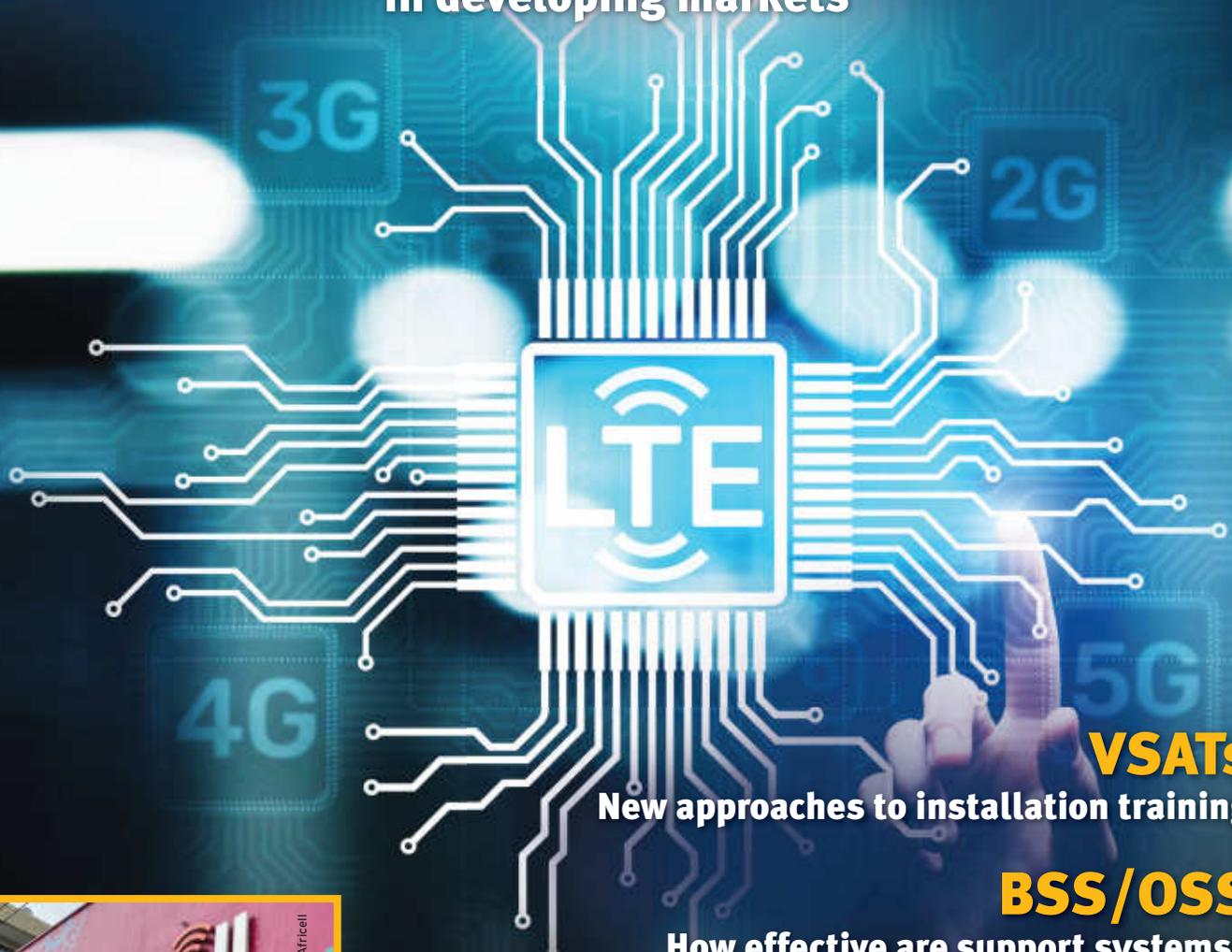


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WHY WAIT FOR 5G?

The case for LTE in developing markets



VSATs

New approaches to installation training

BSS/OSS

How effective are support systems?

Country focus

South Africa sorts out its spectrum issues

Data centres

African demand still outstrips supply



Will Angola's new operator shake up the market?

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See story on page 25.

CONTENTS

Events	4
Quotes	6
Agenda	8
Solutions	32

A note from the Editor

AFRICA'S TELECOMMUNICATIONS OPTIONS are expanding. This issue discusses the merits of open RAN, 5G, LTE, data centres, fintechs and more for the African communications market. At the same time, however, the rich possibilities of technological growth bring unavoidable challenges. Fraud, as ever, is one possible penalty of the relentless pursuit of new technologies and services. However, another potential danger is neglecting the business support systems (BSS) and operations support systems (OSS) that underpin service delivery. Both concerns are addressed in this issue. But there are positive trends too. Markets like Ethiopia, Djibouti and Angola are now allowing more competition. We assess what this could mean for Angola on page 29. Meanwhile the continent's leading communications market has finally sorted out the many issues that have held back spectrum auctions - or so it seems. Are South African operators now on course to deliver more, better services to end users? Whatever the answer to that question - and all the others posed in this issue of Communications Africa - the potential of the African telecommunications sector in 2022 seems to be greater than ever.

ARTICLES

BSS/OSS	13
Present-day business support systems (BSS) and operations support systems (OSS) face many challenges in a world of changing networks and business models.	
Data centres	15
Data centre activity is ramping up in sub-Saharan Africa. But can it meet growing demand?	
Mobile financial services	16
Fintech investment in Africa boomed in 2021 - but this may only be the start of something even bigger, according to a new report.	
RANs	18
Several African service providers are already taking an interest in open RAN. Can it really help to bridge the digital divide and connect the unconnected?	
Network security	20
Covid-19 was good news for IT-focused fraudsters. But that's not the only reason that more vulnerabilities in telecom services are likely to emerge.	
VSATs	23
The operation, installation, and maintenance of VSATs have all evolved significantly over the past 25 years - and so has the training that supports them.	
4G/5G	25
As pressure grows to deploy 5G, there's a strong case for service providers in developing markets to look again at 4G LTE.	
Country focus	28
The South African high-demand spectrum auction finally appears to be over. But what happens next?	
Company profile	29
Africell is the first new or independent operator to launch services in Angola in two decades. What can it offer Angolan end users?	

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Subscriptions: circulation@alaincharles.com
Chairman: Derek Fordham
Printed by: Buxton Press **Printed in:** May 2022
Communications Africa/Afrique is a bi-monthly magazine
ISSN: 0962 3841



Events 2022

MAY/MAI

11-12	Africa Tech Week	JOHANNESBURG	https://manufacturingitsummit.com/africa/
17-19	CABSAT	DUBAI	https://www.cabsat.com/
11	IDC CIO Summit	SOUTH AFRICA	https://www.idc.com/mea/events/69714-idc-south-africa-cio-summit-2022
25-26	RegTech Africa Conference	VIRTUAL	https://regtech.africa/

JULY/JUILLET

27	MANUFACTURING IT SUMMIT	JOHANNESBURG	https://manufacturingitsummit.com/africa/
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SEPTEMBER/SEPTEMBRE

1-2	Cybertech Africa	KIGALI	https://africa.cybertechconference.com/
19-20	AI Expo Africa	JOHANNESBURG	https://aiexpoafrika.com/
30	Tourism and Technology Summit Africa	NIGERIA	https://tourismandtechnologysummit.com/

NOVEMBER/NOVEMBRE

2-3	TECHSPO Johannesburg	JOHANNESBURG	https://techspojoburg.co.za/
7-11	AfricaCom	CAPE TOWN	https://tmt.knect365.com/africacom/
22-23	EDUtech Africa	SOUTH AFRICA	https://www.terrapinn.com/exhibition/edutech-africa/index.stm

CABSAT focuses on sustainability

GLOBAL BROADCAST, CONTENT and satellite experts will descend on Dubai in May for CABSAT 2022, which will spotlight the pressing need for sustainability initiatives in all three industries.

Held under the theme Creative. Connected. Conscious, CABSAT 2022 will host more than 13,000 visitors at Dubai World Trade Centre from 17th-19th May.

More than 280 companies and brands will exhibit at CABSAT 2022. Together they present a world of innovation across the full content journey from creation, through production, to distribution.

Pressing challenges such as shifting geographic collaborations, a crowded orbital space and waste crisis, and increasing demand for transparency on the management and opportunities of the emerging space economy will all feature on an expert-driven agenda.

As the Middle East and Africa transitions from a content consumption market to a content creation hub, CABSAT 2022 attendees will explore the immense opportunities surrounding broadcast and content within the region, with the market for regional productions expected to be worth nearly US\$70 billion by 2026.

CABSAT 2022's SatExpo Summit is one of seven scheduled streams. The SatExpo Summit's agenda will explore the need for a



The Middle East and Africa transitions from a content consumption market to a content creation hub.

clean-up and range of sustainability strategies to address debris dump in a crowded orbital landscape; the need for transparency and talent management of the emerging space economy, ensuring satellite and insurance security; operational innovations; AI and machine learning for satellite communications as well as insurance and risk mitigation.

Other CABSAT 2022 conference streams include the Content Congress, Next Up Startup Stage – the new conference stage for media tech startups – Digital Hub, AV Tech, Next Gen

Content and dedicated sessions on the African and Saudi Arabian markets.

Content Congress will hear from industry trailblazers who will explore the latest trends in the Metaverse, NFT, social content, streaming wars, podcasts, vlogging and music content.

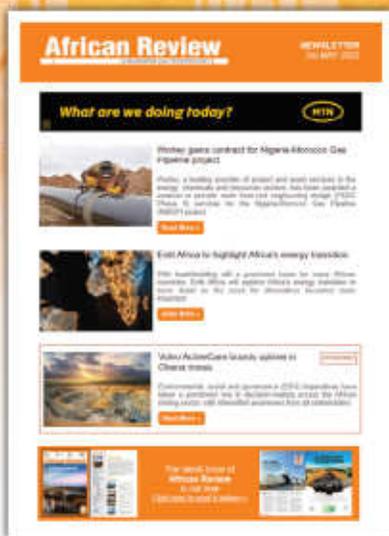
With content scouts always looking to seal the next big film and audio ideas, CABSAT 2022 will also celebrate the best the Middle East and Africa has to offer at NextGen Content – a marketplace for content creators, distributors, and buyers.

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“J2M represents a major breakthrough for Zain and ZGC as we look to develop our wholesale capabilities further while ensuring an even better quality of service to all Zain operations offering international connectivity services.”

- Kamil Hilali

CEO

Zain Global Connect

“We are keenly focused on building a sustainable business that drives the digital and financial inclusion agenda in Africa. Encouraging our supply chain to focus more on ESG principles, and working together with the rest of the global telecommunications industry is the next step towards promoting sustainable development that leaves no one behind.”

- Olubayo Adekanmbi

chief strategy, sustainability and partnerships officer

Airtel Africa

“It is our mission to facilitate the rapid growth of crypto adoption. LBank is an enterprising ecosystem that will continue its intent on the globalisation of cryptocurrency. As a leading digital asset platform, we want to set the pace. We see these events in Nigeria and other parts of Africa benefitting all parties.”

- Allen Wei

CEO

LBank CEO

“Speedcast and OneWeb are looking forward to the results of forthcoming trials this year, where we’ll demonstrate real progress on our maritime mobility and land enterprise offerings.”

- Neil Masterson

CEO

OneWeb

“We look forward to all South Africans benefitting from the dividends of these regulatory interventions, and to seeing the proceeds of the auction being put to good use for the benefit of all South Africans. This auction was indeed in the best interest of all South Africans, as will be the subsequent licensing interventions post government’s revision of the Wireless Open Access Network (WOAN) policy.”

- Dr Keabetswe Modimoeng

chairperson

ICASA

“ICT continues to be a key driver in the advancement of education, Covid-19 has certainly allowed us to accelerate our progress towards greater access and connectivity for all schools across the country. With this launch we truly believe that the sector will continue to make great strides in ensuring that all children across the country benefit from the opportunities that come with connectivity.”

- Angie Motshekga

minister of basic education

South Africa

“We are also being urged to build Zambia from within and this automatically invokes a great sense of national pride and presents us with a very welcome challenge to see how we can support business growth. We are closely aligned with government’s technology and science vision, and we had the foresight to build the necessary infrastructure to take Zambia into a digitally transformed new way of working. Our data centre and connectivity services can support any business, large or small, in future-proofing their plans and their prosperity. As businesses get ready to catch the wave, we can provide the best

surfboard, with a safety cord on board.”

- Marius van Vuuren

*country manager
Paratus Zambia*

“As we approach Women’s Month in March, the USA government reaffirms our commitment to empowering women. Through USAID and Google’s collaboration, hundreds more Egyptian women will be among the business owners and youth to acquire new digital skills to take their careers and businesses to the next level.”

- Leslie Reed

*mission director
USAID*

“Digitalisation offers opportunities that MTN Cameroon is turning into progress and notably bringing value to the business world thanks to platforms such as MTN Fusion. Since 2019, for example, we have explored over a hundred partnership projects; over twenty companies are now partners; over a dozen products have been launched in the marketplace with over a hundred customers from all sectors of the economy.”

- Franck Gérard Kom

*general manager
MTN Business*

“We’ve seen that video now accounts for almost all of the time people spend on Facebook and Instagram, and Reels is our fastest growing content format by far. This is why we’re focused on making Reels the best way for creators to get discovered, connect with their audience, and earn money. We also want to make it fun and easy for people to find and share relevant and entertaining content.”

- Nunu Ntshingila

*regional director for sub-Saharan Africa
Meta*

“Collaborative efforts by technology vendors and service providers are critical to demonstrate real-world interoperability in this exciting and emerging space. Juniper’s ability to provide an open SDK and network-based APIs facilitates seamless portability of x/rApps on its RIC in multivendor environments and underscores the potential for all operators.”

- Constantine Polychronopoulos

*vice-president, 5G and telco cloud
Juniper Networks*

“The multi-cloud-based solution coupled with Liquid’s current technology will serve this market well. As a business, we understand the changing needs of our enterprise customers. Using a multi-cloud-based platform allows Liquid to provide ten times faster internet performance that is more reliable and scalable, allowing global enterprise customers to receive optimal performance from WAN.”

- Winston Ritson

*chief business development officer
Liquid Cloud & Cyber Security*

“Local partnerships are key in realising the Adanian Labs vision. It excites us to have created strategic partnerships with local entrepreneur. As Adanian Labs, we aim to build the next generation of socially impactful and commercially driven companies that will change the world from Africa.”

- John Kamara

*CEO
Adanian Labs*

Liquid acquires fibre pair on Equiano cable

LIQUID INTELLIGENT TECHNOLOGIES, a business of Cassava Technologies, a pan-African technology group, has acquired a fibre pair on the Equiano subsea cable, allowing Liquid to transport traffic up to 12 Terabits, bringing a much-needed increase in international connectivity in Western and Southern Africa.

With older sub-sea cables almost at the end of their lifespan, Liquid, through the Equiano cable system, will address the growing need for internet capacity supporting cloud services in both coastal and landlocked countries on the continent.

The new Equiano subsea cable will link Africa to Europe via the West Coast of Africa when it is ready for service later in 2022, providing terabit/s of capacity to meet the growing and varied business needs of organisations across Europe, Western and Southern Africa. Through its extensive fibre backbone and satellite services, Liquid can offer reliable telecommunications and cloud services to over 1.3 billion people across thousands of towns and cities in Africa.

The Equiano subsea cable, funded by Google, has landings planned in Sesimbra (Portugal), Lomé (Togo), Lagos (Nigeria), Swakopmund (Namibia), Rupert's Bay (Saint Helena) and Melkbosstrand (South Africa), with more landing stations planned in the future.

The move extends Liquid's One Africa Digital Network's reach into Africa, providing connectivity to large data centres on the continent while granting access to major commercial hubs. Liquid plans to interconnect the Equiano landing stations to its East-West network across Africa, creating a new global IP route between Asia, Africa and the USA.

Liquid's investment in Equiano will help provide seamless connectivity for its clients across Africa, complementing its own existing national and metro fibre networks and offering increased resilience thanks to its connection to other subsea and satellite networks. Looking further, the deployment will bring the benefit of access to large capacities and low costs to cross-connect from subsea to terrestrial backhaul, which should lead to lower prices for both consumers and businesses.

"In the last few years, we have witnessed a steady increase in adoption of digital technologies. This wouldn't have been possible without our investments in high-speed connectivity in coastal as well as landlocked African countries," said David Eurin, CEO Liquid Dataport. "The continent needs companies like Liquid who not only land Terabit/s of capacity with subsea cables but also distribute that capacity inland, enabling these countries to see the same benefits as those where the cable lands."

Orange Egypt signs agreement with Visa

ORANGE EGYPT HAS signed an exclusive agreement with Visa — the world leader in digital payments — to provide a suite of exclusive digital payment solutions through virtual and physical bank cards that will enable Orange Cash wallet customers to complete financial transactions in a fast, efficient, and safe manner, while contributing to the state's efforts to go cashless.

This exclusive agreement comes in line with Orange's keenness to enrich its customer experience with advanced services. The customers will manage to conduct online and in-store purchasing transactions using Visa's various payment services whether domestically or internationally. Visa will also provide unique products that grant premium benefits to Orange Premier customers.

UBA and Cellulant extend payments services to 19 markets across Africa

AFRICA'S GLOBAL BANK, United Bank for Africa (UBA) Plc, and leading pan-African payments company Cellulant have announced a partnership that will extend payment services for merchants and consumers across 19 key African countries in which UBA operates. These countries include Nigeria, Ghana, Kenya, Côte d'Ivoire, Zambia, Tanzania, Uganda, Republic of Benin, Burkina Faso, Cameroon, Chad, Congo, the Democratic Republic of Congo, Gabon, Guinea, Liberia, Mozambique, Sierra Leone and Senegal.

This network represents one of the primary tools in bringing together Africa's fragmented payments ecosystem, ensuring Cellulant's payment gateway, Tingg, is available to a vast number of merchants and consumers in each of these markets.



Photo: Adobe Stock

The platform enables merchants to receive, view, and reconcile all their payments via a single application programming interface (API).

Already over US\$15bn in gross value payments is processed by Cellulant across the shared markets - and this partnership has the scope to expand the numbers significantly.

The announcement is the latest in a line of new

partnerships for Cellulant, as it continues to expand its network with leading financial institutions like UBA. The company's payments platform, Tingg, now available via 120 banks, is a one-stop payment gateway for multinational corporations, mid-caps and small and medium enterprises (SMEs) alike.

The platform enables merchants to receive, view, and reconcile all their payments via a single application programming interface (API), cutting out the need to sign up for multiple payment providers, including mobile money and mobile money operators.

This simultaneously streamlines businesses' administration processes while expanding the range of payment options they can offer to consumers, ensuring maximum choice and flexibility both offline and online.

Mastercard and PesaLink aim to boost digital payments in Kenya

DIGITAL PAYMENT SOLUTION company PesaLink has signed an MoU with payments giant Mastercard that will see the two firms create digital payment solutions in a bid to boost the adoption and usage of digital payments in Kenya.

Under the MoU, PesaLink will leverage Mastercard's technology, expertise, partnerships and cyber intelligence solutions to diversify its payment capability beyond person-to-person payments.

Mastercard will specifically collaborate with PesaLink to expand its services to include a direct-to-consumer digital proposition (such as app, USSD and web), agent banking and solutions for business and

government payments, collections and disbursements, both face to face and remote, among others.

Additionally, the financial service provider will also provide advisory and technical support to advance PesaLink's digital-first strategy, in accordance with local and global best practices.

The MOU aligns with Mastercard's focus on localizing its solutions to address specific market needs and shows a deep understanding of the dynamics of the banking ecosystem in Kenya

"This collaboration with Mastercard is pivotal in providing millions of Kenyans with financial solutions that meet their needs, furthering our goal to accelerate

the adoption and usage of digital payments in the country," said Gituku Kirika, CEO of PesaLink.

PesaLink is a real-time 24-hour digital payment solution that allows for bank-to-bank transfers at a low cost via such cashless methods as online banking, mobile apps and USSD mobile banking. PesaLink is known to many Kenyans and was established by the Kenya Bankers Association. It now consists of 31 banks in the country. It is also used by many payment service providers, SACCOs, and telecommunication companies.

Mastercard is a leading global payments and technology company that connects consumers, businesses, merchants, issuers and governments.

Fund transfer partnership targets Zimbabweans

SASAI REMIT, ONE of Africa's leading digital money transfer providers and a business of Cassava Technologies, a leading pan-African technology group, has announced a partnership with Ooki Zindlovukazi, a United Kingdom-based women's networking and empowerment organisation. The partnership has enabled both organisations to empower thousands of Zimbabweans to use a safe and secure fintech platform to seamlessly transfer funds to family and friends in South Africa and Zimbabwe.

The partnership is expected to facilitate faster, simpler and secure cross-border payments for Ooki members when sending money and making payments to Zimbabwe or South Africa. It will also provide an effective and practical alternative to the traditional ways of managing remittances.

Ericsson's Radio 6626 supports Telma Madagascar rollouts

OPERATOR TELMA MADAGASCAR and vendor Ericsson have deployed Ericsson's unique three-sector, dual-band Radio 6626 across five major sites in Madagascar's capital, Antananarivo. Combining three sectors and two frequencies in one radio unit, Ericsson's Radio 6626 will enable Telma Madagascar to radiate all three sectors in its towers through just one radio unit.

Additionally, Ericsson Radio 6626 will provide Telma Madagascar with multi-standard and multi-band coverage while lowering operating expenses (OPEX) and reducing footprint, with up to 18% lower energy consumption on every site configuration. It will also enable a 67% reduction of radios in Telma Madagascar's towers and a 20% reduction in weight and higher capacity in contrast to current installations.

Patrick Pisal Hamida, chief executive officer of Telma Madagascar, said: "As we will launch new commercial 5G services in Madagascar, we are certain Ericsson's Radio 6626 will not only help us with faster rollout onsite but also help us significantly minimize power consumption and weight on tower. With the benefits of this Ericsson dual-band, three-sector radio, we look forward to offering increased capacity on our network, lower power consumption and a superior user experience in Madagascar."



Photo: Adobe Stock

Ericsson Radio 6626 will provide Telma Madagascar with multi-standard and multi-band coverage.

Nora Wahby, vice president and head of customer unit West Africa and Morocco at Ericsson Middle East and Africa, added: "By reducing the number of radios on the tower from six to one, our cutting-edge and energy-efficient Radio 6626 will help Telma Madagascar significantly reduce its network power consumption and increase capacity."

Ericsson Radio 6626 will arm Telma Madagascar with added support to boost capacity while enabling efficient site upgrades and accelerating the time-to-market of various 5G services.

MTN continues expansion

AN EXPANSION DRIVE into rural and peri-urban areas and a major 5G rollout are among the key benefits for consumers as MTN invests R749 million (US\$49.8 million) into the Western Cape this year.

The investment forms part of MTN's Modernisation of Network South Africa project (MONZA), which will see an additional 1,350 sites finalised across South Africa, with total 5G coverage set to reach 179 sites in the Western Cape alone.

The boosting of coverage into villages and peri-urban areas is aimed at bringing network and connectivity services to people in the most remote rural settlements of South Africa. Through this rural rollout, MTN aims to have over 100 rural deployments nationally in highly underserved areas by the end of 2022.

Areas like Khayelitsha, Mitchellsplain and Philipi will benefit, all the way through to the Southern and Northern Cape. With the completion of National Long Distance (NLD) project in 2021, major commuter routes such as N2 will also see a huge boost in network coverage.

The ongoing problem of battery theft and tower vandalism still looms large, but some R10.5 million (US\$699,000) will be spent on fixing damage caused by vandalism in the province, with new battery installations, costing R64 million (US\$4.3 million), also planned.

MTN's heightened security and community collaboration strategy has seen a 50% year-on-year reduction in battery theft.



Photo: Adobe Stock

The investment forms part of MTN's Modernisation of Network South Africa project (MONZA).

New hyperscale data centre for Lagos

NIGERIAN COMPANY KASI Cloud Ltd, the next-generation

interconnection and data centre platform for hyperscale and enterprise cloud, held a groundbreaking ceremony in Lekki, Lagos on 19 April,

2022 to signal the beginning of construction on the company's first of several planned data centre campuses in Nigeria. Kasi's hyperscale data centre and interconnection solutions flag-off the commencement of a critical, new generation digital infrastructure platform that will be constructed in the heart of Lagos.

Kasi is described as a first-of-its-kind mass-scale data centre and digital ecosystem platform company, bringing world-class design and critical digital infrastructure services to Africa via Lagos. The company designs, builds and operates hyperscale cloud data centres to support dynamic space, power, and connectivity at scale. For this purpose, Kasi has acquired approximately four hectares of land in the Maiyegun Area of Lekki, Lagos, the fastest growing deployment zone for commercial and upscale residential facilities in Nigeria.

By looking to attract hyperscalers by solving the connectivity and scalability issues where others have been challenged, Kasi said it is on a mission to build the country's leading sustainable interconnection and data centre platform for Africa, specifically designed to support digital ecosystems and drive internet access for over a billion people.

This \$250 million campus in Lekki is designed to hyperscale requirements and standards, and modeled similar to Silicon Valley technology parks. When fully developed, the campus will stand as one of the biggest of its kind in Africa.



Photo: Adobe Stock

Kasi is described as a first-of-its-kind mass-scale data centre and digital ecosystem platform company.

Infinix and PalmPay launch digital wallet for Africa

SMARTPHONE BRAND INFINIX has launched the Infinix Wallet, a digital wallet app co-developed with mobile financial services platform PalmPay, with the aim of building a multi-dimensional digital life ecology for Infinix smartphone users that integrates financial services and various payment scenarios into a simple and secure ecosystem.

Infinix aims for mobile phone users to have the ability to easily complete credit and balance account applications, mobile phone top-ups, daily shopping, money transfers, and more with simple operations on their mobile phones making their digital finances simple and secure.

PalmPay is a leading pan-African fintech organization that provides diverse and localized digital financial services to tens of millions of consumers through its innovative technology and service capabilities. Infinix has partnered with PalmPay to create a digital wallet that meets the needs of consumers by combining their resources in financial technology, customers, and expertise in the industry.

With services being offered constantly expanding, Infinix said that the Infinix Wallet is set to become the one-stop shop for digital finances in emerging markets where Infinix products are popular by integrating daily user

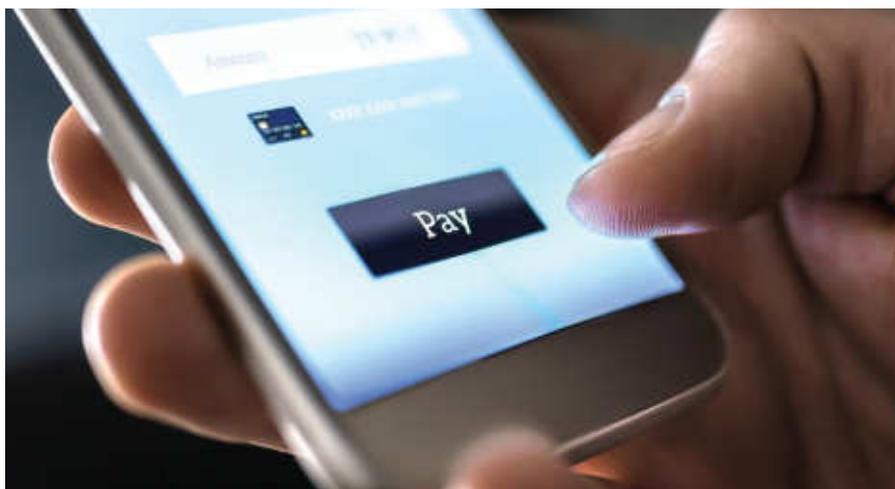


Photo: Adobe Stock

Infinix Wallet is set to become the one-stop shop for digital finances in emerging markets.

spending including topping up talk time, data and utility bill payments.

In addition, Infinix Wallet has also connected with local merchants, offering users a wealth of rebate benefits such as cashback on payments, discounts, loyalty rewards, membership points and more allowing users to spend less and save more.

The Infinix Wallet also features a multi-

layered security system to safeguard user privacy and payments.

Beginning with the current alpha test release, the Infinix Wallet will launch in markets starting in May with Nigeria, Kenya, Ghana. Launch will commence in Tanzania during July and Uganda, Côte d'Ivoire and Senegal during September. Future releases will be announced on Infinix social media channels.

New chip launch targets African market

MEDIATEK, A GLOBAL fabless semiconductor company powering nearly two billion connected devices every year, has launched the Dimensity 700 and Dimensity 1200 chips across the African market with what the company has called unrivalled AI, camera and multimedia features for powerful 5G experiences. This launch of chipsets will give device makers a full suite of options for 5G smartphone models - from premium to mainstream market devices.

MediaTek Dimensity 700 system on a chip (SoC) offers smartphone manufacturers a full suite of options for 5G smartphones for the mainstream market. The Dimensity 700 5G-integrated SoC features 5G carrier aggregation (2CC 5G-CA) and dual 5G SIM, while also being incredibly power efficient. 5G-CA (2CC) enables faster average speeds, over 30% greater throughput layer coverage and a seamless handover between two 5G connection areas across a coverage layer. It also includes MediaTek 5G UltraSave, a set of advanced power-saving technologies to improve battery life, a premium, full HD 90Hz display and up to 64MP cameras with night shot enhancements and advanced AI features.

MediaTek Dimensity 1200 powers

a new wave of exceptional 5G smartphones with best-in-class AI, camera and multimedia. It packs an integrated 5G modem with MediaTek 5G UltraSave powering saving enhancements for immense power savings, supporting the latest connectivity features, including 5G standalone and non-standalone architectures and 5G-CA (2CC).

The SoC sports an octa-core CPU designed with an ultra-core Arm Cortex-A78 clocked up to 3GHz and a nine-core GPU and six-core MediaTek APU 3.0 to deliver premium performance. MediaTek Dimensity 1200 supports 200MP photos for stunning photography with its five-core HDR-ISP and boasts staggered 4K HDR video capture for significantly greater dynamic. It also integrates AI camera features such as AI-Panorama Night Shot, AI Multi-Person Bokeh, AI noise reduction (AINR) and HDR capabilities.

With the launch of globally recognized MediaTek Dimensity 700 and MediaTek Dimensity 1200 chipsets in Africa, 5G devices will now be accessible to even more consumers.

Digital platform will support women farmers

WOMEN FARMERS IN Cote d'Ivoire will more easily find markets for their crops, thanks to a digital platform recently launched by UN Women.

Blaatto, part of the UN agency's Buy From Women initiative, is targeting women smallholder farmers and members of women-led agricultural cooperatives in the country's central region where access to markets is relatively poor. The word 'blaatto' means 'come and buy' in the region's Baule language.

Buy From Women is an open-source, cloud-based enterprise and e-commerce platform that can be customized to specific market products. It also offers women information and finance. In Cote d'Ivoire, UN Women is rolling out the initiative with African Development Bank support and with funding from the Bank-managed Korea Africa Economic Cooperation Trust Fund.

The platform is part of a UN Women project in Cote d'Ivoire to strengthen women's agricultural resilience to climate change and quality of life by incorporating ICT into agricultural production.

Blaatto launched during a ceremony held on 25 March 2022 in Abidjan, attended by M. Felix Anoblé, minister for the promotion of small and medium enterprises, handicrafts and informal sector transformation of Cote d'Ivoire.



Photo: Adobe Stock

The word 'blaatto' means 'come and buy' in the region's Baule language.

Telecel Group Acquires Mattel Mauritania



Mattel is a major player in the ICT sector and digital transformation in Mauritania.

Photo: Adobe Stock

AFTER A COMPETITIVE process, Telecel Group has been selected for the sale transaction of operator Mattel's shares. Mattel was the first mobile operator in Mauritania to launch a GSM service. Since its creation on May 11, 2000, the result of cooperation between Mauritanian and Tunisian economic operators, Mattel has always relied on the quality of its network, the professionalism of its staff, the leadership of its management team and proximity to its customers.

Mattel is a major player in the ICT sector and digital transformation in the country. As such, Mattel plays an essential role in the development of broadband in Mauritania through its 4G and fibre optic infrastructures deployed in the main cities of the country.

Mattel is one of three telecommunications

operators in Mauritania, the other two being Mauritel and Chinguitel. Mattel is also a subsidiary of Tunisia Telecom. Mattel holds nearly 33% market share. Mattel offers its services throughout the country with a network of more than 120 agencies spread throughout the national territory.

Telecel is a mobile operator present in Africa since 1986. The Telecel Group is experiencing strong growth on the continent. It has completed four transactions since 2018. The company plans to invest more than \$700 million over the next three years, mainly in mobile operator acquisitions, fibre optic infrastructure construction and infrastructure. Thanks to its activities, Telecel Global Services, Telecel Play and Africa Startup initiative Programme have become major players in the digital economy in Africa.

Phase3 Telecom scales up layered security

ONE OF AFRICA'S leading independent aerial fibre optic network infrastructure and telecommunications services providers, Phase3 Telecom has announced that it is adopting an innovative, technology-driven, digitised and multilayer approach for security operation network capacity expansion. The move, which will be completed in timed phases, provides secure infrastructure that fortifies its own and other networks against advanced and malicious cybernetic breaches.

This upgrade will also provide support in areas that require cyber-resilience in Nigeria's telecommunications sector and a proactive infrastructure network security due diligence to help businesses scale efficiently and stay less vulnerable to sensitive data exposure that can erode public trust and confidence. This massive upgrade will provide a secure infrastructure that fortifies its own and other networks against advanced and malicious cybernetic breaches in Nigeria and beyond.

Phase3 says it will continue to prioritise risk management and investment in multiple network protection against critical infrastructure



Photo: Adobe Stock

This upgrade will also provide support in areas that require cyber-resilience in Nigeria's telecommunications sector.

threats with other targeted services.

in the second half of 2022, the telecoms and technology sectors can expect to witness strengthening and extension of Phase3 legacy services towards digitisation and intelligence-based operational technology, all in ways that grant Phase3 amplified visibility of its critical infrastructure and prepare its network for eliminating potential exposure in real time.

Equinix acquires MainOne

DIGITAL INFRASTRUCTURE COMPANY Equinix has announced a deal to acquire West African data centre and connectivity solutions provider MainOne for an enterprise value of US\$320M, marking the beginning of its expansion into the African continent.

The completion of this acquisition augments Equinix's long-term strategy to become a leading African carrier-neutral digital infrastructure company by being able to bring a full range of transformative technologies and connectivity to Nigeria, Ghana and Cote d'Ivoire.

This acquisition will extend Platform Equinix into West Africa, giving organizations based inside and outside of Africa access to global and regional markets. Nigeria has both the largest population and the largest economy of any country in Africa, with approximately 142 million active internet subscribers. Home to new innovative digital ecosystems in fintech and content and digital media, it has great opportunity for expansion of digital services.

Equinix believes MainOne, headquartered in Lagos, to be one of the most exciting technology businesses to emerge from Africa, and Lagos is rapidly becoming a key connectivity hub for the wider West Africa region.

Founded by Funke Opeke in 2010, the company has enabled connectivity for the business community of Nigeria and now has digital infrastructure assets, including three operational data centres, with an additional facility in Lagos expected to open in April 2022. It also owns an extensive submarine network, a terrestrial network of more than 1,200 kilometres of reliable terrestrial fibre in Lagos, Edo and Ogun States, access to key internet exchanges enabling low latency to key global networks, and an estimated 800+ business-to-business customers.

Globally, Platform Equinix is comprised of 240 data centres across 66 metros and 27 countries on six continents, providing data centre and interconnection services to 10,000+ companies including more than 50% of Fortune 500 companies.

2Africa deployment underway with first landing in Genoa, Italy

THE 2AFRICA CONSORTIUM, comprised of China Mobile International, Meta, MTN GlobalConnect, Orange, stc, Telecom Egypt, Vodafone and WIOCC, has announced the first landing of the 2Africa cable in Genoa, Italy.

The landing sets the tone for more landings in the coming months as the cable is extended to a total of 46 locations by the completion of the project in 2024.

Announced in May 2020, the 2Africa subsea cable system, together with its Pearls extension, is designed to deliver seamless international connectivity to approximately three billion people, representing 36% of the global population and connecting three continents, Africa, Europe and Asia.

At 45,000km, it will be the longest subsea cable ever deployed, serving communities that rely on the internet for services from education to healthcare and business, with all experiencing the economic and social benefits that come from this increased connectivity.

Vodafone, the 2Africa landing party in Genoa, has partnered with Equinix to land the cable directly into the Equinix Carrier Neutral Data Centre (CNDC), with Retelit delivering the fronthaul. As with all 2Africa cable landings, capacity will be available to service providers in



Photo: Meta

The highly anticipated subsea cable system is set to connect three billion people upon the completion.

Genoa on a fair and equitable basis, encouraging and supporting the development of a healthy internet ecosystem.

Working with a local Italian operator, 2Africa has also developed a new terrestrial route

connecting the Genoa cable landing station (CLS) directly to major CNDCs in Milan.

Good progress on the survey work and manufacturing continues, with the 2Africa project remaining on track for completion in 2024.

CommerceUp to provide end-to-end e-commerce technology solution in MENA

COMMERCEUP, A START-UP service provider of cloud-based e-commerce platforms, has officially debuted in the MENA region to offer a next-generation end-to-end unified technology solution to its steadily growing online business sector.

The company's presence in the region signals the start of its heightened efforts to redefine e-Commerce 2.0 by offering software, services and infrastructure.

CommerceUp's entry to the market comes at a time when the growth outlook on the region's e-commerce industry remains upbeat. According to Digital Marketing Researches & Reports, the value of the regional market rose from US\$18.6bn in 2016 to US\$41.5bn in 2020.

Piyush Pathak, founder and CEO, CommerceUp, said, "As a cloud-based, flexible and adaptable e-commerce platform, we understand the pain points being experienced by many brands today when scaling their businesses, dealing with costly plugins and being dependent on multiple companies."

"Many brands fail as they are not able to connect with the right technology partner. They have a mountain of things to think about - from product design and branding to marketing to sales to legal and HR issues," Pathak added.

"We are solving this gap by providing a fast and efficient way of going online and selling products online. They can execute processes and achieve results efficiently by effectively running their business in one place rather than opening 10 different dashboards. Our commitment is to support businesses who are facing growth challenges due to current market e-commerce platform limitations," Pathak further commented.

The platform is best suited for businesses such as fashion and clothing, beauty and makeup, jewellery and ornaments, grocery and daily kitchen items, among others.

CommerceUp is the first e-commerce platform to successfully combine the simplicity of use, speed to market, affordability of software as a service (SaaS), and the flexibility of bespoke solutions.

People need to be made more aware of 5G rollout threats

ANNA COLLARD, SENIOR vice-president content strategy and evangelist at Know Be4 Africa, has highlighted that the people need to be made aware of the threats of the oncoming rollout of 5G – a technology that will be transformative for mobility, but also introduces some new security vulnerabilities.

"5G technology presents a massive opportunity for the mobile industry to enhance the network as well as its security and will significantly improve security over legacy networks which is very much needed considering that there are expected to be around 1.8 billion connections on 5G by 2025," she explained.

"But we have to keep in mind that traditionally, operators used proprietary protocols for network management and hackers had to have specific understanding of these protocols to break them. Now, with 5G, they are moving towards a P-based protocol set, which is the same technology used on the internet."

She continued, "There is an increasing number of reports on the increased risks that come with 5G and the mobile workforce," said Collard. "These are matched by the increased number of cyber-attacks that are targeting mobile workers and the devices that they use. A recent example is the FluBot malware. This has caused mayhem on Android devices because it spreads easily and its attack vector – messages – is easily mistaken for the real thing."

The FluBot operates just like the flu. It infects the device using a blended attack of smishing using an SMS or WhatsApp message followed by a voicemail. Users click the link, download the malware and then their systems are not only compromised, but used as a platform from which to inundate their contacts with the virus. It is fast, and so convincing that even sophisticated users fall prey to it.

"Companies need to make sure that users understand why keeping your apps and operating systems updated is so important and that jailbreaking or rooting your devices breaks all of the security on them."

“Doing nothing is not an option”

Telecoms operators have always needed IT systems that support their customers, their networks and their business. But present-day business support systems (BSS) and operations support systems (OSS) face many challenges in a world of changing networks and business models, as Mark Newman, chief analyst with the TM Forum, told Vaughan O’Grady.



What does the customer want? And can IT systems help operators to deliver it?

Photo: Adobe Stock

BSS IS SHORT for business support system (or systems) – components that a mobile operator uses to run its business operations towards customers. OSS means operations support system (or systems), the technology that manages network operations. As networks evolve so, you would think, do BSS/OSS.

But that is only partly true. Mark Newman is chief analyst with the TM Forum*, an alliance of more than 850 global companies working together to break down technology and cultural barriers between digital service providers, technology suppliers, consultancies and systems integrators.

As he told us, “Telecoms operators always have needed, and always will need, IT systems that support their customers, their networks and their business. Even though BSS/OSS is quite an old term, most people in the industry still use it today to describe these systems.”

However, many of the BSS/OSS systems in place today are over 20 years old and require modernisation. Operators, he suggested, have tended to take a ‘sticking plaster’ approach to

adapting their IT systems over this period and attempts to transform them have proven extremely difficult because there is so much legacy and customisation.

Increasingly, BSS/OSS systems are helping foresee problems before they arise and to address them in an automated way.

The idea, of course, is that BSS/OSS can enhance network effectiveness, operator profitability and customer satisfaction. How? Well, in terms of the effectiveness of the network, BSS and OSS have two main roles. One of these is to ensure that the network operates with maximum efficiency, to guarantee that when there is a network problem (for example a network outage), it is addressed immediately. Then there is the question of how that problem is addressed.

Newman explained, “Increasingly, BSS/OSS systems are helping foresee problems before they arise and to address them in an automated way rather than one that requires people to make manual interventions.” He continued, “The second role is to ensure that the capabilities of the network are translated into the actual services that people get from their operators. There is no point, for example, in building networks that offer incredibly low latency if these benefits are not delivered to customers at a price, and in a service package that enables them to benefit from it.”

This means that BSS/OSS can enhance operator profitability by helping to minimise and reduce costs, grow new revenues and, more generally, enable the business to make decisions and act on them with increased speed. It’s called business agility and, as Newman explained, “The technology that is used by telecoms operators – compute, storage and network – has evolved so much in the last 20-30 years that any telecoms operator that is not making use of new technologies is almost certainly missing out on cost savings and new

revenues.” He added, “This is all about software and whether or not telecoms operators are transitioning to becoming software-driven organisations.”

Customer satisfaction of course is a function of the quality of the network and customer experience from online and offline touchpoints. All operators are seeking to offer their customers a better digital experience and to get them, for example, to rely more on using the operator’s app rather than making a call into a call centre.

“But,” said Newman, “this is still very much a work in progress. Telecoms operators’ digital touchpoints do not compare favourably with best-in-class digital services. The industry is still a long way from the vision of using customers’ data to provide a highly proactive, personalized service.”

Which means the sort of contribution to an operator’s bottom line an effective BSS/OSS strategy can make is hard to measure. Newman said, “IT is still seen as a cost to manage rather than a platform to enable growth. Many operators are committing to year-on-year Opex savings of anything between 1% and 3%. A large part of this is being enabled by automation, digitisation and the removal of manual processes.”

Africa of course is in an odd position, with 4G and 5G rolling out but 2G and 3G still widespread. How can BSS/OSS both support Africa’s legacy networks and help African operators during the transition to 4G and 5G?

The answer, it seems, is that it comes down to what operators want to do – in terms of new services, new price plans and new market segmentations – with their 4G and 5G networks. Operators are increasingly seeking to separate their BSS/OSS systems from specific generations of networks, so the question is: how are operators seeking to use next-generation networks to enable, for example, an expansion into the provision of a broader range of B2B services such as IoT?

The industry is still a long way from the vision of using customers’ data to provide a highly proactive, personalised service.

As Newman put it, “When we look at 5G globally we can see that the main focus in terms of new products, services and revenues is in B2B and B2B2X markets, so operators need to put in place new BSS/OSS capabilities that allow them to introduce flexible, scalable systems and to partner with other companies in the delivery of complex ICT services.”

Deployment and monetisation of services are important functions of BSS/OSS. How does this apply to Africa where mobile payment is a major



Kenya led the way in mobile finance. But are BSS and OSS keeping up?

Photo: Adobe Stock

business and revenue driver?

Newman said, “I expect that, as operators evolve their mobile payments businesses, they will seek to build platform business models that allow businesses and government bodies to manage relationships with their customers. To do this successfully they will need to build BSS/OSS capabilities for their mobile payments services that are suited to the requirements of these businesses and government bodies.” This is something enabled by the TM Forum, through an initiative called zero-touch partnering, which is designed to help operators develop new, open architectures that can be integrated with the systems of their partners and customers.

Another Africa-relevant issue is that the African communications environment, unlike many others, is almost entirely driven by mobile, with little or no competition from fixed line services. But, said Newman, that doesn’t necessarily change the way vendors in the BSS/OSS space approach this market.

He said, “I tend to think of BSS/OSS more in a consumer-versus-enterprise paradigm rather than fixed versus mobile.” He explained, “Many mobile operators, particularly in Africa, are very consumer-market focused and the challenge for them is deciding where to play in B2B and getting the right balance between a focus on traditional communications and connectivity services for businesses and, on the other hand, playing a role in the delivery of cloud and IoT services.”

Returning to the global stage, next on the list for mobile operators will be managing new business models like IoT, private networks, and service assurance. How are BSS/OSS vendors gearing up for this challenge?

Newman said, “BSS/OSS is an extremely dynamic sector because telecoms operators have come to understand that doing nothing is not an option.” He continued, “The evolution of BSS/OSS systems has seen operators layering one system on top of another and using a highly customised approach to tying them together.

They spend the vast majority of their IT budgets just keeping the wheels turning and are not finding enough time, or budget, to invest in new systems to support new services and capabilities.”

In other words, when it comes to new services and lines of business, operators need to decide whether to take a completely greenfield approach or to transform legacy systems and adopt a brownfield strategy. Luckily, said Newman, “BSS/OSS vendors tend to support operators in whatever approach they take, but it is noticeable that even the more traditional vendors – the ones which arguably have the most to lose as operators adopt new architectures and technologies – are transforming their products and services portfolios and how they engage with operators.”

Finally, how is TM Forum helping operators and vendors to prepare for this? Newman said, “TM Forum is helping to drive the transformation of operators’ BSS/OSS systems. Working through TM Forum, telecoms operators of all shapes and sizes, and from all corners of the world, are seeking to put in place common, shared approaches to the modernisation, digitalisation and the opening of IT and network architecture. Our flagship initiative is the Open Digital Architecture (ODA), a blueprint for modular, cloud-based, open digital platforms that can be orchestrated using AI.” ©

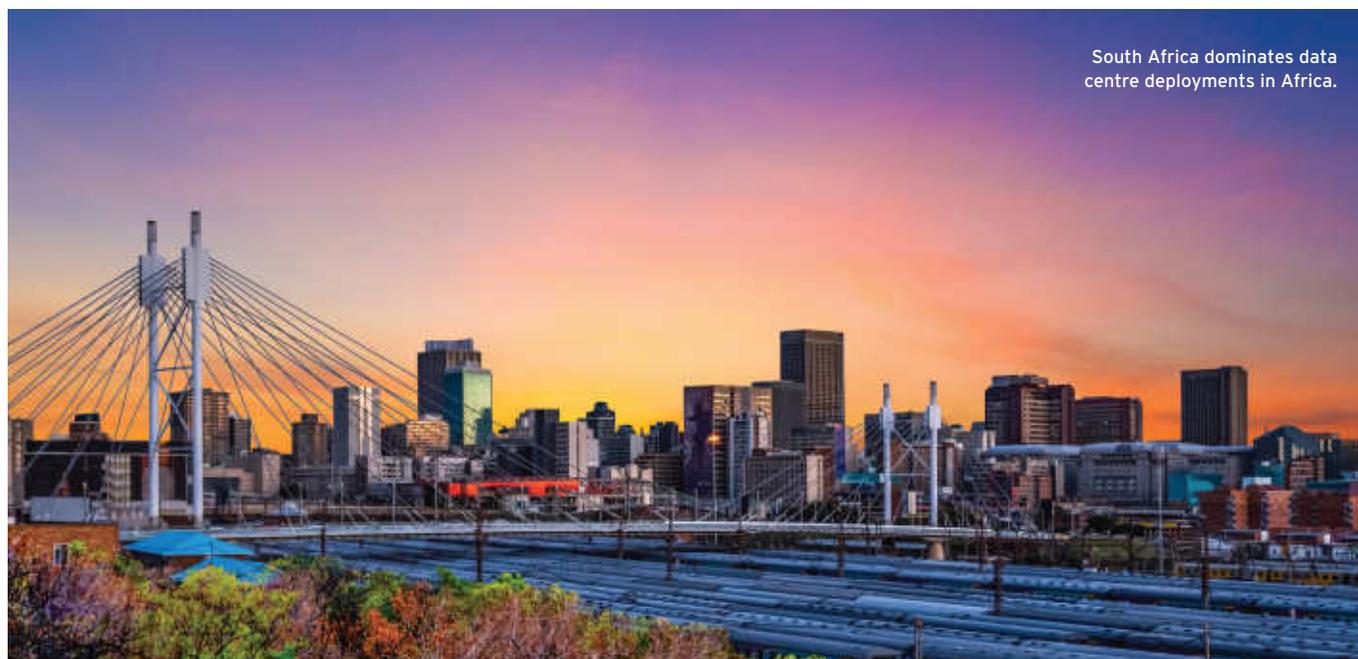
**About TM Forum*

TM Forum helps communications service providers (CSPs) and their suppliers to digitally transform and thrive in the digital era. It does this by providing an open, collaborative environment and practical support which enables CSPs and suppliers to rapidly transform their business operations, IT systems and ecosystems to capitalize on the opportunities presented in a rapidly evolving digital world.

www.tmforum.org

When will supply catch up with demand?

Data centre activity is ramping up in sub-Saharan Africa. It is also beginning to extend beyond the largest ICT services market - South Africa. But can it meet growing demand? Guy Zibi of Xalam Analytics tells Phil Desmond what we might expect from the data centre market in Africa in the coming years.



South Africa dominates data centre deployments in Africa.

Photo: Adobe Stock

GETTING DATA CENTRES close to a business or consumer may not always be easy in Africa but it is becoming essential as data use accelerates in much of Africa. In fact one issue driving data centre development in sub-Saharan Africa is latency.

As Guy Zibi, founder and managing director of research and advisory firm Xalam Analytics, told us, latency is one of the essential drivers of demand for local data centre capacity, and is thus a critical consideration. He said, “Low latency is fundamental to a wide range of existing and emerging cloud-based applications, from basic video conference calling to command of robotics or immersive multiplayer gaming.”

In fact a 2021 analysis of African cloud markets by Zibi’s company found that latency was the top infrastructure barrier to enterprise adoption of public cloud services. This is a big change since a similar

study three years earlier, when connectivity took first place. Hyperscale cloud and content providers ensuring low latency access to their cloud applications is what ensures that a user in Lagos can enjoy the same experience as one in New York, London or New Delhi.

The Xalam view is that latency to cloud applications is one of Africa’s most significant digital infrastructure bottlenecks. Zibi explained, “Our research has shown that median latency to a full-stack public cloud data centre facility from an African capital is 60ms; about a third of African markets have a latency of 100ms or more to the closest full-stack data centre facility. That’s too high. You need local hosting capacity to bring down those numbers.”

There are some predictable drivers for the localisation effort, most obviously African data traffic growth, which is exploding and needs to be optimized. The increased adoption of cloud services has been a contributing

factor as well. However, government is also helping to drive the reduction in latency through legal requirement for data localisation. Is this making a big difference?

“I’d say it’s a top-three consideration,” Zibi suggested, “especially in Africa where a predominant portion of user data has historically been hosted offshore. More industries are becoming subject to data residency rules forcing companies to host their data locally, a trend that has boosted demand for local data centre facilities.”

Of course a localisation drive is fairly pointless if regulations are stifling development. India, for example, is encouraging localisation but is also easing regulatory hurdles. Is that happening in sub-Saharan Africa?

“It is,” said Zibi. He continued, “Governments must strike a balance between rules that keep

Looking at the next decade, we are generally estimating a potential demand of 1000MW of IT load across Africa

Continued on page 17

Digital platforms cash in on fintech boom

A recent report from KPMG suggests that fintech investment in Africa boomed in 2021. But this may only be the start, with a number of drivers likely to encourage even more growth, as Ladi Asuni of KPMG Nigeria explains.

“**F**INTECH INVESTMENT POURS into Africa.” That’s one of the big headlines from a recent report* on the growth of the fintech sector from KPMG Global.

In fact, KPMG reports, 2021 was a record year for fintech investment in Africa, and the momentum is only likely to increase. After a brief dip during the Covid-19 pandemic during 2020, the deals came back with foreign investment flooding in.

Data shows that there was over US \$1.6 billion invested across 153 deals, two times the value of 2020 (US\$800 million) and representing a 50% increase in transaction numbers.

The key markets remain Nigeria in the West, Kenya in the East, and South Africa in the South. Other countries such as Egypt have also seen some sizeable deals. In Nigeria, the value of deals in the first quarter of 2021 alone outstripped the total for the whole of 2020.

As for key drivers, the spread of smartphones is building on the foundations laid by the highly successful M-Pesa service for money transfers that started in Kenya an analogue phones.

Key services remain payments and transfers, with foreign remittances (in and out) an important part of this. This is something that the pandemic accelerated after physically taking cash home across borders became difficult.

Alongside individuals, small and micro

Fintechs are gaining market share by lowering the barriers to adoption, providing better user experiences and leveraging data analytics.

businesses are a significant market too — enabling businesses without a card machine to take payments connected to a cell phone.

While the focus is on payment services and digital banking, at the same time lending is also a growth area. There is a huge untapped market, after all. In Nigeria, for example, credit penetration stands at only around 3%. With fintechs developing alternative ways for credit scoring through the use of AI and machine



Photo: KPMG Nigeria

Ladi Asuni, KPMG: “Fintechs are gaining market share by lowering the barriers to adoption.”

learning techniques, they are able to take on higher-risk lending that traditional banks have largely opted out of.

The report also points out that as the market in Africa matures, you can expect to see more development of other areas such as wealthtech (linked to wealth management and investment services) and insurtech (technological innovations that improve the efficiency of the insurance industry).

Ladi Asuni, a partner within KPMG Nigeria’s technology advisory practice, discussed some of the report’s findings with us.

Communications Africa (CAF): Your report says, “2021 was a record year for fintech investment in Africa, and the momentum is only likely to increase”. Why is this?

Ladi Asuni (LA), KPMG Nigeria: This is based on the trend of increasing count and total value of investments over the last few years. In some of the markets, like Nigeria, things slowed down during the pandemic in 2020. However, growth in 2021 compensated for this significantly.

CAF: How important has Covid been in encouraging people to try out money transfers through their cell phones?

LA: The lockdown experienced across most countries helped to drive adoption of digital platforms as one of the main channels available for financial transactions.

CAF: Have ease of doing business and the regulatory environment also encouraged this activity? Is this likely to continue?

LA: While efforts are being made to enhance the ease of doing business across most African countries, it is difficult to attribute the growth entirely to this as a number of the leading countries are still lagging in their Ease of Doing Business index.

CAF: You mention the role of the spread of smartphones across the continent. How important is this to fintechs? Can smartphone costs continue to fall?

LA: Adoption of smartphones is growing as manufacturers produce low-end devices

targeted at lower income segments (ie emerging markets). In addition, there is a growing market for second-hand smartphones as users cycle out of their old phones. These trends are generally helping to lower prices and drive affordability of smartphones and we expect to continue to see this.

CAF: This is a young continent. Are young Africans leading this trend?

LA: Yes. Digital adoption is strongest amongst youths.

CAF: You say that fintechs are developing alternative ways for credit scoring. How does that help them to target business banks can't get?

LA: Banks have traditionally had a more cautious approach to credit scoring, relying on customers with sufficient financial transactions history. By leveraging alternative data for credit scoring, fintechs have been able to overcome the barrier to granting credit to individuals with limited financial history. Fintechs have also been able to leverage ML/AI [machine learning/artificial intelligence] to eliminate a lot of the manual processing with bank processes and can grant credit in a fraction of the time it takes banks.

CAF: What other innovative approaches (like targeting micro-businesses) are fintechs using to gain market share?

LA: Fintechs are gaining market share by lowering the barriers to adoption, providing better user experiences and leveraging data analytics in ways that incumbents have hitherto not been focused on. An example was during the pandemic when a few of the fintechs in the payment space were able to

In some markets things slowed down during the pandemic. However, growth in 2021 compensated for this significantly.

spin off online marketplaces that allowed small business owners to move their businesses online in a short time – with integrated portals that allowed product listings, pricing, stock management, analytics and online payments. This innovative idea allowed many small businesses to take their business online for the first time and also helped to create a

more secure environment for transacting for end consumers.

CAF: The key markets remain Nigeria, Kenya and South Africa, but are other African markets also making headway?

LA: We are seeing some headway in other markets including Egypt, Senegal and Ghana.

CAF: Is mobile money market growth now unstoppable? And, equally importantly, are governments willing to support fintechs with a business-friendly environment?

LA: Governments in the region are seeing the development and the fact that tech is attracting significant foreign investments. This has definitely generated interest and commitment to support the fintech sector with business-friendly environments. A few countries in Africa, including Nigeria and Rwanda, have already established, or are in the process of establishing, startup bills and different tax incentive programmes to promote the growth of the sector. ☺

KPMG firms operate in 145 countries and territories across the globe, offering audit, tax and advisory services. The report Pulse of Fintech H2.21 is available at the KPMG website: [kpmg.com](https://www.kpmg.com)

Continued from page 15

user data local and requirements that may impede innovation.” However, he added, “For a variety of reasons, some applications sit overseas; it is difficult to mandate that they be brought locally. On the flip side, maintaining user privacy is absolutely vital.”

So what is the answer? “The middle ground is usually to have local requirements for specific industries or types of data, including government data, while retaining a flexible approach for other types of data.”

As for which African markets will benefit, one assumes that coastal countries are more likely to attract data centre development given their proximity to submarine cables. Direct access to diversity of international connectivity is an obvious reason for this. However, said Zibi, “The other reason is that data centres seek economic centres, and coastal countries are quite often economic hubs as well.”

We've discussed power supply a number of times in this magazine. Will power be an issue as growth continues? “Yes,” said Zibi, “power will remain an issue – if only because the facilities are getting larger, more numerous and consuming more energy.”

That being the case, are companies innovating to better control power use, given the cooling requirements in many countries? “Companies are getting better at managing it

because power and cooling technologies are getting better and data centre providers have more experience with it. In addition, data centre providers are doing more self-generation, notably with renewables, or innovating in power capacity sourcing, so they are less dependent on established electricity grids.”

Meanwhile demand is still ahead of supply. “Looking at the next decade,” Zibi explained, “we are generally estimating a potential demand of 1000MW of IT load across Africa.

Governments must strike a balance between rules that keep user data local and requirements that may impede innovation.

Supply is looking to catch up to that potential.”

Of course one country is taking the lead in this market. At the moment South Africa dominates data centre developments in Africa. Will that remain the case?

Zibi agreed that South Africa will continue to dominate data centre deployments in Africa, for a number of reasons. As he explained, “It is Africa's largest ICT services market and the most dynamic technology market in Africa. South Africa also has the region's best demand fundamentals for cloud

services, so it will attract the largest cloud deployments. In 2020, around 55% of Africa's data centre capacity was in South Africa. We expect that to be at around 60% within the next five years, even though other regions will grow as well.”

That isn't to say that South Africa will be alone, Readers will have noticed recent data centre announcements relating to Tanzania, Ethiopia, DRC, Ghana, Nigeria, Uganda and others. These, however, come mainly from specialists like ADC and Raxio. So will more international companies join them over time?

Zibi is optimistic but has some caveats. “Yes, that's to be expected,” he said, “but only over the longer term. International players are primarily interested in the larger economic and connectivity hubs – South Africa, Nigeria, Kenya, Egypt. From those hubs, they will expand to other markets, most likely through acquisitions.” ☺

About Xalam Analytics

Xalam Analytics is a research and investment advisory firm focused on connectivity, cloud and digital infrastructure in the emerging markets of Africa, the Middle East and Asia. A leading source of data and insights on the economics and transformation of Internet infrastructure, Xalam's investment reports have helped redefine investor perception of the frontier digital infrastructure opportunity. [xalamanalytics.com](https://www.xalamanalytics.com)

Delivering the next generation of wireless infrastructure

For some operators, the deployment of 5G is emerging as a perfect opportunity to use open RAN to gain new efficiencies. But, as Lux Maharaj of Parallel Wireless explained, open RAN could also prove appropriate for a continent like Africa where 2G, 3G and 4G dominate.



Photo: Adobe Stock

Could open RAN boost rural deployment in Africa?

SOME OBSERVERS SUGGEST that open RAN has only limited relevance to Africa. However, it has already been embraced by a number of African operators. MTN, for instance, has explained its advantages as follows: “Open RAN allows for the disaggregation of hardware and software elements of a network, enabling telcos to build a network using components with the same specifications and scale from a diverse base of vendors. A disruptive trend, it is gaining popularity as the industry seeks to promote an open and interoperable ecosystem between various vendors.”

Telecommunications service provider Parallel Wireless is a strong proponent of open RAN. It claims that through open collaboration with its open RAN ecosystem partners, it has created a world-first – and largest – fully compliant open RAN ecosystem, one that is capable of delivering the next generation of wireless infrastructure at dramatically lower cost.

What’s more, it believes this approach has a number of advantages for the African market. We discussed this with Lux Maharaj, Parallel Wireless director and account manager for the South Africa region.

Communications Africa (CAF): In a recent YouTube presentation you suggested that open RAN can benefit Africa. Why is this?
Lux Maharaj (LM), Parallel wireless director and account manager for the South Africa region: Africa is a diverse continent. While on one end, the service providers have launched

Several African service providers, including MTN and Orange are already using Open RAN to bridge the digital divide and connect the unconnected.

5G and continue to expand 5G networks, 2G, 3G and 4G networks will remain relevant for several years to come. This means that the service providers will need to maintain multiple networks, leading to network complexity and high operational cost of managing the network.

The general perception is that open RAN is beneficial only for greenfield networks because the initial deployments were in greenfield rural deployments, but this is no longer the case.

Several service providers are successfully using open RAN for brownfield deployments as well to bring down operational cost, avoid vendor lock-in and enhance process efficiencies by simplifying the network.

African service providers can use open RAN to unify all ‘G’ networks – 2G, 3G, 4G and 5G – for better management and to bring down the total cost of ownership. Further, the cost benefits offered by open RAN can make it easier for the service providers to extend the benefits of connectivity in yet-to-be-connected and rural

areas. Several African service providers, including MTN and Orange, are already using open RAN to bridge the digital divide and connect the unconnected.

CAF: Is open RAN an investment that should be made when upgrading networks, or can it be part of ongoing network investment?

LM: For several operators, the deployment of 5G is emerging as a perfect opportunity to reimagine their network architecture and use open RAN to gain new efficiencies. However, open RAN is being successfully used in brownfield networks by several service providers. The service providers can leverage the complete benefits of open RAN by using it in all Gs – 2G, 3G, 4G and 5G.

While 5G is a perfect opportunity for the telcos to reimagine the networks, they should use this to extend the benefit of open RAN to all technology networks. In fact, deploying it only for 5G prevents service providers from realizing the complete benefit of this technological approach. Using it only for 5G means that they will have to manage two different types of networks: one open RAN-based network for 5G and a legacy network for 2G, 3G and 4G. This means that while they may experience short-term benefits, the overall operational expense may turn out to be 50% higher, since the legacy networks will not be as power-efficient or easy to maintain.

CAF: Do the benefits outweigh the investment costs?

LM: One of the key benefits of open RAN is a significant reduction in the total cost of ownership. Typically, service providers add a new layer for every new standard, leading to high network complexity. Further, traditional networks are hardware-centric, making them tough to upgrade or deploy.

On the other hand, open RAN is software-centric and uses the principles of virtualization to not only bring down the time to market but also to reduce deployment and maintenance costs. Further, it uses commercial-off-the-shelf (COTS) equipment, which also helps bring down the cost of deployment and running network operations. Virtualisation makes it easy to automate the network processes, leading to simplified network management.

Another key benefit of open RAN is that it promotes and encourages interoperability, allowing service providers to opt for the most appropriate and cost-effective solution, thus further bringing down the cost of network deployment.

Open RAN also frees service providers from investing in expensive proprietary network

equipment. Further, service providers also record savings in the total cost of ownership by power savings and modernisation of the networks by using cloud-native solutions. Automation of the networks also brings down the cost of operating networks and adds to the savings.

It is because of these proven benefits of open RAN that it continues to gain traction in all regions. ABI Research says that open RAN installs will increase from 1.37 million in 2021 to 22.52 million in 2026.

CAF: You suggest that governments, regulators and MNOs must work together to provide alternative business models. Why should this be a collaborative effort rather than one driven by MNOs alone?

LM: Deploying open RAN calls for a fundamentally different approach when compared with traditional network architecture. Unlike traditional networks, integrating open RAN demands a vibrant ecosystem of system



Lux Maharaj: "Open RAN promotes and encourages interoperability."

integrators, tower companies, real-estate owners, regulators, industry bodies, hardware and software vendors and mobile operators, and this calls for all the industry stakeholders to work together. Open RAN needs to be built for a

One of the key benefits of open RAN is a significant reduction in the total cost of ownership.

African service providers can use open RAN to unify all 'G' networks – 2G, 3G, 4G and 5G – for better management and to bring down the total cost of ownership.

software-centric world where software speaks to all physical components at any time, to deliver scalability and innovation, thus changing the game for how open networks are integrated.

CAF: Is ORAN future-proof?

LM: Since open RAN is software-based, it is easier to upgrade to newer standards as and when required. With CI/CD (continuous integration/continuous delivery) upgrades can be delivered as often as required. While earlier network upgrades demanded a significant investment of time and resources, this is not true in the case of open RAN. Easy upgrade helps in maximising the returns from the initial investments. Open RAN addresses telcos' requirements for a low total cost of ownership and easier upgradeability of the networks.

CAF: How does your approach to ORAN solutions differ from others? And why is it beneficial for Africa?

LM: Parallel Wireless believes in putting the pain points of the service providers at the centre of our product strategy and this is why our solutions are unique and designed to help service providers not be limited by legacy equipment and network deployment approach.

Our 'All Gs' approach is especially relevant for developing markets where 2G and 3G continue to be used extensively. It unifies all Gs on a single platform, allowing service providers to optimise investments made in 2G, 3G and 4G, while preparing the networks for 5G. It also future-proofs the investments since networks could be upgraded just with software upgrades.

Typically the average revenue per user (ARPU) is low in developing markets, which means that it takes a long time before a telco can start to see returns on its investment in setting up the network. This is one of the key reasons why telcos find it tough to expand the network in remote and rural areas. Our solutions address this and make it easier for them to bring down investment in setting up and managing networks, thus enabling them to extend the benefits of connectivity to more people without any adverse impact on their profits. ☺

Is the growth in online working an opportunity for fraudsters?



Photo: Adobe Stock

The fast-changing threat landscape

The Covid-19 pandemic has certainly given more opportunities to fraudsters to exploit vulnerabilities in telecom services. However, as Kusum Liyanage of Cable & Wireless Seychelles pointed out to Ron Murphy, fraud has been evolving for a long time and become more sophisticated as the volume of telecommunications traffic has steadily increased.

TELECOM FRAUD RISK is becoming greater every day. Hence recent events like Telecom Fraud & Risk Management Forum Africa. This event seeks to discover up-to-date methods and strategies to prevent fraud attacks and minimise revenue leakages.

We asked one of the speakers at the event, Kusum Liyanage, head of revenue assurance and fraud management (RAFM) at Cable & Wireless Seychelles, to tell us more, starting with a look at the effect of Covid-19. Of course with that outbreak, activities including work, learning and entertainment increasingly took place online, meaning that telecoms infrastructure experienced much higher usage.

“The uncertainty and disruption caused by Covid-19 undoubtedly created a fertile ground for fraudsters and telecom fraud and security threats significantly increased in the recent past,” she explained.

It seems that as business models are challenged by the pandemic, the top management focus has been more on

operational measures than compliance and fighting fraud. You can add to that the fact that illness among the workforce and absences from work have become an issue in terms of capacity and finding replacements to do the fraud prevention work. Thus ongoing investigations are halted due to lack of resources and focus.

The more you know and the more precautions you take, the safer you will be.

“Furthermore,” said Liyanage, “the temporary transfer of staff into operations may leave prevention functions understaffed. With the pandemic, onboarding of customers and business partners is fast-tracked. There is also the pressure of bringing products very quickly to the market – all potentially leaving doors open for fraudsters.”

Not only that but in the current situation, every company is looking for savings; this may

mean cutting jobs or reducing payments to employees. “For some employees this may create an incentive to commit internal fraud or support fraudsters to gain financial benefits,” Liyanage explained.

Of course the pandemic is not over yet, and the Russia-Ukraine conflict is now adding new uncertainties to the world. “Telcos need to be constantly vigilant and put in place the fraud prevention mechanisms to protect their customers, network infrastructure and overall business sustainability,” she said.

And meanwhile telecommunications marches on. The roll-out of 5G in Africa, for example, will enable unprecedented levels of connectivity. However, despite the growth and excitement over 5G and other technology roll-outs in Africa, telcos readiness for appropriate risk management strategies is still questionable.

Some of the security worries result from the 5G network itself, while others involve the devices connecting to 5G. But both aspects put consumers, governments and businesses at risk.

For example, one 5G-enabled concept is

network slicing, a way of slicing the original network architecture in multiple logical and independent networks that are configured to effectively meet various services requirements.

However, since network slices will span across RAN, transport, and core networks, and utilise virtual and physical network functions, collecting chargeable network slicing events can be a challenge for many telcos.

In fact many new capabilities will need to be closely monitored and audited when it comes to 5G. For example, Internet of Things (IoT) use cases will involve covering IoT device management, support for non-telco service charging, and multi-party charging as well as IoT and/or edge-platform monetisation.

“Furthermore,” said Liyanage, “AI, VR, ML [artificial intelligence, virtual reality, machine learning] etc will create more vulnerabilities in telco infrastructure. Therefore, parallel to the infrastructure rollout, telcos need continuous investment in systems and skilled human resources that enable deeper insights into risk management to combat fraud.”

Threats, meanwhile, will change and evolve. The telecom industry is an intrinsic part of our daily lives and one of the most dynamic industries in the world. In recent years, as technology has developed, the threat landscape has changed; the number of cyber-attacks specifically against the telecom industry is soaring. Given that the telco industry controls a vast amount of complex and critical infrastructure, the impact of successful attacks will not only be significant but extensive.

As we have noted earlier, one of the greatest challenges for operators and ISPs in the current climate is how the IoT will impact the industry. Connected devices in particular create more entry points in the process. Not all these points are patched properly, and they may leave accounts for users, clients and companies exposed.

Also, due to the Covid-19 pandemic, with over 30% of people now working remotely, connections to unsecured networks are higher than ever, and offer easy openings for fraudsters, who have become remarkably professionalised in their reach to stakeholders, especially when it comes to attacking customers using empathy techniques.

“However,” Liyanage warned, “safeguarding against threats, reducing the attack surface, and security systems of large, complicated, and

Given that the telco industry controls a vast amount of complex and critical infrastructure, the impact of successful attacks will not only be significant, but extensive



Photo: Adobe Stock

IoT growth is unstoppable. But will it mean more security problems?

multifaceted organisations are not a quick fix for telcos. Many telcos have limited funding and resources on risk management, and are challenged to secure their devices, systems, people and processes internally.”

Of course mobile dominates in Africa and many believe mobile networks are safer than, say, Wi-Fi networks. However, Liyanage explained, “As 5G rollout continues, users will be increasingly exposed to security threats via a process called Wi-Fi offloading. As the demand for bandwidth on smartphones and tablets increases, a large portion of mobile traffic is offloaded to nearby Wi-Fi networks to help equalize the load.”

And Wi-Fi networks are growing: over a billion Wi-Fi access points connect close to a hundred billion IoT devices, smartphones, tablets, laptops, desktops, smart TVs, video cameras, monitors, printers and other consumer devices to the internet to enable millions of applications to reach everyone, everywhere.

Meanwhile, as government policymakers increase their focus on the digital society, telcos remain under pressure to improve network performance and coverage. “The economics of network rollout in remote areas remain challenging, and new technologies are offering disruptive alternatives, which can easily get exposed to fraud,” said Liyanage.

The spread of low-cost, high-function devices will also invite more risk. Not all device manufacturers are prioritising cybersecurity, as can be seen with many low-end smart devices. As more mobile (and IoT) devices are encouraged to connect, devices with varied security standards offer billions of possible breach points and hacking opportunities.

“Cybercriminals are adapting evolving tools and techniques to exploit undefended gaps in the hardware, software, and encryption standards of these devices,” Liyanage explained.

Fraudsters, meanwhile, are strategic opportunists. They know how to find weak points in the telco ecosystem to gain access to their targets. With the evolution of complex technologies like 5G, IoT, ML, AI, and the associated applications, there are more loopholes for fraudsters if telco investment in

risk management does not keep up with technological advancement.

Though it’s not on the same scale as telcos, fraudsters also attack stakeholder groups who use telecom services. Attacking business systems and customers has increased significantly during the Covid-19 era. Fraudsters are using increasingly sophisticated tactics to steal your money. The only way to protect yourself is by knowing what to do. Prevention of fraud is the key, in particular a community-based approach to fight against telecommunications fraud in collaboration with all stakeholders involved as opposed to a traditional self-dependent approach.

But fraudsters are becoming more sophisticated and remarkably professionalised in how they approach telcos and other stakeholder groups. Fraudsters also build up and maintain strong networks among themselves. “The more we share data across different platforms, the more vulnerable it becomes. Social media and e-commerce have been fertile ground for fraudsters by allowing them to quickly build a comprehensive picture of who you are and what online services you use,” said Liyanage. She continued, “Fraudsters like soft targets like the elderly community or junior employees who have insider information. The more you know and the more precautions you take, the safer you will be.”

Finally what can an event like Telecom Fraud & Risk Management Forum Africa do to raise awareness of the dangers?

Liyanage explained, “Our event gives an opportunity for anti-fraud professionals and communities to come together to look at how far reaching the effects of fraud can be. It is the perfect time to go a step further in your role as an anti-fraud professional and to start discussions among peers, co-workers, executives and stakeholders in your community about how important fraud prevention is to society as a whole.

She added, “Establishing strong collaboration is key to identifying and tackling modern fraud threats and our event sheds some light on catching up with the evolving fraudsters – and outsmarting them!” ©

Impact Organization Power Learn Project launches One Million Developers For Africa Programme

POWER LEARN PROJECT, a Pan African impact organization announced today the launch of its flagship programme One Million Developers for Africa” Scholarship Programme (#1MillionDevs4Africa) to train one million young people and empower them with tech employability skills.

Africa faces a huge digital skills gap, which is diluting economic opportunities and development. Some 230 million jobs across the continent will require some level of digital skills by 2030, according to a study by the International Finance Corporation (IFC). This translates to a potential for staggering 650 million training opportunities and an estimated US\$130bn market. And, with the COVID-19 pandemic forcing many businesses to go digital to survive, the need for these skills has become glaringly more apparent since 2020.

The chief growth and operations officer for Power Learn Project, Mumbi Ndung’u said, “Our goal is to drive transformative change for the youth of Africa through technology skilling. The programme will offer online junior software development training, consisting of curated programming languages as well as a soft skills component in employability, and entrepreneurship to enable the learners to acquire entry level smart technology jobs. Through support from partners, the course will be covered on full scholarships, so the learners’ only concern is to learn and absorb as much as they can, as they prepare to navigate the digital revolution with us.”

“Upon completion of the course, the learners will have access to a number of opportunities and alternative educational pathways through the organization, ranging from internships and proof of work opportunities or venture studio and incubator connections if they want to explore entrepreneurship.” Further stated Ndung’u.

With 70% of Africa’s population between the ages of 18 and 35 and 60% of this group being under-employed or unemployed, the time to invest in digital advancement is now.



Photo: Power Learn Project

Learners will earn a certificate upon successful completion of the course and join a community of young skilled Africans ready to take on the digital opportunities.

The Power Learn Project programme will help address this issue by providing accessible world-class tech education to young Africans across six pilot countries: Kenya, Tanzania, Uganda, Rwanda, Burundi and Zambia and later to West and North Africa in phase two.

The hybrid junior software development training will be conducted on a user friendly Learning Management System and will be guided by Power Learn’s expert instructors. The platform will be free data access meaning no cost of data to the learner.

The Power Learn 16 week scholarship programme consists of courses:

- Python Programming
- Dart Programming with Flutter
- An introduction to blockchain technologies
- Web technologies (PHP, HTML, JAVA)
- Databases (SQL Programming)
- Employment & Entrepreneurship skills

How innovation in technology is outsmarting crime in South Africa

IN THE CURRENT climate of hijackings, robberies and unlawful syndicates, it is hard to imagine a world where crime is drastically reduced, or even wiped out completely. However, according to Warren Myers, CEO of South Africa’s on-demand security and medical response platform AURA, this is entirely within the reach.

In the third of a series of monthly webinars discussing and finding solutions to the crime situation in South Africa, Myers was joined by anti-crime activist Yusuf Abramjee and Kagiso Khaole, Head of Mobility Operations at Uber Sub-Saharan Africa, to talk about how new, innovative technology is being used to outsmart criminals.

“As criminals become smarter, and rates of murder, attempted murder, kidnapping and corporate crime rise, we need to change our approach to how we deal with them. Crime often functions like a business, and, like any business, it evolves and becomes more sophisticated, and sophisticated crime needs sophisticated solutions,” said Myers. For this, partnerships and collaboration between security companies, corporates, the community and the police are key, and innovations in technology are making this possible.

One way technology is helping disrupt crime is through the creation of a cashless society. “Digital payment apps and mobile wallets are creating a society where there is less physical cash moving around, which will eventually eradicate a lot of our crime issues as adoption of this technology grows,” added Myers.

Another way technology is tackling the crime problem is by improving response capabilities when incidents do happen. Myers argues that it isn’t enough to send just one responder to deal with syndicate-related crimes when they happen, as the good guys need to come in stronger and harder. “AURA’s platform enables us to coordinate mass dispatch protocols to the scenes of crimes because of the technology installed in thousands of armed response vehicles. With multiple responders closing in on a crime scene within 5-6 minutes and positioned at the location’s exit routes, a situation can quickly be neutralised. When all the good guys come together as a team, using the right technology, it is far more difficult

for the bad guys to get away with unlawful and often violent activities, and makes it riskier for them to attempt these crimes in the future.”

According to Abramjee, a multi-faceted approach is needed to get ahead of rising crime, and agrees that collaborations between business, law enforcement agencies and society are crucial. “Along with making use of technology such as AURA’s on-demand armed and medical response platform, we need to educate the nation to be proactive and be aware of the technology available to assist in times of trouble. Leaving South Africa to go to a safer country is not the solution. We need to join hands and work together to wipe out crime so we can stay in this country, our home.”

In his time at Uber, Khaole has come to appreciate the power of using technology to help improve safety on the platform - especially when it comes to empowering users with information that helps minimise risk. “Organised crime doesn’t stand a chance against an organised society,” he asserts, adding that if we continue to innovate, be proactive and work together, we can eventually get to a place where we can predict crime and prevent it by applying artificial intelligence to big data. “It sounds like science fiction, but tech companies are advancing quickly and, if you think about it, it is something that is already in your hands today - the magic of technology.”

Myers said that while crime rates in South Africa are unacceptably high, there are reasons to be hopeful: “The rate at which technology is being developed to fight crime is completely overpowering what is being used to commit crime. The problem is, our society doesn’t believe that we can fix this, but with the hyperscale technology tools now available, it is going to become very difficult to be a criminal in the next five years. This message needs to be filtered down into society so that everyone can see the vision of where we can get to with these new tech tools, how we can win the fight and ensure everyone’s fundamental human right to safety is in place. This will stop people getting on planes and contributing to the brain drain and the ripple effects of that.”

Bringing VSAT training to a global audience

It's been 25 years since satellite industry-focused organisation the GVF was established. The GVF's Martin Jarrold tells Ron Murphy how VSATS have changed in that time, and how training in operation, installation, and maintenance has adapted to the evolution of VSATS.



Interactive, 3-D, animated tutorials enable a better grasp of technical concepts and permit students to practice hands-on skills such as dish pointing, polarisation alignment, and uplink signal line-up.

Photo: Adobe Stock

The number of VSAT technicians who have undertaken GVF Training and Certification who are located across the African continent runs into the many thousands

THE GVF IS the only global non-profit association for the satellite industry with members from the entire ecosystem. However, it began life as the Global VSAT Forum and still has a significant role in the development and delivery of technologies and services related to satellite terminals or VSATs.

This includes training. The growth of the GVF's training and certification portfolio has been an organic developmental process over the last 21 years, with expansion of the course portfolio being driven by various factors, including by member company and other customer/student/user demand, and by how changes in the operation, installation, and maintenance of VSATs have evolved over time.

What, then, has changed since the GVF started 25 years ago? Well, remote terminal configuration is

increasingly more automatic, which simplifies installation. And, said Martin Jarrold, vice president international programme development, GVF, courses too have changed since 2001, when, at the request of its membership, GVF launched a training programme with the objective of building a global force of qualified VSAT installation technicians available in local areas to support the expansion of VSAT networks.

"At its inception," he explained, "GVF Training and Certification was founded on classroom-based instruction, but this had its limitations in terms of reaching a truly global audience of potential trainee technicians."

Jarrold continued, "An online resource was required and developed, building a portfolio over time. The advanced web-based e-learning materials feature interactive animations based on

numerical simulation algorithms. Students equipped only with internet terminals now have access to realistic simulations of the behaviour of real-world equipment."

Interactive, 3-D, animated tutorials enable a better grasp of technical concepts and permit students to practice hands-on skills such as dish pointing, polarisation alignment, and uplink signal line-up. Interactive exercises run in the browser (previously Flash, now HTML5) using highly advanced simulations developed by satcom engineers to accurately emulate the behaviour of equipment and antennas. Student performance in the simulators is automatically scored and is a mandatory element of certification.

However, said Jarrold, "While GVF training and certification remains founded on online interactivity, there are

circumstances where additional augmented classroom-based training comes into its own, such as for optional hands-on skills tests and supplementary classroom activities offered by some GVF affiliates.”

The GVF training curriculum is aimed at a technical audience – mainly at the field technician and network operations centre (NOC) operator level. “However,” said Jarrold, “GVF’s interest in facilitating a broadening of understanding of the satellite industry – developed before the new SBQ (Space Business Qualified) qualification (see page 26) but a significant driver behind its development – was the course GVF500 ED2: Introduction to Satellite Communications. This was a comprehensive overview of the technology and business of satellite communications, which covered industry history, launchers, orbits, frequencies, networks, equipment, bandwidth,

Students equipped only with internet terminals now have access to realistic simulations of the behaviour of real-world equipment



Today, the GVF training programme has already reached more than 20,000 students all around the world.

Photo: Adobe Stock

applications, markets, regulations, industry structure and more.”

Upon completion of this course, trainees were equipped with a solid understanding of how the satcom market is structured and the capabilities of the technology that makes it all possible. Edition 2.1 of the programme

extended this to include high-throughput satellites, new launcher players, new market data, and other updates.

“The SBQ”, Jarrold said, “takes this much further for a space and satellite industry that has grown far beyond the dreams of its commercial pioneers and the governments that started it.”

In fact the industry is now a mature, fast-expanding, and complex business with an estimated value of well over US\$1 trillion. It reaches deeply into dozens of vertical markets and other industry sectors, is essential in the provisioning of communications, data and the digital transformation of much of the global economy and has become an invisible but indispensable part of everyday economic activity.

As for its more technical courses, GVF training and certification covers all the various facets of the job of an earth station/satellite terminal installation technician, giving technicians and engineers a solid foundation in all areas.

Jarrold added, “Over time the GVF curriculum has generally added more fundamental theory and skills with somewhat less emphasis on the specifics of particular models of VSAT modems and antennas, as those products tend now to have more self-configuration features. However, GVF training is used by many organisations as the basis for specific product and business process follow-up training, and specific courses within the portfolio have been developed driven by the specific requests of GVF members, and other companies for content dealing with proprietary equipment and technologies. This is because some models of equipment have

The SBQ: a comprehensive non-technical learning experience

THE 25TH ANNIVERSARY year of the GVF is being celebrated in various ways. One of these is an expansion in the association’s education and training initiatives in the form of the SBQ – Space Business Qualified – qualification.

The SBQ is an online qualification that is the satellite industry’s first comprehensive non-technical programme and curriculum based on individual courses, full modules, and a dedicated certification path focusing on Satellite Communications and Broadcast Business, Earth Observation, Navigation, Science Business, and Launch and Spacecraft Business.

“Its creation,” said Martin Jarrold, “arose from a recognition by the three development partners – GVF, its training and certification partner, SatProf Inc, and Space & Satellite Professionals International (SSPI), with a combined 80 years of experience in space industry education – that the space and satellite industry has demand for a broad range of skills covering engineering in all its disciplines, finance, marketing, sales, advanced manufacturing, legal and regulatory, government relations, information technology and human resources.”

As Jarrold explained, “These skills are put to work in manufacturing, launch, fleet operations, ground segment operations and service delivery. The complexity of doing business in space requires that specialisations be narrow and expertise high within them. Traditionally, people have built their industry understanding through on-the-job experience over years or high-cost graduate-level education.”

Thus the SBQ programme shortcuts the process – using a self-paced format of interactive tutorials, video lectures, animations and graphics – and increases the effectiveness of people working at every level and in every discipline of the industry, enhancing their ability to rise in their profession. Obtaining certification demonstrates a comprehensive understanding of the industry.

Jarrold pointed out, “Until now there has been no industry course offering a comprehensive learning experience to explore this. SBQ’s non-technical education – addressing the fundamentals of launch, design, manufacturing, services, financing, leadership development and the impact of space and satellites on the world, and pitched at the concept and business level rather than depending on knowledge of mathematics, physics or engineering – is designed to improve the knowledge and performance of existing employees, increase the marketability of those seeking a job in the industry, and provide employers with an inexpensive way to both increase productivity and enhance employee retention in a hyper-competitive labour market.”

In launching this new online learning programme, he added, the three organisations are satisfying the need of new and established businesses and employees in the commercial space industry to learn about all aspects of the business, enabling industry professionals to become space business qualified. www.SpaceBQ.org.

Continued on page 26

5G for Africa? Think again!

Service providers in developing markets dominated by 3G networks may be thinking that leapfrogging a generation to 5G appears to be the desirable option. Real Wireless* CTO Simon Fletcher argues that 4G LTE still merits very careful consideration.

LOOKING FOR A fast, efficient, flexible technology that enables virtualisation, IoT service delivery, private networks and literally thousands of revenue-generating services? No, not 5G. There's a strong case for service providers in developing markets to look again at 4G LTE.

LTE stands for long-term evolution and the acronym reflects a path from 3G that was long – more than 10 years – hard and transformative.

From an industry perspective, 3G technology was always expensive to implement. This is mostly because it's underpinned by obscure (outside the telco world) W-CDMA technology which is quite specific to the mobile sector. By contrast, LTE borrows heavily from the IT space and employs robust and well-understood FDMA (frequency division multiple access) wide-area network technologies that have their roots in the WiMAX community.

In terms of the physical layer, LTE is more resilient than 3G; it's more spectrally efficient and has better mechanisms for dealing with interference. From an architectural perspective, LTE is a native IP system that is extremely efficient in the context of data transport. Its use of OFDMA (orthogonal frequency division multiplexing access) as a bearer technology means that, assuming the availability of spectrum, service providers can aggregate carriers efficiently to increase bandwidth over time – delivering scalability of up to 80Mbps or more.

In short, LTE has proven to be cost-effective and scalable, capable of dealing with high levels of data throughput. It is also highly resilient.

On the downside, while LTE is a brilliant data transport workhorse, bringing voice over LTE (VoLTE) to market proved to be extremely challenging. Over the years, VoLTE has suffered from what was intended to be an interim circuit switched fallback (CS-FB) approach becoming difficult to displace. VoLTE requires upgrades to IP Multimedia Subsystem (IMS) which have proved more challenging and costly than originally envisaged. It also took a long time before handsets became available that were compatible with the various VoLTE and legacy voice solutions.

And this brings us to the central case for LTE for developing markets.

The point is that, in the early days of LTE, it



Photo: Adobe Stock

There's a strong case for LTE adoption in developing markets.

was both expensive and risky for both operators and equipment vendors to make investment decisions. Today, there's a great deal of experience out there. In fact, there's probably never been a better time for service providers in developing markets to jump on to the LTE bandwagon.

According to the GSMA, nearly 800 operators are running LTE networks in 240 countries and territories, with 6.6 billion subscriptions connecting two-thirds of mobile users globally. That's 66% of all mobile users.

LTE is now an extremely mature technology – and it's one that has continued to innovate as the standard has evolved. A prime example of this is the ability of LTE to coexist with other OFDMA technologies in unlicensed bands like Wi-Fi. This level of flexibility simply wasn't available with earlier iterations of cellular technology, although it's a capability that has more to do with the high levels of innovation that have shaped the evolution of LTE, rather

LTE is now an extremely mature technology - and it's one that has continued to innovate as the standard has evolved.

than anything native to the platform.

To date, the coexistence potential of LTE in unlicensed bands may not have had huge take up, but it's indicative of LTE's growing alignment with other core technologies associated with the IT world. This is an area in which Real Wireless has done a good deal of work and it has been intriguing to observe how, as cellular technologies have moved closer to the IT and cloud space, unlicensed technologies like Wi-Fi have shifted to meet them more than halfway.

For example, the 802.11ax Wi-Fi standard introduced OFDMA as a controlled access mechanism into the Wi-Fi standard. OFDMA allows air interface control by scheduling of transmission – in other words it determines in which sub-channel and at what time a user device is allowed to transmit. In this way, the access point can now not only control the downlink but also the uplink, which was historically the difficult bit for Wi-Fi – especially in a TDD system, where you have uplink and downlink on the same frequency. OFDMA in both directions solves that problem.

And, as we have seen, OFDMA is already used as the access methodology in LTE. But the 802.11ax standard now brings OFDMA to Wi-Fi and is progressing. In addition, common features of LTE – such as multi-user MIMO – are now also part of the latest Wi-Fi standard, once

again enabled by OFDMA.

The other key area that is becoming increasingly important for LTE service providers is IoT, where LTE, because of its ubiquity and reliability, is beginning to push ahead of the crowd.

Like LTE itself, LTE-M and narrowband-IoT (NB-IoT) both emerged from the 3GPP standards stable in response to operator demand for a low-power, wide-area network (LPWAN) solution, leveraging existing standards while preserving resources.

Many of the game-changing architectures generally associated with 5G can already be cost-effectively launched over LTE.

NB-IoT is an evolution that might be described as 4G advanced (operating outside the LTE construct but within 3GPP standards), while LTE-M is also defined by 3GPP but native to the LTE platform. Both provide a robust option for smart cities and use cases where stability and reliability matter and, as a consequence, are starting to edge ahead in the market.

Another significant benefit of a technology that has high levels of field-tested reliability and



Photo: Agobe Stock

Do we really need to rush into 5G?

which continues to evolve is the large number of applications and services that have built up around it. In addition, and importantly, many of the game-changing architectures generally associated with 5G can already be cost-effectively launched over LTE – including private networks, virtualised networks and, as we have seen, IoT networks.

For many service providers, then, it surely makes sense to invest in a tried and tested solution with a great deal to offer both MNOs

and their customers and which, after a few years, will also offer a proven migration path to 5G – as opposed to the multiple choices currently in the mix. ☺

**Real Wireless is the world's leading independent wireless advisory firm. Its network of experts includes engineers, physicists, economists, security advisors, business strategists and deployment specialists. www.real-wireless.com*

Continued from page 24

complex installation and maintenance procedures and merit additional dedicated training.”

In 2010 there was a change: training content was refocused on interference prevention skills, as a key element in GVF's initiatives serving the industry's drive to combat unintentional satellite interference. Jarrold explained, “Analysis of interference events at that time suggested that human error was a major cause of satellite interference. For example, the small antennas used for VSATs necessarily have a wide beamwidth and, if not accurately centred on the target satellite during installation, adjacent-satellite interference can easily result. Inaccurate cross-polarisation adjustment and excessive uplink power also contribute to unintentional interference events.”

GVF took on the challenge of training VSAT and up-linking technicians in correct techniques that should be used industry-wide. Today, the GVF training programme has already reached over 20,000 students all around the world and has grown to over 30 courses and multiple separate certifications, covering not only VSAT installation but marine terminal operation and installation, teleport and news gathering uplinking, mobile terminal

operation, numerous general theory topics, and equipment-specific training.

Today the number of VSAT technicians who have undertaken GVF training and certification who are located across the African continent runs into the many thousands. Moreover, the GVF training programme enables technicians anywhere in the world to build their skills and gain industry certifications at very low cost and without expensive travel or down-time. All that is needed is a browser and a basic internet connection.

The space and satellite industry is now a mature, fast-expanding, and complex business with an estimated value of well over US\$1 trillion

VSAT services from geostationary (GEO) satellites remain an excellent way to deliver high-speed internet, especially on a regional basis, so GVF expects demand for field technicians to continue. However, low earth orbit (LEO) and medium earth orbit (MEO)

satellites are more common than ever. Does that affect the GVF training programme?

Jarrold said, “Although LEO terminals are self-pointing, a reliable installation still requires important basic skills; the fundamentals taught in the GVF training programme apply to all satellite links, including LEO and MEO. Moreover, many LEO networks use regional gateway earth stations, which need a skilled labour pool.”

As for the future, the physics of RF/microwave satellite communications, such as links and antennas, are unchanging and it will always be important for technical staff to have a solid understanding of them. Jarrold added, “Interfaces, however, are consolidating to ‘IP everywhere’ and GVF anticipates that future GVF training will cover more application protocols such as 4G and 5G, IoT and backhaul as they relate to satellite communications.” ☺

GVF brings together organizations from around the world representing operators, manufacturers, service providers and other parts of the satellite ecosystem that are engaged in the development and delivery of satellite technologies and services for consumers, commercial and government organizations worldwide. www.gvf.org

Doing dares to take the gap

MTN has put in place specific business products that are tailored to ensure your business will thrive in this fast-moving digital world.

MTN provides your business with a host of enterprise communication tools which will enhance collaboration, enable seamless connectivity, and increase efficiencies.

WHEN IT COMES to running your business effectively, doing is a game changer. At MTN, we put the right tools in the hands of doers, closing the gap between can and do. After all, doers are everywhere in Africa. They are the people and businesses, like you and yours, who dare to take the gap and convert intention into action. Whether you run a start-up or an enterprise, MTN has a full suite of business tools you need.

We offer every possible solution, from network and products, to the platforms you need to inspire the doing you want to achieve today. But enough talk, what are we actually doing that will help your business take the gap?

MTN has put in place specific business products that are tailored to ensure your business will thrive in this fast-moving digital world.

MTN Business ICT Solutions

This gives your business an evolutionary leap that connects everyone and everything. MTN Business ICT solutions, simplify, automate, and speed up the administrative processes while enhancing networking, connectivity, and collaboration.

Our solutions can accelerate your business' progress in ways that will give it the agility to respond to customers, employees, and suppliers in real time. Providing your business

with efficient connectivity, integration, infrastructure, and network, using multiple solutions across these five categories:

- Managed Networks
- Unified Communications
- Data hosting and Cloud services
- Security-as-a service
- IoT

MTN Managed Networks

MTN Managed Networks offer African doers fewer servers, and more service. With networks that are simply better managed, ensuring that your business has access to smarter infrastructure, cost savings, as well as an always on, and always connected system.

MTN's IoT platform increases business efficiency, improves productivity, and maximises human resources, while also reducing costs.

MTN Business Unified Communications

Providing your business with a host of enterprise communication tools which will enhance collaboration, enable seamless connectivity, and increase efficiencies. Equipping you with everything you need to work from wherever you

are – doing may sometimes be out of the office, but it never has to be out of the loop.

MTN Business Data Hosting and Cloud Services

Enhancing your business' digital experience by allowing your service to continue, even when your servers go down, all while securing your data. Just because your servers are down, does not mean your data has to go down with them.

MTN Business SaaS

MTN Software as a Service: no installation and management of software and hardware; and enables you to access applications via the cloud while giving you a secure and protected space for all data.

As a doer, you don't have to worry about software updates, but can trust us to take care of that on your behalf.

MTN Business - Internet of Things

IoT enables an exchange of information between networked devices, allowing them to intelligently respond without human interference. This platform increases business efficiency, improves productivity, and maximises human resources, whilst also reducing costs.

At MTN, everything we do is inspired by the doers. Our trusted business solutions will help you take the gap, and make progress happen every day 🌐

The wait for more spectrum is over

The South African high-demand spectrum auction finally appears to be over - and with it the wait for extra spectrum that will enable more 4G and 5G services. We asked Mark Colville, a principal analyst with consulting group Analysys Mason, to explain how we got here - and to suggest what might happen next.

Photo of Sandton city at night

Photo: Adobe Stock

SOUTH AFRICAN HIGH-DEMAND spectrum for 4G and 5G has finally been auctioned, after a lot of delays. In fact, said Mark Colville, a principal analyst with Analysys Mason, whose work focuses mainly on radio spectrum and wider regulatory issues, “The exact starting point can be debated.”

The regulator ICASA acknowledges 28th May 2010 as the date when it initiated the process of developing the licensing framework regulations for the spectrum, and in December 2011 it published a first invitation to apply (ITA) for the 800MHz and 2.6GHz spectrum bands. However, Colville added: “It has been over 15 years since ICASA previously licensed new spectrum to MNOs.”

He continued: “Since then, a series of political disputes and legal challenges have successively served to derail the process and prevent the auction from taking place. In more recent times, since another ITA was published in 2020, the industry has been very divided on how the spectrum should be assigned.”

Lack of spectrum has been a key contributor to the proliferation of roaming agreements

The largest operators, Vodacom and MTN, have not been keen on aspects of ICASA’s auction design that set aside some of the spectrum for smaller players. The third-biggest operator Telkom, meanwhile, objected to the spectrum caps that were applied in the context of South Africa’s relatively unique market structure with a large number of roaming agreements between operators.

It even seemed unhappy with the concept of using an auction rather than some form of administrative assignment to license spectrum. However, Telkom’s legal challenge to the process may now be over, after it reportedly reached an out-of-court settlement with ICASA in mid-April.

The context is an urgent need for extra

spectrum. After all, since spectrum was last assigned to mobile operators, first 4G and now 5G technologies have arrived on the scene. As in other countries, South Africa’s data traffic has also grown rapidly in the last 15 years as consumers have made increasing use of these new technologies, as well as legacy 3G services.

However, capacity has not been able to keep up, at least not in an economic way. “The result,” said Colville, “has been lower service quality than could otherwise have been expected and a need for operators, particularly the larger mobile operators with more customers, to look for creative solutions to boost network capacity.”

He continued, “This lack of spectrum has therefore been a key contributor to the proliferation of roaming agreements between established operators with a lot of traffic and not enough spectrum, and others with spectrum licences originally used for other purposes but relatively few customers.”

Continued on page 30

Investing for the long term

Africell is the first new or independent operator to launch services in Angola in two decades. Sam Williams, Head of Communications, Africell Group, tells Vaughan O'Grady why the company chose to enter this market and what it believes it can offer Angolan end users.

THE ARRIVAL OF Africell in the Angolan market was notable for a number of reasons – the most significant perhaps being that it brought competition to the Angolan mobile communications for the first time in some 20 years.

But as Sam Williams, Head of Communications, Africell Group, told us, this by no means put the new entrant at a disadvantage – precisely the opposite, in fact. He said, “The characteristics of many African countries make them good places to go with a disruptive mindset. Angola exemplifies this. It is a vibrant country with a telecoms sector that does not match its ambitions. Limited competition and investment have resulted in unreliable services, high prices and consumers hungry for change. In environments like this, innovative new operators who promise something different and approach consumers on a more respectful level can enjoy a lot of success.”

But that's not all. Commercially, there are opportunities right across the spectrum. It's true that many commentators fixate on the promise of 5G. It is undoubtedly a potent technology and one that the Africell network is ready to deliver when the time is right. However, the 5G fireworks shouldn't blind operators to the fact that in many parts of Africa

The characteristics of many African countries make them good places to go with a disruptive mindset. Angola exemplifies this.



Photo: Africell

Africell currently operates in Angola, Democratic Republic of Congo, Sierra Leone and The Gambia.

(including Angola), other solutions continue to present equally if not more attractive opportunities in many communities.

Williams explained, “More established services like 2G, 3G and 4G still have a hugely beneficial impact, connecting communities and putting transformational tools into millions of pockets. Getting the basics right in addition to bringing more advanced solutions is perhaps the most important thing we can do as a new operator seeking to earn the trust and favour of a new consumer population in Angola.”

And of course Africell is the first new or independent operator to launch services in Angola in two decades. It's a market ready for disruption because its telecoms

sector has been a de facto monopoly for such a long time. However, Williams pointed out, “This doesn't equate with the fact that, in other respects, the country's economy is among the most developed in sub-Saharan Africa. Limited competition and investment in the telecoms sector has been an unnecessary drag. It has meant that some innovations experienced elsewhere in the region – including in less affluent countries – have not yet come to Angola.”

He continued, “The present government wants to change this – hence it invited Africell to launch services. Our mandate to transform Angola's digital landscape includes the goals of driving down prices, improving service quality, and establishing

ourselves as a technology platform which supports other activities.”

The business model is an interesting one. Africell is not, said Williams, providing mobile products and services in a traditional transactional sense, but instead is offering a digital “platform” on which other technology-enabled activities – such as mobile money, education, content creation and consumption, access to healthcare and more – are possible. The high-tech data centre Africell opened in Luanda last year is perhaps the shiniest evidence of this. Innovators and entrepreneurs in Angola can host, integrate and run their applications at a low cost, removing one of the main obstacles to successful

enterprise, especially in sub-Saharan Africa.

Williams said, “Future value in the telecoms sector lies in creating a community of users who treat your platform as a place to spend time and pursue a broad range of digital activities. We ultimately want our customers to be doing more than just making calls and sending SMSs. Angola has a digitally engaged and literate population, and the country’s mobile users stand to benefit from this approach.”

However, there have been infrastructure supply issues. “Infrastructure is often either very basic or wholly lacking in sub-Saharan Africa. This makes the task of building and maintaining a mobile network challenging. Over 20 years, we have fashioned a unique operating model which allows us to deliver services despite these risks. It is a model based on adaptability, flexibility and expecting the unexpected.” It is also based on investment for

the long term.

For example, the sharing of infrastructure between operators is common practice in most markets. While this is an approach that Africell is always willing to explore, it’s not always an option. Williams explained, “In Angola it has been a struggle to find assets of sufficient quality at reasonable prices. This is partly a result of long-term under-investment in the sector. The need to overcome this shortfall and ensure that our network is built on a strong backbone is one of the reasons we have invested so much in Angola to date.”

This is not new for Africell. Since the company first launched in The Gambia in 2001, it has learned that using a network it has built from scratch makes for stronger foundations than buying or trying to convert pre-existing assets. “This modus operandi has given us the flexibility to expand coverage according to our own strategy, and it has allowed us to

invest in new equipment as demand has dictated. This approach has required an extremely long-term view, but it has ultimately advantaged our customers. It also helps that we are prioritising investment in equipment from trusted and transparent vendors. We recognise the inherent risks – both technical and geopolitical – in overreliance on one supplier. In Angola, by using Nokia kit for our core network, we are making the overall telecoms sector more secure, diverse and resilient.”

Africell is unusual in another way. In a continent dominated by African, Indian, Middle Eastern and European mobile operators, Africell is the only US-owned mobile telecommunications operator. “This is a critical point of difference between us and other operators. In all our jurisdictions, we work closely with the US government and other like-minded international and local partners to drive an agenda of

digital inclusion, transparent business practices and social development.” The US Development Finance Corporation, or DFC, is Africell’s biggest external investor, and Africell is positioned as a cheerleader and spearhead for US investment in the region.

Africell currently operates in Angola, Democratic Republic of Congo, Sierra Leone and The Gambia. Its philosophy in all its operating markets is simple: the best way to win over customers is to provide high-quality, reliable and affordable services.

But that’s not the whole story. Williams added, “We also believe that to earn and maintain a “social license” to operate, we must be actively engaged with grassroots community issues ranging from health and education to arts and sports. It is right from both a moral and commercial point of view that we offer our resources as generously as possible in support of wider development goals.”

Continued from page 28

However, the spectrum has now been auctioned, and government expectations were vastly exceeded. The nearly ZAR15 billion (close to US\$1 billion) bid by operators is almost double the R8 billion (US\$533.7 million) a lot of analysts, and indeed the government, had been expecting.

Interestingly, the only sub-1GHz spectrum previously available to MNOs was the 900MHz band, which was assigned to Vodacom, MTN and Cell C. The new assignments in the 700MHz and 800MHz bands provide Telkom and fixed wireless access operator Rain with sub-1GHz spectrum for the first time, and the opportunity therefore to economically expand the coverage of their networks.

Colville added, “These bands will also be used for 4G, and in time 5G, services. This means that Telkom and Rain, but also Vodacom and MTN, should be able to provide the capacity for data services in rural areas and harder-to-reach parts of urban areas, including indoor locations.”

That’s not all. The 2.6GHz band will offer the ability to add much-needed capacity to 4G services in urban and suburban locations, while the 3.5GHz band is a pioneer band for 5G services and will be critical for their deployment in South Africa. Vodacom has acquired a large amount of 2.6GHz but relatively little 3.5GHz, so, Colville explained, “the expectation is that it will start to use some of the 2.6GHz band for 5G services as well sooner than might otherwise have been the case”.

Of course spectrum auctions aren’t the end of the expenditure. New equipment may be needed at existing mobile sites – for example antennas and new radio units. “That being said,” Colville added, “other parts of the 2.6GHz and 3.5GHz bands are already in use by some operators, and the 700MHz and 800MHz are relatively close to the 900MHz band, which may limit the requirements for new hardware. The new spectrum will allow for the provision of extra capacity from existing sites, and so will reduce the infrastructure requirement in relation to new site locations compared to what would have been required without the new spectrum.”

However, there are a few other issues for ICASA to deal with. After a

wholesale open-access network (WOAN) project was dropped, a large block of 800MHz spectrum, to which an unviable coverage obligation was attached, did not sell in the auction. This means that 100MHz of prime mobile spectrum is unsold. The process to license this, in the context of just having concluded one auction, may prove to be complicated.

In addition, the delayed digital TV migration project [see Making the switch, issue 3, 2021] means that potentially substantial interference issues, particularly in the 700MHz band, may persist until the analogue switch-off is complete.

Colville explained, “ICASA has undertaken to reduce spectrum fees to account for delays, but the details of the mechanism for this are unclear – and therefore likely to be contentious. Moreover, a delay in the useability of some of the spectrum will mean an extension of the problems that operators have faced in recent years, regardless of whether or not their fees for newly acquired spectrum are reduced.”

Assuming all the outstanding problems can be overcome, however, Colville said, “There is a well-established link between the availability and quality of mobile services and economic growth. The bringing forward of 5G services to wider areas of South Africa, in addition to the substantial boost in 4G capacity that will be realised, should all contribute to increased economic growth.” He added, “On a smaller scale, there is also of course the direct impact of nearly ZAR15 billion of revenue for the government from the sale of the frequency licences, which should be able to be put to beneficial use.”

Analysys Mason offers services including spectrum valuation and auction support, as well as advice on business planning and spectrum management issues, to operators and regulators around the world. For more information about our services, please contact Mark Colville (Mark.Colville@analysismason.com)

Oser, c'est faire un pas vers sa réussite

MTN a mis en place des produits commerciaux spécifiques qui sont conçus pour garantir que votre entreprise prospérera dans ce monde numérique en évolution rapide.

MTN vous propose moins de serveurs et plus de services.

LE GROUPE MTN a mis en place des produits commerciaux spécifiques qui sont conçus pour contribuer à la croissance et à la prospérité de votre entreprise dans ce monde numérique en évolution rapide.

Lorsqu'il s'agit de gérer efficacement votre entreprise, l'action change la donne. Chez MTN, nous mettons les bons outils entre les mains des entrepreneurs, comblant ainsi l'écart entre « avoir une idée » et la réaliser. Après tout, les « faiseurs » sont partout en Afrique. Ce sont des personnes et des entreprises, comme vous et les vôtres, qui osent et convertissent l'intention en action. Que vous dirigiez une start-up ou une grande entreprise, MTN dispose d'une suite complète d'outils commerciaux à votre service.

Nous offrons toutes les solutions possibles, du réseau et des produits aux plateformes innovantes. Mais assez parlé, que faisons-nous réellement pour aider votre entreprise à évoluer?

MTN a mis en place des produits commerciaux spécifiques qui sont conçus pour garantir que votre entreprise prospérera dans ce monde numérique en évolution rapide.

Les solutions TIC de MTN Business

Les solutions TIC MTN Business simplifient, automatisent et accélèrent les processus administratifs tout en améliorant le networking, la connectivité et l'environnement collaboratif.

Nos solutions peuvent accélérer le progrès de votre entreprise et lui donner l'agilité nécessaire pour répondre aux clients, aux employés et aux

fournisseurs en temps réel. Fournissez à votre entreprise une connectivité, une intégration, une infrastructure et un réseau efficace, en utilisant les solutions de ces cinq catégories :

- Gestion de réseaux
- Communications unifiées
- Hébergement de données et services Cloud
- Sécurité
- IOT (internet des objets)

Les solutions de gestion de réseau de MTN Business

MTN vous propose moins de serveurs et plus de services. Avec des réseaux simplement mieux gérés, votre entreprise a accès à une infrastructure plus intelligente, à des économies de coûts, ainsi qu'à un système toujours actif et toujours connecté.

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MTN Fournit à votre entreprise une multitude d'outils de communication qui améliorent la collaboration, permettent une connectivité transparente et augmentent l'efficacité et la productivité. MTN Business vous équipe de tout ce dont vous avez besoin pour travailler

MTN Business vous équipe de tout ce dont vous avez besoin pour travailler où que vous soyez.

où que vous soyez.

Les solutions de stockage de données et de service cloud de MTN Business

MTN Améliorez l'expérience numérique de votre entreprise en permettant à vos services de continuer à fonctionner tout en sécurisant vos données, même lorsque vos serveurs tombent en panne. Ce n'est pas parce que vos serveurs sont en panne que vos données doivent tomber avec eux.

Les solutions SaaS de MTN Business

MTN vous permet d'accéder aux applications via le cloud tout en vous offrant un espace sécurisé et protégé pour toutes les données. Pas besoin d'installation ni de gestion de logiciels et de matériel.

Vous n'avez pas à vous soucier des mises à jour logicielles et vous pouvez nous faire confiance pour nous en occuper en votre nom.

Les solutions IoT (Internet des objets) de MTN Business

L'IoT permet un échange d'informations entre les appareils en réseau, leur permettant de répondre intelligemment sans interférence humaine. Cette plateforme augmente l'efficacité de l'entreprise, améliore la productivité et maximise les ressources humaines, tout en réduisant les coûts.

Chez MTN, tout ce que nous faisons est inspiré par les entrepreneurs. Nos solutions fiables vous aideront à progresser chaque jour. ☺

ECOWAS and ITC launch the ECOWAS – ITC SheTrades project

The ECOWAS COMMISSION has combined efforts with the International Trade Centre (ITC) SheTrades Initiative to launch the ECOWAS – ITC SheTrades project.

Jointly organised by ECOWAS, ITC and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the launch event was attended by representatives from ECOWAS, ITC the West African Economic and Monetary Union (UEMOA), and the Federation of Business Women and Entrepreneurs (FEBWE), as well as National Women Business Associations.

Data shows that across West Africa, women's economic activity tends to be concentrated in subsistence activities, and in informal and non-tradable sectors of the economy. Through this project, ECOWAS and ITC will work with all stakeholders to ensure that the African Continental Free Trade Area (AfCFTA) trade provisions and implementation mechanisms open equal markets opportunities for women and men.

This project will roll out the tools and resources of ITC's SheTrades Initiative to provide targeted support and technical expertise to women in business at a regional level. Through its focus on export readiness, this new joint project will empower women entrepreneurs to be competitive actors in AfCFTA trade ecosystems.

In her remarks, H.E Finda Koroma, Vice President of the ECOWAS Commission stated, "With the entry into force of the AfCFTA and the start of trading under its regime in January 2021, new trading opportunities are open for women traders in the region. These opportunities should unlock our potential in numerous sectors and develop value chains for which our region has comparative advantages. To this end, micro small and medium enterprises (MSMEs) need to be accompanied with adequate tools and resources in order to enable them increase their competitiveness and take advantage of export markets on the continent and beyond."

"Through these trainings, women entrepreneurs across ECOWAS member states will be able to leverage networks of women's associations and tap into

new markets and trading opportunities. The trainings will give the women the knowledge and skills needed to assess the viability of trading within AfCFTA regulated markets for their product and then proceed with confidence if they choose to upgrade their business. These new commercial opportunities and access to markets will have considerable knock-on effects for gender equality and women's economic empowerment including reducing poverty, and creating decent jobs," said Pamela Coke-Hamilton, ITC executive director.

This latest series of in-person bootcamps on export readiness will be initially rolled out in Liberia, Niger, Nigeria, Benin and Togo, and there will be complimentary online trainings that will be offered in English, French and Portuguese for women entrepreneurs and Women's Business Association members across the ECOWAS region.

ITC will work with ECOWAS and other major stakeholders to realise a series of export readiness bootcamps and online trainings; these practice-oriented trainings will provide women with the tools needed to position themselves as competitive exporters and traders within the AfCFTA. In parallel, ITC will also work with institutions to support women in trade by mainstreaming gender into trade policies.

The programme builds on ITC's SheTrades Initiative work to increase the competitiveness of women entrepreneurs and women producers and connect them to markets, and foster more inclusive business and policy ecosystems as well as ITC's One Trade Africa programme to empower, enhance and enable MSMEs to access business opportunities in Africa.

The launch was followed by the first Steering Committee Meeting of the ECOWAS – ITC SheTrades Project which is composed of the ECOWAS Commission, the Federation of Business Women and Entrepreneurs (FEBWE), ITC and GIZ. The meeting, which was chaired by Mr Kolawole SOFOLA, acting director of trade at the ECOWAS Commission, adopted the 2022 Action Plan of the project.

Orange and Yabx collaborate with Cofina in Côte d'Ivoire

ORANGE AND YABX Netherlands, a fintech venture offering credit products across multiple countries in Africa, have announced their collaboration with Cofina Côte d'Ivoire with an aim to facilitate smartphone financing for Orange customers.

The announcement was made during the MWC Barcelona.

This partnership will make a significant difference in promoting digital lifestyle and expanding financial inclusion across Côte d'Ivoire.

Raoul Yobouet, chief marketing officer of Orange Côte d'Ivoire, said, "To experience high quality of digital services and user experience, it is imperative for customers to buy 4G smartphones. High one-time expenditure becomes a key challenge to increase user adoption."

Puneet Chopra, chief growth officer, Yabx, added, "Our collaboration with Orange Côte d'Ivoire is a part of the company's long-term strategy to enable digital lending services in Africa. Our partnership would facilitate the vision of affordable and convenient handset financing."

Elhadj Kane, legal director and company secretary at Cofina, said, "This partnership helps us further advance on our vision to be the pan-African model for inclusive finance and use of technology to do responsible lending."

Yabx provides the technology to underwrite smartphone financing for customers in multiple emerging markets. In doing so, the company builds

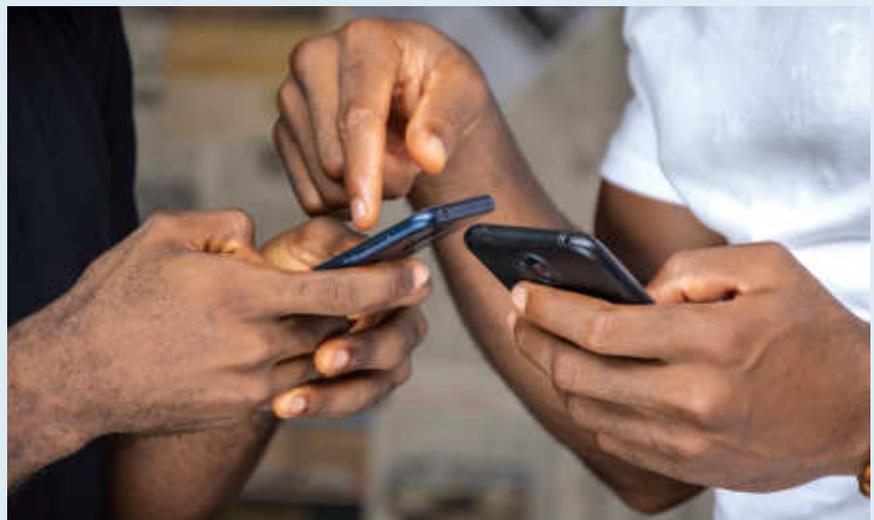


Photo: Adobe Stock

This partnership will make a significant difference in promoting digital lifestyle and expanding financial inclusion across Côte d'Ivoire.

customer profiles from tens of thousands of data points, using a customer's digital footprint on mobile services and mobile money. Yabx offers a platform to enable digital lending, merchant and MSME financing, buy-now-pay-later (BNPL) products, where they help banks and financial services organizations underwrite the customers using alternate data. The company leverages technology and analytics to reduce the cost of delivering financial services, thereby bringing banking services to the unbanked. This is achieved

through strategic partnerships with leading banks, microfinance institutions, credit bureaus, mobile financial services providers, mobile network operators and handset manufacturers.

Yabx showcased its fintech solutions at MWC Barcelona emphasising its collaborative lending model where it partners with mobile network providers and financial institutes to create innovative and disruptive propositions bringing substantial new value pools for all stakeholders.

Phase3 Telecom scales up layered security

ONE OF AFRICA'S leading independent aerial fibre optic network infrastructure and telecommunications services providers, Phase3 Telecom, has announced that it is adopting an innovative, technology-driven, digitised and multilayer approach for security operation network capacity expansion. The move, which will be completed in timed phases, provides secure infrastructure that fortifies its own and other networks against advanced and malicious cybernetic breaches.

This upgrade will also provide support in areas that require cyber-resilience in Nigeria's telecommunications sector and a proactive infrastructure network security due diligence to help businesses scale efficiently and stay less vulnerable to sensitive data exposure that can erode public trust and confidence. This massive upgrade will provide a secure infrastructure that fortifies its own and other networks against advanced and malicious cybernetic breaches in Nigeria and beyond.

Phase3 says it will continue to prioritise risk management and investment in multiple network protection against critical infrastructure threats with other targeted services.

In the second half of 2022, the telecoms and



Photo: Adobe Stock

The goal is to prioritise risk management and investment in multiple network protection against critical infrastructure threats.

technology sectors can expect to witness strengthening and extension of Phase3 legacy services towards digitisation and intelligence-based operational technology, all in ways that grant Phase3 amplified visibility of its critical infrastructure and prepare its network for eliminating potential exposure in real time.

In a statement, the company's executive chairman Stanley Jegede stated, "Phase3

understands the existential threats posed by cyberspace attacks in a new digital era and in a world where business networks are more interconnected than ever before. And we are determined to be the team at the forefront of protecting their own network and proffering solutions that help other businesses, organisations and institutions secure and control access to their critical networks."

Uptime Institute announces guides for digital infrastructure sustainability

UPTIME INSTITUTE, THE global digital infrastructure authority, has announced a new Executive Advisory report series titled Digital infrastructure sustainability - a manager's guide, and released the first installment: Creating a sustainability strategy.

The new advisory series is a practical resource that owners and operators can use to establish and implement an effective sustainability strategy.

The launch of this comprehensive executive advisory series is the latest step in Uptime's longstanding and expanding programme to inform, guide and support sustainability efforts within the sector - and it comes at a critical time for digital infrastructure operators.

Governments worldwide are beginning to establish new regulations and promulgate new policies to discourage unsustainable data centre growth, drive procurement of low-carbon data centre services, and move toward net-zero carbon emissions goals.

However, research by Uptime clearly shows that most organizations have not put in place many of the strategies, processes and controls they will need to meet all stakeholder expectations and legislator demands. According to Uptime's 2021 Global Data Centre Survey, most organizations tend to only compile and report on power-related sustainability metrics, while far too few are tracking other key elements such as water use (just 51%), greenhouse gas (GHG) emissions (just 33%), and IT efficiency (just 25%).

The first report in the series, Creating a sustainability strategy, defines the key elements to include in a



Photo: Adobe Stock

Governments worldwide are beginning to establish new regulations and promulgate new policies to discourage unsustainable data centre growth.

sustainability strategy, the actions necessary for a successful implementation, and the processes required to measure progress against goals and objectives.

Upcoming reports discuss, among other topics, minimizing energy use, greenhouse gas emissions reduction, IT efficiency, regulations, directives and standards, water use and the key terms used by those defining, regulating and applying digital infrastructure sustainability strategies.

Uptime Institute is the standard bearer for Digital

Infrastructure performance. Our Tier Standard has been used in the design, construction and operations of thousands of sites in more than 110 countries. Uptime Institute partnered with Google, Meta, and Microsoft has partnered to launch a free online tool that lists hundreds of career possibilities in the fast-growing digital infrastructure industry.

For more information, please visit www.uptimeinstitute.com.

Thales launches sixth cyber security operations centre in Morocco

THALES HAS ANNOUNCED plans to open a Cyber Security Operations Centre (SOC) in Morocco, the sixth in its international network, to provide real-time protection against cyber-attacks in the country and across the African continent as a whole.

The digital transformation of African societies, as illustrated by the extensive use of mobile payments across the continent, and the rise in teleworking due to the health crisis, have had a major impact on Africa's vulnerability to cyber-attacks. While businesses, administrations and individuals are becoming increasingly connected, this trend must be accompanied by an increase in the level of protection in order to tackle the multiplication and sophistication of attacks.

The SOCs combine 24/7 threat detection and analysis capabilities and deliver responses in compliance with a country's cybersecurity infrastructure and policies. There are six SOCs, located in Canada, France, Hong Kong, the Netherlands, the UK and now Morocco, and they currently form an international network operating according to the "follow the sun" model which offers continuous support to more than a hundred clients around the world, with an unequalled level of responsiveness and flexibility.

"Thales is proud to be able to strengthen its expertise and know-how in the field of cybersecurity in Morocco. The launch of this SOC demonstrates the Group's aspirations to support the development of security facilities in Africa, while closely matching its customers' needs. As well as our analysis capacities, we offer businesses access to a hybrid consultancy and monitoring solution for their activity, thus demonstrating our commitment to fostering skills and autonomy over the long term," said Hicham Alj, managing director of Thales Morocco.

Telecel Group announces the acquisition of Mattel Mauritania

TUNISIE TELECOM, BSA telecommunication and COMATEL announce the signing of an exclusive agreement with the company TELECEL Group for the sale of 100% of the shares of the company Mauritano-Tunisienne des Télécommunications (Mattel).

Mattel is a major player in the ICT sector and digital transformation in the country. As such, Mattel plays an essential role in the development of broadband in Mauritania through its 4G and fiber optic infrastructures deployed in the main cities of the country.

Mattel holds nearly 33% market share and in 21 years of existence, Mattel has constantly modernised its network thanks to the latest generation of technical equipment and the knowhow of its engineers.

Mattel offers its services throughout the country with a network of more than 120 agencies spread throughout the national territory.

Telecel is mobile operator present in Africa since 1986. The group is experiencing strong growth on the continent. It has completed four transactions since 2018. The company plans to invest more than US\$700mn over the next three years, mainly in mobile operator acquisitions, fiber optic infrastructure construction and infrastructure. Thanks to its activities, Telecel Global Services, Telecel Play and Africa Startup initiative Program have become major players in the digital economy in Africa.

Mattel shareholders declared, "We are pleased to announce that Telecel Group has been selected for the sale transaction of Mattel's shares."

ADVERTISERS INDEX

Company	page
Es'hailSat	2
MTN Group Limited	36

Tanzania expands mobile maternity transport service m-mama

VODACOM TANZANIA FOUNDATION and Vodafone Foundation have deployed the mobile 'm-mama' service to provide emergency transport for pregnant and postpartum women .

Starting from 2022, the expanded m-mama programme in Tanzania is expected to transport more than 300,000 women, empower more than 1,400 community transport drivers and could save more than 9,000 lives.

The new programme has been developed by Vodacom Tanzania Foundation, Vodafone Foundation and the government of The United Republic of Tanzania.

With full government endorsement, both Foundations have committed to invest US\$10mn over six years to roll out the programme, guided by a steering committee from Tanzania's Ministry of Health and public health delivery agency PO-RALG. Over the next six years the government will increase its funding and the programme will be fully integrated into the healthcare system by 2027.

Vodacom Group CEO Shameel Joosub said, "We believe that technology - coupled with a country's enabling environment and political will - has the potential to support African nations realize transformation in healthcare, agriculture, education, financial services and other priority sectors."

Vodacom Tanzania's managing director Sitholizwe Mdlalose confirmed, "Too many pregnant women, women in childbirth and newborns die each year from largely preventable causes. For nine years, we have been working with the government to develop a practical, sustainable and scalable solution to reduce maternal and new-born deaths in the country."

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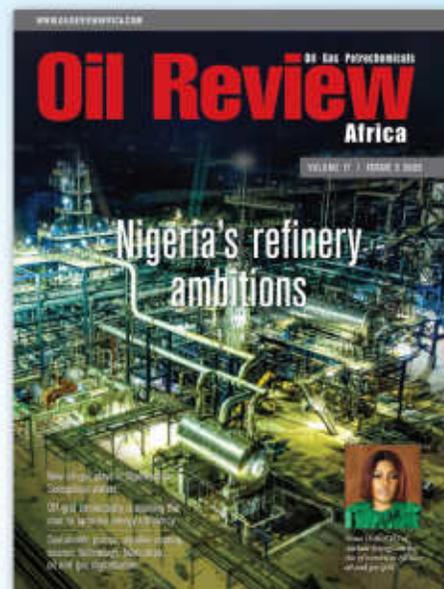
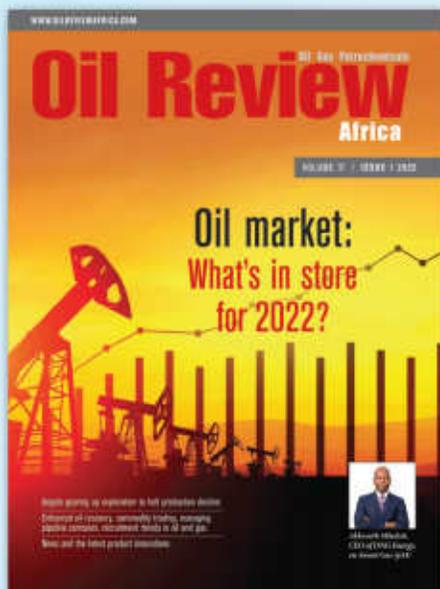
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