efficiency.

To date, 53 satellites have been launched by African states, with Kenya being the most recent launchers. These satellites are mostly Earth observation

satellites, which provide valuable data on marine ecosystems, floods, drought and other natural disasters, and agricultural data such as crop and soil erosion monitoring. These services directly contribute to the socio-economic development of the regions they serve.

The challenge at WRC-23

This WRC cycle is poised to be one of the most critical for sub-Saharan Africa – the active development of an African position over the past three preparatory meetings has proven contentious, with member states raising their voices for various solutions to the connectivity problem.

There are several key Agenda Items of note to the satellite industry in Africa, with the two most contentious being 1.2, which aims to allocate more spectrum in the upper 6GHz band to IMT, and Agenda Item 1.3, which seeks a primary allocation for mobile services in the C-Band midband (3600-3800MHz). While there are plenty of other Agenda Items of interest to satellite communications, special focus is being given to these two.

Agenda Item 1.2 presents a challenge to several other services in the C-band, including WiFi and satellite. While 3GPP has completed its standardisation for 5G in the upper 6GHz band, there are other problems which must be addressed. These include harmonisation and interference, and not least of all, acknowledging that at present, large portions of IMT spectrum are not actively being used.

Agenda Item 1.3, which seeks to allocate more midband spectrum to mobile services, has two possible outcomes which African states are deciding upon. These include whether to allocate the entire portion and allow member states to individually opt out of assigning 3800MHz to mobile, or whether to allocate 3600-3700MHz and allow member states to individually opt in to assigning 3800MHz.

These two agenda items will shape how satellite services are provided in Africa in the future and must be mindful of the services satellites provide – both within and out of the communications sector. They must also be cognisant of planning for the future of more satellite launches, African space missions, and satellite services.



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The good, the bad and the ugly: enabling communications across Africa



James Gray, director of telecom strategy,
PowerX Technology Limited

The magnitude of the task facing the telecommunications industry in Africa is profound. It's the world's fastest growing economic zone, home to 1.2 billion people, yet shackled by an infrastructure gap that presents unique challenges in providing access to regions, resources, communications, and markets.

The World Bank is unequivocal about the economic benefits of communications and connectivity. "Internet access can drive economic development through its impacts on both the supply-side and the demand-side of an economy. When infrastructure expands in developing regions, workers [...] gain higher wages or find employment. Digital connectivity directly affects the productivity of firms, workers, and other inputs in the production process." And unique to Africa, mobile connectivity is the backbone of the pervasive M-Pesa branchless banking system – developed originally in Kenya – that allows users to transfer money, deposit, withdraw, and pay for goods and services with a mobile device, transforming local economies.

All these benefits rely on robust, high bandwidth networks – predicated on the ability of individual sites to reliably serve their subscriber base. In a typical developed market – say Germany – it's not unusual to see an LTE base station to subscriber ratio of about 1:1000. Some markets have even lower ratios – Japan provides almost double the base station density for example, and Finland has an astonishing ratio of around 250 subscribers per base station.

For Africans however, the numbers tell a different story. Take Tanzania, where around 3,500 subscribers fight for the bandwidth of every base station, or the DRC where this ratio climbs to around 6,500 per site. That's over six times as many people being served mobile connectivity from an individual site compared to a median developed economy.

The challenges are familiar. Poor grid infrastructure with low quality power and outage issues, high transportation costs due to low quality roads and difficult terrain, high dependence on diesel (along with high fuel prices and shortages), operational leakages (including theft, vandalism, and diesel pilferage), lack of technical skills, and uncertain policy/regulatory environments.

So how can data science prevent or safeguard against these problems?

Much of the difficulty in maintaining and servicing remote rural sites is in the unpredictability of events that require intervention. Towercos – and the complex ecosystem of vendors, operations and maintenance suppliers, subcontracted electrical and mechanical engineers etc. that support them – are more often than not reacting to unforeseen (but not necessarily unexpected) problems: a malfunctioning battery, an unexplained disconnection from the grid, a missing rectifier module. These are the type of outage-inducing problems that must be fixed now – regardless of whether or not a bridge has been washed out, an armed conflict is underway, or a gang of fuel thieves is operating on the road to the base station.

But most of these emergency maintenance events can now be pre-identified – or flagged as highly probable – by employing the sophisticated data mining and analytical tools found in artificial intelligence (AI). Trawling through unimaginably vast troves of archived and real-time data, collected across networks that span thousands of base stations and towers, AI algorithms can identify anomalies and patterns never before accessible to engineers and operators. This unique insight into potential problems puts the towerco – for the first time – in the driving seat of preventative maintenance and problem-solving.

Now, instead of having a maintenance truck roaming a region stacked full of replacement parts that might be needed in the event of an unforeseen outage, a real-time feed can alert an operations and maintenance teams that a specific battery at a specific site has a high probability of failure within a certain timeframe. A targeted intervention can take place, under conditions and on a schedule controlled by central and regional operations management teams.

In the example of battery replacement – just one of countless components that require maintenance and/or replacing – there is a hard financial benefit. At present, batteries that are still operational are swapped out on a fixed schedule (usually every three years). But as any electrical engineer will tell you, they usually have a good couple of years' service left in them, even though they've been removed 'just in case.' By using data science and AI analytics

to more accurately predict when a specific one will fail, they can be left in the field longer – extending their lifespan to make significant reductions in maintenance costs.

This predictability has ripple effects through a towerco's OPEX. As well as reducing miles driven to sites, maintenance fuel costs, wear and tear on vehicles, risks to human lives and potential losses due to environmental hazards, CFOs can stabilize and forecast cashflow better than ever before. It extends the window of financial predictability, which in turn benefits the roll-out of new regions and base station in-fill.

The benefits don't end there. A key feature of AI oversight is the ability to reduce diesel fuel costs at individual tower sites, adjusting the switch from solar/diesel/grid/battery depending on the unique conditions at the site and machine-learned efficiency gains across the entire network. A reduction in diesel usage means fewer deliveries – and fewer opportunities for fuel trucks to fall foul of predatory gangs that have increasingly plagued many parts of the subcontinent.

Building out and maintaining the tower networks in Africa is important, essential work. The physical and logistical challenges this presents are formidable. But by turning to the technology of the future, towercos – and the complex ecosystem of suppliers and vendors that support their endeavours – can begin to do this work on their terms and under their chosen conditions. Predicting the unpredictable is within our grasp, giving a much-needed boost to the stability and growth of the African telecommunications industry. ■



The smart city opportunity for Africa

Dominic Smith, marketing director, Cerillion



Despite slowing global population growth in the coming decades, all regions are expected to urbanise further, as more and more of us settle in cities. Current estimates by the United Nations Economic and Social Council say that by the end of the decade, over 60% of the global population will be concentrated in cities, dramatically challenging the delivery of connectivity and public services.

Nowhere is this more evident than in Africa; by 2050, Africa will be home to 25% of the global population, increasingly concentrated in its cities. In fact, Africa is now the fastest urbanising region in the world; by the end of the decade, there will be 17 African cities with over five million residents, and five of them – Cairo, Johannesburg, Kinshasa, Lagos, and Luanda – will form megacities of ten million or more. This rapid urban growth has led to the rise of informal settlements with high mobile internet penetration but low access to fixed-line infrastructure.

What's more, Africa will face the brunt of climate change in the coming decades, bringing

droughts, floods, and desertification. This, paired with rapid urbanisation, will put a great deal of strain on local institutions and governments in their current form.

To avoid socio-economic and environmental catastrophe, there must be a 're-shaping of current development trajectories in middle-income and rapidly industrializing cities... and future-oriented urban design and land-use planning for African cities,' and this is where smart cities can really help.

A smart city is one with a high degree of digital awareness and control embedded within the infrastructure to support urban development. Connected services, traffic management, waste reduction – smart cities are changing the face of urban living by giving citizens easy access to network infrastructure and integrated digital services via connected devices.

Finding the African smart city

Birnin Zana, the fictional capital of Wakanda in Marvel's Black Panther film series, has won

praise and sparked discussion in academic, architectural, and urban planning circles for what a smart city in a distinctly African context could look like. Just as African cities challenge Western conceptions of urban spaces, they can equally challenge conceptions of smart cities. In fact, it's the opinion of Deloitte that Africa is 'ready to leapfrog the competition' with smart city technology.

Africa is already the global leader in mobile money, which has become an important component of regional financial services and will be critical to the success of African smart cities. Today, dozens of telcos operate mobile money services, enabling consumers and small businesses with little or no access to traditional financial services to obtain basic banking and pay for services via smartphone or feature phone – services which, in turn, drive a wider informal economy that employs millions across the continent, and sees nearly \$3 billion transacted every day.

It's this different context that has led Sénamé Koffi Agbodjinou, architect and anthropologist, to reject Western notions of smart cities for Africa as "too top-down and remote from people's real needs." His vision for an African smart city is one that is "horizontal and distributed," inspired by the regional architectures of traditional societies and enhanced through free access to new technologies.

In existing cities, this can be achieved by digitalising government and municipal services and retrofitting existing infrastructure; think installing smart electricity meters and water meters or upgrading traffic management systems. However, all this digitalisation is only possible with widespread penetration of broadband infrastructure, and today 43% of people in sub-Saharan Africa live over 25km from fibre, and there are only 0.76 broadband subscriptions per 100 people.

The future of living

Increasingly, hyper-scale civil engineering projects are constructing whole new cities with smart capabilities and fibre connectivity by design, with devices and sensors embedded in entire residences and housing blocks, driven by needs of population expansion, climate change, and energy efficiency.

Smart devices and sensors allow real-time monitoring and analysis of data generated by the consumption of city facilities. However, for these services to be truly beneficial to a city's residents, the technology, architecture, data, and business models must also be open, allowing users to decide what services they need, and how their data is used.

One such example is the Administrative Capital for Urban Development (ACUD), the new smart capital city for Egypt, 60km east of Cairo, which is being developed with connected infrastructure and digital services at its core. Powered by millions of connected devices, ACUD

is expected to welcome seven million citizens in the next 10 years and create nearly two million new jobs, while easing congestion in Cairo.

ACUD will serve as the new seat of government for Egypt, flanked by financial and cultural districts, and residential neighbourhoods all connected to an extensive FTTX network. Citizens and retail providers are connected to smart services in real-time, including smart metering, utilities, traffic management, security, and a wide range of connectivity services – all paid for online.

City limits

There's a legitimate degree of scepticism around smart city projects however, due to the sheer amount of data that needs to be collected and managed. Even something as simple as a parking app, for example, requires live occupancy data, traffic and weather data, and real-time information on public holidays and civic events to determine pricing.

Businessman Roger McNamee called Toronto's smart city project, in partnership with Google, "the most highly evolved version to date of what Harvard professor Shoshana Zuboff calls surveillance capitalism."

Increasing mobile spectrum and the density of IoT devices is not enough to address deep-rooted structural issues. Without egalitarian access, this digitalisation in effect cuts residents without devices off from certain services. By 2025, half the population in sub-Saharan Africa will have a mobile subscription; though a fantastic testament to the successes already achieved, this nonetheless leaves another half of the population potentially unable to use digital services.

In a smart city though, it's not only the price of devices and connectivity that must be considered; as demand for affordable homes with durable construction and improved sanitation (and the restructuring of existing stock) skyrockets, housing options at all price points must be built

to meet the needs of millions of new residents.

Vision City in Kigali has come under fire for courting high-income earners as part of its first development phase, as 40% of Rwandans live on less than \$1.25 a day, an income the World Bank defines as 'extreme poverty' and the country faces a deficit of up to 350,000 houses over the next decade.

Large scale smart city initiatives must cater to socio-economic needs to effect real change in urban settlements. In Eneni Bambara-Abban's 2022 Turing Talk, 'A day in the life of a smart city,' she outlined four factors that cities must address:

- Lessening the digital divide through prioritising education in technology and digital skills
- Progressive government and legal policies
- Security and data privacy
- Overhaul of infrastructure to make these projects viable

It's not just the physical infrastructure which needs substantial investment, but also the back-office business support systems (BSS) which play a crucial role in enabling and future-proofing the smart cities of tomorrow. End-to-end process automation, fast time-to-market, and scalability to support millions of connected devices and sensors are all crucial elements of smart city BSS, but the real complexity comes from the breadth and convergence of services offered.

Smart city BSS must be not only multi-service, but also multi-business model, able to monetise connectivity, utilities, and ICT services for consumers and businesses, including retail and wholesale, all in one convergent platform.

Smart technology and improved broadband connectivity are at the heart of Africa's twenty-first century development path. Given the right support, smart cities in Africa and the wider developing world will soon take centre stage in the race for global international development. ■





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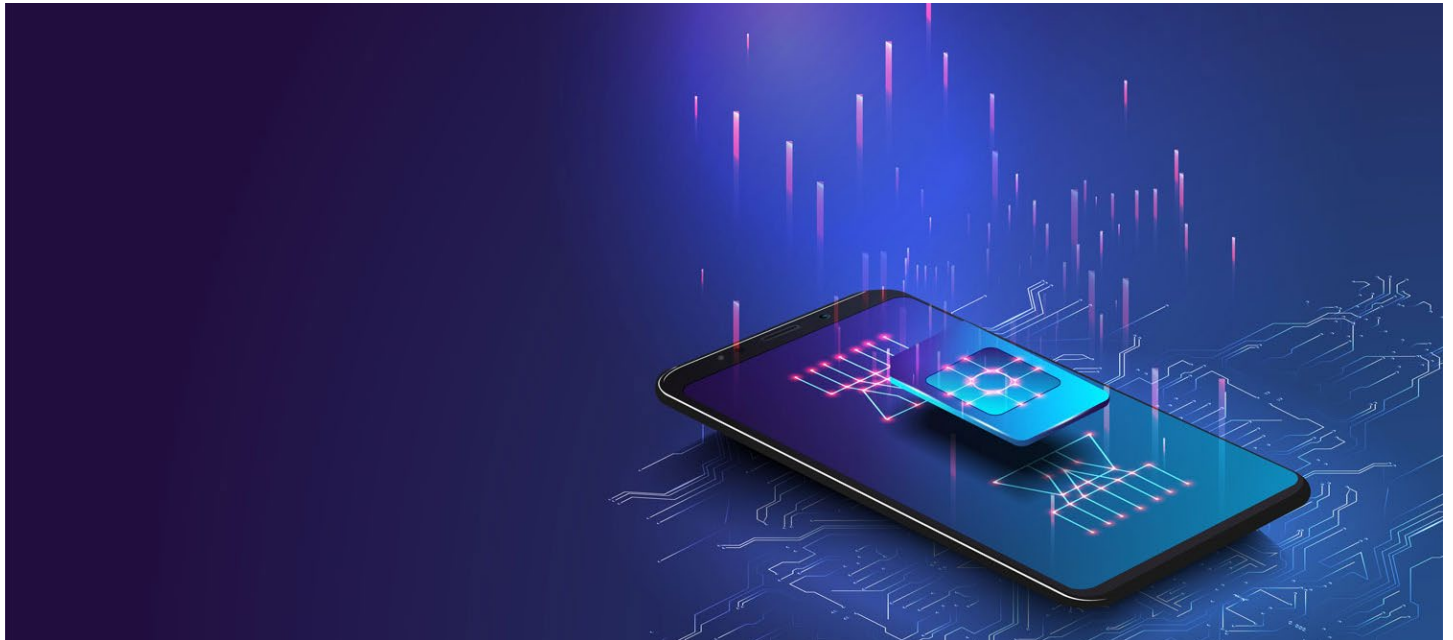
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Connecting a continent via eSIM

eSIMs are big news across the world, shaking up the environment for IoT/M2M and consumer devices alike. But what impact is the technology having in Africa?

Embedded SIMs or eSIMs have been taking the wireless comms world by storm since the first standard was released in 2016. Instead of an integrated circuit on a removable SIM card, eSIMs comprise software installed onto an eUICC chip which is permanently installed on the device. Once active, the eSIM can be reprogrammed remotely with new information, enabling rapid, hands-free carrier switching.

eSIMs hold a great deal of promise across a variety of applications, offering flexibility, convenience, connectivity, and the ability to leverage emerging technologies like IoT/M2M. As eSIM technology continues to mature and MNOs offer broader support for eSIMs, adoption is expected to grow.

Developing demand

Byron Kennedy, executive head of media relations, Vodacom Group, reports that the MNO is seeing rapidly expanding demand on the continent: “from a Vodacom perspective, we have seen an increase in eSIM device sales across our portfolio, with over one million devices eSIM enabled on our base.”

“We are seeing Africa, to some extent, reflecting what we are experiencing in Europe,” says Henrik Aagaard, CTO and co-founder of Onomondo. “In contrast to the US, where you don’t need to switch carriers to serve a market, smaller countries in

Africa, like Europe, require the ability to switch carriers as devices cross borders. This is where we are seeing the demand for eSIMs.”

Garron Dace, solution architect sub-Saharan Africa, Giesecke+Devrient, concurs: “we see demand from leading operators in sub-Saharan Africa to leverage eSIMs in the wearable and smartphone segment, but the adoption rate is much lower than in other regions such as US or Europe.”

There is genuine demand for eSIMs in Africa today, insists Kenta Yasukawa, cofounder and CTO, Soracom. “Part of that comes from a generational shift in the handset market, where Apple and Samsung have already transitioned to eSIM and most manufacturers are quickly following suit. But it’s also driven by a wave of new connected devices.”

Indeed, the consumer segment is making headlines across the globe – but that’s not to say that it’s the main market on the continent...

“The most obvious case is wearables like smart watches and trackers, where switching to eSIM allows smaller form factors, improves ruggedness, and removes the opportunity for consumer error in SIM installation,” says Yasukawa. “But eSIMs also offer significant advantages in large-scale M2M deployments, where removing the burden of managing individual card-type SIMs across thousands of devices can produce meaningful cost savings.”

“While there are developing regions within Africa, those areas also tend to adopt new technologies the fastest,” says Aagaard. “This can be seen in situations like end users paying via POS systems over mobile phones rather than using older technologies like credit cards. That’s why we are expecting to see the adoption of more technology within IoT and M2M, and here, eSIM is definitely going to play a role.”

Dace, however, warns that “eSIM has entered the market on high end devices, which means there is not such a broad market appeal. Additionally, the recent chip shortage has seen fewer handsets enter the market in the developing world. We think that demand will increase as users get their hands on devices and become familiar with the technology.”

Talking business

The business case for adopting eSIM technology varies from one MNO to another, depending on customer base, market position and business objectives. Nevertheless, eSIMs have a lot to offer. They enable MNOs to explore new revenue streams, in areas like value added services (VAS), connected cars, smart homes and buildings, and IoT/M2M applications. With eSIMs, Africa’s MNOs can leverage emerging markets and industries to expand their customer base and grow revenues.

For wearables, for example, eSIMs enable

solutions like Vodacom OneNumber, explains Kennedy. “Vodacom OneNumber allows a customer to receive messages and calls anywhere on their eSIM wearable (watch) without the need to carry the primary connected handheld smartphone. Additionally, smartphone users who travel abroad can try a network quality, and then make a decision on the basis of the quality of the network they receive. Another practical example is the elimination of packaging which contributes positively to saving the planet as well as the cost saving associated with logistics – stock ordering and transportation, etc.”

Indeed, the use of eSIMs enables MNOs to sell their connectivity more efficiently without having to worry about customer relations or support. Remote SIM provisioning and management simplifies device onboarding and reduces support costs, while enhancing overall operational efficiency. By bypassing traditional physical SIM card distribution and remotely activating eSIMs, significant cost savings can be achieved, particularly in remote or rural areas.

“The use of eSIMs in everyday devices is becoming increasingly popular, representing a major opportunity for companies in this market,” says Lemberg. “As digitisation continues, the number of available IoT/M2M devices will increase significantly. Even though profit margins are lower in the IoT/M2M space, eSIMs still provide an opportunity to improve connectivity services, reduce fees and reduce manual effort.”

Adopting eSIMs can also help MNOs stand out from the crowd in competitive markets. By offering more flexible options to consumers like seamless switching and innovative services, operators can attract customers that value flexibility and convenience.

Yasukawa believes that for MNOs in Africa in particular, eSIM support offers an opportunity to grow market share while competitors lag behind. “Ultimately, we can expect that eSIMs will effectively replace card-type SIMs in most applications. This transition is already happening, and MNOs who fail to adapt will be left behind by more aggressive and opportunistic competitors. Because eSIMs are associated with the newest and highest-end devices, there is a secondary opportunity to position the MNO brand around technical leadership and capability.”

From an MNO standpoint, eUICC might even be considered crucial, opines Michael Karlsen, CEO and Co-Founder of Onomondo, as it protects the network dynamics.

“An eUICC solution is essentially a patchwork of agreements and a technology that enables those agreements in the field,” says Karlsen. “eUICC allows seamless switching between local identities, ensuring proper functionality. It enables MNOs to retain control over customer connectivity, as the device virtually belongs to them when used on their network. This control establishes a sense of security for MNOs as they can monitor the use of these solutions, individually price them, or develop business cases.”

However, using the traditional UICC in a wholesale model aggregates an MNO's network into a single solution, leading to the loss of fine-tuning

dynamics on pricing.

“Although this might be difficult for MNOs to appreciate, it provides access to a larger scale and fosters a partnership model, contrasting with eUICC's B2B sales model,” says Karlsen. “Ultimately, MNOs must weigh the opportunity cost of engaging in wholesale agreements against the expenses involved in establishing and maintaining individual relationships for eUICC.”

Managing connectivity

The rise of eSIMs is expected to have a significant impact on the demand for connectivity management platforms (CMPs), which play a crucial role in managing the lifecycle of eSIMs, enabling remote provisioning, activation, and management of eSIM profiles.

“Efficiently managing the lifecycle of eSIMs is critical for enterprises,” agrees Lemberg. “Using

automation and AI in connectivity management platforms will be crucial for optimising costs by analysing past behaviour from SIMs and making suggestions. It is also important that all CMPs support APIs that simplify the process for IoT companies when switching telecom profiles to eSIMs.”

For MNOs, CMPs deliver the tools to manage multiple network profiles, enabling users to choose the most suitable network based on factors like coverage, pricing, and quality of service (QoS). The new level of complexity in managing device connectivity for devices means that demand for CMPs will expand quickly. Moreover, CMPs will be more needed than ever to deliver lifecycle management, real-time monitoring, data analytics, and billing integration, all essential components for IoT.

“Even with card-type SIMs, multi-IMSI capability is already a valuable feature, especially in IoT/M2M use cases where devices may be located in remote areas or may travel frequently,” adds



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Yasukawa. “Because the eSIM is soldered to the device and cannot be swapped physically, increased eSIM adoption will necessarily drive increased demand for CMPs. For IoT/M2M in particular, we are already seeing growing demand for flexible, scalable connectivity management with the ability to aggregate multiple profiles and integrate with different hyperscaler platforms, like Amazon Web Services and Microsoft Azure.”

Further, eSIMs require robust security measures to ensure the integrity and authentication of profiles. CMPs play a crucial role in managing secure connections, enforcing authentication protocols, and providing encryption mechanisms. “Service providers will insist on tight control of connectivity management. Not only from a risk perspective, but for QoS monitoring as well,” adds Dace.

IoT vs consumer

In Africa, the adoption of eSIMs for IoT/M2M applications is expected to be significant due to the specific requirements and scalability of deployments in sectors like agriculture, energy, transportation, and healthcare. eSIMs are particularly well-suited for IoT/M2M applications due to their ability to enable seamless connectivity and remote management of devices, ideal for large-scale IoT deployments.

eSIM uptake for consumer devices like smartphones, wearables, and tablets is also rampant; however, on the continent, factors like low smartphone penetration rates, affordability, and digital skills play a significant role in market adoption. Nonetheless, with so many projects currently aiming to address these challenges, and with manufacturers increasingly incorporating eSIM support in their devices, the adoption of eSIMs in consumer devices is likely to increase rapidly.

New data from Juniper Research reports that the global number of IoT connection using eSIM technology will reach 195 million by 2026, up from 22 million this year. Only 2% of all eSIMs will be attributable to the IoT sector in 2023; however, with the increased adoption of eSIM tools, the growth of eSIM IoT connections will outpace the consumer sector over the next three years. By 2026, 6% of global eSIMs will be attributable to the IoT sector. eSIM-enabled IoT devices will grow 780% globally over the next three years, with two key areas benefitting: logistics and oil & gas. By 2026, it forecasts that these two markets will account for 75% of eSIMs in use globally.

However, our jury is out on which use case – IoT or consumer – will ultimately take the lead.

About 70% of eSIM connections today are M2M, but the consumer device share of the eSIM market is growing fast, reports Yasukawa.

“This is driven in part by IoT cases like smart home and wearables, but primarily by the transition to consumer eUICC spec by manufacturers of mid-range Android handsets following the lead of Samsung and Huawei,” says Yasukawa. “We expect that consumer devices will ultimately overtake IoT/M2M devices in terms of total eSIM market share, but for now both markets are growing quickly.”

“Currently, we see a bigger trend in consumer devices, due to watches and wearables use cases, as well as iconic smartphones,” adds Kennedy. “We believe the IoT/M2M trend will start as soon as eSIM reaches greater economies of scale.”

In contrast, Karlsen expects IoT/M2M use cases – specifically for eSIM and eUICC – will rapidly outgrow consumer devices.

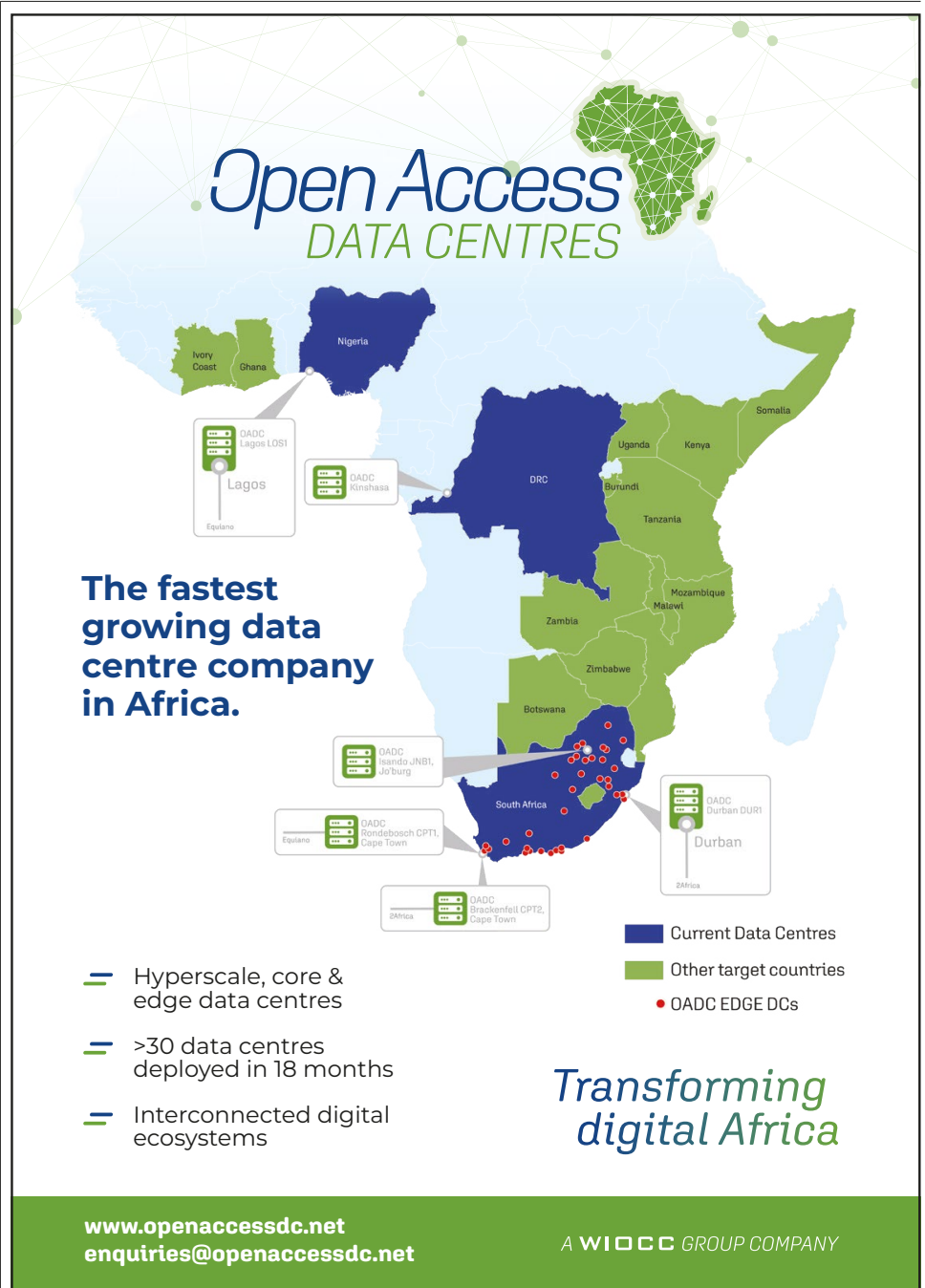
“By the sheer dynamics of a human-to-machine ratio, IoT/M2M solutions are bound to exceed the number of people in African countries,” said Karlsen. “In the IoT/M2M market, there often becomes a need for international roaming and traveling activities. This is where eUICC has been able to make an impact. This is a trend we are seeing in Africa and southern Asia, as well as in Europe and North America.”

However, when considering the prominence of eSIMs versus traditional UICCs, it becomes more nuanced: “the scale at which solutions are

implemented plays a vital role in determining the preference for eSIMs or UICCs,” says Karlsen. “Both technologies offer advantages, and their suitability depends on specific use cases and implementation scenarios. One of the biggest factors is how the MVNO or MNO deploys the solution.”

“IoT/M2M may take some time to develop as there is huge application scope,” agrees Dace. “However, there is a dependency on infrastructure to deploy and utilise these kinds of devices. It is likely that IoT/M2M will overtake consumer volume in the long term.”

Ultimately, the uptake in both use cases depends heavily upon regulatory support, infrastructure development, and partnerships and ecosystem development. With the drive we’re seeing to connect Africa today, eSIMs will necessarily play a significant role in connecting the unconnected, bridging the digital divide, and digitally transforming the entire continent. ■





Paul-Francois Cattier



Jocelyn Karakula



Ayotunde Coker

Roundtable: data centres – buy or build?

Data centre capacity demands are booming across the African continent, leading to one all-important question: should MNOs buy or build?

As continent wide-digitalisation ramps up across Africa, in-house data management is becoming an increasingly challenging concern for MNOs. IT professionals are facing numerous issues, and organisations of all sizes and across all sectors are considering outsourcing the hosting of their data and looking at colocation as part of their ongoing IT strategy.

According to Mordor Intelligence, the African data centre market is expected to register a compound annual growth rate of 15.41% over 2023-2029, with growth rates peaking in Nigeria (23.24%) and South Africa (15.68%).

For MNOs amidst the uptick in mobile adoption throughout the African populace, data management is a key priority; many are now facing the choice of building or buying, in-house or colocation. For some of the larger players, building may seem like a no-brainer to manage networks across the entire continent. However, for smaller operators with a presence in a handful of countries or less, the answer is less clear.

What should MNOs consider when deciding whether to collocate or build their own data centre?

Paul-Francois Cattier, managing director, Africa Data Centres Association: The advantages

for MNOs in renting space from a colocation provider include reducing capital and operational expenses by leveraging economies of scale and sharing infrastructure costs with other tenants.

Network performance and reliability is also improved by accessing diverse connectivity options and redundant power sources. Security and compliance are enhanced by relying on the provider's expertise and certifications, while scaling up or down is easily achieved by adding or removing equipment as needed without long-term commitments. Interconnectivity, easier connection to partner services that are hosted in the collocated data centre such as financial services or access to other cloud exchanges, brings content closer to their customers. With colocation, MNOs do not have to search for skills, competencies, experience, and critical infrastructure mindset in building a data centres team. Additionally, MNOs are not carrier neutral, so you lock out cloud and CDN.

However, disadvantages include not being able to offer a bundled offer of connectivity and colocation to their customers; and not being able to develop a colocation business strategy - but do they even want it, and do they have access to the capital to do it?

Jocelyn Karakula, CTO, Orange MEA: For MNOs in Middle East and Africa, data centres have been built first to host all strategic technical

assets, including network core elements, IT, and platforms. Therefore, in several cases, MNOs such as Orange have already invested in strong, resilient and in some cases, evolutive data centres, targeting Tier 3 or 3+ technical environment levels.

These investments comply with regulatory contexts (data sovereignty), driving to a per-country or per-cluster of countries data centre approach. On top of this, in many cases, these structures benefit from secured and resilient connectivity to international capacities and internet exchange points.

So obviously, the first rationale for an MNO is to take advantage of such structures, as soon as they can host additional capabilities and services (cloud services, data management assets, etc., ...) tailored to the needs of internal and external customers.

But at the same time, the digitalization of the African industry requires more and more infrastructure and data centre capacities that the existing MNO structures cannot handle. As fast time to market is a key driver for the success of digital businesses, an easy way for them to address the necessary needs for quick growth and flexibility can be to rely on external hosts as soon as those are available within the country. This is also a way for MNOs to adapt hosting costs to the business fluctuations, which is more

a challenge when they build their own additional structures (occupation ratio being sometimes below the expected value for years).

Ayotunde Coker, CEO, Open Access Data Centres (OADC): To colo or not to colo, that is the question!

Colocation enables MNOs to realise the following benefits:

- Redundancy and uptime: no need to budget for and implement contingencies (for power, cooling, connectivity, etc.) to ensure continuation of service.
- Opex vs capex: outsourcing to a third-party is more cost-effective and tax-efficient than operating an in-house data management facility. Colocation becomes an opex cost rather than a capital expense. Also, a data centre facility provider continually invests in the latest technology and efficiency solutions, so MNO clients would always have access to the latest technology and expertise to help them manage their data and expand their business.
- Professional expertise 24/7/365: a data centre has the advantage of dedicated, fully trained staff monitoring the network and facility 24/7/365.
- Compliance: MNOs can be confident that the data centre will remain compliant with all current and future standards - such as PCI, HIPAA, SSAE-16 and HIGHTECH.
- Minimising environmental impact: colocation providers design facilities with energy efficiency in mind and are continually investing in the most efficient green energy sources available.
- Scalability: colocation offers MNOs the flexibility to grow without consideration of current in-house IT restrictions, or to easily scale down if necessary.

Do these factors vary across the continent?

Ayotunde Coker: Yes - the importance of each pro and con does vary. If the region where the MNO wants to use a data centre facility does not have one already then self-build is the only option - unless of course they can persuade a data centre operator to build a suitably sized new facility there, for it to be operational when the MNO needs it.

As for the size of the MNO, the key factor here is the size of the rack space the MNO would need and what expertise they have in-house to potentially run their own data centre facility.

Jocelyn Karakula: The context is different according to region and/or countries. First, because the hosting market does not expand at the same pace in all places, this sometimes offers very poor alternatives to MNO-owned capabilities.

There are at least two reasons for this: the position of governments and regulators in boosting digital business and technology within each country - both have a major influence on the hosting industry dynamics. Consequently, it impacts on the attractiveness of the hosting offers.

Second, the strategy of major digital players is also a differentiator among countries, as their presence in a country creates a real boost for the digital ecosystem and creates attractive hosting possibilities.

Paul-Francois Cattier: In most African countries - mid and large sized - the colocation offering is sufficient and mature enough to provide a competitive offering from different colocation companies. In smaller countries, however, the offering could be limited to few actors, not enabling a competitive purchase.

In terms of both MNO and country size, the bigger the data centre, the more efficient - and the scaling effect has a huge impact on hiring

resources and costs. So, building data centres in small countries is riskier.

How important are the economies of scale offered by colocation data centres to MNOs?

Ayotunde Coker: Not just one factor needs to be considered when deciding whether to colo or not. For each situation there would be a different threshold above which it might be more economically viable for an MNO to build their own DC - but this is just one factor within the overall decision-making matrix.

Paul-Francois Cattier: The advantage of the colocation offering is flexibility and scalability. Without touching capex, you can follow customer demand, increasing your space or scaling down if you lose a customer. It is a pay as you grow model.

It is not a question of economies of scale, buy or build; it is a question of business strategy based on MNO customer demand. Indeed, the data centre design and build and operations are so specific that this will require a strategic vision to enable the full effort of each of the MNOs department towards this ambitious goal. A colocation company in Africa is building one data centre every two years and operates several data centres, learning constantly with experience and being immersed in the data centre business and tech community.

Is there adequate native talent and expertise for MNOs to man their own data centres 24/7?

Paul-Francois Cattier: The mission critical buildings that are data centres are facing critical resource shortages in every part of the world, not only in Africa.

In Africa, we do have excellent technical expertise, but we are lacking experience, mindset, and attitude in mission critical services.

The choice for MNOs to develop their own data centres should be a strategic choice to become a co-location provider to their customers, supported by a strong business strategy. If this choice is just a procurement choice, this will have little chance to succeed.

Ayotunde Coker: MNOs may have the appropriate expertise in-house, while specialist data centre operators will definitely have the required expertise, experience, and resources. However, expertise is just one factor. Others include management time; human resources; available funding - the capex vs opex argument; and economies of scale.

Jocelyn Karakula: MNOs in Africa can operate their own data centres, sometimes relying on additional external expertise, and sometimes relying on their own experts and technicians. For Orange MEA, one key driver is to anchor all operations and expertise on the African continent, and to manage the upskilling of technical teams accordingly. For large operations - we are present in 18 countries in MEA, for example, 24x7 operations can be mutualized at a regional, or at least multi-country scale, to optimize the operation cost structure and secure the appropriate competencies. ■





First TIP OpenWifi network installed in Kenya

Internet service providers (ISP) ThinkWiFi and Mawingu have launched the first outdoor Telecom Infra Project (TIP) OpenWiFi network in Kenya. The collaboration is funded using an advertising-based model, the first time a TIP OpenWiFi network has been built and commercialised using a sponsorship platform.

Launched in 2021, TIP OpenWiFi is an open source-based WiFi architecture that enables multi-vendor, interoperable WiFi networks. OpenWiFi-based solutions enable the seamless mix and match of access points and controllers from any TIP OpenWiFi compliant manufacturer, allowing developers to quickly create new applications. There are more than 300 companies involved with the TIP OpenWiFi initiative from OEMs, ODMs and silicon providers to managed service providers and app developers.

Purposefully closing the connectivity gap

"ThinkWiFi's mission is to empower people by giving them access to the internet. We are a purpose-based business working to close the digital divide," said Janine Rebelo, founder and CEO of ThinkWiFi.

"Working with Mawingu and TIP OpenWiFi provides social upliftment where everyone can get connected to enterprise-grade WiFi through an easy-to-use advertising platform. It's a win-win-win where brands win by gaining access to high growth consumer segments, consumers win with free, uncapped, high speed connectivity, and the community wins by getting unfettered access to the digital economy through free WiFi networks powered by advertising revenue."

Managed from ThinkWiFi's headquarters in South Africa, the WiFi network uses TIP OpenWiFi certified hardware and software including access points (APs) from Edgecore and CIG. Wavespot provides the cloud controller which also implements the backend analytics and location-based services through its AICloud allowing ThinkWiFi to gain valuable customer experience insights. The WiFi network is built on top of Mawingu's network infrastructure.

"This network clearly demonstrates why TIP OpenWiFi is the most innovative connectivity solution on the market today – it's open, with multiple vendors supplying hardware, so it can be scaled to provide superb speeds without vendor lock-in. Plus, funding the network through

advertising makes community connectivity widely available, and as OpenWiFi already offers a much lower TCO, it's a very effective way to build affordable WiFi networks in city centers," said Jack Raynor, TIP OpenWiFi program group co-chair. "Simply put, OpenWiFi is beneficial to the communities that we serve and that's why we've seen it scale so rapidly around the world."

"Mawingu's aim is to help our customers access new opportunities for work, education, entertainment, and social connections, through the power of the Internet. Our company's mission is driven by this very purpose: Open Opportunities," said Farouk Ramji, Mawingu CEO. "Through our collaboration with ThinkWiFi and OpenWiFi, we can provide free internet to bring us closer to bridging the digital divide in Kenya."

The ThinkWiFi OpenWiFi network is the first part of a larger rollout that will include additional city centres, transit, and tourist hubs and retail malls in Kenya and South Africa with plans to expand into other African countries. The ThinkWiFi OpenWiFi network deployments are expected to cover several public service and healthcare facilities through collaboration and partnership with public organisations. ■



Sustainable internet access upgraded across South Africa

Founded in 2013, Project Isizwe is a non-profit organisation committed to enabling sustainable free internet access in low-income communities across South Africa.

Project Isizwe's pilot and award-winning flagship project, Tshwane Free WiFi, was designed to connect the unconnected in South Africa's capital city. The project deployed 1,050 free public WiFi hotspots across the City of Tshwane, with 600,000 monthly users receiving 500Mb per day. If the project had been subscription funded, it would have cost under R10 per user per month with each user receiving 500Mb a day. It remains the biggest free public WiFi network in Africa and was implemented in partnership with the local municipality, hailed as the most innovative government program to bridge the digital divide.

Enabled by blockchain technology, Project Isizwe provides transparent and traceable transactions, to ensure credibility between contributing donors and beneficiaries who are connected to fast, reliable, and quality internet for free.

Facebook cancels Express Wi-Fi

Project Isizwe was initially using a solution from Facebook parent company Meta - the Express Wi-Fi project. This initiative was launched in 2016 to provide affordable or free WiFi in different parts of the world. In 2020, Facebook cancelled Express Wi-Fi in South Africa, followed by complete cancellation of the project shortly after, as the company looked to focus on metaverse projects.

Thus, Project Isizwe started to examine alternative solutions to maintain its initiative and goals. The key aspects that drove the decision to choose Splynx were its commitment to custom-building the required functionality and the affordable pricing model.

Switching to a different platform required some changes to business processes. As a team of nine, Project Isizwe looked for a transition with minor modifications to their workflow. The team has used

the opportunity to review and improve some of their processes, including how to streamline the onboarding of new customers.

The Splynx solution

After reviewing all the requirements defined by Project Isizwe, the Splynx team decided to completely redesign the existing hotspot functionality. Project Isizwe shared their experience and best practices that helped Splynx develop a completely new module that was able to meet both Project Isizwe's needs as well as market requirements to run a successful hotspot business.

With the new solution, routers can be connected and configured to easily create or manage any desired hotspot bundle. Besides service price and internet speed, easy customisation allows setting desired limitations like validity, online time, traffic limit, or usage limit directly in the corresponding



tariff plan settings. The updated customer workflow runs as follows:

- Step 1: Customer signs in/registers with a phone number via branded page
- Step 2: OTP verification
- Step 3: The customer selects the desired plan
- Step 4: The customer makes payment and gains access to the internet



Most of the users remain predominantly in cash-based economies and purchase their services using cash. The credit mechanism on VulaCoin enables users to top up their balance with cash, and resellers pay upfront using other payment methods. Splynx integrates with VulaCoin enabling payments via VulaCoin credit, Visa/Mastercard bank cards, 1ForYou Vouchers, and directly via a user's bank account.

"Project Isizwe's transition to Splynx as our radius server has been both the right business decision and a positive experience," said Tim Genders, commercial director, Project Isizwe. "Working alongside and in collaboration with the Splynx team to develop a customised technical solution that meets our users' needs while enhancing our service and product offering has enabled a sound working relationship between Project Isizwe and Splynx. The personalised service and the ongoing support and engagement that we receive to improve how we serve our customers gives us the confidence in a long-term partnership to ensure we continue towards connecting Africans to free and affordable internet."

"Our partnership with Project Isizwe is a prime example of how the private and non-profit sectors can work together to address social issues and make a positive impact in society. By working together, we discovered the impact we can make on the lives of people living in low-income communities and how we can contribute to a more connected and fair society," said Alex Vishnyakov, CEO and co-founder of Splynx. ■

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3		30 Day Bundle	Yes	R 100.00	Yes	<div></div> <div></div>
5		1GB Free	Yes	R 0.00	Yes	<div></div> <div></div>
6		500MB Free	Yes	R 0.00	Yes	<div></div> <div></div>
7		200MB Free	Yes	R 0.00	Yes	<div></div> <div></div>
8		1 hour Online Time	Yes	R 2.00	Yes	<div></div> <div></div>
9		FREE 1 Day Bundle	Yes	R 5.00	Yes	<div></div> <div></div>

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Flexible and PCB patch antennas for cellular applications

Amphenol RF has launched flexible and PCB patch antennas for use inside connected devices.

The antennas feature either a flexible pad or rigid printed circuit board which can be mounted inside the device. Flexible and PCB patch antennas are commonly terminated to wireless modules featuring the AMC or other industry-standard

ultraminiature connectors. These types of internal antennas are often used in wireless applications such as WiFi enabled IoT technology and portable entertainment devices.

Flexible and PCB patch antennas are available in dual-band, multi-band, and wide-band configurations with WiFi 6E supported options with reliable frequency range up to

7.2GHz. These 50ohm antennas have a dipole design which has a relatively low profile and can be mounted in various locations and support standard cellular protocols which makes them well-suited for IoT, WiFi and LTE technology. These antennas use centre-fed micro-coax cables that terminate to an ultraminiature AMC connector. The

extremely thin antenna features an adhesive mounting tape on one side for secure placement inside the device.

The antennas are compatible with a wide variety of standard RF interfaces. They are well suited for applications that require a wireless signal such as drones, navigation systems, payment terminals, etc.

Next-gen O-RU test solution utilises application layer testing with any commercial device

NI and Spirent Communications have announced the first and only O-RU (Radio Unit) test solution that uses application layer testing with any commercial device, providing comprehensive, real-time O-RU validation. This unique capability enables customers to validate their systems faster and in a real-world environment while reducing costs

all in one validation solution.

Traditional testing of O-RAN systems has been very time-intensive and cost-prohibitive due to the need for engineers to manually test their systems from beginning to end. Built on common technologies, the Spirent/NI joint solution combines Spirent's software and emulation environment, including pre-built test

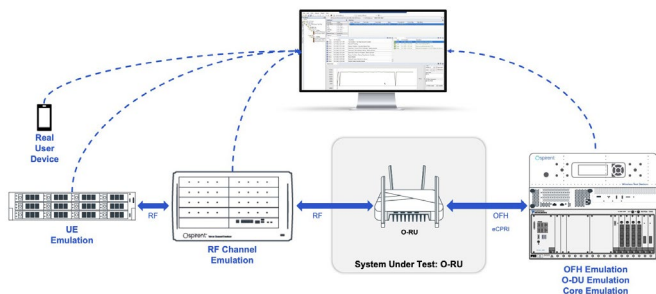
cases, with NI's high-performance instrumentation, providing a robust and integrated O-RU validation solution that improves time to market with full automation through a single, intuitive GUI while also minimizing instrument cost and footprint.

The solution wraps the O-RU with a real-time O-DU emulator through a fully compliant O-RAN 7.2 interface, a CU emulator, a core network emulator, and a commercial UE emulator for real-world interoperability testing (IOT) to deliver a testbed capable of running real-world test scenarios in the lab. Customers can also use a commercial device in place of the UE emulator to validate all timing, full throughput including 4x4 MIMO, and any system-level test that an O-RU would experience in a real-world deployment scenario

to test true performance and interoperability at a functional level rather than at the interface. On the production side, NI also has an O-RAN O-RU APT test system which uses the same O-DU emulation and combines this with NI's PXIe-5841 VST for parametric measurements for best-in-class efficiency with unmatched measurement accuracy.

This test system is highly configurable, real-time, and ORAN FH compliant. It enables customers to configure the O-DU to emulate various timing profiles, test corner cases, and validate the system performance under real-time conditions. In addition, having the same test systems used in validation facilitates a streamlined O-RU development process that connects validation to production and drastically reduces test time, cost, and development effort.

Spirent



Aspire NetZero to cut energy costs for MNOs

NEC Corporation has released Aspire NetZero, by NEC Aspire Technology Limited, an NEC subsidiary.

Aspire NetZero is an AI-enabled SaaS-based intelligent standalone energy reduction solution, designed to support MNOs in reducing unnecessary energy consumption in the Radio Access Network (RAN). The vendor-agnostic solution is adaptable to each mobile operator's requirements while supporting 3G, 4G, and 5G.

GSMA Intelligence calculated that, on average, mobile RAN is responsible for 73% of an MNO's total energy consumption. Energy is usually the third biggest cost after site rentals and labour, and energy

costs have increased from two-fold to eight-fold in the past year. The growth of 5G is also weighing heavily on MNO energy bills. GSMA Intelligence estimates that even in a best-case scenario, mobile networks are on course to almost double their power consumption between 2020-2025, thanks to 5G growth.

The power-saving features developed by different RAN equipment vendors for the various radio access technologies are generally static and not optimized for fluctuating traffic profiles. Aspire NetZero leverages AI to autonomously analyse and predict network traffic patterns enabling operators to adjust resources to

required capacity and performance, resulting in considerable power usage reductions. The solution automatically configures and orchestrates vendor features to continuously provide maximum savings and ensure the best end-user experience.

Aspire NetZero is designed to support hybrid-powered sites and to maximize battery run-time during off-grid periods, thus extending mobile service availability. The solution can realise at least a three-fold energy savings compared to standard energy reduction vendor features. These savings are increased up to ten times, depending on traffic behaviour and network topology.

"5G is putting a lot of pressure on energy consumption for operators, especially while they keep 2G, 3G, and 4G networks running," said Declan Friel, CTO, NEC Aspire Technology. "Our AI-powered, multi-vendor application learns traffic behaviour and continuously takes action in a fully automated closed loop, without any manual intervention. The solution is live and delivering OPEX savings to operators globally, and we are now extending that footprint together with NEC."

Network operators can establish an estimation of their potential savings (in kWh and OPEX) with Aspire NetZero by using an online calculator.

Liquid cooled servers for telco environments

Iceotope's new KUL RAN, an ultra-resilient and highly-energy efficient precision liquid cooled server solution, was recently launched to address extreme edge deployment challenges.

KUL RAN is a new 19-inch short-depth rack form factor with HPE ProLiant DL110 servers and 4th Gen Intel Xeon Scalable processors optimised for high-density, low-latency edge, virtualised RAN, and 5G services. The solution fits to existing deployed infrastructure.

KUL RAN is specifically designed for telco and harsh edge deployments to meet the need for reliable data processing installations close to the point of use in the face of a range of challenges from power constraints to service accessibility, as well as local

environment and ambient weather conditions. The solution, developed in partnership with Intel and HPE, will help accelerate adoption by achieving game-changing reductions in power consumption and maintenance costs while maintaining or enhancing data center density.

KUL RAN delivers up to a 40% power saving compared to other edge servers in its class. Precision Liquid Cooling removes nearly 100% of the heat generated by the electronic components of a server. This not only reduces energy consumption, but also eliminates all water consumption as well. With much of the power usage in telco networks coming from RAN sites, KUL RAN stands as a clear enabler for energy efficiency, expediting telcos' path to net zero.

With thousands of sites in remote locations, telco providers are continuously looking for ways to minimise on-site maintenance costs. KUL RAN has been created as a 'fit and forget' solution, for reliable operations with significantly fewer service visits, greatly reducing the OpEx burden on operators. It can be installed, removed, and replaced without risk of weather or contaminant ingress reaching sensitive HPE ProLiant DL110 server components and 4th Gen Intel Xeon Scalable processors, thanks to its sealed chassis. Its IP67-rated enclosure provides 100% protection from thermal shock, dust, and other airborne contaminants, keeping the housed solution factory clean throughout its operational life.

Connect LPWA enables MNOs to launch 5G more efficiently and with reduced costs

Velos IoT's new Connect LPWA is one of the largest Low Power Wide Area (LPWA) coverage solutions in the market, and is aimed at resellers, enterprises, and OEMs who are currently on 2G and 3G networks and want energy-efficient devices deployed worldwide with reduced cost and maximised battery life.

Many MNOs launching 5G networks are having to reuse spectrum currently allocated to 2G and 3G networks. Companies need to plan and find alternative replacements for these networks as early as possible to minimise the impact on their business. So, it is not a question of if but when to deploy LPWA technology for IoT connectivity.

Velos IoT's Connect LPWA solution offers connectivity on the two most

popular LPWA technologies - NB-IoT and CAT-M1. NB-IoT connectivity is currently available on 47 networks in 35 countries, with LTE-M (CAT-M1) its 77 networks in 42 countries, and the list is constantly growing. Both options support low-power features like PSM (Power Saving Mode) and eDRX (extended Discontinuous Reception); users can allocate dynamic and fixed IPs and connect securely through custom APNs, all of which are managed on the Nomad Connectivity Management Platform with a single invoice.

The Connect LPWA solution will help to maximise the lifetime of devices with efficient battery management on an IoT network technology designed for the future.

Graham Hart-Ives, VP of Sales at

Velos IoT, said:

"IoT users are facing a real issue with the decommissioning of 2G and 3G networks around the globe. Velos IoT truly believes that our newly launched connectivity options will enable customers with no choice but to replace devices with a long-term, cost-effective alternative."



Amdocs amAlz delivers generative AI for telcos

Amdocs amAlz is a pioneering telco generative AI framework, combining carrier-grade architecture leveraging open-source technology with large language AI models, creating a foundation for global communications service providers, enabling them to benefit from the immense potential of generative AI.

Open and agnostic by design, Amdocs amAlz delivers both templated use cases based on deep industry expertise and perspective,

as well as tooling and infrastructure that can be quickly adopted to accelerate time to market, improve operational efficiencies, and increase quality of service through generative AI-powered experiences. Amdocs amAlz addresses the telecom industry-specific challenges of security, data privacy, scalability, and the complexity of data governance, as well as the intentional focus on a telco-specific taxonomy.

Leveraging Amdocs' telco-specific

expertise, the Amdocs amAlz framework will empower CSPs to deploy generative AI use cases across the telecom ecosystem, from customer experience to network provisioning. At the same time, Amdocs amAlz will revolutionize a service provider's ability to explore, assist, generate, and recommend activities across the entire customer and operations lifecycle, and deliver increased efficiencies and productivity.

Look out for...

Enabling wireless connectivity via blockchain

Wireless traffic is expected to increase 80 times over between 2020-2030, necessitating upgrading and securing wireless resources for optimum use.

While investing in new cell towers is one way of managing this expected boom in traffic, wireless LANs and private 5G networks also hold a potential route, while minimising costs. Tokyo, for example, has around 20 times more wireless LAN access points than are required; however, sharing that access is problematic due to challenges in security and usage efficiency.

To address these challenges, NTT has conducted tests connecting users to wireless access equipment with blockchain technology, targeting a reduction in power consumption for service providers.

In a world first, the company used blockchain to create a one-time contract enabling users to access any wireless access equipment. It used a mechanism for conducting secure blockchain-based transactions between individuals and wireless access providers, meaning that the operators of the WiFi access point gets paid and the users get connected.

The trial enabled each radio base station to use blockchain-ledger information to smooth out the number of terminal connections in a decentralised and autonomous manner and improve communications quality (technology for improving use of radio resources).

According to NTT, its proposed sharing technology could boost wireless providers' income, lower the cost of investment in facilities, and reduce radio wave interference and energy use. It said that the technology can lower the "cost of constructing a shared system since a decentralised autonomous blockchain system negates the need for centralised control stations."

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Optus invests in new Tasmania tower

 Optus has invested in the construction of a new tower on a hill overlooking Lake Barrington.

This new tower is expected to strengthen Optus' network for residents, and visitors, including those who come to watch school rowing championships that draw teams from all over the state. Optus customers will benefit from greater network density and capacity, as well as improved connectivity and network performance.

The strategic location of the tower also ensures that travellers visiting destinations such as Tazmazia — a location attracting thousands of visitors to the region annually — can

easily stay connected.

"The introduction of a mobile tower for the first time near Lake Barrington will enable customers to take advantage of our amazing network," said Peter West, Optus territory general manager for Tasmania.

The new Optus tower in Derby is set to address long-standing connectivity and coverage issues encountered by residents, local businesses, and tourists alike.

"I am sure the new tower will be welcomed by residents and tourists, who will benefit from a more consistent and reliable mobile network and improved connectivity," said West. "Optus is thrilled to be

able to improve the capacity and reliable connectivity needed to handle the increased customer load during events when there is an influx of tourists."

The investment in Optus' telecommunications infrastructure and mobile coverage is part of an overall initiative to improve coverage and dependability across Tasmania.



Hochhaus Uptown München - the O2 Tower - benefits from in-building connectivity

 Visitors and employees at Munich's tallest skyscraper are benefitting from seamless mobile coverage following the deployment of CommScope's technology.

The Hochhaus Uptown München, known as the O2 Tower and headquarters of O2 Telefónica Germany, has been equipped with a fully digital DAS ERA C-RAN antenna system, covering all 38 floors. Additionally, on selected floors, O2 Telefónica will use CommScope's DAS ERA technology to enable O2 Telefónica's customers to demo private networks.

As part of the deployment CommScope installed 5G new radio 4x4 MIMO native active access

points, to minimise equipment count – the first live installation of the technology in the DACH region, and among the largest in Europe.


The whole building now benefits from the use of 2G, 4G and 5G new radio licensed spectrum from O2 Telefonica, as well as of the industry 5G spectrum allocated in Germany for private networks. As part of the installation, CommScope deployed both passive components and indoor antennas.

"After the installation of CommScope's C-RAN system at the O2 Tower we are experiencing first-in-class throughput performances, thanks to the native 4x4 MIMO support and LTE carrier aggregation," said Matthias

Johannes, group lead technology special projects at O2 Telefónica. "The ability to host a private network for demonstrations to our customers enables us to also address new market segments."

"Throughout the deployment we supported O2 Telefónica Germany, not only with the fully digital innovative DAS ERA C-RAN antenna system, but also with our unique field service technicians for the whole project lifecycle," said Samuel Buttarelli, vice president, Sales ICN EMEA and APAC, at CommScope. "The system we've installed can be cost-effectively extended to add new frequency bands and operators without touching the system, making it plug-and-play."

Cook Islands to gain satellite direct-to-mobile-phone service with Vodafone and Lynk

 Satellite-direct-to-standard-mobile-phone system Lynk and operator Vodafone Cook Islands have announced the start of an initial satellite direct-to-mobile-phone service to Vodafone Cook Islands subscribers using what Lynk calls 'cell-towers-in-space.'

This deal makes Vodafone Cook Islands the second mobile network operator (MNO) in the world to launch Lynk's 'sat2phone' technology as a subscriber

service after PNCC in Palau.

"Lynk's service is unique in addressing our need to extend our mobile coverage but without burdensome capex. We see our remote communities, our fishers and visiting yachties making good use of the extra connectivity and coverage that Lynk provides," said Phillip Henderson, CEO, Vodafone Cook Islands.

Vodafone Cook Islands spans 15 islands and over 1,960,027

square kilometres of Exclusive Economic Zone (EEZ). The Sat2Phone service will start as a beta service in an area called Manuae Route and extend over time.

"Similar to the service we offer to PNCC in Palau, Lynk will also provide backup services that enhance network resilience when natural disasters damage the ground network," said Dan Dooley, Lynk's chief commercial officer.

Brazil and Japan sign O-RAN deal

 Brazilian regulator Anatel has signed an agreement with the Japanese government for open RAN, with the goal of increasing deployments of the technology in Brazil and developing new business opportunities between the countries.

The partners share knowledge relating to open RAN like spectrum policies, carrying out tests, and collaborating with other countries. Japan's general director for international affairs Nomura Eigo said that the partners would also strengthen their cooperation on 5G as the technology continues to gain traction in Brazil.

Anatel chief Carlos Baigorri said that open RAN is an "opportunity for Brazilian industry" as the increased range of suppliers and disaggregation of network equipment would make the market more competitive.

National Telecom invests in FWA and private 5G

 National Telecom (NT) has gained approval from its board to invest THB800 million to build its network to tap into spectrum in the 26GHz band, to provide FWA services and connect enterprises to private 5G networks.

The operator is expecting the project to be completed by March 2024. This is a first phase of a THB6.7 billion budget the Thai government approved for NT's business development utilising mmWave spectrum, the company licensed spectrum in the 26GHz band for the next 14 years.

Most of the budget, around THB5 billion, will be used for network development and the rest for operational costs. NT management will apparently begin drafting terms for purchase of equipment for the network next month, and finish early next year. The first phase of this expansion will be online to provide service by March 2024.

NT is an entity formed by the merger of TOT and CAT Telecom. A part of NT's 26GHz licence came from TOT which won 200MHz in the bandwidth in 2020 before the merger in 2021.

Applications open for TDRI programme

 The Australian government has opened applications for the Telecommunications Disaster Resilience Innovation (TDRI) programme, which will make up to A\$50 million available to support telco networks remain functional during natural disasters.

The TDRI programme is split into two rounds: the Power Resilience Round and the Innovation Round.

The former, comprising A\$30 million of the total funding, will focus on projects aiming to help telco networks' power supplies become

more reliable in the face of natural disasters. The government notes that power outages are the leading cause of telecoms disruption during natural disasters in Australia.

The second funding pool, containing the remaining A\$20 million, is less specific, available for any projects seeking to improve the resiliency, redundancy, and availability of telecoms networks following natural disasters. Applicants can include mobile network operators, mobile network infrastructure providers, and

NBN Co (the state-run National Broadband Network), as well as Australian solution providers.


Each project can be awarded up to A\$5 million.

"Access to telecommunications coverage during a natural disaster can be the difference between life and death," said minister for communications Michelle Rowland. "While no network is ever 100% disaster-proof, the Albanese government is determined to do what we can to boost the resilience of our telecommunications networks. The new Telecommunications Disaster Resilience Innovation program will fund a wide range of innovative local projects across Australia to reduce the likelihood of telco outages during disasters."

The application process closes on 20 October 2023, with the TDRI set to run from 2023-2025. The TDRI programme is part of the Australian government's far larger Better Connectivity Plan for Regional and Rural Australia scheme, which includes a total of A\$1.1 billion for rural connectivity projects.



50% of global e-commerce payments made via digital wallets

 Analysis from ID Crypt Global reveals that 50% of global e-commerce payments are now made via digital wallets.

With digital wallets already identified as 'the leading payment method globally,' ID Crypt has analysed e-commerce revenue across 40 countries in 2022 to reveal how much is now coming from digital wallets.

In 2022, the global e-commerce market generated revenue of £4.9 trillion. Digital wallets accounted for 49% of this, which is £2.4 trillion.

The Asia-Pacific region is the global digital wallet leader, with 69% of e-commerce payments, equivalent to £1.7 trillion, making use of the technology. In North America, 32% of payments came through digital wallets, followed by Europe (29%), Latin America (21%), and the Middle East and Africa (20%). On a national level, the APAC region dominates.

China has the largest e-commerce

market in the world, generating revenue of £1.85 trillion in 2022. It's also the global leader for digital wallet usage which accounts for 81% of this total revenue, equivalent to £1.5 trillion.

In India, 50% of e-commerce revenue came from a digital wallet, and in Indonesia, the figure is 39%.

The UK has the highest proportion of digital wallet revenue outside of the APAC region. The nation's e-commerce market generated £259 billion in 2022, and £90.6 billion of this, or 35%, came via a digital wallet. The UK is followed by Italy (35%), the Philippines (33%), and USA (32%).

Meanwhile, the lowest use of digital wallets is recorded in Turkey (9%), the Netherlands (9%), and Nigeria (10%).

"The significance of digital wallets is huge. They're playing a central role in all of our lives, whether we're paying for goods online or getting on tubes, trains, and buses. And we're still only at

the very beginning of the journey," said CEO and founder of ID Crypt Global, Lauren Wilson-Smith. "We can look at the digital wallet market in China, where it accounts for 80% of e-commerce revenue, and fully expect the likes of the UK and USA to quickly approach this sort of level. This is because China has a well-established 'everything app' called WeChat. Everything apps are so-called because they are a platform from which users do everything, from chatting and texting with friends, to sharing photos, ordering food, buying goods, booking tickets, playing video games, and streaming TV shows and music. The digital wallet is central to the success of everything apps, and the important thing to consider is Elon Musk's express desire for X, formally Twitter, to become an everything app just like WeChat. If this happens, the role of digital wallets could further explode here in the UK and elsewhere, becoming the absolute norm for decades to come."

Latvians consume 42Gb of mobile data monthly



According to the data presented by the Atlas VPN team, Latvians and Finnish people use the most mobile data per month among the Organisation for Economic Co-operation and Development (OECD) countries. In addition, each Estonian has about two mobile broadband subscriptions.

Latvians lead in mobile data usage, averaging nearly 42Gb per month per mobile broadband subscription. Latvia's high mobile data consumption may be driven by widespread access to high-speed mobile networks in urban areas and unlimited provider data plans.

Finland ranks second globally in monthly mobile data use, with citizens browsing 41Gb on average.

Austria has the third-highest rate of mobile data consumption, averaging around 30Gb per month. Lithuanians also rank high in mobile data usage, browsing through 28Gb monthly on average. Iceland demonstrates high mobile data consumption for its population as well, with citizens using 24Gb per month on average.

The average mobile data usage among OECD countries is almost 9Gb. Countries like the United States, UK, and Germany all fall below this average.

"Mobile connectivity is convenient, but it can lead to overuse and dependency. Moderation and balance are essential. As networks continue improving globally, average mobile usage rates will likely rise. The future will undoubtedly bring innovations integrating mobile technology even deeper into our lifestyles," said cybersecurity writer at Atlas VPN, Vilis Kardelis.

Each Estonian has about two mobile broadband subscriptions. Estonia's citizens extensively use mobile networks not just for smartphones but also for other internet-connected devices.

Japan likewise has extremely high mobile broadband penetration, with citizens subscribed to nearly two mobile networks on average. The US ranks third, with an average of 1.8 mobile broadband subscriptions per citizen.

Finland, which is second in mobile data consumption, has a broadband subscription rate of 1.6 per person. At the same time, Israel and Denmark demonstrate a rate of 1.4 mobile broadband subscriptions per citizen.

Fixed wireless access to gain 15.8% market share by 2028, says GlobalData

Fixed wireless access (FWA) technology for broadband internet continues to attract new users and is expected to more than double its subscription market share among US fixed broadband technologies, expanding from a 7.2% share in 2023 to 15.8% in 2028, according to GlobalData.

GlobalData's updated report reveals that despite its rapid adoption, FWA will remain ranked in third place behind cable and fibre subscriptions.

"Easy self-installation and affordability, combined with high reliability and performance, thanks to underlying 5G technology, are among FWA's selling points, but so is the fact that FWA offers a new service choice versus existing solutions from incumbent service providers. Additionally, FWA is suitable for both primary and backup internet service and can be deployed in locations where internet service may only be needed temporarily," said Tammy Parker, principal analyst at GlobalData.

Cable technology will lose market share over the next five years but will retain its dominant grip on the US fixed communications market, representing 58% of total broadband access lines in 2028. However, cable faces rising competition from 5G

FWA networks deployed by mobile network operators as well as rollouts of new fibre-optic networks.

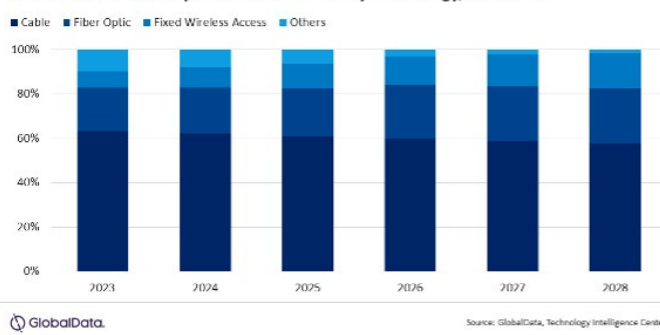
"Fiber presents a significant challenge as it is highly reliable and can deliver the symmetrical multigigabit speeds that are increasingly demanded by consumers and businesses. Additionally, fibre deployment is gaining momentum as government subsidies lead to an unprecedented expansion of the nation's fibre broadband infrastructure, leading this technology's share of the market to grow from 19.5% in 2023 to 24.7% in 2028," said Parker.

Cable operators are upgrading their hybrid fibre/coax (HFC) networks with new DOCSIS 4.0 technology that is expected to support 10 Gbps downstream and

up to 6 Gbps upstream capacity, which will help cable technology retain a dominant market share. However, some cable operators are starting to roll out their own fibre networks, particularly in 'edge out' situations where they expand their service footprints into nearby neighbourhoods and communities, and this will also help boost fibre technology's market share.

"Total US broadband services revenue is expected to increase at a compound annual growth rate (CAGR) of 4.2%, from \$102.9 billion in 2023 to \$126.3 billion in 2028. Service revenue for FWA will grow at a CAGR of 24.8% during the same period, while cable's service revenue will rise at a 1.5% CAGR, and fibre's will increase at a 9.1% CAGR," said Parker.

US broadband subscriptions market share by technology, 2023-2028



Tejas Networks to maintain BSNL network

Tejas Networks has won a INR74.9 billion contract from BSNL to supply gear, support and maintain annually the operator's 4G/5G network.

Tejas Networks received a purchase order to equip 100,000 sites, which will be executed in 2023 and 2024. The vendor gained the contract after completing extensive trials as part of a consortium led by Tata Consultancy Services. Tejas Networks CEO and managing director Anand Athreya said that the vendor is the sole supplier of RAN equipment for BSNL.

"Our state-of-the-art 4G/5G RAN products were subjected to rigorous field testing by BSNL for 18 months before being chosen for this large-scale commercial deployment," said chief technology officer Kumar Sivarajan. "This win is a true testament to the engineering excellence and innovation prowess of our R&D team that successfully developed and delivered an industry-leading product in a complex technology area in record time."

India: new policies for security

Several policy initiatives have been announced by India's electronics and information technology minister Ashwini Vaishnaw focusing on improving the reach of IT and the issues of SIM card security and bulk connections.

The announcement concerns cabinet approval for the extension of the Digital India scheme for a period of five years till 2025-26. This involves an outlay of some 149 billion rupees.

The expanded scheme will help to re-skill and upskill 625,000 IT professionals and train about 265,000 people in information security. In addition, Bhashini, an artificial intelligence-enabled multi-language translation tool currently available in ten Indian languages, will be expanded to 22 languages. More supercomputers and more support for start-ups are also planned.

center3 opts for Ciena tech for 2Africa

center3 has selected Ciena's cutting-edge solutions and technologies for its fibre pairs on the new submarine network 2Africa.

The 2Africa submarine cable system, which lands in Saudi Arabia at Jeddah and Yanbu, provides reliable, high-bandwidth connectivity onward to three continents. With Ciena's 800G technology, center3 can serve both regional and international digital needs with advanced communication, cloud, and data center hosting services.

2Africa is an Open Cable owned by a consortium of global partners, including center3. At 45,000km in length, it is the longest submarine cable system ever deployed, connecting 33 countries through


46 landing stations. It is expected to drive strong economic growth in the MENA region.

"center3 is committed to achieve its vision of making the Kingdom of Saudi Arabia the main digital hub connecting the continents of Asia, Europe, and Africa, and to become a worldwide leader in the digital economy in line with Saudi Vision 2030. The 2Africa submarine cable is a significant step forward in realizing this vision, placing the Kingdom at the heart of international data connectivity and solidifying its standing as a regional data center hub in the MENA region," said Fahad Alhajeri, CEO at center3. "We chose Ciena for our new submarine network because of its proven technology, unparalleled track

record in the submarine networking space, and long history of successful collaboration with stc Group."

"Given center3's major investment in the 2Africa cable system, it is positioned to accelerate the growth of digitization across three continents," said Virginie Hollebecque, vice president of EMEA at Ciena. "It will play a key role in expanding and fast-tracking competitive digital services across a vast region of the world—and in creating thriving digital societies. With Ciena's industry-leading GeoMesh Extreme, center3 will enable its hyperscaler and carrier customers to support the rapid growth of 5G, streaming, content, gaming, and other big data applications for several hundred million people and businesses."

The Red Sea gains world's first zero-carbon 5G network from Zain and Red Sea Global

 Zain and Red Sea Global (RSG) have unveiled 'the world's first zero-carbon 5G network' at the Six Senses Southern Dunes resort at The Red Sea Project on the west coast of Saudi Arabia.

The Red Sea project is a vast land and property project focusing on luxury and ecotourism to attract visitors to the Red Sea coast. It is expected to be completed by 2030. Six Senses Southern Dunes is set to open during the first phase of development of The Red Sea, which

is on track to be completed by the end of 2023.

The zero-carbon 5G network, designed exclusively for The Red Sea, will bring guests the highest speeds for 5G connectivity in the region and be powered by 100% renewable energy from over 760,000 solar panels that Red Sea Global has built to power the entire 28,000 square kilometre destination.

Designed using innovative 3D printing technology, the project will achieve three primary goals:

preserving the environment, reducing emissions by utilizing renewable energy, and mitigating visual distortion. In addition, the towers have been built to blend harmoniously with the landscape.

The creation of the 5G network aligns with Vision 2030's goals of elevating clean energy reliance, curbing carbon emissions, and safeguarding the environment. Vision 2030 is a government programme that aims to increase economic diversification.



Republic of Ireland's rugby union plans to utilise private 5G for world cup


 The Republic of Ireland's international rugby union squad has detailed plans to make use of private 5G at the sport's forthcoming world cup, teaming with Ericsson and Vodafone Ireland to deploy a standalone (SA) network from a customised van.

Ericsson and Vodafone initially installed a private SA 5G network at an Irish Rugby Football Union (IRFU) facility to provide coaches and players with real-time video analysis intended to improve decision-making. The partners tested the

technology at the squad's training camp, with the network now set to be deployed in a 'bespoke 5G connected vehicle' at the Rugby World Cup, scheduled to take place in France from next month.

Ericsson stated IRFU previously employed 'standard WiFi in stadiums and training sites. It claimed the faster data rates and lower latency afforded by the private network will enhance decision making during matches by providing information from up to eight high-resolution video streams and a 5G-connected drone.

Dish Network and EchoStar ponder merger

 Dish Network and EchoStar have revealed plans to merge, a deal they claim would create a global leader in both terrestrial and non-terrestrial wireless connectivity.

The companies explained that the all-stock transaction would yield significant cost savings and revenue synergies, in addition to creating a business able to provide a broad set of communication and content distribution services.


After completion, Dish Network shareholders will own around 69% of the new entity's common stock with the remainder allocated to EchoStar shareholders.

Current Dish Network president and CEO Erik Carlson will depart the business following the merger, with the combined entity set to be headed by current EchoStar chief Hamid Akhavan.

Ergen said that the deal is "a strategically and financially compelling combination," adding Dish Network's "substantial past investments in spectrum and its wireless buildout, combined with EchoStar's recent launch of Jupiter 3, are expected to significantly reduce near-term capex requirements."

The deal is subject to regulatory approval and is expected to close by the end of the year.

Constancia mine gains fourfold increase in performance

 The Constancia mine in Peru is the latest industrial application to use LTE to improve its operations, with the help of Rajant Corporation.

Rajant and STRACONTech, a mining company that provides integrated technology services focused on the mining sector, have increased bandwidth and improved networking coverage at the large copper mine in south Peru with Rajant's Peregrine LTE BreadCrumb wireless nodes. Rajant's solution allows an almost 'plug-and-play' integration with the mine's existing LTE network.

"Our mining operation needed

a better design for its haulage and loading fleet. With the Rajant hybrid solution we now have a significant increase in bandwidth, which will allow us to be more efficient," said Eduardo Rojas, IT manager for Constancia owner Hudbay Peru.

With the Rajant Peregrine LTE, the mine obtained a fourfold performance improvement, going from a limit of 10Mbps with LTE up to 40Mbps. The Rajant Peregrine LTE allows connectivity on multiple frequencies simultaneously, including LTE. This means connectivity is not lost with the mining fleet, even when there is interference on the 2.4GHz, 5GHz or LTE band.



Q&A

Kim Buller,
CFO and co-founder,
Alchemy Telco

**Who was your hero when you were growing up?**

My father. He is incredibly principled and so hardworking. A humble self-made man, who enjoys his own company, is happiest in the vast garden he created or his greenhouse and potting shed, which houses his tractor, a landline phone, kettle, microwave, and small TV to watch the golf and cricket.

We often say he just needs a bed His interests are so diverse. He knows the call of every bird and where they are nesting, is an incredible sportsman, plays a mean game of darts and enjoys his bridge. I would say he taught me to enjoy hard work and to never be 'bored.' I have not seen him for some years, but I am sure he will still be out with his chain saw at the age of 86.

What was your big career break?

Rather than one definitive break, my career has been marked by a series of opportunities that have steadily built my experience and capabilities. I started my professional journey as a bookkeeper for the local farmstock auctioneers and then started my own landscaping business. Both gave me a strong foundation in business operations and project management.

From there, I transitioned into cashew farming (not my finest moment but an intriguing way to explore the Gambia and its people nonetheless). During this time, I was frustrated that there were significant gaps in communicating vital things - prices, etc, and in an attempt to bridge that gap, I entered into the dynamic world of telecommunications and technology, setting up Alchemy as a way, initially, to deliver affordable SMS comms to keep the rural farmers in touch with each other and with those who

were eager to buy from them. We started off building websites and then a tool to send bulk SMS.

Along the way, I've been fortunate to work with visionary mentors who have encouraged me to take on new challenges and greater leadership roles. My biggest growth has come through saying "yes" to tough assignments that seemed daunting at first. Each step out of my comfort zone has expanded my skills and confidence.

Meeting my business partner Malick Dibba has certainly been pivotal. Together we've built a thriving enterprise in Africa. I'm eager to see what the future holds for our promising venture.

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

I sat at a dinner in London many years ago with Princess Anne and was so impressed by her down to earth common sense, her humour and fascinating conversation. She is an extremely accomplished horse woman and competed in the Olympic Games. She is a patron of over 300 organisations and has been associated with Save the Children for over fifty years.

What is the best piece of advice you've ever been given.

My mother often told me: "the sooner you realise life is not fair, the happier you will be."

At first it seemed a cynical perspective, but over the years I've recognised the wisdom in her words. We all encounter setbacks and missed opportunities - pining for the 'what ifs' will only lead to frustration. Accepting imperfect realities, while retaining a sense of hope and agency to shape our future, is a mature outlook that breeds contentment.

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

I would go back to landscape gardening. I retrained many years ago and had a great little business helping women create a garden. I had a trailer, a concrete mixer and plenty of energy. They would take a couple of weeks of work, and we would build brick retaining walls and lay paving slabs. Then we would have a day out buying beautiful plants to plant together. Many of these women honestly had

"As a child of the 60s, I have to go with the unrivalled cool of the Rolling Stones. Their gritty, soulful rock and rebellious attitudes spoke to me more than the pop perfection of the Beatles."

never done any DIY and often felt very empowered by their achievements, even going onto decorating and of course they had a lovely garden to take care of and enjoy.

I remember one garden I did with my husband and children, who were quite young then, for an elderly friend who I did Reiki training with. She went away for the weekend, and we borrowed her garden gate key to build a teak deck at the bottom of her garden under an apple tree. I will never forget the look of wonderment on her face when we welcomed her home.

The Rolling Stones or Beatles?

As a child of the 60s, I have to go with the unrivalled cool of the Rolling Stones. Their gritty, soulful rock and rebellious attitudes spoke to me more than the pop perfection of the Beatles. To this day, I have many memories of dancing to tracks like 'Can't get no Satisfaction.'

What would you do with £1 million?

I would invest every penny into Alchemy. We're expanding across the Sahara so it would no doubt come in handy!! My business partner Malick and I have built a business that provides vital digital solutions across Africa, not least of all our SMS transactional services to financial institutions, that are reliable, timely and charged in local currency. We have ambitious plans for expansion that our current funding can't

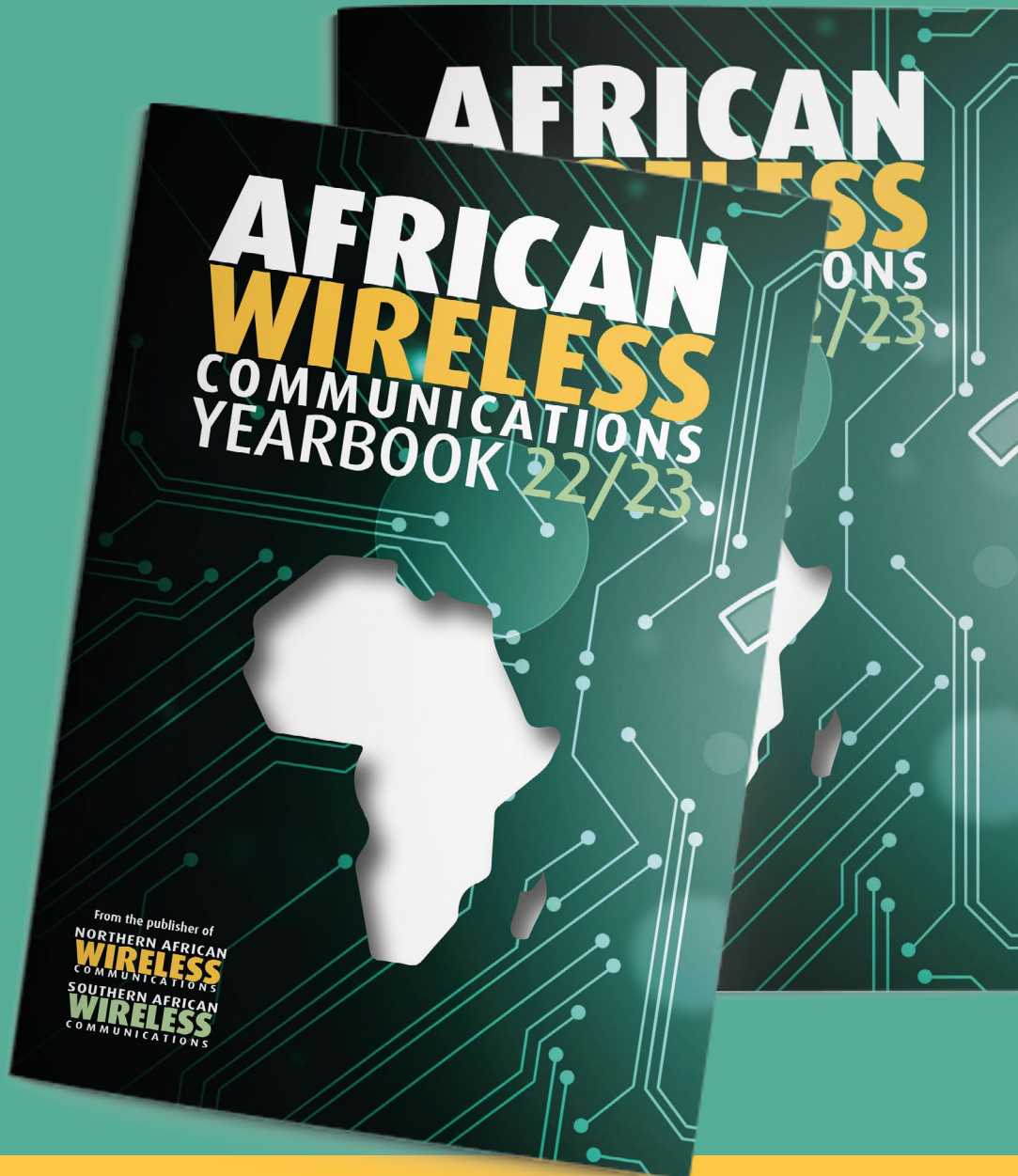
fully support. An infusion of £1 million would accelerate our ability to serve millions more people across the continent and would go a long way towards our mission of bridging both the financial and digital divide in Africa and beyond. That would make every struggle we've faced well worth it.

What is the greatest technological advancement in your lifetime?

I can remember us getting our first TV, working on a computer using the old DOS operating system and then the internet. However, I think the mobile phone is awesome. The technical developments that have led to smart phones which enable us to run our lives wherever we are. Here in West Africa, there seem to be more mobile phones than people. SMS is used widely, and the functionalities are really closing the digital and financial divide. Let us see in the next years where 5g and AI will take us... ■

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