Issue 4 2022

Communications Africa Afrique

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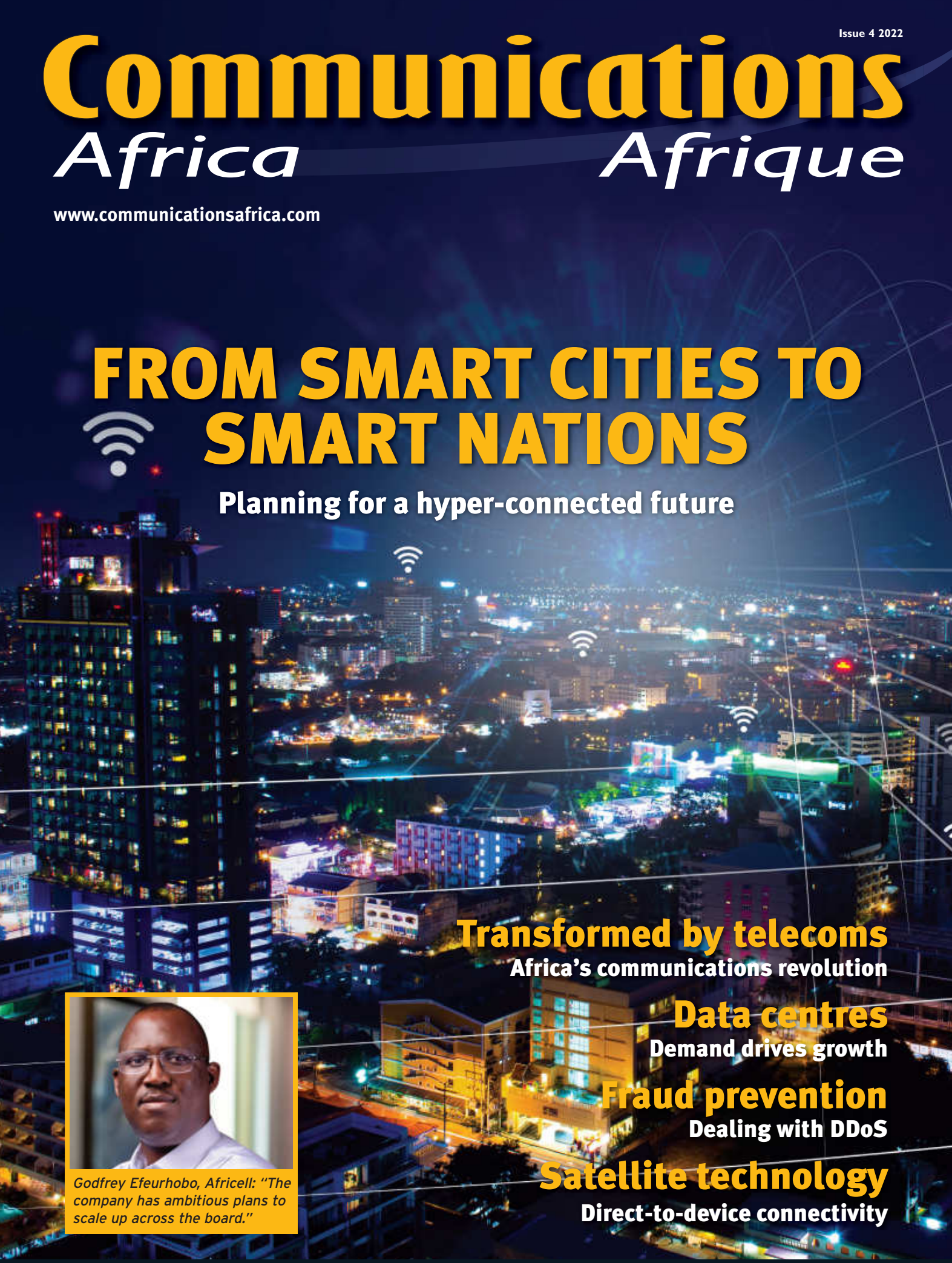
FROM SMART CITIES TO SMART NATIONS

Planning for a hyper-connected future



Godfrey Efeurhobo, Africell: "The company has ambitious plans to scale up across the board."

Transformed by telecoms
Africa's communications revolution

Data centres
Demand drives growth

Fraud prevention
Dealing with DDoS

Satellite technology
Direct-to-device connectivity

FEATURES: ● Fibre competition in South Africa ● Smartphones in low-income markets ● A new operator in Ethiopia

REGULAR REPORTS: ● Agenda ● Solutions ● Events

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CONTENTS

A note from the Editor

CYBERSECURITY. SMARTPHONES. DATA centres. Digital payment. Smart cities. Mobile operators.

Few, if any, of these topics would have appeared in issue one of Communications Africa more than 30 years ago. Today they are essential parts of our coverage. How that happened is the theme of Africa 2.0: Inside a Continent's Communications Revolution, a major new publication outlining the extraordinary changes in sub-Saharan Africa brought about by the mobile phone and the internet.

And this could be just the beginning. As the book's author, Russell Southwood told us: "The digital future that mobile has opened up transforms the assumptions about what Africans can do and seems to open out a very different future for the continent."

These changes have clearly affected much of today's Africa but are especially significant for the growing number of tech-savvy young people who are already transforming how Africa's digital markets operate. Will operators, vendors and indeed governments support them in gaining the digital skills that could benefit the continent as a whole in the future?

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Events 2022/2023

NOVEMBER			
2-3	**TECHSPO Johannesburg**	JOHANNESBURG	https://techspojoburg.co.za/
8-10	**AfricaCom**	CAPE TOWN	https://tmt.knect365.com/africacom/
22-23	**EDUtech Africa**	JOHANNESBURG	https://www.terrapinn.com/exhibition/edutechafrica/index.stm
JANUARY			
26	**Digital Retail Africa 2023**	JOHANNESBURG	https://itnewsafrica.com/event/event/digital-retail-30africa/
FEBRUARY			
15-16	**Africa Tech Summit Nairobi**	NAIROBI	https://www.africatechsummit.com/nairobi/
27-2 March	**MWC Barcelona 2023**	BARCELONA	https://www.mwcbarcelona.com
MAY			
16-18	**CABSAT**	DUBAI	https://www.cabsat.com/

AfricaCom returns to Cape Town

Cape Town: home, once again, to AfricaCom

Photo: Adobe Stock

THE NEXT AFRICACOM packs so much in you might think it's making up for lost time, which in a way it is. But after two pandemic-affected delays it's back with a strong and varied programme of events.

Cape Town International Convention Centre will welcome back AfricaCom in its role as the anchor event of the Africa Tech Festival from 8-10 November this year. it calls itself the largest digital infrastructure event in Africa, focused on connecting the next billion people – and certainly the conference programme attempts to match that ambition.

The 8th of November sees the beginning of a massive programme of speeches, panels and papers taking place across a number of convention centre venues and including a number of speakers familiar to readers of these pages, notably on the first day's keynote panel, where the author of Africa 2.0 – Inside a Continent's Communications Revolution (see page 24), Russell Southwood, will moderate a session with industry veterans who played key roles in this historic journey. They include Nic Rudnick of Liquid Intelligent Technologies, Nika Naghavi of MFS Africa, Andile Ngcaba of Convergence Partners and, of course, Funke Opeke of MainOne.

But other topics– like digital support for SMEs, carbon reduction, sustainable development, 5G, bridging the digital divide, cloud computing, high-bandwidth satellite connectivity, data governance frameworks, green ICT, Africa's tower infrastructure, satellite connectivity and streaming platforms will no doubt keep visitors engaged right up to lunch.

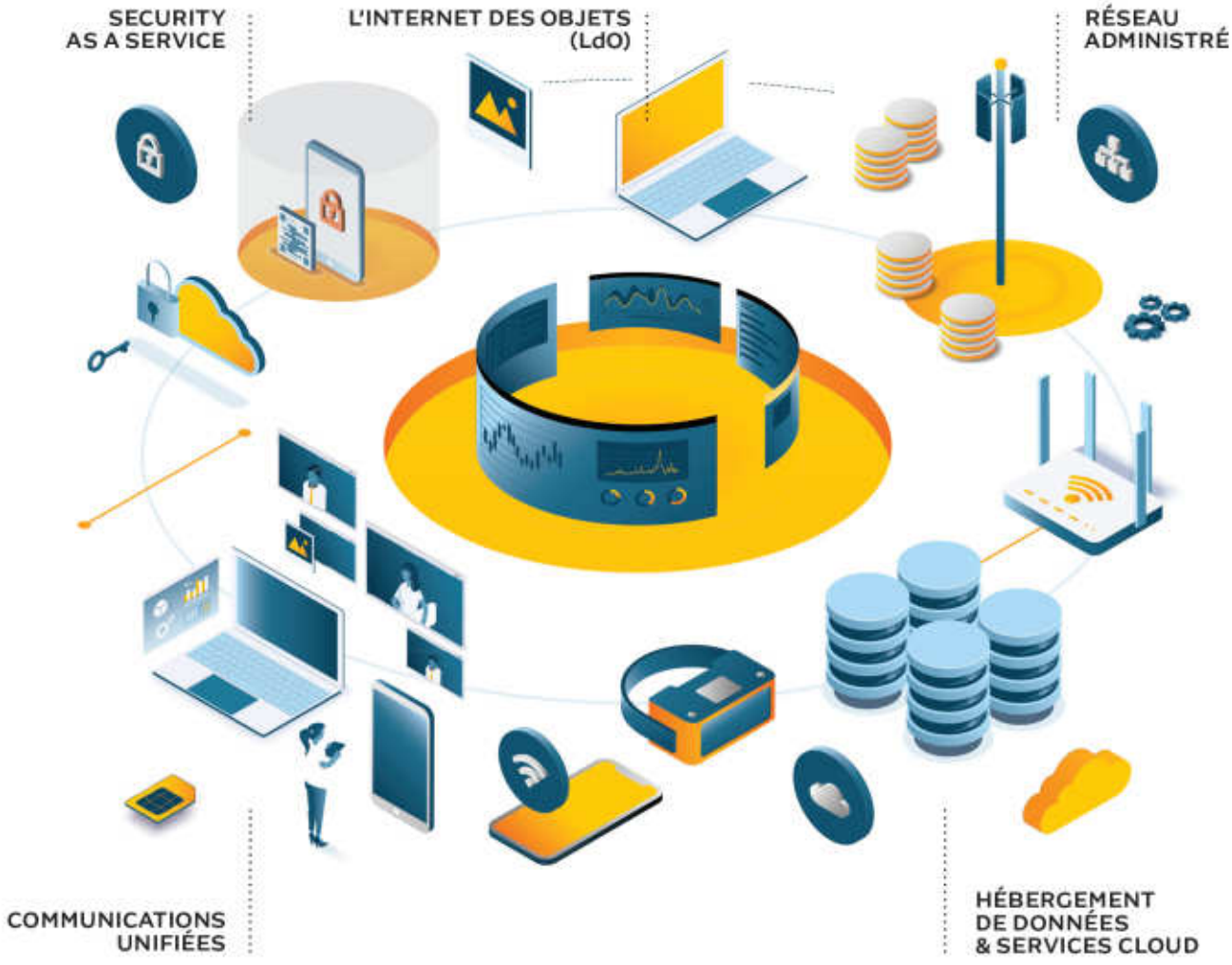
As the day continues, many other subjects, like connecting Africa's underserved, renewable energy, digital payment and West Africa's tech boom, should also attract interest.

The next day opens with a session called The Building Blocks for Africa's 4th Industrial Revolution and then How African Telecoms is Evolving with the Continent, but people interested in subsea cable, the metaverse, satcoms, OpenRAN and North Africa's telecoms scene will also be catered for in a very busy pre-lunch programme.

The afternoon covers content streaming, network migration, mobile financial services, Central Africa and more before the evening's main event: the Africa Tech Festival Awards.

Day three includes a focus on digital skills, innovations, infrastructure, MVNOs, Africa's satellite sector, OTT and the gaming market. There's even a nod to Afrobeats in a look at Africa's creative economy.

Of course, if you're not trying to catch the talks and speeches, there's also a major exhibition going on for which many major names, such as Gilat, Huawei, Liquid, Parallel, WIOCC and Africa Data Centres, are already signed up.



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Alors, ***on fait quoi aujourd'hui?***

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MTN

"This [fibre rollout] development answers the long wait for reliable connectivity while also smoothing the company's journey of creating a sustainable value for all our stakeholders through innovative digital solutions and a high-performance culture."

Tim Ekandjo,
director of human capital and corporate affairs
MTC Namibia

"Today I am delighted for the opportunity for Safaricom Ethiopia to start serving the people of Ethiopia with high-quality telecommunications services. We are optimistic about how the technology and connectivity we are providing will contribute to a digital future and eventually transform people's lives through digital solutions."

Peter Ndegwa,
CEO
Safaricom

"As we selectively extend the platform services we offer, we are demonstrating our commitment to introduce new and renewable sources of energy to power our sites, which protects the industry, our customers and consumers from ongoing and future volatility in fuel prices."

Marek Busfy,
SVP and CEO
ATC Africa

"We are excited to announce the first Google Cloud region in Africa. The new region will allow for the localisation of applications and services. It will make it really easier for our customers and partners to quickly deploy solutions for their businesses, whereby they're able to leverage our computer artificial intelligence or machine learning capabilities, and data analytics to make smarter business decisions as they go forward."

Niral Patel,
director
Google Cloud Africa

"More and more Mozambican individuals and businesses join the digital community every day, and this number continues to grow at a fast pace. We are looking forward to supporting the country's digital growth by developing the first hyperscale-ready colocation data centre that will be operated by a team of highly skilled Mozambican professionals."

Robert Mullins,
CEO,
Raxio Group

"We are adopting appropriate mitigation measures that are enabling MTN and its people to reduce our reliance on fossil fuel-generated power. Our focus is to reduce any unnecessary use of energy, create more energy efficiencies, increase the use of renewable energy and to generate more value from conventional sources, such as heat."

Charles Molapisi,
CEO
MTN SA

"As we speak right now, the inclusion rate is around 50%, which means that close to 49.5% of adult populations don't have formal banking services, and to compound the matter, 82% of Nigerians are currently receiving income their income in cash."

Zakari Usman,
head of enterprise business
Globacom, which recently launched a payment service bank in Nigeria

MTN builds private 5G networks

MTN IS BUILDING private 5G networks for big companies in the mining and port industries to offer dedicated capacity and guaranteed coverage.

According to MTN SA CEO, Charles Molapisi, the network has signed at least 14 companies to the service, which will give the clients the ability to control their own communication network. MTN also claims the service will improve internet speeds and security and provide uninterrupted connectivity.

MTN's enterprise 5G network will offer clients cloud computing, unified communication through integrated communication services, cybersecurity and machine-to-machine communications.

Liquid Telecom also plans to enter the enterprise 5G network space, using spectrum it acquired in the March spectrum auction to build a 5G network aimed at enabling automation in industries such as manufacturing and mining.

Orange and Cellulant enable card-to-wallet transfers

ORANGE MONEY, THE mobile money service of Orange and leading pan-African payments company Cellulant, have launched a partnership to enable card-to-wallet transfers for eight banks in Botswana.

The Orange Money Card-To-Wallet service in Botswana enables customers to transfer money online from any bank account to an Orange Money wallet. The service is available to all Orange Botswana customers with bank accounts, allowing them to instantly send money to any Orange Money wallet regardless of who they bank with. The sender does not need to have an Orange Money account; they are only required to have a registered Orange SIM card, while the recipient needs an Orange Money wallet.

This solution will now allow bank customers to move money from their bank accounts to their Orange Money wallets through the Orange Botswana website, a process that is powered by Cellulant's Tingg payments platform. This applies to both the banks that have apps and those that do not.

Customers can also buy airtime and access other MNO services using their Visa or Mastercard debit and credit cards through Tingg.

By leveraging its vast networks, Orange Money will enable customers with bank cards from all eight banks in Botswana to move money from their cards to any Orange Money wallet at the touch of a button.

Orange Money CEO, Seabelo Pilane, commented, "This service affirms our commitment towards contributing positively to the growth of the informal and financial services sectors.

"The introduction of Card-To-Wallet aligns with our financial inclusion strategy that is centred around providing relevant and convenient solutions that address our customers' everyday needs, as well as addressing our priorities around placing our customers first."

Tingg, which integrates 211 banks across Africa, is a one-stop payments aggregator for multinational corporations, mid-caps and small and medium enterprises (SMEs). It enables merchants to receive, view and reconcile all their payments via a single platform or through their system by integrating Tingg's Application Programming Interfaces (APIs), cutting out the need to sign up for multiple payments providers as well as mobile network operators (MNOs) and banks.

"Africa accounted for 70% of worldwide mobile money transaction value in 2021. Instant digital payment solutions have significantly increased across the continent in recent years. Tingg by Cellulant is at the frontline in ensuring that digital financial solutions are available across the continent. Cellulant has been in Botswana for over 11 years now as a technical solutions partner providing digital banking and value-added services to the banks in the country. We are pleased to partner with Orange Money Botswana to power payments for their Card-to-Wallet service. This is in line with our strategy to extend our services to merchants in Botswana with a view of helping them digitise their payments." said Bathusi Beleme, Cellulant Botswana country manager.

Raxio breaks ground on data centre in Mozambique

THE RAXIO GROUP, which builds and operates a network of Tier III carrier-neutral data centres in Africa, has announced the ground-breaking of a new data centre in Maputo, Mozambique. Raxio MZ1 will be the country's first carrier-neutral, privately owned facility. The 250-rack, Tier III quality facility is located in the Beluluane Industrial Park and is set to launch in 2023.

Photo: Raxio

The centre is set to launch in 2023.

Robert Mullins, CEO of Raxio Group, said, "We are looking forward to supporting the country's digital growth by developing the first hyperscale-ready colocation data centre that will be operated by a team of highly skilled Mozambican professionals. Our site at the MozParks Industrial Park provides us with an ideal operating environment, with prime access to connectivity and power infrastructure, as well as the possibility to supply our site largely from renewable energy sources, allowing us to further our ambitious ESG goals."

The facility will keep with the company's core sustainability principles to minimise the environmental footprint through optimal equipment selection and sustainable design. In addition, the MozParks location will provide Raxio MZ1 the possibility to meet its electricity requirements from renewable sources.

Raxio has said it expects to build additional facilities in Mozambique in the coming years. The Maputo data centre is the latest in a series of expansions the Raxio Group has announced across Africa in the last 18 months, including facilities in Tanzania, Uganda, Mozambique, Cote d'Ivoire, DRC and Ethiopia.

Nigeria and Zambia ease tax burden on telecoms

NIGERIA HAS SUSPENDED plans to add a 5% excise duty on telecommunications services, saying the sector is already overburdened with taxes.

The move comes despite the need for new revenue streams in a country facing rising debt servicing costs, massive fuel subsidies and a plunge in oil exports.

Minister of communications and digital economy, Isa Pantami, said the sector was already overtaxed on multiple fronts and didn't need more, and added that he had petitioned the president, Muhammadu Buhari, over the long-term effect of the tax and got his approval to suspend the tax. He was also allowed to constitute a committee which will look at the tax and advise the president appropriately.

He said in a statement that the potential tax could "impact very negatively" on the digital economy and was on hold until a committee could review it.

Zambia's government, meanwhile, has zero-rated the importation of telecommunications equipment, including telecommunications masts, in a fresh bid to attract investment into the industry.

Officials also announced that a national digital strategy would be implemented and that the government would review the country's ICT Act to encourage uptake of digital services and secure investment in infrastructure and digital platforms.

Presenting the 2023 national budget, finance minister Situmbeko Musokotwane said the government was zero-rating the importation of telecommunications equipment used in the construction of telecommunication masts because ICT is considered pivotal to socio-economic development and a catalyst for job creation.

Last month, the Common Market for Eastern and Southern Africa (COMESA) urged member countries to consider subsidising the construction of telecommunications infrastructure to enable mobile networks to deliver services.

MTN Nigeria launches Metamorphose programme

DIGITAL BUSINESS SUPPORT systems company Tecnotree has announced a partnership with operator MTN Nigeria on a new initiative – Metamorphose. MTN Metamorphose is described as a transformation programme to enhance MTN's digital presence for consumers and enterprises. It is powered by Tecnotree's digital suite.

This initiative will transform MTN's business and digital processes with a strategic approach to people and technology. The programme's objective is to adapt to customer needs, improve customer experience, and become the enabler of digital life through tailored customer-centric offerings.

Photo: Adobe Stock

Tecnotree says its flagship digital stack is open, inclusive, dynamic, and 5G-ready.

Tecnotree says its flagship digital stack is open, inclusive, dynamic, and 5G-ready. It has AI/ML capabilities and cloud extensibility that have transformed applications and services beyond connectivity. It conforms to TM Forum Open API standards with reduced opex, which makes it easy to quickly deploy innovative and personalised multi-experiences in response to market demand. A catalogue-driven approach supports the launch of new bundles in days instead of months, converting ecosystems partners into instant revenue generators across health, education, gaming and esports.

MTN Metamorphose is an automation-driven solution that will enable dynamic and improved user experience and enhanced 360-degree customer view. It will also modify existing workflows, improve the productivity of the workforce through personalised dashboards, and provide omnichannel engagement and user journey optimisation, with improved order management.

South Africa proposes plan to shut down 2G and 3G

South African communications minister Khumbudzo Ntshavheni has proposed a roadmap for shutting down South Africa's 2G and 3G networks by 2025. 30 June 2023 will see licensing of 2G devices prohibited. 3G device licensing will end in March 2024.

The plan is contained in the ministry's next-generation radio frequency spectrum draft policy, published for public comment.

According to local press reports a cabinet statement said, "Radio frequency spectrum is a finite natural resource that is vital to the growth of South Africa's digital economy and communication infrastructure.

"The proposed policy intends to support the spectrum allocation and licensing for fixed mobile, broadcasting and other relevant industries".

Perception TVCDN and Africell to launch mobile TV service in Angola

INDUSTRY INNOVATOR PERCEPTION TVCDN has signed a deal with operator Africell to launch a new free TV service in Angola, monetised with data revenues.

The service, called AfriTV, will offer Africell mobile network customers a free mobile TV service, comprising leading Portuguese-language linear TV channels with automated seven days catch-up TV.

Photo: Adobe Stock

AfriTV will provide attractive free content for all ages, delivered in high-quality native apps for all popular platforms.

AfriTV will also include new channels auto-scheduled from Portuguese language VoD libraries and exciting social media video content. AfriTV will provide attractive free content for all ages, delivered in high-quality native apps for all popular platforms.

Recognising that video is a key driver to increasing customer acquisition, retention and growth in data consumption, Africell and Perception are partnering on the basis of sharing incremental data revenue generated by AfriTV content with content partners.

All Africell customers at launch will be pre-registered with apps, making it simple for everyone to access and enjoy content. The service is delivered using Perception TV CDN's state-of-the art private TV CDN platform which has an in-built OTT and IPTV platform feature set. All streaming is secure and limited to Africell's mobile network in Angola.

Slated to launch in Q4 this year, Perception invites Portuguese content partners to join the service and benefit from this model.

ETI Guinea selects Alepo Digital BSS to boost FTTH and LTE

GUINEA'S LEADING SERVICE provider, ETI, is implementing digital enablement expert Alepo's BSS Transformation. The advanced platform will modernise the operator's existing FTTH services, as well as provide support for the future launch of its fixed LTE network.

The deployment will replace ETI's legacy BSS with Alepo's convergent Digital BSS, providing a unified billing and charging platform for all of ETI's prepaid and postpaid services. ETI will be able to introduce a range of advanced new offerings, including limited and unlimited plans, pay-as-you-go offers, high-spending and referral discounts, time and volume-based offers, and more.

Alepo's Digital BSS will enable advanced invoicing with support for invoices in different currencies, issued in advance and at different frequencies, and issued on demand. The solution will integrate seamlessly with the operator's IT and core infrastructure, introducing digitisation and automating key processes to streamline network management.

The platform also includes policy control for different services, dynamic offer creation, CRM, online payments, and more. In addition, Alepo's Authentication, Authorisation, Accounting (AAA) server will bolster network security and enable a scalable network to support expansion as the subscriber base grows.

Alepo's solution also includes a real-time reporting system that will enable the operator to gain advanced business intelligence (BI) insights. These reports will enable ETI to create personalised and contextual plans based on customer usage patterns.

Alepo's platform will also support data and voice services for the operator's future fixed LTE network, for which the operator has recently acquired a license from the Guinea government.

Over the next few years, the operator will roll out these services in phases, beginning with a pure data network and eventually introducing voice.

WorldRemit partners with Hello Paisa to ease money transfers to Zimbabwe

LEADING INTERNATIONAL DIGITAL remittance companies WorldRemit and money transfer service HelloPaisa have announced a partnership to provide cash pickup services throughout Zimbabwe.

This partnership allows the Zimbabwean diaspora to effortlessly send money back home and provides their loved ones the ability to receive and withdraw the funds through an extended cash pickup network in both rural and peri-urban areas.

In 2021, money coming into Zimbabwe surpassed 2020's impressive figure of US$1.002bn by 43% (US$1.430bn).

Thanks to the partnership with Hello Paisa, WorldRemit's cash pick-up network has now grown to a total of over 640 locations across Zimbabwe.

Egyptian consumers offered paying via chat

A COLLABORATION HAS been announced involving valU, a buy-now, pay-later (BNPL) lifestyle-enabling fintech platform, PayTabs Egypt, the payment processing solution, and notchnco, an independent software vendor (ISV) for meta products.

For the first time in Egypt, through an automated workflow developed by notchnco, valU is capitalising on WhatsApp's business application programming interface (API) while processing payments via PayTabs, Egypt's digital payment solutions, to offer clients the convenience of paying via chat.

Through this partnership, notchnco's 'humanised' chatbot software for WhatsApp will enable valU to target various consumer groups with tailored offers relevant to their interests, purchasing cycles, and buying behaviours. This will allow valU to offer a specific customer base a personalised shopping experience. The advantage is that it will enable convenient campaign-based selling by sending targeted and timely messages to opted-in customers, with the added benefit of an unlimited number of characters.

With PayTabs Egypt providing instant payment links through WhatsApp, the process will be fully automated from beginning to end. This will provide the customer with a smooth, seamless payment experience and the opportunity to take advantage of valU's affordable and flexible six-to-60-month instalment payment plans.

notchnco is a business that aims to utilise artificial intelligence (AI) and machine learning technologies that effectively serve the customer's experience. It currently operates in Abu Dhabi and Cairo, offering its patented omnichannel platform and humanised chatbot software, notchbot.

Photo: Adobe Stock

notchnco is a business that aims to utilise artificial intelligence (AI) and machine learning technologies that effectively serve the customer's experience.

This platform is customisable to different merchants with proactive messaging tools and a sales tool. notchbot creates a user-friendly experience with an interactive platform that allows users to build their own chatbots. It has been designed to seamlessly lead the user into the conversation flow through different interactions, intents, and channels.

Flutterwave secures Nigeria's highest payments processing license

FLUTTERWAVE, AN AFRICAN payments technology company, has been granted a Switching and Processing License by the Central Bank of Nigeria (CBN) — widely regarded as CBN's most valuable payments processing license.

Photo: Adobe Stock

Flutterwave helps businesses expand operations through cross-border transactions.

The Switching and Processing license allows Flutterwave to enable transactions between banks, fintechs and other financial institutions. The company is also able to process card transactions, participate in agency banking and offer various payment services without any intermediary.

Flutterwave is a leading African payments technology company that enables businesses across the world to expand their operations in Africa and other emerging markets through a platform that enables cross-border transactions via one API. Flutterwave has processed over 200 mn transactions worth over US$16bn to date and serves more than 1,000,000 businesses including customers like Uber, Flywire and Booking.com.

The company says its key advantage is international payment processing in 150 currencies and multiple payment modes including local and international cards, mobile wallets, bank transfers and Barter by Flutterwave. Flutterwave has an infrastructure reach in over 34 African countries.

Satcom-supported initiative aims to boost economic development

PHILANTHROPIC ORGANISATION THE Rockefeller Foundation has announced a US$5.5mn collaboration with e-GUIDE (Electricity Growth and Use In Developing Economies Initiative) and Atlas AI, a public benefit technology start-up, to accelerate economic development and promote climate-resilient infrastructure investment across sub-Saharan Africa.

Leveraging satellite data and machine learning technologies, this three-year effort will produce unprecedented insight into the well-being of communities through a ground-breaking digital platform that builds upon new research and publicly available data sets covering the nexus of agriculture, energy and transportation sector development conditions.

Initially covering Kenya, Nigeria, Rwanda, and Uganda, the platform will provide policymakers with extensive cross-sectoral insight into where new infrastructure development can help mitigate community vulnerabilities and promote economic opportunities, ultimately assisting efforts to prioritise and sequence investments more effectively in these key sectors.

"While data science has been used to improve individual development projects, we haven't yet unlocked its potential to improve development at a systems level — which is critical, because efforts to drive change in energy, agriculture and transportation must be integrated in order to make opportunity universal and sustainable," said Zia Khan, senior vice-president of innovation at The Rockefeller Foundation. "We are excited about the potential of this collaboration to give policymakers, investors, and operators more dynamic situational awareness of local conditions and help them improve those conditions for the people they serve.

How digital finance can drive women's economic empowerment in Africa

COMMISSIONED BY THE United Nations Economic Commission for Africa (ECA), the latest edition of the biennial African Women's Report analyses the digital finance ecosystem in Africa to examine all its components and how they impact women's economic prospects.

The report pinpoints five key issues affecting the use of digital finance as a catalyst for women's economic empowerment in Africa. First, women's access to digital services, mobile and internet in Africa is limited due to illiteracy, cost, skills gap and social norms.

Second, while impressive gains have been made in improving women's digital finance skills, Africa lags behind compared to other regions.

Photo: Adobe Stock

The report pinpoints key issues affecting women empowerment in digital finance.

Third, only 33% of women in Africa have a formal bank account compared to 43% of men. Fourth, social norms as well as inherent biases in financial practices, products and services adversely impact women.

Finally, the lack of women's participation in decision-making processes, as well as in financial and technology fields, means digital finance policies and products are unlikely to include women's perspectives and meet their needs. In addition, in some African countries, women are nine times less likely to have formal identification than men, which impedes their ability to access, own and use digital finance services freely and safely.

The report outlines 10 policy responses for governments to consider in ensuring their national digital ecosystem supports women's economic empowerment. Specific responses include prioritising female representation in the sector, up-skilling people – especially women – in digital finance, reforming laws for greater mobile money uptake and designing gender-sensitive policies that combine technology with social development.

The report proposes that sex-disaggregated data on internet usage, mobile ownership and financial literacy should be part of national household surveys to inform the design of relevant policies. It further recommends embedding digital finance frameworks in national development plans and working with credit bureaus to address the potential for inherent gender biases within credit reporting systems.

Finally, the report urges African countries to establish regional digital finance regulatory and justice frameworks using the African Continental Free Trade Area as a platform to enable digital identities and improve cross-border cooperation.

Google plans to set up its first African cloud region

GOOGLE IS SET to launch its first cloud region in Cape Town, South Africa, as part of its wider plans to invest US$1bn in the continent. The project will leverage Equiano, Google's private subsea cable that will connect Africa with Europe, running along the West Coast of Africa and between Portugal and South Africa.

The new cloud region may contribute over US$2.1bn to SA's GDP and will help create more than 40,000 jobs by 2030, according to research commissioned by Google Cloud. Google's decision to expand its footprint in Africa may also be partly to do with expanded data protection regulations in many countries, which encourages in-country data storage.

Google Cloud Africa director Niral Patel said that the new region will allow 'localisation of applications and services' and 'will make it really easier for our customers and partners.'

Aeris uses IoT to support African e-vehicle company

AERIS, A LEADING global Internet of Things (IoT) solutions provider, has announced that M Auto, the leading provider of electric mobility solutions in Africa, is utilising Aeris' secure, intelligent IoT connectivity to help enable sustainable transportation across the continent.

M Auto is now the largest electric vehicle start-up in Africa, with 2,000 e-bikes on the ground and 3,000 bikes ready for market. M Auto is also creating employment across Africa by investing in manufacturing and deploying e-bikes across the continent, with Togo and Benin being the first two countries to go live.

M Auto's vision is to replace all African motorcycles powered by an internal combustion engine with electric by 2030, while creating more than 1 mn jobs. Its mission is to provide access to innovative and sustainable electric mobility solutions to improve the quality of life of all African users by creating an e-mobility experience that is sustainable - having zero carbon emissions - affordable, digitally enabled, and offers an unparalleled mileage range via swappable charging battery stations.

M Auto utilises the Aeris Intelligent IoT Network to deploy its devices faster and Aeris' support services to scale more quickly into new markets. In addition, the continued expansion of M Auto in Africa is boosted by the Aeris Intelligent IoT Network, which provides a robust platform with reliable connectivity everywhere to help build and scale innovative IoT programmes including sustainable mobility solutions. Aeris' global subscriber identity module (SIM), which is deployed at the point of manufacture, has enabled M Auto to reduce its supply chain costs and solution deployment time.

"We are delighted to help M Auto expand their capabilities and deliver sustainable transportation to the people throughout Africa," Mohsen Mohseninia, vice-president market development, EU at Aeris, said to media.

American Tower and Airtel Africa announce partnership

AMERICAN TOWER CORPORATION'S African operation (ATC Africa) and Airtel Africa have announced that they have entered into a multi-year, multi-product agreement, leveraging ATC Africa's vast portfolio of communications sites and new site and product development capabilities across its footprint in Kenya, Niger, Nigeria and Uganda in support of Airtel Africa's network rollout. Through their combined efforts, the companies expect to substantially increase connectivity on the continent, extend digital inclusion to underserved communities and advance their mutual greenhouse gas (GHG) emissions reduction objectives.

All new site development under the agreement will comply with ATC Africa's new green site specifications, which are expected to substantially reduce reliance on fossil fuels, while advancing American Tower's progress toward achieving its science-based targets (SBTs). Furthermore, this strategic partnership is expected to reduce exposure to fuel price volatility for both ATC Africa and Airtel Africa.

The parties have also committed to continue working together to convert existing telecommunications sites to ATC Africa's green site specifications over time.

In addition, Airtel Africa and ATC Africa will partner to provide training around information and communications technology skills to underserved communities.

To date, ATC Africa has invested approximately US$300mn in energy efficiency improvements, renewable energy deployments and energy storage solutions to decrease on-site reliance on fossil fuels. The company has also earmarked additional investments to fund the implementation of future energy efficiencies.

Africa Data Centres join forces with IXPN

Africa Data Centres, the largest network of interconnected data centres across the continent, has joined forces with Nigeria's principle internet exchange point, IXPN, taking steps towards a widescale expansion.

Enterprises are migrating to more cloud and internet-centric technology, but the associated expenses are found to be too high. Shared data resources reduce the total cost of ownership while increasing availability and connectivity. Effective cloud services cannot be implemented without stable internet access and reliable data centres, which is the essence of the partnership between the two companies. The data centres deliver the local ecosystem for customers, while IXPN allows local content and services providers to connect directly for the exchange of local internet traffic.

Vodacom Business Africa expands SD-WAN software into 47 countries

VODACOM BUSINESS AFRICA has decided to further expand the accessibility of its software-defined wide area networking (SD-WAN) solution after successfully deploying the software to several businesses within South Africa. The company is now making the offered solution software accessible to all 47 operating countries across its African footprint.

The company, which is an enterprise-focused subsidiary of the Vodacom Group, offers digital ICT services and platforms to multinational organisations operating across Africa and the world, and with the help of their global footprint, organisations can operate from five continents into the 47 Africa countries the company has a presence in.

SD-WAN is emerging in the market as the go-to solution in business for delivering unmatched performance and cost-effective benefits to clients, including increased agility and quality of service, and better reliability and security.

The software boosts efficiency by managing bandwidth availability and usage, traffic routing, and prioritisation of business-critical protocols. When working with business critical systems and automated processes, the prioritisation is vital as a connectivity lapse could cause production delays and revenue loss.

The benefits of the SD-WAN software are a major indication for its success, and why clients across multiple industries, from mining to manufacture to retail, have embraced it as a preferred solution. The technology offers high-quality connectivity across all sites, even in hard-to-reach locations and rural areas where it would otherwise be very difficult, and very costly, to connect.

"Vodacom Business Africa offers an end-to-end SD-WAN solution, meaning we provide both the physical network underlay and the digital overlay so that you don't have to approach various providers to set up the kind of network you need," said Wale Odeyemi, Vodacom Business Africa's executive head of strategic marketing.

"When choosing our solution, you don't have to completely replace an existing network, either. You can simply strengthen what you already have. As an overlay technology, our SD-WAN can run on top of existing carrier-grade multiprotocol label switching connections (MPLS) and across hybrid WANs.

"Plus, it's scalable and configurable to meet each business' needs and pace of growth."

Furthermore, the Vodacom Business SD-WAN software is fully managed by a team of technology experts, and streamlines networks across multiple locations locally and internationally. This is crucial for organisations managing multiple data centres and critical branch operations across private and public cloud environments.

As a result, clients receive enhanced application performance and improved network visibility, and are equipped with a single-pane view of all data usage across multiple assets, whether in remote factories or branch office locations.

Eutelsat and Liquid support broadband services across three countries

EUTELSAT COMMUNICATIONS AND Liquid Intelligent Technologies have signed a multi-year, multi-beam agreement for capacity on the Eutelsat Konnect satellite.

The agreement is in order to address the connectivity demands of small and medium enterprises (SME), and small office and home office (SOHO) customers in Uganda, South Sudan and the Eastern regions of the Democratic Republic of the Congo.

Photo: Adobe Stock

The agreement between Eutelsat and Liquid is for capacity of the Eutelsat Konnect satellite

Under the agreement, Liquid will leverage capacity on the Eutelsat Konnect satellite to increase its portfolio with affordable internet services in territories under-served by terrestrial networks.

The two companies already had a long-standing business partnership prior to the agreement, with Liquid using Ku-band capacity of Eutelsat's 7B satellite for VSAT services in sub-Saharan Africa under a long-term contract that was expanded in 2021.

Liquid will also host the first Eutelsat Konnect ground gateway in sub-Saharan Africa, reinforcing its dominance as a key satellite operator in Africa and further cementing its partnership with Eutelsat.

Located in Krugersdorp, South Africa, the gateway will help Eutelsat expand local coverage, secure and create new business opportunities by offering enhanced broadband service performance.

Eutelsat Konnect is a new-generation high throughout satellite (HTS), offering unrivalled operational flexibility and extensive in-orbit resources to begin broadband services to Africa.

Oranges launches initiatives in Côte d'Ivoire and Liberia

ORANGE CÔTE D'IVOIRE has launched its Orange 5G Lab, creating a devoted service for digital professionals, start-ups and businesses.

As the 5G network roll-out across Côte d'Ivoire is scheduled for 2023, Orange said it is thinking ahead by providing local businesses with a collaborative space that is fully equipped and dedicated to practical applications.

Orange 5G Lab Abijan offers services devised with expert partners such as Huawei, Nokia and ZTE. The Lab system is built around two concepts: allowing economic players a chance to discover new possibilities with 5G, and supporting innovative businesses looking to experiment with 5G's potential. This site will also host a 5G demo space for use across different business sectors.

Elsewhere, Orange and the German Development Cooperation are inaugurating an Orange Digital Centre at Monrovia – a digital ecosystem dedicated to the development of skills and innovation. The 11th Orange Digital Centre will be built in Liberia, following the success of those located in Tunisia, Senegal, Ethiopia, Ivory Coast, Mali, Cameroon, Egypt, Jordan, Madagascar and Morocco. The centre will include a coding school, digital manufacturing workshops and a start-up accelerator.

All the programmes provided are free of charge and open to everyone. They range from digital training for young people, to guidance for project bearers, start-up acceleration and investment.

Orange Liberia, in partnership with universities, will establish Orange Digital Centre Clubs, which will act as extensions of the coding school within universities in the regions.

Working as a network, the Orange Digital Centres allow experiences and expertise to be shared across countries and offer a simple and inclusive approach to improve the younger generation's employability skills, encourage innovative entrepreneurship and promote the local digital ecosystem.

"A transformational acceleration"

Operator Africell has been making headlines for some while as a major player in Sierra Leone and The Gambia and a dynamic new presence in Angola and Democratic Republic of Congo. Recently the company appointed a new group chief commercial officer. We talked to Godfrey Efeurhobo about his, and Africell's, plans.

AFRICELL, A FAST-GROWING mobile network operator with a pan-African footprint, has appointed a new group chief commercial officer to accelerate growth in Angola and Democratic Republic of Congo (DRC) and strengthen its market leadership in Sierra Leone and The Gambia.

Godfrey Efeurhobo joins Africell from Airtel Nigeria, an operator with over 50 million customers and almost US$2bn in annual revenue. As chief commercial officer of Airtel Nigeria, Efeurhobo led all aspects of commercial operations including marketing, sales and distribution, customer experience, brand and communications, regional operations, home broadband and retail.

In his new role, Efeurhobo is responsible for growing Africell's customer base, driving sales, and differentiating Africell from its competitors.

He joins Africell only six months after the launch of its services in Angola and at a time when it is undertaking a major network expansion in DRC, with several new cities and provinces (including in the east of the country) coming online in the past year.

In this interview, Godfrey Efeurhobo discussed the challenges of his new market focus and Africell's plans for its four key markets.

Communications Africa: Your background is working with a major operator in the continent's biggest market. Why did you choose Africell as your next challenge?
Godfrey Efeurhobo, group chief commercial officer, Africell: For a major operator in a highly competitive market like Nigeria, the opportunity for revenue and subscriber growth is not comparable to markets like Angola and DRC. Africell operates in environments where growth can be much bolder, and the company has ambitious plans to scale up across the board. This appeals to my personal instinct for having an impact. As chief commercial officer, my aim is to double the group's overall subscriber numbers and revenues within a short period.

In our first six months [in Angola] we have presented a fresh and dynamic alternative

Communications Africa: What do you see as the challenges of working in Angola and DRC? And the opportunities?
Godfrey Efeurhobo, Africell: The biggest challenge in both these markets is the enormous gap between high income and low-income communities. Both countries have affluent, educated and well-travelled elites who expect a high level of mobile service, defined by convenience, reliable connectivity (for both voice and data), and speed. Meanwhile, these countries are home to big populations with very limited spending power. This is challenging because our commercial strategy needs to be expansive enough to target both categories of customer. Happily, our networks are more than capable of impressing higher-end users familiar with the quality of mobile service you would get in the Gulf, Europe or North America. Moreover, our distribution network is over time spreading more widely and deeply into the less affluent communities which provide the lion's share of our potential subscriber base.

Godfrey Efeurhobo: "The company has ambitious plans to scale up across the board."

Photo: Africell

Communications Africa: You refer to strengthening market leadership in Sierra Leone and The Gambia. What sort of areas do you feel can be boosted in these markets and how?
Godfrey Efeurhobo, Africell: Gambia and Sierra Leone are smaller than Angola and DRC, with higher mobile penetration rates. One of the ways to cement our market leadership in this context is to accelerate the transition of more users to a sustained behaviour of quality data consumption. Content is – and will continue to be – vital to this process. As in other parts of the world, people in Africa draw increasing value and enjoyment from consuming digital content – whether it is TV, videos, music, or social media. There are numerous strategies for growing data

Continued from page 14

Holding back the flood

Technology group Liquid Intelligent Technologies and security specialist SLVA Cybersecurity are both targeting distributed denial-of-service (DDoS) attacks. They told Phil Desmond why and how DDoS attacks have become a major concern, and how they might be prevented.

Mauritius is one the few African countries with a proactive approach to cybersecurity.

Photo: Adobe Stock

DISTRIBUTED DENIAL-OF-SERVICE (DDOS) attacks may mean little to most people, but they are a major concern for cybersecurity experts.

As Tarquin Rohlandt, executive head: connectivity & services at technology group Liquid Intelligent Technologies explained, a DDoS attack is when an attacker floods a server with malicious traffic to prevent users from accessing connected online services or sites. He continued, "A DDoS attack renders any functionality the server or website provides to customers inoperable. The effects of a DDoS attack can last for a matter of minutes, hours and sometimes for days, with lasting impact on business."

Patrick Evans, CEO of security group SVLA Cybersecurity, added, "The word 'distributed' is key. Attackers recruit thousands of distributed end points into what is termed a 'botnet', almost always without the permission or the knowledge of the owners, to participate in DDoS attacks."

Why is DDoS more of a concern nowadays? Rohlandt cited the pandemic, which has accelerated digitalisation and increased attacks on digital infrastructure. "As a result," he said, "DDoS attacks are becoming more frequent, varied, and sophisticated. In the last year, cybercriminals launched over nine million DDoS attacks globally, including Africa, with around 4.4 million occurring in the second half of 2021."

Ransomware, hacktivism, nation state attacks, politics and disruption of services between business competitors are other drivers. Also, as Evans said: "One doesn't need technical skills to launch a DDoS attack. One can pay for a DDoS attack to be carried out at a fairly low price."

He noted, "Africa has already experienced targeted attacks aimed at service providers. Service providers host multiple customers and once you know how to target a particular service provider successfully, they represent a customer-rich target environment."

DDoS attacks are becoming more frequent, varied, and sophisticated

Of course cybercrime in Africa isn't new. Rohlandt said, "In 2016, cybercrime cost the Kenyan economy about US$36mn, the South African economy US$573mn and the Nigerian economy US$500mn."

Citing Insights from The African Cyberthreat Assessment Report 2021, he pointed out that Africa has more than 500 million internet users. In addition, more than 90% of African businesses operate without the necessary cyber security protocols There's also the growth of tech particular to Africa – like mobile banking, which has, he said, "inspired criminals to create new scams linked to these new technologies".

But DDoS in particular can be combated. Liquid's DDoS Secure solution proactively mitigates attacks by scrubbing traffic and blocking known attackers or malicious traffic at one of its four scrubbing centres. On top of this, this service can give clients a line of sight into an attempted disruption by providing reports on attacks.

Meanwhile, Liquid's Next-Gen Cyber Security Fusion Centre makes it possible to monitor all online activity live and deter an attack before it reaches your network. And Liquid Intelligent Technologies' DDoS Secure protects targeted servers or networks from attack. By using specially designed network equipment, a targeted victim can mitigate the incoming threat.

As for SVLA, Evans offered some background, pointing out that to keep DDoS mitigation platforms operating optimally requires constant testing for vulnerabilities, requiring the DDoS platform to be brought down, running a series of vulnerability tests, reconfiguring the platform and bringing it up again, all in a very time-constrained, expensive maintenance window.

"As a result," he said, "these are run infrequently, resulting in what is called a DDoS gap i.e. a measure of how vulnerable a particular DDoS mitigation platform is at that moment in time. A

recently recalibrated DDoS mitigation platform may have a DDoS gap of only 5%, three-to-six months. Thereafter it will probably have a gap of 30-45%." He explained: "It's like a homeowner or business relying on a high wall and an electric fence to keep intruders out – only the electric fence isn't working due to load shedding."

Most DDoS mitigation platforms can handle layer 3 & 4 attacks. The original DDoS mitigation platforms don't necessarily prevent the more dangerous layer 7 attacks in their original form, often requiring changing out the DDoS mitigation platform or purchasing a new application layer protection option, which is expensive.

Hence SVLA proposes the Mazebolt RADAR solution, which is "effectively an automated 24x7 breach attack simulation solution for all vendor DDoS mitigation platforms. It continually tests one's DDoS defences providing prioritised remediation notifications that can be applied to keep the DDoS Gap between 0-2%".

But is cybersecurity a priority for African governments and businesses? According to the Brookings Institute, some progress has been made. The African Union, as part of its "Agenda 2063" for transforming Africa, has identified cybersecurity as a key priority to ensure that emerging technologies are used for the benefit of African individuals, institutions, and nation states and to guarantee data protection and safety online.

However, most countries are not like Mauritius, which, Rohlandt pointed out, has set up a National Disaster Cybersecurity and Cybercrime Committee that includes public and private sectors. It facilitates the monitoring, controlling, and transmitting of decisions during cyber crises. "Mauritius has built a centralised portal to report cyber incidents and a security operations centre to detect and monitor malicious traffic in real time to enhance the country's cyber threat preparedness."

In the area of cybersecurity, there is a history of a lack of funding or prioritisation

A big problem is that, as Evans said, "Cybersecurity is resource intensive – both from a financial and skill perspective – and in the area of cybersecurity, there is a history of a lack of funding or prioritisation."

He continued, "A lot of small business owners believe they could not possibly be a target and are thus apathetic when it comes to cybersecurity. Even where cybersecurity processes and controls are in place, I question how effective they will prove to be when they are attacked."

The answer? "It is our contention that business owners and leaders need to view cyber risk as a business risk and manage it in line with what their business needs," he said, adding, "Outsourcing cybersecurity services to MSSPs [managed security service providers] who know what they are doing is one approach, but businesses and governments must ensure their service providers are using the newer, fully automated, AI/ML-enabled solutions which are built from the ground up to do more, for less." ✆

Photo: Liquid Intelligent Technologies

Tarquin Rohlandt: "In the last year, cybercriminals launched over nine million DDoS attacks globally."

Continued from page 12

usage in our customer base. But one of the most interesting is working with partners to ensure, first, that homegrown and imported content is available in these markets, and second, that consumers are incentivised to access it through the Africell platform.

Communications Africa: Africell has moved quite aggressively in Angola, winning customers and offering new services (like AfriTV). Why do you think Angola has responded so well to the new entrant?

Godfrey Efeurhobo, Africell: When Africell launched services in Angola, the country was desperate for a new mobile operator. Two decades of de facto monopoly had short-changed consumers. In our first six months we have presented a fresh and dynamic alternative. Africell data costs significantly less than that available from other operators, and our network offers dramatically faster connectivity. Opting into Africell is a logical choice for consumers. After a successful first six months, during which we have earned substantial market share and a lot of favourable brand recognition, our task now is to balance the continued pursuit of higher subscriber numbers with a focus on increasing the average revenue from each of these users.

Photo: Africell

Africell's Store in Belas, Luanda

My aim is to double the group's overall subscriber numbers and revenues within a short period

Communications Africa: In the announcement of your appointment you refer to paying attention to the 'unique features' of each market. Apart from size are there any that stand out already? And what sort of technologies and support systems will you use to collate data on these markets that could be strategically useful?

Godfrey Efeurhobo, Africell: On-the-ground realities such as lifestyle habits, occupations, sources and levels of income, travel and commuting patterns, the built environment of cities and towns, entertainment channels, the size and distribution of the diaspora, and many more factors should inform a commercial strategy. It is essential to understand and be connected with the socio-economic fabric of each market. A one-size-fits-all commercial approach will do more harm than good and leave a lot of potential untapped. Having candid and transparent dialogue with partners, retailers and consumers is a good place to start. These people are situated in communities, interacting with customers day in and day out, and they are essential in providing intelligence and helping to identify issues, flag pain points, and suggest areas in which we can better meet customer needs. ✆

A new view of African viewers

The recent publication of Intelsat's Media Market Watch 2022* takes a close look at the African TV market. Intelsat's Rhys Morgan explained why, as one of the fastest-growing TV markets in the world, Africa offers a significant market opportunity.

Communications Africa: Could you tell us something about your satcoms offering for Africa?
Rhys Morgan, vice-president – general manager, EMEA Media and Networks Sales, Intelsat: With Africa one of the world's fastest-growing TV markets, Intelsat is ideally positioned to help media organisations reach millions of households in underserved areas through one of seven prime orbital locations and video neighbourhoods. Serving 45 million viewers across six African sub-Saharan countries, Intelsat 20 (IS-20) brings more than 560 pay TV and free-to-air (FTA) channels to millions of households every day.

While our satellite fleet is in geosynchronous orbit around Earth, enabling carrier-grade connectivity when and where it's needed most, we believe in NGSO [non-geostationary orbit] capabilities, and this is why we are investing over US$2bn to build the world's first multi-orbit, multi-layered unified 5G network.

Communications Africa: You refer to a mix of traditional and high throughput satellites. Is this simply to do with the age of the satellites?
Rhys Morgan, Intelsat: This mix of traditional and high throughput satellite, soon completed by software defined satellites, four of which have been ordered, forms the backbone of our Unified Network, enabling resilient, cost-effective connectivity when and where it is needed most. We launched on October 8th two traditional satellites, Galaxy 33 and Galaxy 34, part of the Intelsat Galaxy fleet – the most reliable and efficient media content distribution system in North America. These were the first of seven satellites to launch over a six-month period, which will include the high throughput satellite Intelsat 40e, expected to launch early 2023. With ten traditional, HTS and software-defined satellites in production – the largest number in production seen in the industry – we are committed to a reliable and high-performance technology path for our customers.

The African space market is a very competitive market with many countries launching their own programmes

Communications Africa: Can your satcoms capabilities manage growth in demand?
Rhys Morgan, Intelsat: We already have 26 satellites covering Africa but, as in other regions, we are always reviewing customers' requirements and demand evolution. The addition of two software-defined satellites, Intelsat 41 and Intelsat 44, to our Unified Network, will bring high-speed dynamically allocated connectivity across Africa, and also Europe, the Middle East and Asia, for commercial and government mobility services and cellular backhaul.

Communications Africa: How has the process of audience measurement changed over the years?
Rhys Morgan, Intelsat: The media surveys we have worked on are designed to show content providers how to reach and engage with existing and potential audiences. We have seen results evolving over the years as the continent accelerated its economic development with an impact on income, as access to smartphones was made easier and with its young population's changing viewing behaviour shaping the media landscape of tomorrow.

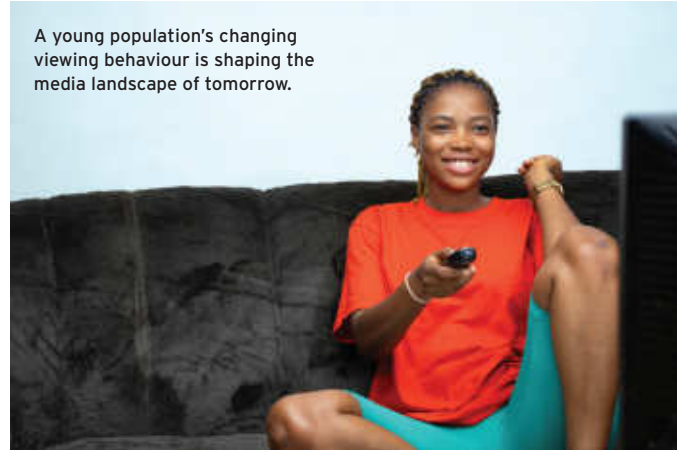

A young population's changing viewing behaviour is shaping the media landscape of tomorrow.

Photo: Adobe Stock

The most recent study, Intelsat's Media Market Watch 2022*, provides broadcasters with insightful information to assess the reach, reliability, quality and revenue potential of technology choices for delivering content. It uncovers the preferences and demographics of urban free-to-air TV viewers in six sub-Saharan African countries (Nigeria, South Africa, Kenya, Ethiopia, Ghana and Tanzania). The study finds that these countries have maintained a steady increase in free-to-air viewers, driving demand for diverse and relatable content reflecting local languages and cultures. We also conduct similar surveys in other regions.

Communications Africa: How difficult is measuring audiences in Africa? Will technology make it easier in the coming years?
Rhys Morgan, Intelsat: With 54 countries, more than 2,000 languages spoken, and huge disparities between some regions, measuring audiences in Africa is not an easy task.

Communications Africa: You say: "Satellite enjoys the highest penetration of all content delivery technologies into TV households and will continue to do so for decades." Will that mean more market entrants or do investment costs favour established players like Intelsat?
Rhys Morgan, Intelsat: Africa is one of the fastest-growing TV markets in the world. With a population of 1.2 billion people and counting, TV penetration in Africa is at 42%, with the potential to reach 58% of under-served people.

The African space market is already a very competitive market with many countries launching their own programmes, but we believe that our 60+ years of expertise, combined with the strong investment in our video neighbourhoods and now in our Unified Network, position Intelsat optimally to help media organisations cater to the ever-changing needs of their consumers, today and in the future. ✆

**You can find Intelsat's Media Market Watch 2022 for Africa at www.intelsat.com/resources/*

Strategic policy decisions can turn smart cities into smart nations

Developing countries have an opportunity to use technology to reduce national inequalities. How? One answer could be through smart cities – but they have to be managed and rolled out appropriately, as Simon Fletcher, CTO of Real Wireless, explains.

Photo: Adobe Stock

Smart city investment could have a positive effect on healthcare – but who pays?

DEVELOPED AND DEVELOPING countries all want smart cities. Done well, they tick all the right boxes for governments and for business, both of which have targets to become more efficient, more accessible online and to make themselves better connected to their stakeholders.

Private or public, the benefits of smart cities include headline hallmarks of corporate social responsibility. They're sustainable – or, at least, environmentally less damaging – they support and can help drive economic activity and they improve the quality of life for the city's residents in terms of safety and security. They also improve communications, infrastructure, service provision, transportation, data access and sharing, and even energy distribution and consumption.

At the most fundament level, smart cities use technology to find new and more efficient (often automated) ways to solve urban challenges and to support growing urban populations. Executed well, the output from such initiatives includes more data that can be shared between connected people, systems and locations, enabling more effective health and social service delivery.

Interpreted correctly, the overriding outcomes of this big data include improvements in governance, and even in social infrastructure. At a more micro level, smart buildings – with connected cooling, heating, lighting and security – can detect the presence of people and thereby minimise power consumption and maximise safety and security for their users.

So how does this work in terms of infrastructure? Smart cities typically incorporate some element of Internet of Things (IoT) technologies. For that reason, connectivity between nodes, connected systems and networks has a big role to play in successful deployments.

Executed well, the output from such initiatives includes more data that can be shared between connected people, systems and locations, enabling more effective health and social service delivery.

Having more systems connected, more portable devices, and more sensors interconnected and sharing data can certainly be useful. However, this connectivity can bring with it a significant new task: handling and processing the resultant 'big data'. This is often one of the most challenging parts in enabling any complex IoT network.

In terms of the communications technologies being deployed, there is an obvious emphasis on the traditional cellular base, from M2M based on 2G to an increasing use of 4G (LTE) and 5G. Future generations, 6G and beyond, are being developed from the ground up to suit smart city infrastructure – that is, to ensure people, devices, sensors and smart nodes remain fully connected to a city's online systems.

Returning to the here and now, technologies such as LoRaWAN are starting to develop to meet the needs of IoT applications. [Editor's note: LoRaWAN is an abbreviation for long range

wide area network. It's a type of low power wide area network (LPWAN) that uses open-source technology and transmits over unlicensed frequency bands].

In fact, such technologies have also been developed specifically for the applications of smart cities. Having said that, there is some need for bolstering the security credentials of LoRa compared to cellular architectures which are naturally built with security features.

Developed economies are increasingly looking at rolling out smart infrastructure – particularly in the major cities – but it's when countries put it on their national agenda that they see the greatest benefits. A good example can be seen in Norway. The country's Powerhouse collaboration sets out to ensure its buildings generate more energy than they consume, even including their construction and demolition.

Despite all of this positive news, the business case for providing more specialised services to both enterprises and public sector organisations is unclear and will vary depending on the deployment type.

What does this mean? Well, let's consider a practical health care example taken from work Real Wireless undertook as part of the EC's 5G TOURS trials. 5G TOURS was designed to assess the techno-economic viability of smart city uses based on 5G technology. Its name is short for SmarT mObility, media and e-health for toURists and citizenS.

A health initiative was part of the trials. This took place largely around Rennes, in France, and shows the ability of 5G to serve relevant use cases such as remote health monitoring, emergency situation notification, teleguidance for diagnostics and intervention support, a wireless-enabled operating room and optimal ambulance routing.

These have a focus, as you might expect, that would most likely interest healthcare professionals, rather than ordinary consumers or private businesses.

As for the benefits, a hospital putting in a dedicated network around its operating theatre and using augmented reality to support the surgeon may improve the level of care received (and hence patient experience) with potential benefits such as reductions in the chances of post-operative complications and related emergency re-admission. The overall health system gets a benefit because fewer patients are going through the system.

But would the cost benefits in funding the installation of the wireless network for a hospital convince the funding group – the hospital trust, perhaps or the government – to pay for it? Judging the worth of this initiative may therefore involve looking at the benefit to society as a whole and then making the case for the funding.

It's certainly worth reflecting on the learnings from Liverpool 5G, 5G TOURS and other projects we've been involved in at Real Wireless. One important learning is to ensure the business case is properly assessed from the outset: these projects can involve significant investments, so it is essential to ensure the cost-benefit analysis strikes the right balance. This is particularly true at a time when, globally, health, and other public services, are facing reduced spending and overstretched resources.

For smart city investment, the key is to think holistically. It's rare that single use cases add up to a compelling business case in their own right.

Technologies such as LoRaWAN are starting to develop to meet the needs of IoT applications

But perhaps the single most significant takeaway from all our work in this context is that, for smart city investment, the key is to think holistically. It's rare that single use cases add up to a compelling business case in their own right.

Another way of making the same point is that smart city investment should never be supply-side driven – vendors are inclined to overstate the savings implied by the deployment of their products and underestimate how much it costs to roll them out cost-effectively. Right now Real Wireless is working with policymakers to better understand baseline aggregated use case blueprints that maximise smart city ROI for governments and local authorities.

Developing countries looking at the existing case studies on smart city deployments have a lot of positives to take away in terms of returns on investments and potential benefits to society and to government. However, one opportunity many developed countries are missing is the opportunity to move away from isolated smart cities to broader smart nation developments.

National digital transformation policy is another important consideration. When it comes to technology, developing countries can leapfrog developed economies, rolling out 4G LTE or 5G infrastructure, even LoRA, without the burden of supporting legacy cellular or other city-wide or nation-wide networks.

If the shift moves from investing in developing smart capital cities to a broader nationwide policy, then governments have an opportunity to tackle their strategic national priorities via nationwide smart infrastructure. Done well, this will avoid deepening divides between a country's poor and rich areas.

As with a smart city rollout, the needs and the potential benefits of a smart national infrastructure must be balanced carefully against its costs. There are many aspects that need to be carefully planned to deliver value and sensible return on national investment. Spectrum, network infrastructure choices... if you invest poorly or without careful consideration, the results can be ruinous. ✆

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. For more information on 5G TOURS and 5G in Liverpool, as well as Real Wireless services, see www.real-wireless.com

Photo: Adobe Stock

Cities like Accra could save on power consumption with connected cooling, heating, lighting and security.

The fast-changing cost of connectivity

The potential of smartphones in the African market is vast. But are pricing and availability going to make things difficult for the consumer? Ron Murphy discussed the state of the mobile devices market in Africa with Arnold Ponela of IDC.

IN AUGUST A news item from analysts at IDC* entitled Africa's Smartphone Market Declines for Fifth Consecutive Quarter Due to Global Supply Shortages and Slowing Demand appeared. It was based on trends uncovered by the latest edition of the company's Quarterly Global Mobile Phone Tracker.

We asked Arnold Ponela, an IDC research analyst for mobile devices and image printing and document solutions (IPDS) in South Africa and sub-Saharan Africa, to assess the present state of the mobile devices market in Africa.

Of course, regular readers know that we often see new announcements about affordable devices for Africa, but are they really affordable? Ponela suggested that some are. "The devices are affordable to cash-strapped consumers in Africa – with some entry-level smartphones costing around US$25," he said. In fact, he added, "During the first half of 2022, the African market was dominated by devices that cost less than US$100, which constituted about 38.8% of the total market. These affordable smartphones are contributing to bringing more people online across Africa."

During the first half of 2022, the African market was dominated by devices that cost less than US$100

Photo: Adobe Stock

Africa's business people would benefit from better – and cheaper – phones.

As for where would-be manufacturers should be aiming in price terms, he reiterated that the market has been driven by entry-level smartphones and mid-range phones which have made it possible for many people to own a smartphone. "Therefore," he continued, "to penetrate the African market most manufacturers are targeting the less than US$200 segment which represented about 81% of the market in H1 2022."

It's true to say demand is still high but is there availability? "Despite the African market still being dominated by feature phones, the need for devices that connect them to the internet has seen consumers migrating from basic and feature phones to smartphones." Again the increasing number of smartphone models priced under the US$100 mark will be the main driver of this consumer migration.

In case you were wondering how to define these phones, Ponela said, "A feature phone is a device that runs a proprietary or real-time operating system (RTOS), and the devices are designed to perform phone calls and SMS and nothing more. On the other hand, smartphones contain a high-level operating system such as Android. When it's an entry-level smartphone it has smaller memory and lower storage capacity with few of the advanced features of a mid- or high-end phone."

And what do end users want? Do younger, tech-savvy users – and Africa has a very young population – want feature-rich devices?

"African consumers are shifting their buying patterns towards affordable and feature-rich products. Some of the features that consumers are looking for include larger screens, large memory and storage capacity."

That's the good news, but how much of a problem is component supply? Will that ease?

Apparently not for a while, said Ponela. "Supply chain issues have hampered the production of smartphones. Logistical and operational issues such as production capacity have added to the situation and most original equipment manufacturers (OEMs) are seeing inventory shortfalls. The problem is set to continue throughout 2022."

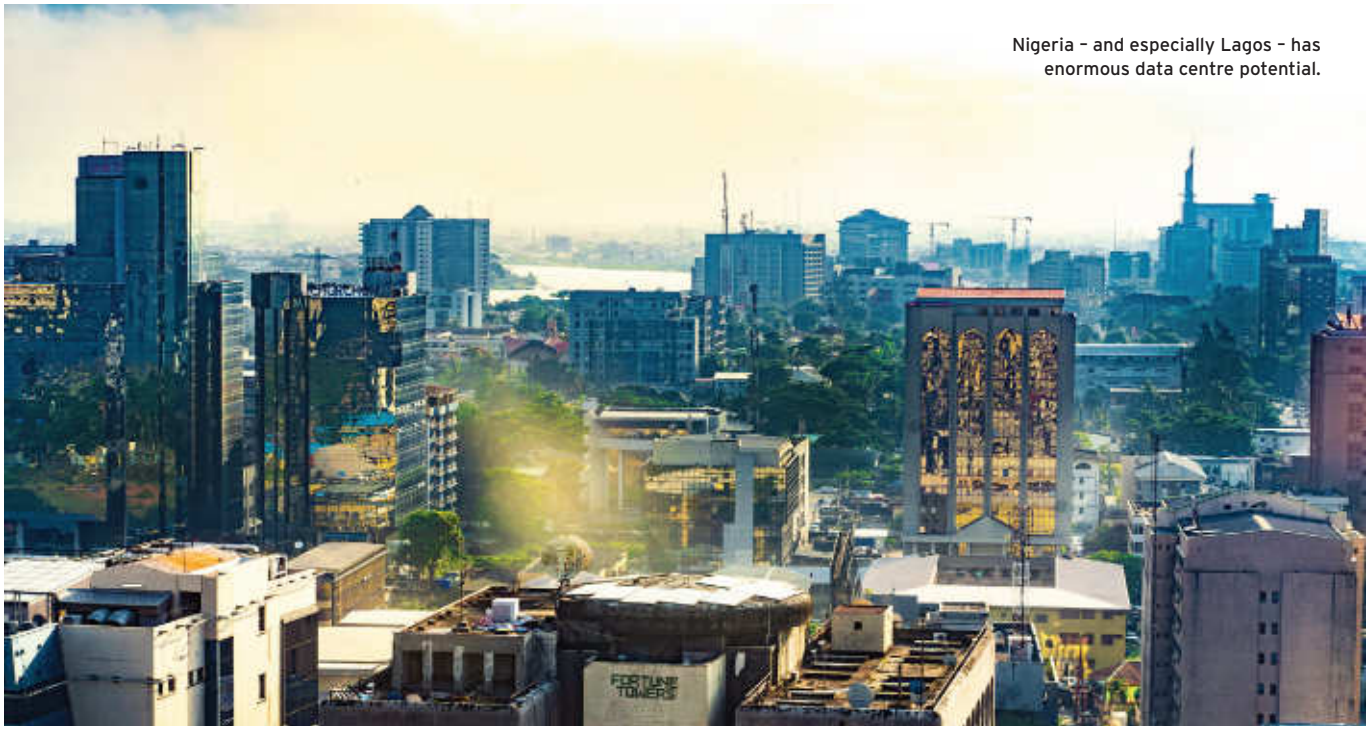
Meanwhile the potential switch-off of 2G and 3G in some regions may not have a major influence on buying trends. As Ponela said, "We are already seeing a growing number of 4G feature phones." However, he added, "The only challenge is that some of these devices cost more than an entry-level device. For instance, the Nokia 2720 Flip feature phone cost around US$70, whereas the itel A13, which is an entry-level smartphone, cost US$25. Consumers would rather buy a smartphone in this case."

As and when supply chain issues ease this could prove a very interesting market indeed. ✆

International Data Corporation (IDC) is a global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. www.idc.com

Supplying – and supporting – data centre growth

While data centre growth is clearly ramping up in Africa, is demand likely to remain ahead of supply for some time? And can more be done to enable effective rollout? Representatives of two major names in the business, Siemon and Open Access Data Centres, discussed managing growth in the African market with Vaughan O'Grady.



Nigeria – and especially Lagos – has enormous data centre potential.

Photo: Adobe Stock

"THE GROWTH RATE for data centres in Africa is ahead of its curve and this is likely to continue into the future." That's the view of Dinesh OP, technical manager for Africa at Siemon, whose portfolio includes the design and manufacture of IT infrastructure solutions and services for data centres. As he told us, new subsea cables (such as PEACE, Equiano, 2Africa, Africa-1 and Raman) are coming into Africa and new cable landing points with new cable routes are being developed.

He continued, "This will increase internet penetration on the continent exponentially, resulting in more edge data centres needed to handle the data from increased traffic. The cable landing stations will drive the demand for new PoPs (points of presence) with many new colocation data centre facilities then connecting to these POPs and the cable landing stations."

He added, "Data centre growth is also driven by national governments which support enterprises migrating from on-premise to colocation and managed services data centres, which support the adoption of advanced, higher-performing IT infrastructures."

As for demand, Dr Ayotunde Coker, CEO of Open Access Data Centres, which is constructing and operating a pan-African network of world-class, client-centric data centre facilities, suggested that demand is likely to be ahead of supply, then align in the medium term. As he said, "Africa has 17% of the global population and 4% of global GDP; however it only has 1% (though growing) of global installed data centre capacity – as assessed by Xalam Analytics."

Broadband penetration is growing, though very unevenly, across the continent. Hotspots of penetration are emerging in South Africa, Nigeria and Kenya. "As we increase penetration and drive adoption with efficient services delivered at the edge, demand for data centre capacity will continue to grow."

Are local regulation and power or comms infrastructure able to manage this? "We expect so," said Coker. "The scale of power requirements is such that specific projects, be they hydro or gas, have to be implemented for capacity demand. Africa has the opportunity to develop power infrastructure as required in a sustainable way to meet demand. The regional ability to scale up power infrastructure, however, will drive choices of data centre location."

Governments of African countries play a key role in developing the local power and communications infrastructures

He added, "Regardless of primary power source, data centres must have back-up power to meet the levels of resilience demanded.

OP said, "The amount of power needed to support this data centre growth is huge. According to a 2021 report by Xalam Analytics and the Africa Data Centres Association, Africa will need to add at least 1000 MW of capacity." By contrast, he said, "Communications infrastructure is relatively cheaper with service providers providing cutting edge technologies."

So what would OP like to see done to speed up the process? He said, "Governments of African countries play a key role in developing the local power and communications infrastructures. They will have to take the initiative and work on policies that will support the development process."

He added, "Also, increased foreign

investment can speed up the process and enhance power and comms infrastructure. Here, governments also play a role in creating and providing a healthy and investment-friendly environment and in simplifying the application process for foreign investors. Lastly, local availability of skilled labour to support this development is critical. This requires the provision of vocational training from universities or training from manufacturers and training institutions that are specialised in data centre and information technology, and governments to promote and provide scholarship."

Coker pointed to the need to build out rapidly at scale with the architecture and specifications required by the hyperscalers. He added, "We also see that the harmonisation of sovereign data and data protection rules across the continent, as part of the Africa Continental Free Trade Area, will raise the efficient delivery of data centre capacity across the continent".

He believes that the key hubs will continue to be South Africa, Nigeria – in particular Lagos – and the Kenya/Ethiopia axis, although he said, "A benign regulatory and supervisory environment would certainly help." He also made the interesting point that "the capacity constraints emerging in Europe due to lack of planning permissions and power availability will push compute capacity to African data centres".

Let's not forget edge data as a response to the need to bring data closer to the customer. Is this easier and quicker to deploy than hyperscale data centres?

Coker said, "We have commissioned more than 30 edge data centres across South Africa since the start of 2022. However, this has to be done without compromising primary quality of infrastructure. We offer local 'eyeball' networks and ISPs the opportunity to have access to quality infrastructure closer to their customer point of demand. We aggregate their demand, security and power infrastructure availability, significantly reducing the cost for individual carriers or ISPs at the 'edge'."

For OP, edge data centres differ from large centralised facilities in that they handle the processing of applications, data analytics and data storage within the general vicinity of end users and devices that use those applications and data. "However," he pointed out, "when being set up, edge data centres require the same power, cooling, connectivity and security that is being found in centralised data centres, only on a smaller scale." Thus it seems that edge data centres require IT infrastructure that provides higher density and that can manage a large number of physical connections within a small space.

"Also," he added, "deploying edge data centres requires a modular approach. Once specified, modules and configurations should allow for an easy replication from one site to the next and they should also allow for local demand-based growth. Pre-terminated plug and play copper and fibre cabling systems, for example, can reduce installation time by up to 90%. They are factory terminated and tested and provide guaranteed performance levels."

Photo: Dinesh OP

Dinesh OP: "Local availability of skilled labour to support this development is critical"

Many edge data centres will be unmanned or limited access sites. "They will also benefit from automated infrastructure management (AIM) tools (such as Siemon's MapIT G2 with EagleEye software) that enables remote management and monitoring of copper and fibre connections."

The capacity constraints emerging in Europe will push compute capacity to African data centres

A regular concern is energy efficiency and sustainability. Will this slow down the development process? OP agreed that in terms of power sources and power supply, renewable energy such as solar is becoming increasingly important in Africa. He cited a 2021 report from the Africa Solar Industry Association that suggests African countries are developing their solar infrastructure.

He added, "Some data centre operators and owners start converting their facilities to using renewable energy but power consumption can also be addressed through new data centre technologies such as virtualisation."

It's not just about power consumption of course. "It remains important to analyse and monitor where power inefficiencies lie, e.g. through the use of intelligent power distribution units (PDUs)."

Sustainability is certainly part of the OADC roadmap "and is engineered into our infrastructure as we go along", said Coker. "We advocate and promote this by sponsoring initiatives such as the ReEnergy Africa conference, which is being held in Rwanda this year, and other innovations and initiatives; so much so, in fact, that we are recruiting at senior level to focus on our sustainability agenda."

Photo: Open Access Data Centres

Dr Ayotunde Coker: "Data centres must have back-up power to meet the levels of resilience demanded"

Finally, after South Africa, which countries do these two experts see as likeliest to enjoy data centre growth in the coming years?

Coker cited Nigeria and in particular Lagos, pointing out that there are 150 million people connected to the internet in Nigeria, 80 million of them (a number that is rising) with access to broadband. Broadband access in Lagos – with a population of about 22 million – is over 70%. The demand drivers are high and access to gas-generated electricity, even if via private power purchase agreements, needs to ramp up to meet demand.

He summarised, "Lagos has six undersea cables directly connected: ACE, Glo1, MainOne, SAT-3, WACS, and most recently Google's Equiano, which lands directly into Open Access Data Centres' facility in Lagos. Meta's 2Africa is expected to land at multiple locations in the next 18 months. All are significant demand drivers for the location, which is half the latency of connectivity from Cape Town to Europe. This makes Lagos an excellent geographical location."

OP said, "While South Africa is already attracting hyperscale data centre players, sub-Saharan Africa as well as Egypt and Morocco lead the data centre market in terms of data centre growth. In East and West Africa it is countries including Kenya, Uganda, Ethiopia and Nigeria." ✆

500 million reasons to welcome the LEO revolution

Is direct connectivity from satellites to devices possible? And could it be a feasible and affordable way of reaching unconnected communities? The answer to both questions, as Tim Hatt of GSMA Intelligence told Vaughan O'Grady, could be yes.

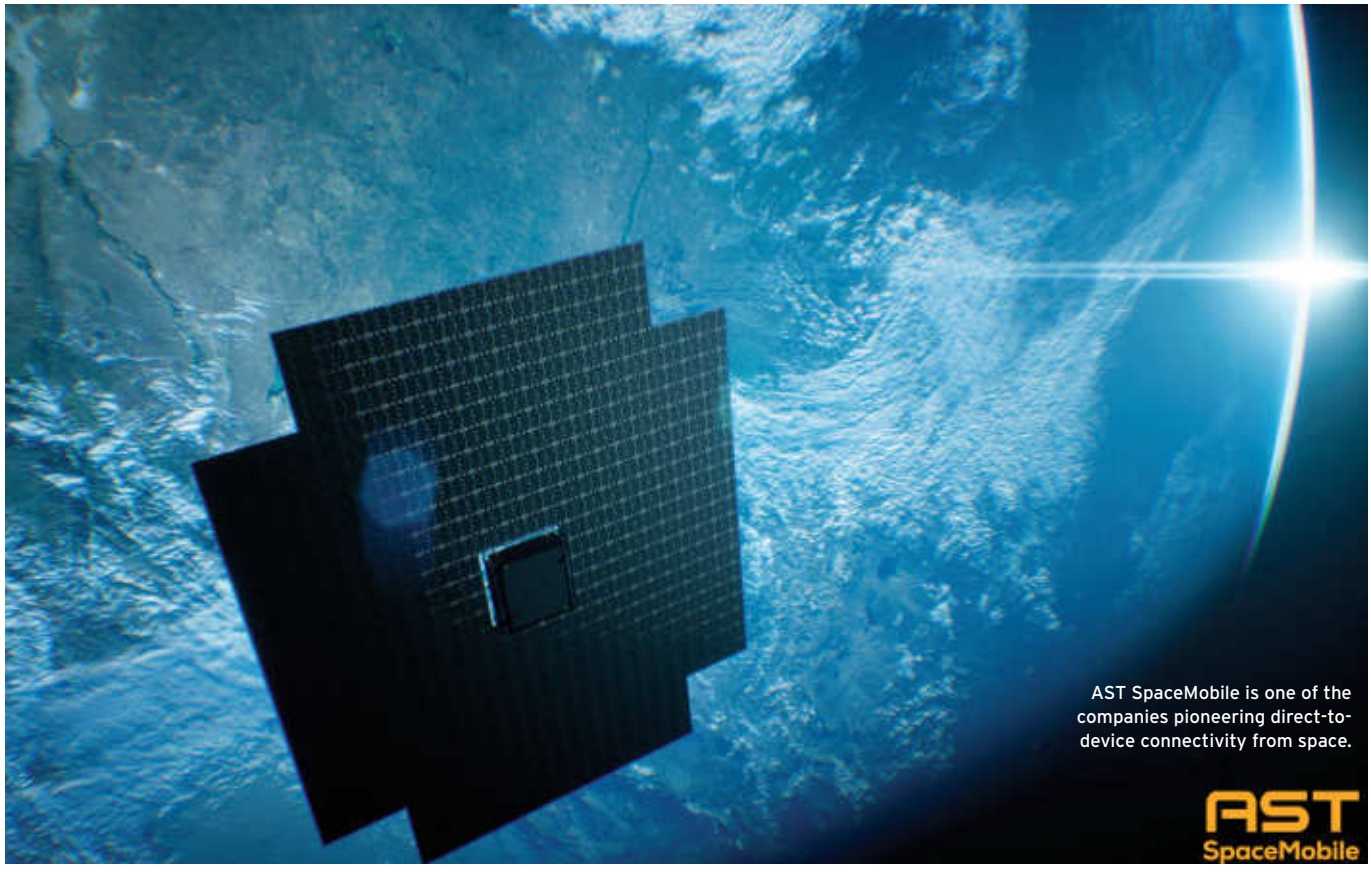


Photo: AST SpaceMobile

AST SpaceMobile is one of the companies pioneering direct-to-device connectivity from space.

TIM HATT IS head of research with GSMA Intelligence (GSMAi) and author of Satellite 2.0: going direct to device, a report that discusses and assesses direct-to-device (D2D) satellite technology – a technology that seeks to help operators reach the large section of the world's population that remains out of range of mobile and internet access.

"The reason satellite has come back into play," he said, "is because there has been a fundamental shift in the cost structure of the economics for launching satellites as well as maintaining them in orbit. That has allowed much higher-density constellations to be formed, which increases the throughput and makes the service better overall."

There have also been improvements in terms of how connectivity from space is integrated with a terrestrial network. "That's become a much more seamless process."

Most importantly, perhaps, there's also been a significant change in terms of how the end user cost has come down. As Hatt said, "Historically that has been a major barrier to uptake because you require a dish or other type of receiving equipment."

There has been a fundamental shift in the cost structure of the economics for launching satellites as well as maintaining them in orbit

However, with the ability for a satellite signal to be received directly by somebody's phone, end users don't need to own any receiving dish or kind of router. The signal now just goes right to your phone.

"And so," Hatt said, "there has been a very big increase in the addressable market for satellite that is now coming online through wholesale satcom and mobile operator partnerships."

This is clearly a long way from the 1990s when early Iridium and Globalstar satellite phones had to ensure a clear connectivity path to the satellite being used – not easy in urban areas or bad weather. As Hatt explained, "The way engineers have been able to hone the beam array forming means that the satellite beams track your location much better – much like a GPS would do."

It's not quite as easy when you're looking at a maritime application for a geostationary satellite. A GEO satellite cruises at a single altitude of 36,000 kilometres or more, which is not ideal for direct connectivity. They're also at one single fixed point related to the phone. "But," said Hatt, "with LEO (low earth) orbits" – which means Starlink, OneWeb, Omnispace, Amazon and others – "they've had to improve the tracking technology and that's been a big factor."

Will such improvements continue? GSMAi believes so, partly because they address the

coverage gap – the population of the world living outside of a 3G or 4G signal. Of course the gap is narrowing because of terrestrial expansions, but it's still at about 500 million people.

Hatt explained, "There's still a latent market for people that require coverage to get a mobile phone or get on the internet, plus the ability to roam domestically or internationally, particularly in emerging markets like Africa and India. These are heavy demand drivers that will underpin satellite expansion."

So who, in Africa, could benefit? Businesses and schools? Or individual end users?

Both, it seems. As Hatt's report suggests, there is undoubtedly a B2B market – mostly IoT devices or M2M for utilities companies and manufacturing [see Sateliot interview on page 23]. There's also a government market. But for the direct-to-device (D2D) variant, you also have consumers in play who are using a mobile phone. "You may have community institutions who are using it for a broadband connection – like a hospital, rural clinic or school – as well as mainstream business customers."

How then does the billing process work? "That," said Hatt, "would come down to the nature of a commercial partnership between a satellite company and operator. In most cases the operator will own the customer relationship and they would enter into a revenue share agreement or some other type of arrangement for wholesale backhaul connectivity with the satellite company."

An important part in all this is played by standardisation – and specifically the 5G new radio (NR) standard that incorporates integration for NTN or non-terrestrial networks. This became integrated because of support from the industries gathering to formulate the next generation of standards for the notion that satellite and non-terrestrial should be a part of mainstream communications options.

"3GPP is the global standard-setting body that sets the mobile phone standards we all use and when NTN came up in the latest release, it was the first time it had been integrated in the mobile phone standards – and the latest release of that is 5G NR. At the stroke of a pen that greatly augments the addressable base of devices that can use satellite."

Ultimately this is a win/win story about reaching new customers and revenue segments

Thus in the past you either had to have a specialty phone manufactured purely to use a satellite signal or you had to buy a dish or other specialised receiving equipment. Now you can buy a phone with a chipset engineered to receive a satellite signal directly from space. "We're talking an order of magnitude difference," said Hatt, who added, "That is the sort of big regulatory change that lays the groundwork for the addressable base to size up considerably."


Could satellites eventually connect anyone, anywhere?

Photo: Adobe Stock

And it's a big addressable base. Hatt's report suggests a coverage gap that could involve 500 to 600 million people – plus businesses. "When you translate that into an addressable revenue opportunity, we think it's around just over US$30bn by 2035 per year – a not insignificant opportunity."

Areas like Africa would be a major beneficiary. But Vietnam, Myanmar, India and even parts of Europe, the US and other higher-income countries still have low-density areas in rural parts that present an economic issue for operators when it comes to coverage.

Returning to the B2B and IoT market Hatt said, "We ran a global enterprise survey – 3,000 businesses across the world, segmented by sector – and around 20 to 25% of them said they would consider using satellite connectivity."

By businesses he refers to public utilities, manufacturing groups, energy companies and public sector bodies, "all of which are facing a coverage issue in some areas and are looking for an economical means of getting there".

Also now that we're recovering from the pandemic, the increase in cross-border trade, and the ability to have a seamless roaming connection with lorries and trucks and the shipping industry are all key drivers of the IoT part of this discussion.

He agrees, however, that it's early days yet. As he said, "From the satellite perspective, Starlink, which is Elon Musk's company, is the only one to really be offering a consumer product direct. They have a beta trial in the UK and the US. Most of the other satellite companies are offering wholesale deals with the operators. Even Starlink's partnership with T-Mobile in the US is a wholesale offering."

There are many companies gearing up to target this market alongside Starlink. We spoke to AST SpaceMobile in issue 3 this year. Lynk Global has detailed ambitions to have up to 50 satellites in operation within a year of its initial launch. And they're not alone.

GSMAi isn't recommending any manufacturer or service in particular. Its reports don't take a position. These are analyst reports designed to inform operator stakeholders and others. "But," said Hatt, "we do think it's important to highlight this because a) we know operators are looking for cost-effective means of reaching unconnected populations and tapping into new revenue streams and b) there's a pragmatic business case to be had here that a lot of mobile operators are taking stock of."

He added, "Ultimately this is a win/win story about reaching new customers and revenue segments through these types of partnerships – because otherwise you'd be doing it on your own through terrestrial capex and expansion or network sharing. And we know there's a limit to how far that can go, given the economics, in very low-density population regions." ✆

GSMA Intelligence is the definitive source of global mobile operator data, insights and forecasts, and a publisher of authoritative industry reports and research. Its subscription-based data platform covers every mobile operator group, network and MVNO in every country worldwide – from Afghanistan to Zimbabwe.
https://data.gsmaintelligence.com

Enabling massive IoT everywhere

Direct-to-device connectivity isn't just about mobile phones. The growth of IoT makes it a very attractive target market for companies offering LEO-based satellite services. One such is Sateliot, whose CEO told us why this is such a promising business model.

Communications Africa: What is your connectivity proposal? What stage has it reached?
Jaume Sanpera, CEO, Sateliot: Sateliot is launching the first low-earth-orbit (LEO) satellite constellation based on the 5G standard, allowing commercial unmodified cellular IoT devices to connect from space. This is the first time in history that cellular terrestrial telecom is merging seamlessly with satellite connectivity – and Sateliot is leading this revolution. Sateliot's cost-effective technology and the possibility to use commercial low-cost (under US$5) devices to connect to satellite opens infinite possibilities in the untapped market of massive IoT in remote areas, and it is in line with Sateliot's mission to make IoT connectivity available everywhere and to everybody.

Communications Africa: Why is IoT (as opposed to voice or data) a good market for direct to device satellite technology?
Jaume Sanpera, CEO, Sateliot: IoT is on an unstoppable growth path worldwide, enabling optimisation of business and sustainability; this is the opposite to the voice and data cellular phone market, which is stagnating. Sateliot is enabling massive IoT allowing cost-effective connectivity everywhere. Direct to satellite is key to being able to deploy regardless of the location of the IoT devices.

This technology can provide near-real-time monitoring services in sectors such as maritime transport, critical infrastructure, logistics, freight transport and many others.

Communications Africa: How does your solution keep costs down?
Jaume Sanpera, CEO, Sateliot: The development of a common standard accepted by the entire industry provides a unique and very cost-effective solution for the whole IoT ecosystem. The use of the connectivity service provided by 5G NB-IoT technology means that they will not have to make changes to their hardware and that adapting to it has a very low cost. In addition Sateliot can also enable universal and low-cost technological solutions in the connection of any smartphone to the satellite.

The development of a common standard accepted by the entire industry provides a unique and very cost-effective solution for the whole IoT ecosystem

There is a change of paradigm in the space industry

Communications Africa: Has the price point of satellite development and launch costs made a direct to device proposition more feasible in recent years?
Jaume Sanpera, CEO, Sateliot: There is a change of paradigm in the space industry – the development of what we call the New Space has led to the entry of new players and the lowering of costs that were previously enormous and unaffordable. Technological advances, shorter development times and lower costs have led to a real revolution that has resulted in the emergence of new companies such as ours.

Before, building a satellite was a very expensive job. Now, with the smallsats and cubesats, this process has been standardised for all satellites and only a specific part of each of the companies interested in launching them needs to be developed.

Communications Africa: Could your offer benefit developing markets like Africa? How?
Jaume Sanpera, CEO, Sateliot: Africa is one of the territories where the use of this technology could be most necessary and useful to solve the connection problems of large areas without coverage. Sateliot's solution has the advantage of being secure, reliable and cost-effective. On this basis, we have to seek agreements with telecom operators, governments and IoT service provider companies so that they can use it to solve the connectivity problems of large areas of the continent, such as those that are in remote areas that are difficult to access or that have complex orography. ✆

Jaume Sanpera, CEO of Sateliot: "IoT is on an unstoppable growth path worldwide."

Photo: Sateliot

The communications revolution that transformed Africa

Africa 2.0: Inside a Continent's Communications Revolution is a major new publication outlining the changes in sub-Saharan Africa brought about by the mobile phone and the internet - changes barely imaginable only a few decades sago. Vaughan O'Grady discussed with its author the breathtaking transformation of African communications outlined in his book.

Will younger 'digital natives' drive Africa's future?

Photo: Adobe Stock

WHEN COMMUNICATIONS AFRICA first appeared in 1991, concepts like mobile communications and the internet were barely known. Indeed, most African governments regarded telecommunications as a strategic resource that could not be shared with private companies – and most African consumers regarded it as a luxury.

Even in Europe, where 1991 was the year that digital 2G mobile was first launched, few people came close to guessing how popular it would eventually be.

Today, however, mobile subscriptions number in the billions – and few regions have been more transformed by mobile communications than sub-Saharan Africa.

In 1986, as a new book on this communications revolution points out, sub-Saharan Africa had fewer phone lines than Manhattan – and getting a fixed line could take two years or more. Today almost half of all Africans have a mobile phone – and over a quarter have access to the internet.

It is this transformation that the book, Africa 2.0: Inside a Continent's Communications Revolution, examines – and such an examination is long overdue.

While there have been many papers, commentaries and articles about this change, it does appear that this is the first book to offer an insight into these extraordinary changes that can be understood and enjoyed by the general reader.

Increasingly in the key growth markets there have been fibre-to-the-home offers and the enforced home lockdowns of Covid have accelerated interest in them

It's been a breathtaking transformation: mobile money, smartphones, streaming and, more recently, fibre, are all available in Africa and being used on a scale few could have imagined possible 36 years ago.

However, as the book wisely notes, some donors and technology advocates got carried away with this success and overpromised – to themselves and others – what telecommunications could do for people, without necessarily taking into account social, political, educational or other factors.

In other words we're still learning what Africa can and could do with communications technology in 2022. But there has undoubtedly been a revolution. And learning about it makes for a great read.

In fact, if anything, there's more to say than this impressive overview can fit in. The stories of Strive Masiyiwa's battle with the Zimbabwean authorities, the development and arrival of subsea cables and, of course, mobile money, could each justify a book on their own. But until that happens, Africa 2.0 is an excellent starting point for anyone wondering how Africa got from a continent with next to no connectivity to where it is today.

Communications Africa editor Vaughan O'Grady talked to author Russell Southwood about some of the issues his book raises.

Vaughan O'Grady, editor, Communications Africa: While mobile money and prepaid were massive successes, a lot of assumptions were made about mobile technology that were not borne out in the real world (like services aimed at rural farmers and traders). Why was this?
Russell Southwood, author, Africa 2.0: It's quite complicated and it's these complications the book explores. Mobile operator Celtel launched Celpay in 2000 and sold it off in 2005 when Celtel was being itself prepared for sell-off. So Celpay was launched a full seven years before M-Pesa was launched in 2007. As one executive in Celtel told me: "There has to be a change in people's mindsets. People were reluctant to be charged 1-2% of their payment when it cost nothing to pay with cash." So that's two things – gaining trust and changing people's behaviour – that seem to me are the golden threads of success.

Interestingly M-Pesa was not initially piloted as a money transfer service but to make micro-finance loans easier. It was during the pilot that Safaricom realised: "Users worked out you could send money to someone else."

And the rest is history? Not quite. M-Pesa faced enormous resistance from a variety of institutional interests – including a group of Kenyan MPs who said it was a Ponzi scheme – which it overcame. There was also an enormous amount of learning that had to take place about how to deliver the service locally. The user numbers were going up but it experienced a tremendous spike in usage because of post-election violence, which meant people were more reluctant to go out.

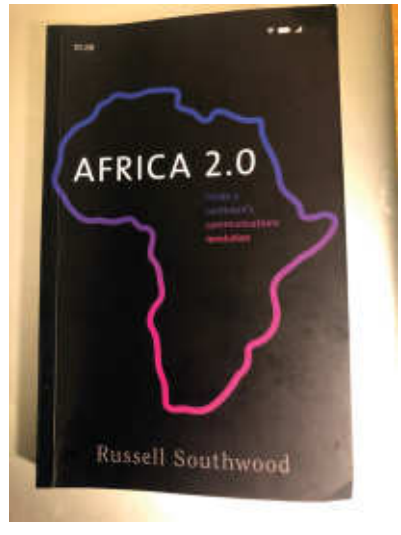
Britain's aid agency DfID put money into M-Pesa and it has probably been one of the best aid investments made over the last two decades. It has spawned an entire payment ecosystem that has allowed all manner of other things to happen, including direct payments to refugees in camps like Dadaab in northern Kenya.

All of this excellent and worthwhile impact has probably masked another truth. M-Pesa works so well because it is used both by the middle classes who have money and those who do not, and this provides the widest user base possible for it to succeed.

Mobile services for small plot farmers and traders – like mobile money services - looked like a 'no-brainer'. Farmers would want information to grow crops better and market information to get better prices. Twenty years later it is slowly beginning to make some progress as other things like loans are added to the mix.

There are a number of 'analogue' obstacles that are hard to overcome. Farmers are often old, less well educated and technologically illiterate. They may grow part of their crop for their family and therefore not always have additional produce in sufficient quantities to sell. Those involved – and I claim my own part of the blame – understood little about food supply chains and logistics. Tech by itself is not always the first answer to all questions.

Vaughan O'Grady, editor, Communications Africa: You mention the dominance of certain big players in mobile money. Is that first mover advantage, bigger companies being better able to manage small margins or something else? Can mobile money ever be as competitive as voice?
Russell Southwood, author, Africa 2.0: It's largely first mover advantage or whoever understood first that mobile money services were very different to other mobile services. In Nigeria, the regulator – under some pressure from the banks – insisted that mobile money services should be launched with the banks. The result has been largely the same with independent provider Paga, who understood how to do it becoming the player with the



The digital future that mobile has opened up transforms the assumptions about what Africans can do and seems to open out a very different future for the continent.

majority market share. The regulation has now been changed and it will be interesting to see how new competition might change things. In Kenya, the reviews of Safaricom's dominant position have in part focused on its ownership of M-Pesa and the company has announced that it will be separated out at the beginning of next year.

One of the primary hurdles to greater equity of market competition has been the lack of interconnection between the different mobile money providers. In the early days of mobile voice, it took some time to convince operators that interconnection was good for them. Now the growth derived from network effects is widely acknowledged. Interconnecting mobile money services is more complicated in practical terms but has the potential for similar network growth effects. So we will have to see whether the developments above produce more competition into these kinds of services at a country level.

Vaughan O'Grady, editor, Communications Africa: Rural and remote coverage remains a great, if often unfulfilled, aim. Do you think remote coverage will finally happen – and without subsidy?
Russell Southwood, author, Africa 2.0: Not all rural and remote areas are the same. There are some that might be described as at the edge of the addressable market where in the right circumstances service can be delivered at the right price. Companies like AMN and NuRAN provide the kind of business case bridge to build out to these communities.

The challenge – and I think I would say the obstacle – is that mobile operators bought national licenses and insist that only they can be providers everywhere, even when they have no intention of bringing services to some of these places. A large company will not always be sufficiently financially lean and it's minimum viability number of subscribers for a base station might be very different from a company whose sole purpose was to reach these kinds of areas.

The issue with subsidy is not whether it should be deployed but how and to which companies. If it goes to the mobile operators, who after all have often provided it, there is the danger that no-one will exert themselves to lower the costs of providing services to very low-income markets. In the long run, all parts of the country should have sufficient income to be able to afford these kinds of services and the provision of them is probably one of several first steps in that direction.

Vaughan O'Grady, editor, Communications Africa: Can cable connectivity finally bring reliable broadband to the interior of the continent?
Russell Southwood, author, Africa 2.0: Building fibre connectivity is always the equivalent of hoppering money in great quantities into the ground. But increasingly in the key growth markets there have been fibre-to-the-home offers and the enforced home lockdowns of Covid have accelerated interest in them. For those less well-off, the burgeoning availability and improved speeds of Wi-Fi services (including hot-spots) has spurred more fibre build-out. In the end, everything – including voice – will be data and big pipes will be needed to carry it all. You see a small number of VoLTE roll-outs and again because of Covid there's

much wider use of WhatsApp and Zoom.

The introduction of 5G contains a number of interesting possibilities. In order for it to work, base stations will require high-capacity fibre links, extending the reach of networks as 5G begins its inevitable spread to ever wider numbers of base stations. 5G is also a way of delivering high-capacity bandwidth to households but again lays more emphasis on a higher-capacity network.

Over the long haul, the quality of broadband has increased and will continue to do so. However, when will mobile operators think creatively about how to increase data usage? Currently those who purchase small amounts of data regularly are penalised. Also losing your data at the end of a time period (for example, a day or a week) is one of the most anti-consumer business practices on the continent. Models like South Africa's Moya that use advertising and sponsorship to provide free data should be more widely spread.

Vaughan O'Grady, editor, Communications Africa: You refer to the rise of digital natives. Given the very young population of Africa is this likely to be the dominant trend driving connectivity in the future?

Russell Southwood, author, Africa 2.0: Dare Okoudjo, CEO, MFS Africa, told me for the book: "The 18-25 generation will become the workforce and then the magic will happen. They are completely comfortable with technology and apps." This will not be a quick change as it will take 10-15 years to see its impact. But as Africa's 'digital natives' move into positions of power it will both transform how its digital markets operate and what can be imagined for the future. Young Africans don't want to be trapped in dead-end, corrupt countries where there is little dynamic for change. Migration patterns to Europe from Africa show that all too clearly. I was very struck by the excitement generated on social media among Africans when the film Black Panther came out. The idea of a technologically advanced African country touched a chord in a way that a government strategy for digital transformation cannot. On an optimistic scenario, It will be the growing ability to respond to imaginative digital ideas that will transform the continent.

The digital future that mobile has opened up transforms the assumptions about what Africans can do and seems to open out a very different future for the continent.

Photo: Adobe Stock

Farmers were not as enthusiastic about mobile services as many experts thought they would be.

Vaughan O'Grady, editor, Communications Africa: Will government and mass-market telecommunication services always have a troubled relationship?

Russell Southwood, author, Africa 2.0: It's always about arguing about who has the power and the money. The chapter on corruption in the book describes the idea of patronage capitalism: put simply, how the president's friends get all the business opportunities. Corruption is the nexus through which this often happens, and the chapter describes a number of high-profile cases.

But it is not just about corruption. Telcos provide the means for a two-way communications platform, the most high-profile bit of which is social media. It eats away at the edges of the former near monopoly of communications that some presidents had and, where they exert absolute control, allows those in opposition to publish other opinions from outside the country. In the early days, some governments like Ethiopia and Mozambique cut off SMS services. These days Africa's rulers understand that internet and social media pose a threat to the stability of their rule, particularly around election times. The excellent Access Now (www.accessnow.org) site tracks internet shutdowns on the continent. Sadly they are still a feature of elections.

Vaughan O'Grady, editor, Communications Africa: Finally, connectivity has brought with it some surprises (like using scratchcards as a virtual currency). Is there any result of connectivity in Africa that has come as a surprise to you?

Russell Southwood, author, Africa 2.0: Connectivity is simply the means and people make things happen with it. The quote I like best in the book is Emily Macauley visiting a town in Burkina Faso in the mid 2000s to look at extending the network. It both encapsulates the changes that have been happening in Africa but also how technology is driven by human behaviour: "I went on market day and saw a pizza place. They don't pizza (I thought). Then I saw houses built of cement. I thought something fishy's happening. I saw a Western Union office. People are sending money home. Fifteen per cent of the young people are working on tomato farms in Italy and sending money home. It's why they had a pizza place, and they did a very good pizza."

Africans have both used the processes of technology to innovate as you refer to in your question, but they have also taken the mobile to heart as part of their lives. In the early days, a woman in Sierra Leone – who would have died of delivery complications had it not been for her phone – named her baby boy after her mobile provider. In Ghana, its image was printed on kente fabric. It [the mobile phone] has become an object of desire and a symbol of success. One parent tells her child to look at people carrying mobile phones and that "she wants me to be like them". The digital future that mobile has opened up transforms the assumptions about what Africans can do and seems to open out a very different future for the continent. Russell Southwood has for over 20 years run a consultancy and research company in Sub-Saharan Africa focused on telecoms, internet and media called Balancing Act. ✆

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Nothing should get in the way of getting business done

It's time to get business done better with MTN Business ICT Solutions.

Photo: Getty Images

There is a growing recognition that digitising operations can offer unprecedented commercial value in flexibility, productivity and growth.

MORE AND MORE often, clients are looking for ways to keep their staff productive in a dynamically changing business environment. Whether employees are working from home, the office, or abroad, there is a growing recognition that digitising operations can offer unprecedented commercial value in flexibility, productivity and growth.

This new digital reality means that it is more important than ever to stay agile – if there is anything that can slow a business down, it is being burdened by old technology.

Having made substantial investments in fibre technology, high-speed terrestrial and undersea networks and new frequency spectrums across the markets wherein it operates, MTN is perfectly positioned to respond to this shift in the market.

A few years ago, MTN also made the decision to build an IP capable radio network for its mobile services, giving its core network the ability to seamlessly integrate with enterprise IP networks. The company's mobile towers deliver services to enterprise clients absolutely anywhere they have a network, shortening the last mile and removing complexity and cost.

Now there is increasing demand from clients to connect their remote sites in all areas, including rural and semi-rural. MTN has assisted clients with overcoming this connectivity hurdle, enabling their staff to get the job done wherever they are.

> **"For MTN, the focus has shifted from just being a core telecommunications services provider, towards also becoming a technology solutions provider."**

MTN's evolution

For MTN, the focus has shifted from just being a core telecommunications services provider towards also becoming a technology solutions provider.

Its service offering now also includes the Internet of Things (IoT), Unified communications, Cloud solutions, Security as a Service and Managed network. The scope has changed to being client and industry specific, so the requirements and service portfolio vary from one client to the next.

The expectation is that a company like MTN must respond to these challenges, helping clients to get business done better as they shift from old to new technologies.

As many businesses continue to grapple with a digitally dynamic world, they face new challenges that have to be solved. This environment will benefit those that are more digitally enabled and agile. It is a brave new world that will favour online over on-site, wireless over wired and fluid over formulaic. Businesses will seek out partners and suppliers that are every bit as flexible and forward-looking as they are.

Ultimately, clients need partners like MTN Business that will invest in infrastructure, deliver the services they require, have market credibility, are financially sound and have a long-term commitment to their market presence. ✆

New business models for a maturing market

Fibre-related news has been a notable feature of the South African telecoms scene for some time, but this year seems to have been an especially busy one for fibre-related headlines, as Ron Murphy explains.

FIBRE CONNECTIVITY HAS been even making more headlines than usual in South Africa this year. A notable piece of recent news came from scalable connectivity platform Liquid Dataport, which claims to be bringing much-needed access to affordable internet in South Africa after it acquired a pair of fibre cables on the Equiano submarine cable, capable of delivering up to 12 terabytes of new internet capacity.

The landing of this capacity in South Africa, the company says, will significantly foster the development of businesses in Southern African countries

But a lot of fibre news is being generated further inland. Local IT and telecommunications market research group Analytico recently released its 2022 South African Fibre Network Operator Report. It suggested that two operators – Vumatel and Openserve – dominate South Africa's fibre-to-the-home market, with 2.4 million homes passed and over 860,000 connected between them.

However, it also suggests that there is still great potential in the market. Of the 17 million households in South Africa, only 3.9 million have been passed by fibre. And there are a lot of companies trying to service that market. In fact today there are around 40 prominent open-access fibre providers and over 45 small-scale fibre operators, as well as increasing competition in the national long-distance fibre market.

It does seem as though the market for fibre to homes and businesses is getting more competitive. Open access fibre provider MetroFibre Networx recently made headlines with plans to bring more fibre connectivity to underserved markets in South Africa, helped by a Standard Bank Group debt finance package of nearly US$300 mn. The money will be used to expand MetroFibre's fibre connectivity into homes and businesses in underserved communities – an additional 500,000 households.

As fibre network operators have entered into lower-income areas, prepaid has become very popular

Fibre network operators are seeing opportunities in underserved markets such as townships.

Photo: Adobe Stock

There also appear to be new business models. MetroFibre describes its recently launched MetroConnect solution as a new "pre-paid pay-as-you-go service which provides a 20Mbps fibre connection into your home with the flexibility to top-up when you need to, for as long as you need it".

But MetroFibre Networx is far from alone. Many fibre network operators (FNOs) are cutting prices and increasing line speeds to win over customers, apparently seeing opportunities in underserved markets such as townships.

So why are relatively low-income areas being targeted by fibre providers? Juanita Clark, CEO of Digital Council Africa, a not-for-profit organisation whose aim is to maximise the societal benefits of digital and data-driven technologies, told us, "The price point of fibre services remains attractive especially for lower-income areas. It is important to remember that fibre connects the entire home, as opposed to a single user and this makes it very attractive for households."

Of course the prepaid model seems to be part of the MetroFibre offer. Has this been a recent innovation? Clark said, "As markets mature new business models are developed; it is a natural evolution in any market. Prepaid has not necessarily been popular in higher-income areas, which is where much of the focus has been, but as fibre network operators have entered into lower-income areas, prepaid has become very popular as it allows consumers to control their spend."

Still, it does beg the question of whether the business model of MetroFibre, Vumatel, Openserve and others is sustainable in the longer term. Clark noted, "FNOs have matured significantly over the last decade and have made substantial investment in developing sustainable deployment methodologies that support lower-income areas – and they have proven that it works. We now think that the market size is still between 10 – 13million homes."

There are still technical challenges involved in bringing fibre to underserviced areas, of course. For example, deploying fibre to outlying areas makes the business case more complex, because of the cost of backhaul infrastructure, "so," said Clark, "planning is important".

Assuming this works, of course, could it be a model for other African countries?

Clark is optimistic. As she said, "Africa is the next big frontier for fibre deployment and as communities mature and understand the value of the internet, we expect a landgrab in the African continent." ✆

Safaricom goes north

Ethiopia has finally opened up its market to a second operator. But, as Danson Njue, senior analyst, Omdia, told Ron Murphy, that may not be the end of the country's liberalisation plans.

A new dawn for Ethiopian telecoms?

Photo: Adobe Stock

IT'S BEEN A long time coming, but new operator Safaricom Ethiopia finally launched its commercial network on 6 October 2022, offering 2G, 3G and 4G services across 11 cities in Ethiopia.

In fact, said Danson Njue, senior analyst with global research leader Omdia, "Safaricom has a great opportunity in Ethiopia, particularly with its M-Pesa mobile money proposition, which has been given a green light to launch in the country." According to Omdia market data, Ethiopia's mobile voice penetration was 52% at end-2021.

Safaricom's full-service unified Telecommunication Service License also grants it the authority to launch fixed services, particularly fixed wireless, and fibre-based broadband services in the future to compete with state-owned incumbent Ethio Telecom.

This could be another major opportunity. Mobile penetration may be low in Ethiopia but fixed penetration remains very low across all of sub-Saharan Africa due to underdevelopment in fixed network infrastructure and high prices. However, Ethiopia's fixed voice and fixed broadband household penetration rates of 4% and 2% at end-2021, are well below the Africa average of 10% and 11%, respectively, according to Omdia market data.

Ethiopia's fixed broadband penetration is projected to record some growth due to the increase in demand for high-bandwidth applications such as video streaming, video conferencing and real-time gaming occasioned by a change of consumer behaviour due to the Covid-19 pandemic. In addition, there is an increased focus on fibre and fixed wireless access (FWA) via 4G and 5G to provide fixed broadband services to homes and businesses across the major cities in Ethiopia.

As for mobile, Safaricom has an aggressive plan to expand its services across 25 cities and meet 25% population coverage targets by April 2023. In addition, Safaricom will leverage newly signed infrastructure sharing and interconnection agreements with Ethio Telecom to fast-track its network deployment plans in the country.

So far, the government has proven to be very supportive towards welcoming a new network in the market

"However," said Njue, "the question of whether Safaricom will provide real competition to Ethio Telecom will depend also on whether the regulator, the Ethiopian Communications Authority (ECA), can provide a level playing field for new entrants to thrive in the market. So far the government has proven to be very supportive towards welcoming a new network in the market."

As well as a level-playing field, the regulator should be willing to provide additional spectrum whenever needed to enable the new operator to achieve its network deployment plans according to its license obligations.

There's still a slight issue with the 2020 ban on foreign telecom infrastructure companies imposed to enable Ethio Telecom to lease its telecom infrastructure to new entrants who are unable to build their own network infrastructure. As it stands, new entrants can either lease existing infrastructure or build their own. Njue explained, "In March 2022, Safaricom signed a five-year lease agreement with Ethiopian Electric Power (EEP), the state-owned power utility company, to use the optical ground wire cables installed along the high voltage transmission lines."

Will a third mobile operator ever join this market? Or has this plan been postponed indefinitely?

"We believe that government of Ethiopia is keen to complete its plans to liberalize its telecom market by awarding a second operating license and selling a minority stake in Ethio Telecom in the future," said Njue. "The ongoing civil war in the Tigray region and the weak macro-economic environment are some of the reasons that may have influenced the government's decision to postpone the bid process for the award of the second license and the sale of minority stake at Ethio Telecom. The processes will most likely resume when conditions improve."

As for other monopoly markets such as Djibouti and Eritrea, it's probably a case of wait and see, although Njue said, "Djibouti is already considering offering a minority stake in Djibouti Telecom in a privatisation plan aimed at opening the sector to competition to support digitisation and economic growth." ✆

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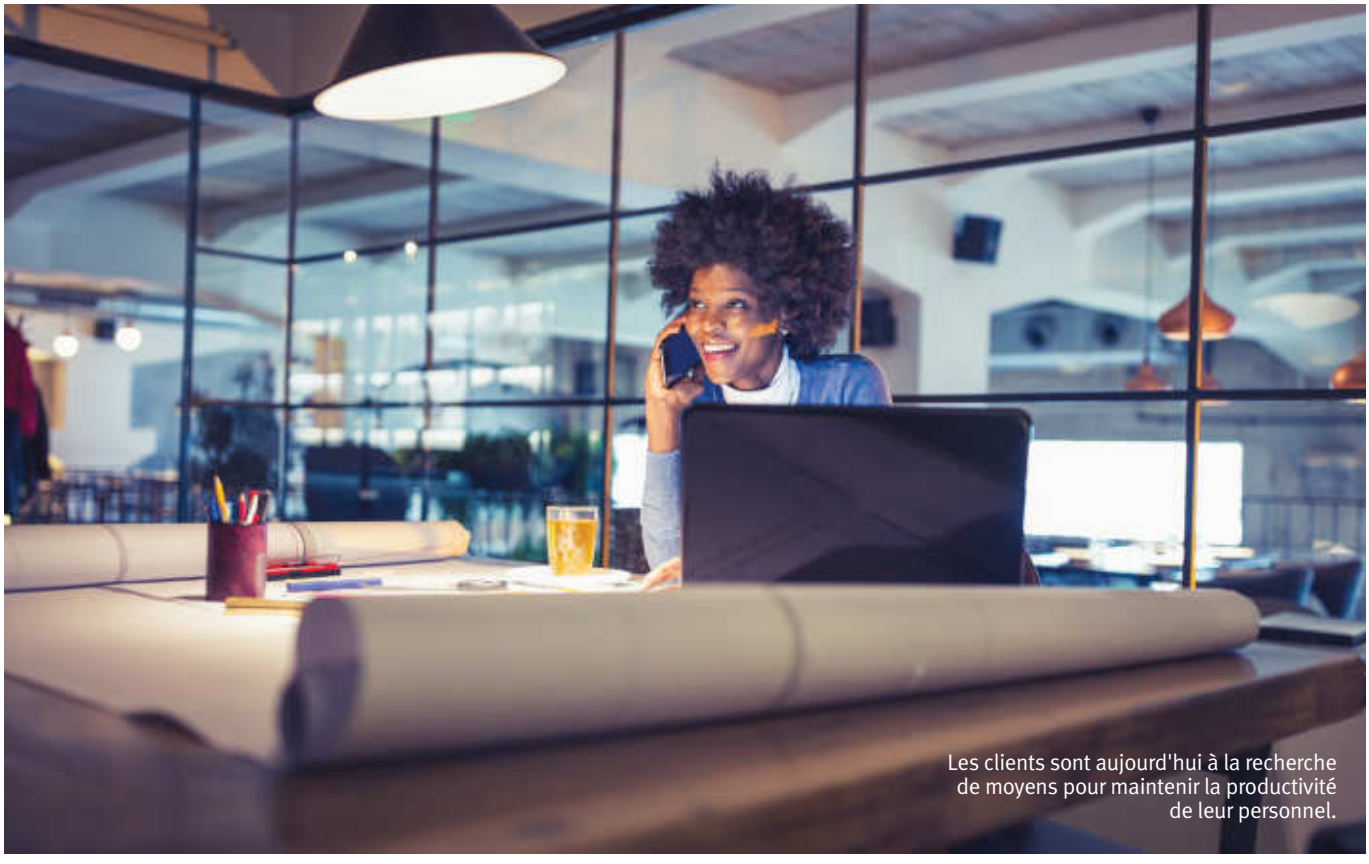


Photo: MTN

Les clients sont aujourd'hui à la recherche de moyens pour maintenir la productivité de leur personnel.

Gérer une entreprise digitale

Les clients sont aujourd'hui à la recherche de moyens pour maintenir la productivité de leur personnel dans un environnement économique en constante évolution.

Que vos collaborateurs travaillent depuis leurs domiciles, leurs bureaux ou depuis l'étranger, il est de plus en plus admis que la digitalisation de vos opérations peut vous offrir une valeur commerciale sans précédent en termes de flexibilité, de productivité et de croissance.

Cette nouvelle réalité numérique signifie qu'il est plus important que jamais de rester agile ; et s'il existe une chose qui peut ralentir une entreprise, c'est bien d'être ralentie par une technologie obsolète.

Ayant réalisé d'importants investissements dans la technologie de la fibre optique, les réseaux terrestres et sous-marins à haut débit et le nouveau spectre de fréquences sur les marchés où il opère, MTN est parfaitement positionné pour répondre à cette évolution du marché.

Il y a quelques années, MTN a également pris la décision de construire un réseau radio compatible IP pour ses services mobiles, donnant à son réseau central la capacité de s'intégrer de manière transparente aux réseaux IP des entreprises.

Leurs tours mobiles fournissent des services aux entreprises clientes absolument partout où elles disposent d'un réseau, ce qui raccourcit le dernier kilomètre et élimine la complexité et les coûts. Aujourd'hui, les clients demandent de plus en plus à connecter leurs sites distants dans toutes les zones, y compris rurales et semi-rurales.

L'évolution de MTN

Pour MTN, l'objectif n'est donc plus d'être un fournisseur de services de télécommunications de base, mais de devenir un fournisseur de solutions technologiques ou "TechCo".

L'offre de services comprend désormais l'Internet des objets (IoT), la communication unifiée, les solutions cloud, la sécurité en tant que service et le réseau administré. Le champ d'application a évolué pour s'adapter aux différents clients et à chaque secteur, de sorte que les exigences et le portefeuille de services varient d'un client à l'autre.

Il est attendu d'une entreprise comme MTN qu'elle réponde aux défis actuels en aidant ses clients à mieux gérer leurs business pendant leur transition des anciennes aux nouvelles technologies.

Alors que de nombreuses entreprises font face à un monde digitalement dynamique, elles sont confrontées à de nouveaux défis qu'elles doivent surmonter. Cet environnement profitera donc à celles qui sont les plus digitalisées et habiles.

C'est un monde nouveau et audacieux qui privilégiera le travail en ligne, le sans-fil et la fluidité. Les entreprises rechercheront des partenaires et des fournisseurs aussi flexibles et tournés vers l'avenir qu'elles.

En fin de compte, les clients ont besoin de partenaires comme MTN Business, qui investissent dans des infrastructures, fournissent les services dont ils ont besoin, sont crédibles, financièrement solides et s'engagent à long terme à assurer leur présence sur le marché. ✆

Eswatini and Giesecke+Devrient to explore Central Bank Digital Currency

THE CENTRAL BANK of Eswatini will partner with international technology group Giesecke+Devrient (G+D) to research and explore the development of a Central Bank Digital Currency (CBDC) – an electronic form of money for the Kingdom of Eswatini.

G+D's appointment stems from the completion of the 1st phase of the CBDC Diagnostic Study conducted in 2020 which found that a retail CBDC presented the strongest and direct opportunity for the adoption of a digital currency in Eswatini.

The Central Bank of Eswatini (CBE) and G+D aim to advance CBDC research efforts to gain an in-depth understanding of the practicalities on implementing a CBDC in Eswatini. CBE joins other central banks and regulators around the world that are exploring the potential of CBDCs to address challenges such as payment efficiency, interoperability, financial inclusion and payment system resilience.

While cash remains a dominant means of payment, technology and the increasing demand for instant and fast payments are changing the way businesses and consumers transact. This is evident in the expanding role and uptake of digital payment channels.

To ensure that consumers continue to have access to legally backed central bank money, through the CBDC project, the Bank will investigate the possibility of issuing a Digital Lilangeni as a complement to cash. This involves a design concept of a potential digital currency in Eswatini including aspects of governance, accessibility, interoperability, security and programmability.

It is envisaged that at the end of the project, the Bank will understand whether, and how, a CBDC could provide additional benefits and ensure continued access to central bank money, contributing to the development of the country's diverse and resilient payment system.

Nokia supports CSPs with AI Maturity Assessment launch

NOKIA HAS LAUNCHED its AI Maturity Assessment to help communication service providers (CSPs) better leverage autonomously driven software solutions that can reduce network congestion, improve network quality, and enhance customer experience with new products and services.

The new tool assesses where an operator stands against competitors in different markets and guides them to their own AI strategy and adoption. An assessment is based around a framework of eight dimensions and a further 67 sub-dimensions.

It provides an operator with a view of its maturity at each dimension and compares that against peers, before mapping out a CSP's path through five levels of automation.

CSPs can get an understanding about which AI solutions can benefit their network environment in the short, medium, and long term. It is also intended to steer CSPs away from taking a 'wait and watch' approach.

Adaora Okeleke, principal analyst at Analysis Mason, commented, "AI technologies are set to transform many aspects of the telco industry and our daily lives. Telcos need tools that can assess their AI readiness (including skillset, tools and processes), and provide recommendations on how to optimise these capabilities in making the most of the opportunities AI will bring to transforming their operations."

Hamdy Farid, senior vice president of business applications at Nokia, remarked, "With the ability to provide an increasing number of critical network functions – from reducing energy usage in base stations, to faster security assurance, and detecting and resolving network issues automatically – AI adoption is critical to all operators. And the Nokia AI Maturity Assessment provides a needed framework for strengthening AI readiness and rolling out AI in any network environment."

Partners to enhance aviation safety through automated aircraft

RELIABLE ROBOTICS, A leader in autonomous aircraft systems, and Kenya-based airline Astral Aviation have announced a strategic collaboration with the goal of enhancing aviation safety and increasing air cargo connectivity in sub-Saharan Africa through the use of automated aircraft.

With challenges such as safety, speed and cost of transportation hindering Africa's prospects of economic and trade growth, the companies will work together to develop operational, regulatory and business plans to launch automated aircraft operation in sub-Saharan Africa.

Sanjeev Gadhia, founder and CEO at Astral Aviation, commented, "Automation will enable us to serve more routes. We look forward to working with Reliable to safely transport larger payloads over longer distances at lower cost with remotely operated aircraft.

"We are preparing for explosive growth in regional trade and the need to transport significantly more air cargo across Africa. Automation will enable us to serve more routes. We look forward to working with Reliable to safely transport larger payloads over longer distances at lower cost with remotely operated aircraft."

Reliable Robotics is working with the Federal Aviation Administration (FAA) to certify its automation system on the Cessna 208 Caravan, and to begin commercial cargo operations in the United States. The collaboration with Astral Aviation will enable the subsequent international expansion into Africa where the Caravan is an essential utility aircraft with nearly 350 currently operating across the continent.

Sub-Saharan Africa's Gross Domestic Product (GDP) is growing at 4%. The widespread adoption of mobile technologies has enabled e-commerce to leapfrog legacy banking, communications and retail infrastructure, and is expected to grow to half a billion users by 20252.

Expanding the air cargo network is critical to GDP and e-commerce growth in a continent with landlocked countries, busy ports, poor road networks, sparse transportation infrastructure, and an average distance between major cities of 4,100 km.

Photo: Reliable Robotics

Reliable Robotics demonstrated its remotely piloted system on an uncrewed Cessna 172 Skyhawk in 2019.

"The African aviation sector is primed for change and automated aircraft can be part of the solution to the market's constraints," said Robert Rose, co-founder and CEO at Reliable Robotics. "Astral has deep experience operating in Africa, and we share a vision for how automation and remotely piloted aircraft can help the region reach its economic potential with safer, more flexible and cost-efficient air transport."

Reliable has established leadership in designing, building and demonstrating its remotely piloted system and made aviation history with milestone flights in 2019 and 2021 in Northern California. Astral Aviation is the fastest growing All-Cargo Airline in Africa, and recently announced that it will be the launch operator of the Embraer E190 Freighter aircraft. Together, Reliable Robotics and Astral Aviation are working on a roadmap to expand automated air cargo solutions that will provide significant economic and societal benefit for Africa.

FSD Africa and NAICOM partner to boost digital, innovative insurance

FSD AFRICA AND Nigeria's National Insurance Commission (NAICOM) have partnered to launch BimaLab, an accelerator programme designed to boost the development and adoption of digital solutions for the insurance sector.

BimaLab Nigeria aims to address gaps in the insurance market by educating, nurturing and promoting innovators and insurtech start-ups. The programme will borrow from Kenya's BimaLab I, BimaLab II and global best practices with a focus on local experience to provide Nigeria with the most competitive and attractive start-up accelerator programme.

Ten companies will be selected to participate in the 10-week programme that will provide them with the expertise, resources and support to develop and scale market-ready solutions that bring social and/or commercial value to Nigeria's insurance sector.

Across the continent, little knowledge of the insurance industry coupled with low income has affected the rate of insurance penetration in the mass market. Yet, a recent report by Deloitte indicates that affordable insurance products play a crucial role in mitigating the effects of negative financial shocks and in doing so reducing financial vulnerability.

To widen insurance coverage, FSD Africa has recently rolled out a similar accelerator programme in Ghana (InnoLab). The solutions being supported through the accelerator programmes will be expected to also speak to the needs of populations beyond their borders of origination.

Among the success stories from previous BimaLab Accelerator programmes is Bismart, a Kenyan insurance agency that has partnered with Britam to launch a short-term school fees insurance cover called Elimu Smart. The cover protects school-going children from dropping out of school in the event their parent or guardian becomes critically ill or dies, safeguarding the future of the children even in cases of incidents.

Commenting on the launch of the BimaLab Accelerator Programme, Kelvin Massingham, director – risk and resilience, FSD Africa, said "We believe that this programme will enhance the development of a vibrant ecosystem of start-ups through collaboration with corporate partners, investors and research institutions to accelerate and scale innovation in the insurance industry in Nigeria. We have successfully implemented the programme in Kenya and are commencing the same in Ghana."

Thomas Olorundare Sunday, commissioner for insurance/CEO National Insurance Commission (NAICOM) said, "As a key driver of change in the financial sector, innovation has led to immeasurable efficiency and gains. Even though these changes can sometimes be accompanied by uncertainty and hesitation, there is evidence of great success. I do not doubt that with such collaborations, Nigeria is set to be a successful case study on insurance innovation across the continent."

Ben Llewellyn-Jones, UK's deputy high commissioner in Lagos said, "As a result of Covid-19's negative impact and the resulting need for improved resilience against economic shocks, innovative insurance becomes increasingly important in addressing emerging vulnerabilities among businesses and households. The UK government has long been enthusiastic about leveraging technology and innovation as major vehicles for making an impact and supporting the Nigerian government, so the partnership between UK Aid-funded FSD Africa and the National Insurance Commission (NAICOM) is crucial in fostering the development of an insurtech ecosystem that focuses on growth, inclusion, and strategic alliances."

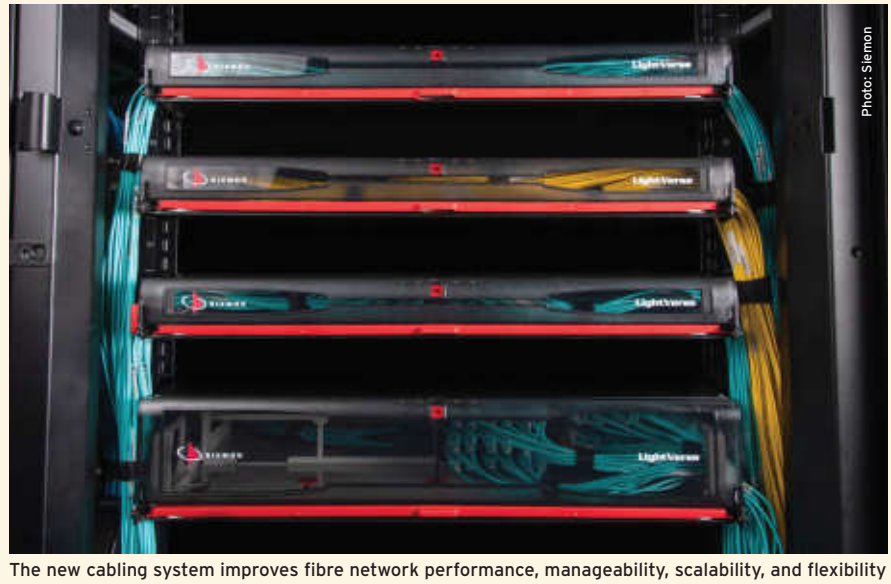
Siemon launches innovative high-density fibre optic cabling system

SIEMON, GLOBAL NETWORK infrastructure specialist, has announced its innovative LightVerse high-density fibre optic cabling system in Africa. The new cabling system improves fibre network performance, manageability, scalability, and flexibility in data centre and LAN environments.

Engineered for excellence with a range of sleek enclosures and panels, the fully featured LightVerse system is specifically designed to address today's fibre installation challenges, while providing a robust, quality foundation for evolving network requirements.

Available in 1U core and plus versions and 1U, 2U, or 4U pro versions ideal to support a wide variety of applications, LightVerse supports up to 96 fibre terminations in a single rack unit for any termination method, including pre-terminated, field-terminated and splice-terminated fibre deployments. The system's wide array of transition modules, pass-through adapters, pre-loaded enclosed splice cassettes, and stackable translucent splice trays support unique network needs and multiple connector types, including LC, shuttered LC, MTP, SC, ST and FC. Integrated front and optional rear cable managers, cable strain relief brackets that can be mounted in different locations, and multiple cable entry points facilitate flexible design and installation options with maximum fibre manageability and protection.

LightVerse features a front- and rear-accessed high-contrast sliding tray and integrated label holder, which can be accessed when the door is closed, ensuring easy access, inspection, and administration of critical fibre connections.



The new cabling system improves fibre network performance, manageability, scalability, and flexibility in data centre and LAN environments.

LightVerse enclosures and panels have been designed with the user in mind and as a result they can easily be installed by one person allowing easier and quick rollouts and moves, adds and changes. Available with ultra low loss connectivity and support for multiple industry-recognised polarity schemes, LightVerse modules and adapter plates combine with Siemon's award-winning line of plug and play trunks, traditional LC duplex jumpers, and innovative LC BladePatch fibre jumpers to deliver a complete end-to-end ecosystem that unlocks the potential of high-density fibre installations. While designed to deliver excellent performance and usability, the LightVerse enclosures are beautiful by design, too. The moulded scratch-resistant transparent front and rear doors with tamper-resistant latching provide a world-class appearance, while keeping critical connections secure.

Cutting greenhouse emissions at 100 Angolan cell tower sites

POWERX TECHNOLOGY, THE first AI platform to optimise tower infrastructure performance, and Megmar Holdings, a telecoms infrastructure solutions provider, have announced the first-stage roll-out of breakthrough technology for telecom tower operators.

The solution promises to lower costs and greenhouse emissions from cell towers in rural Angola. It is an innovation that takes the industry forward in two technical leaps: firstly, by unlocking data intelligence to redefine remote monitoring, site operations and maintenance for entire cell tower networks and equipment; and then by using AI to drive autonomous continuous site-level improvement at scale.

Megmar's deployment of PowerX will enable the local tower company's network operations centre [NOC] to see at a glance sites where resilience is at risk or which sites are running inefficiently, something they would otherwise be unable to do. The system also learns from past usage behaviour and even live weather reporting to automatically adjust load balancing and power usage to optimise performance with no manual interventions.

For tower operators, this means they will no longer need to estimate when a component is nearing its end of life or is malfunctioning, or whether power reserves are running short. Instead, they will be able to engage in real time with detailed operational information and dispatch engineers to solve problems only when they are needed, and with the right equipment to hand.

From energy use and cost per kWh, to managing the load on individual sites, the PowerX AI software deployment in Megmar tower cabinets will relay back to the NOC exactly how individual sites are running and take in a range of data streams to autonomously optimise site behaviour to meet market needs and manage costs.

Kaspersky patents technology to counter cyberattacks against linked electronic devices

THE TECHNOLOGY WILL help prevent any user devices from becoming a vector of attack on another device or user data, informing them if their configuration is insecure.

According to Deloitte, the number of electronic devices with a network interface belonging to the same household or user has doubled in the past three years. A single smart home usually consists of a number of devices, including home appliances and wearables with different security integration capabilities, code vulnerabilities and patch timing. So today, to keep a home safe from cyberattacks, an owner of all these devices must dedicate special attention to ensuring regular device patching or configuring a secure device network that isolates insecure gadgets from others.

The patent "system and method for analysing relationships between clusters of electronic devices to counter cyberattacks," issued by the US Patent and Trademark Office, provides a new method of facilitating cybersecurity management of IoT devices. It allows users to detect every gadget belonging to the same network environment and to correlate them with similar networks for further identifying actual or potential cybersecurity gaps. Thus, if any device in the user's network is insecure and has already been an attack vector, or a similarly configured network has been compromised, the technology will detect it and warn the user or security solution about the possible danger.

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Cloud financial management solution comes to Namibia, Botswana and Mauritius

SAGE, A LEADER in accounting, financial, HR, and payroll technology for small and medium-sized businesses, has launched Sage Intacct in Namibia, Botswana and Mauritius. The cloud financial management solution provides finance teams with the insights and automation they need to keep pace with the demands of running a business in an ever-expanding digital environment.

Sage Intacct is a powerful cloud financial management platform, designed for finance professionals, providing deep multi-dimensional accounting, automation for efficient financial operations, and sophisticated visibility for real-time decision making.

Its technology uses open application programming interfaces (APIs), making it easy to connect with third-party cloud applications, including Salesforce, and providing a highly extensible and scalable platform.

Sage Intacct is a highly modular solution where customers pay for what they need and get more efficient and cost-effective implementations, world-class security backups and disaster recovery – delivering a lower total cost of ownership.

Following a successful introduction in South Africa in 2020, Sage Business Partners in Namibia, Botswana and Mauritius are ready to help Sage customers unlock the power and value of this financial management platform with sales and implementation expertise. Sage Intacct also offers customers increased functionality through the Sage Intacct Marketplace. On average, Sage Intacct customers achieve an ROI of 250%, payback in less than six months, and enhanced productivity by 65%.

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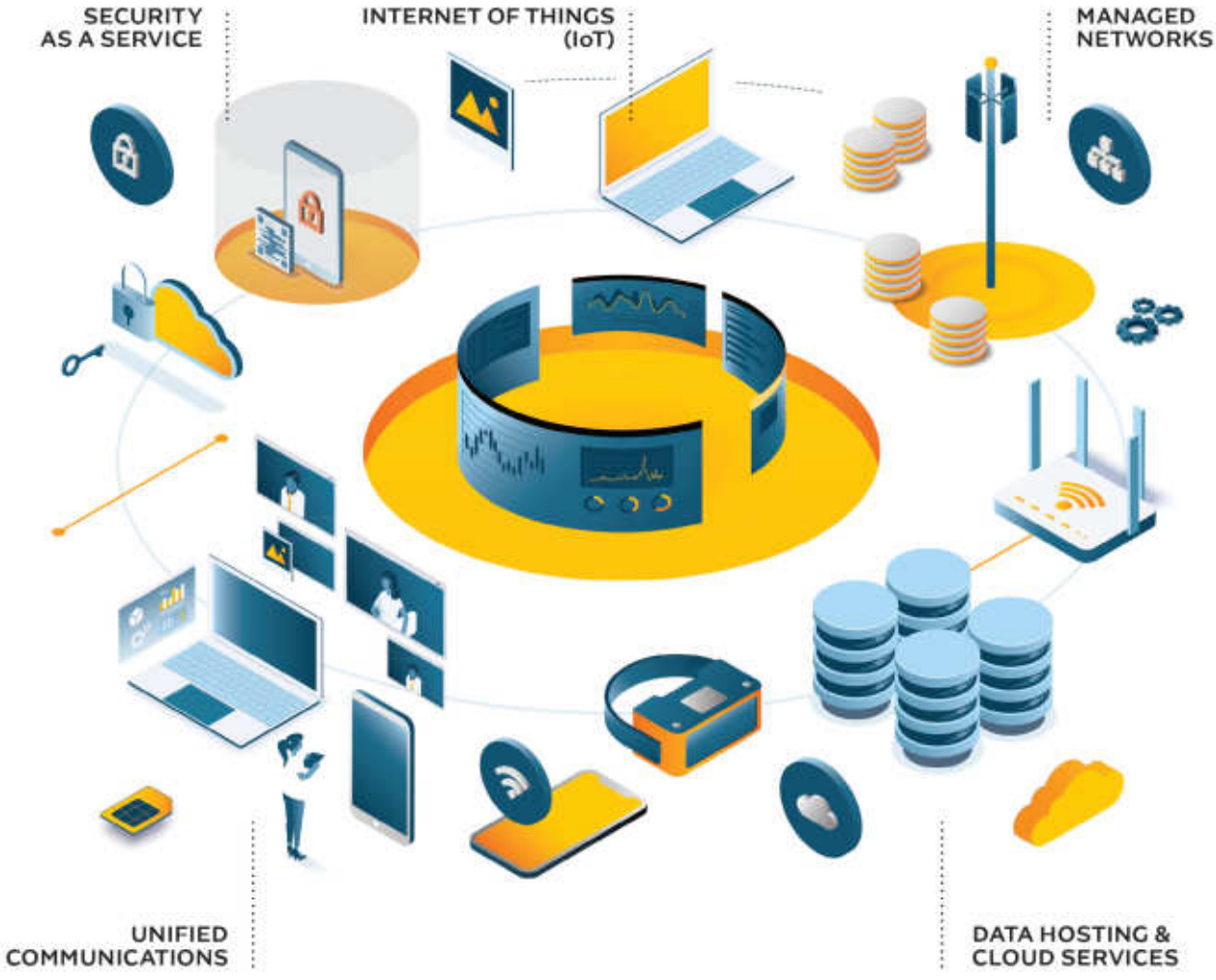

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