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THE NEXT WAVE

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IoT: the healthy option?

Mobile broadband
Innovating to deliver the internet

Broadcasting
Why satellite TV is going for growth

Bluetooth
Short range – big market

FEATURES: ● TV goes digital ● Power goes green ● Rwanda goes cashless
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A note from the Editor

THE WORLD IS not back to normal – far from it. But the future for Africa could still be bright if it can benefit from improving telecommunications and increased connectivity. Some of this could be down to the arrival of more and better fibre connections thanks to a growing number of projects bringing cable to Africa under the sea. Or the growth of mobile money. Or cheaper access to the mobile internet. Or the positive effect of short-range wireless technologies like Bluetooth in areas like business, entertainment and health. Or the much wider range of viewing options that satellite TV and DTT can bring. All these topics are discussed in this issue and all promise that, even during a dark and worrying present, a brighter future lies ahead.

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Can cleaner ways be found to power network infrastructure?

BMI achieves 50 per cent cost savings by hosting at MainOne's data centre

MAINONE, WEST AFRICA'S leading connectivity and data centre solution provider, has on-boarded Business Management Invest-Côte d'Ivoire (BMI-CI) on its network by providing internet infrastructure and data centre solutions.

BMI-CI is a financial technology company specialising in the design, deployment and management of technological, IT and electronic payment solutions. To improve its productivity and provide its customers with services, BMI-CI leverages MainOne's open access, carrier-neutral facility at the Grand Bassam to host its IT infrastructure and enjoy reliable internet connectivity with high-capacity data network to meet its computing and connectivity requirements.

BMI-CI is now hosting its IT infrastructure at the MainOne Tier III Data Centre.

BMI-CI is now hosting its IT infrastructure at the MainOne Tier III Data Centre as part of the collocation arrangement, achieving savings of up to 50 per cent of its CAPEX costs as well as faster time on the market than it could have done with its own proprietary construction.

Furthermore, the collocation enables BMI to achieve operational efficiency, including uninterrupted power supply, as well as enterprise-grade multi-level security and 24/7 access to an experienced team of in-country engineers who have implemented and will continue to support the integration of BMI's infrastructure and services.

Sanogo Clotcho Secongo, CEO, BMI-CI, said, "As an organisation which prides itself in delivering the best services and solutions for enterprises and municipal districts across Côte d'Ivoire, we recognise that operational excellence is imperative and MainOne is the most suitable partner with the requisite operational experience to work."

Kazeem Oladepo, regional executive at MainOne, explained, "MainOne remains strongly committed to providing innovative ICT infrastructure, solutions and services that drive the growth of businesses and advance the growth of the digital economy of the entire Francophone region, particularly as the world continues to navigate the current business realities with emphasis on digitisation."

NCC sets up digital economy department

THE NIGERIAN COMMUNICATIONS Commission has announced the creation of a digital economy department. NCC said the department will be responsible for implementing programmes and policies aimed at fully supporting the national digital economy agenda of the Nigerian government.

Professor Umaru Dambatta, the executive vice-chairman, EVC, under whose office the department is domiciled, said, "Placing the newly created department under the office of the EVC also underscores the importance the commission places on the need to successfully drive the overall national digital economy strategy of the government through ensuring its effective monitoring and supervision."

Orange, NSIA launch Orange Bank Africa

ORANGE, A TELECOMS provider in Africa and the Middle East, and NSIA, a leader in bancassurance, have launched Orange Bank Africa in Abidjan and Côte d'Ivoire.

Orange Bank Africa, headed by Jean-Louis Menann-Kouamé, will provide clients with a range of simple savings and credit services that are available through mobile phones.

Orange Bank Africa will address the needs of a large part of the

Orange Bank Africa will address the needs of a large part of the population.

population, often excluded from the conventional banking world, allowing them to borrow and save small amounts which are nevertheless essential to their daily lives. When it launches, Orange Bank Africa will offer a range of savings and micro-credit services through its Orange Money service, allowing clients to borrow as little as 5,000 CFA francs instantly using their mobile phone.

Orange's mobile financial services strategy in Africa aims to offer solutions accessible to the broadest population regardless of their income or where they live. To open an Orange Bank Africa account, people who aren't Orange Money customers can also apply through the Orange Bank Africa application, or by going into the head office branch if they live in Abidjan.

Orange chairman and CEO, Stéphane Richard, explained, "New technology is needed to strengthen financial inclusion and support economic development, as proven by mobile money over the past few years. Banking is a new area of business for Orange in Africa.

"Based on our association with NSIA, also a leader in the market in Africa, we provide easy access to bank services for as many people as possible, with simple and essential services that benefit all our clients."

Sterling Bank partners Clickatell to introduce personalised banking experience

STERLING BANK, NIGERIA'S leading commercial bank, in collaboration with Clickatell, a mobile communications and chat commerce specialist, have announced a personalised banking experience for existing customers and prospective account holders through WhatsApp.

With the help of Kiki, a new personalised financial assistant, customers can now initiate bank transfers and airtime and bill payments and check balance and BVN enquiries, as well as enjoying direct statement generation on WhatsApp.

The financial assistant also directly connects customers to customer service, thus making dispute resolution seamless.

Designed to provide personalised service to every bank customer, Kiki has conversational intelligence and will respond once prompted to questions relating to personal finances. Kiki makes it as easy to initiate banking transactions as chatting with friends, via the bank's verified WhatsApp number-+234 906 000 6449.

Oladipo Alabede, group head of digital banking at Sterling Bank, said, "Delivering banking on WhatsApp for instant messaging is desirous by our customers who want a reliable, convenient, and safe medium to perform basic banking transactions on their mobile devices. It eases the stress of moving between apps before transactions can be concluded."

According to Alabede, WhatsApp is easy, safe, fast and secure. "It has improved security that prevents fraud and enables customers to have access to all their accounts. The service is designed for self-service registration and the customers can sign on from any location. The current features of the app include Sterling to Sterling and Sterling to other banks' transfers, airtime top-up, bill payments, balance enquiry, BVN enquiry and statement generation, among others."

Samson Isa, director – West Africa for Clickatell, added, "Chat banking is the future of financial services with bank customers preferring the channel for conducting routine banking, as it is fast, simple, and secure."

Mastercard raises online security capabilities in South Africa

AS DIGITAL COMMERCE continues to accelerate as a result of the Covid-19 pandemic, Mastercard has announced that it will offer tokenisation services to merchants through an app, ecommerce, and recurring billing card-on-file programme in South Africa.

Dubbed Mastercard Digital Enabling Service (MDES) for merchants, the service uses a security measure known as tokenisation to protect, accelerate and simplify online and in-app Mastercard purchases, as well as subscription and recurring payments such as streaming music, video services and utility bills.

Tokenisation encrypts consumer data by substituting digital tokens for the Mastercard numbers. Every time a transaction is made online, a unique token is created for making the payment and ensures that the 16-digit card number of a consumer is not stored anywhere. This prevents improper usage at any other location and provides additional security and peace of mind for consumers and merchants alike, resulting in higher approval rates while minimising online fraud and reducing data breaches for merchants.

Suzanne Morel, country manager for South Africa, Mastercard, said, "Online shopping has gained significant traction in South Africa, and it is imperative for merchants of all sizes to ensure that they are offering a convenient, enjoyable and, most importantly, secure digital experience. With consumers feeling safer shopping virtually, e-commerce will be integral in economic recovery and driving revenues for businesses."

Currently, consumers store their card numbers at five or more merchant locations. In addition to the inherent security risks in the storage of card numbers online, when a card number changes, consumers are faced with the daunting task of updating payment information across all of these locations.

"This typically requires them to remember where their card has been stored, as well as the username and password they created when they stored it. If they are unsuccessful in changing the card number, transactions will fail – resulting in a potential interruption in services, lower customer satisfaction and lost sales for the merchant," explained Morel. "With MDES for merchants, consumers no longer need to update their card details at each merchant when their card expires, allowing for seamless, ongoing payments."

Photo: Goodpics/Adobe Stock

With MDES for Merchants, consumers no longer need to update their card details at each merchant.

TBCSA's Opus4business app to train businesses for Covid-19 prevention

THE TOURISM BUSINESS Council of South Africa (TBCSA) has launched the Opus4business app for training business owners about the implementation of Covid-19 safety protocols.

The app provides a paperless way to record compliance with industry protocols by putting tourism industry owners and staff through a Travel Safe - Eat Safe Certification Programme.

The programme helps businesses manage Covid-19 health screening for employees, suppliers, delivery agents and patrons in compliance with the Protection of Personal Information Act, and to receive industry updates and deploy contact tracing when required.

Genesys introduces multi-cloud architecture for contact centres

GENESYS, A CLOUD customer experience and contact centre solutions provider, has introduced the first native multi-cloud architecture in the industry.

With Genesys Engage, users can now adopt innovations delivered via the cloud, resulting in a more personalised service.

Moreover, organisations can take advantage of the ability to transition to the cloud while preserving existing technology investments and meeting rigorous data and security requirements.

Genesys Engage's newly containerised architecture, built using open standards, allows Genesys Engage customers to choose private or public cloud, on-site or hybrid deployments with Genesys Cloud or third-party providers.

Moreover, the multi-cloud architecture enables organisations to run Genesys Engage in the private cloud of their choice, including leading providers of infrastructure such as Amazon Web Services (AWS), Google Cloud, and Microsoft Azure.

The multi-cloud approach also allows every Genesys Engage customer to consume innovation with speed and ease regardless of their deployment model, both cloud and on-premise. For example, it allows organisations that use Genesys Engage to access Genesys Cloud's artificial intelligence capabilities, such as predictive engagement and workforce engagement management, as a fully integrated solution.

Cloud customers can decide how Genesys Engage operates – independently, by Genesys or managed by a partner like Accenture, Aria Solutions, Avtex, BT, Cognizant, ConvergeOne, Infosys, NTT LTD or Orange Business Services.

Additionally, organisations can move their software applications between different clouds or use multiple providers to address different geographic needs and requirements for data sovereignty.

Enterprises using Genesys Engage benefit from its open architecture which allows them to avoid lock-in from vendors.

Trend Micro announces protection for emerging 5G networks

TREND MICRO, A cybersecurity solutions provider, has announced its upcoming mobile network security solution.

This solution will accelerate digital innovation at the network edge by offering comprehensive network and endpoint protection for a new era of IoT and 5G private networks.

Service providers and system integrators are increasingly using shared and unlicensed products to build private mobile networks for their enterprise customers – driving new 5G and IoT-powered business opportunities at the edge.

"From shopping malls to airports and smart factories to enterprise campuses, private networks are emerging as an increasingly popular way to deliver business-critical applications at the network edge. However, the sheer complexity involved can create dangerous security gaps," said Akihiko Omikawa, executive vice-president of IoT security for Trend Micro. "Trend Micro leveraged its decades of cross-functional cybersecurity experience to create Mobile Network Security, a comprehensive platform for protecting cellular networks and distrusted IoT devices."

Private networks are a natural choice for many enterprises, offering the prospect of low latency, low interference and high-security environments. However, CISOs are challenged by a lack of in-house skills capable of combining expertise in information technology (IT), operation technology (OT) and communication technology (CT) security.

Trend Micro Mobile Network Security is comprised of two major elements: Network Protection (Trend Micro Virtual Network Function Suite): Built on the ETSI NFV framework to offer high-performance, low-latency virtualised network security across 4G/5G/NB-IoT/CAT-M.

Endpoint Protection: Comprehensive endpoint security for IoT devices provided in two form factors — physical SIM card and software Java applet.

❝MTN Group is well positioned to take advantage of the digital acceleration shifts and opportunities across our markets, and we are well placed to play an important and leading role in digital and financial inclusion of the African continent, working with our stakeholders and partners.❞

- Ralph Mupita
New group president and CEO
MTN

❝This partnership with Airtel will enable millions of consumers instant access to our global platform to receive money from over 200 countries and territories without having to even step outside.❞

- John Gely
Head
MoneyGram Africa
(on a partnership for international money transfers)

❝Using mobile phone technology, farmers will receive low-cost, customised advice to improve on-farm practices, input utilisation, pest and disease management, environmental sustainability and access to markets.❞

-IFAD
International Fund for Agricultural Development
(on the launch of a scheme targeting 1.7 million small-scale farmers in Kenya, Nigeria and Pakistan)

❝As part of our ongoing portfolio review, we believe the group is best served to focus in the future on our pan-African strategy. We will therefore be exiting the Middle East in an orderly manner over the medium term.❞

- Rob Shuter
Former president and CEO
MTN

❝This project is part of the government's effort to upgrade and modernise communications infrastructure, thereby reducing the connectivity costs of both data and voice.❞

- Jenfan Muswere
Minister of information communications and technology
Zimbabwe
(on commissioning of TelOnes's newly constructed Makuti to Chirundu fibre optic link in Makuti)

❝This decisive step that the CEMAC zone has just taken, by opting for community roaming, constitutes a tool of borderless communication and a vector of regional integration.❞

- Giuseppe Renzo D'Aronco
Economic affairs officer
Economic Commission for Africa
(on a proposed end to surcharges on mobile roaming in parts of Central Africa)

"Our relationship with Standard Chartered boosts financial inclusion across the continent, giving millions of people access to valuable banking services."

- Raghunath Mandava
CEO
Airtel Africa

"With our Avaya Spaces offer, we have helped teachers and students continue to focus on education, and we're proud to have played a small part in seeing off the worries of a lost generation of learners."

- Nidal Abou-Ltaif
President
Avaya International

"Together with our key partner Google, and specifically Android, we are aiming for an additional one million customers who will be able to access and leverage the power of the internet."

- Peter Ndegwa
Chief executive officer
Safaricom
(on a new Safaricom affordable smartphone scheme)

"A unique opportunity to change the way we conduct disease surveillance, enhance our ability to acquire good and timely data, and make all Africans count."

- Dr John Nkengasong
Director
Africa CDC
(on the launch of the Africa Communication and Information Platform for Health and Economic Action)

"The ICT incubation centres that are being constructed all over the country and being championed by the National Information Technology Development Agency, will go a long way in promoting and supporting our economy, particularly its diversification."

- Dr Isa Ali Ibrahim (Pantami)
Minister of communications and digital economy
Nigeria
(on commissioning of 11 different Information and Communication Technology (ICT) projects across the country)

"This initiative will help build more resilient digital infrastructure and foster innovations to improve citizens' access to basic social services and their welfare, including in the poorest and most fragile regions."

- Joelle Dehasse
Country manager
World Bank
(on IDA support for digital infrastructure in Niger)

Ugandan e-commerce platforms help soften economic blow

PARTNERSHIPS WITH DEVELOPMENT agencies and government efforts to boost the digital economy help soften the economic blow of the pandemic, said the United Nations Conference on Trade and Development (UNCTAD).

SafeBoda, a motorcycle ('bodaboda') taxi-hailing app, has launched an e-commerce platform to connect market vendors with customers after the country went on lockdown to control the spread of Covid-19. Through the SafeBoda app, customers can place orders and pay through their mobile wallet feature, then market-based riders deliver the groceries. Having evolved into an e-commerce platform, the 'bodaboda' hailing app has boosted sales for hundreds of small traders, benefiting thousands of customers as well.

E-commerce platforms such as SafeBoda help soften the economic blow of Covid-19. And the Ugandan government is helping them flourish by fostering an enabling environment for e-commerce and the digital economy, in line with UNCTAD eTrade Readiness Assessment recommendations.

After the pandemic outbreak, SafeBoda and other e-commerce platforms experienced a triple-digit increase in business. By giving market vendors access to the app, it enables them to sell goods while sustaining the livelihoods of 18,000 'bodaboda' riders whose earnings were affected by the pandemic.

Uganda is also planning to develop a national e-commerce strategy with the support of the UNDP.

The app's e-commerce platform is the result of a partnership between the United Nations Capital Development Fund and SafeBoda Uganda, supported by the Swedish International Development Cooperation Agency.

Shamika N Sirimanne, UNCTAD's director of technology and logistics, said that the collaboration shows the added value of partners under the eTrade for all initiative, which empowers developing countries to benefit from e-commerce. The government is strengthening cooperation between the public and private sectors to improve trade.

Telecoming enters Egyptian market

TELECOMING, THE EUROPEAN technology company which specialises in monetisation of digital services, has entered the Egyptian market to promote digital entertainment.

In the first stage, the company will distribute official Real Madrid content through local mobile operators, who rely on Telecoming to increase user engagement.

Egypt is one of the most attractive markets for digital services development, with access to more than 100mn people, and a mobile penetration of 94 per cent.

Telecoming intends to invest US$.56mn in Egypt as part of its expansion in Africa. It has been monetising digital content in Africa since 2015, in partnership with the local mobile operators and content producers.

AdcareIT rolls out NFV-based secure SD-WAN services in Kenya

ADCAREIT, A PROVIDER of outsourced technology services in Kenya, has selected Telco Systems and cybersecurity solutions provider Clavister to roll out NFV-based secure SD-WAN services in Kenya.

The company's newly managed SD-WAN and cybersecurity services target SMEs and large enterprises across the country.

The joint solution features the connectivity and cybersecurity VNFs of Clavister running on solution NFVTime uCPE of Telco Systems. The Telco Systems-Clavister solution was provided on a flexible, pay-as-you-grow subscription model to reduce entry barriers and expand the addressable market for AdcareIT.

NFVTime by Telco Systems is an open virtualisation plug-and-play suite. NFVTime's operating system is the only available NFVi-OS that can run on both x86 and ARM-based devices.

The Telco Systems and Clavister integrated NFV edge solution supports zero-touch provisioning that can eliminate the need for costly on-site technicians.

The company's newly managed SD-WAN and cybersecurity services target SMEs and large enterprises across the country.

Based on low-cost, high-performance ARM-based hardware architecture, this joint solution allows AdcareIT to design, deploy and monitor multiple customer services in one centralised management solution across multiple locations.

The secure SD-WAN VNF from Clavister assists IT administrators managing multi-site customers' security infrastructure to simplify their deployment and maintenance routines while saving costs.

Helios Towers acquires more than 1,200 sites from Free Senegal

THE INDEPENDENT TELECOMMUNICATIONS infrastructure company Helios Towers has signed an agreement with Free Senegal to acquire its passive infrastructure assets for an upfront cash consideration of US$189mn.

This represents an enterprise value of US$210mn including an estimated US$21mn of taxes and capitalised ground leases.

Deferred consideration and growth capex of US$47mn and US$35mn respectively are expected to be invested over the next five years in relation to the rollout of 400 committed new build-to-suit sites.

Helios Towers and Free Senegal have signed a 15-year service agreement to provide hosting and energy services on the acquired sites and future sites to be built. The transaction

The transaction will allow Free Senegal to further expand its network mobile coverage in Senegal.

is expected to close by the Q1 2021, subject to the customary conditions of completion and regulatory approval. The transaction will be fully funded by existing cash and debt facilities from Helios Towers.

Kash Pandya, CEO of Helios Towers, said, "This agreement is aligned perfectly with our 2025 strategic ambitions, broadening our footprint within the African towers infrastructure market."

Mamadou Mbengue, CEO of Free Senegal, said, "The transaction will allow Free Senegal to further expand its network mobile coverage in Senegal."

Telkom starts life insurance business

SOUTH AFRICAN OPERATOR Telkom has launched Telkom Financial Services, which includes a life insurance business that would initially sell funeral insurance, written out of a Guardrisk Life cell, to its more than 12mn customers.

Telkom owns a significant share of the mobile market in South Africa, recording 23.9 per cent growth in active mobile subscribers as of 31 March 2020, effectively giving it important distribution channels for insurance products.

"This strategic partnership between Guardrisk Life and Telkom creates an exciting platform through which to provide Telkom customers with affordable, innovative insurance products," said Francois Schaap, managing executive of Guardrisk Life.

Spacecom, Gilat Telecom partner to improve satellite services in Africa

SPACECOM, AN OPERATOR of the AMOS satellites fleet, and Gilat Telecom, a connectivity service provider, have announced that they are co-operating to develop a faster, more reliable and more cost-effective satellite service for organisations of all sizes across Africa.

The service uses Spacecom's AMOS-17 fully digital and advanced high throughput satellite (HTS) on both C and Ku band and Gilat Telecom's unique SD-WAN MAX technology.

The service can be used for home and office connectivity, including video conferences, e-health applications, e-learning and e-education.

The biggest benefits for African MNOs and ISPs are:

CAPEX savings: Spacecom's AMOS-17's HTS fully digital payload enables cross-connection between all beams and all bands, enabling the use of existing equipment which can also be set up remotely by the end customers (on existing or new terminals).

Higher throughput at reduced operational costs: Using Gilat Telecom's intelligent routing, capacity can be expanded by up to 20 per cent (the equivalent of 6 Mbit/s can be achieved from a 5 Mbit/s downlink).

Smart traffic management: Gilat Telecom's SD-WAN enables service providers and MNOs to centrally control the route that both satellite and fibre traffic takes to and from the customer. It enables different applications – voice, streaming, caching (Facebook, Netflix, Microsoft cloud , etc.) – to be identified with automatic prioritisation, according to

Photo: Gilat Telecom

Gilat Telecom's SD-WAN enables service providers and MNOs to centrally control the route that both satellite and fibre traffic.

the customer's needs and demands.

Dan Zajicek, Spacecom's CEO, said, "This partnership enables us to boost the services offered to customers along with fast returns on investments to these growing markets. We are sure this fruitful cooperation will lead us to many great business opportunities in Africa, and invite all to gain great value from this unique collaboration."

Asaf Rosenheck, Gilat Telecom's CEO, said, "We are an innovative company always focused on how we can improve the service we provide to our customers. Our partnership with Spacecom demonstrates how we work across the ecosystem to drive down costs and improve capacity."

Temenos to foster digital transformation for Somalia's Sombank

SOMALIA'S ISLAMIC BANK Sombank has selected the cloud-based Temenos Islamic banking solution to accelerate its digital transformation and create products to increase access to financial services in Somalia.

Temenos Infinity and Temenos Transact will enable Sombank to design and launch customised digital products more quickly while also reducing its operating costs.

Temenos' cloud-native technology is expected to allow Sombank to create innovative digital products and offer lower-cost services that are more accessible to all Somalians via a mobile device, including current and savings accounts for individuals and small businesses as well as the latest mobile money products.

A report produced for Temenos by the Economist Intelligence Unit found that governments across the Middle East and Africa regions are increasingly embracing digital agendas to encourage financial inclusion and accelerate digital banking and a cashless economy. According to the report, smartphone use is expected to hit 74 per cent in the region by 2025 and

Photo: Adobe Stock

Sombank focuses on rebuilding the country's financial infrastructure by improving access to financial services throughout Somalia and beyond.

the affordability of smartphones is a major driver in the development of mobile-only and mobile-first banks.

Currently, Sombank serves customers via branch and online network and representative offices throughout Somalia. Sombank will use the Temenos Infinity digital front office to create a unified customer experience for all financial and non-financial services across all channels, helping its staff serve customers faster in branches and online.

Vodacom to bridge digital divide in Eastern Cape insurance business

VODACOM EASTERN CAPE Region plans to invest more than US$1.1mn in the network across the province during the 2020/2021 financial year.

This network investment will help the region bridge the digital divide so that citizens in deep rural and urban areas have the same network experience as those living in urban areas.

The capital expenditure for the region will go towards deploying 20 new base stations in urban areas and 18 new base stations in rural areas. In addition,

Photo: Adobe Stock

The region will also be upgrading 4G capacity on 102 urban towers and 48 rural towers.

the region will invest in modernising more than 80 sites in urban areas to unlock additional network capacity and higher download speeds.

The region will be upgrading 4G capacity on 102 urban towers and 48 rural towers, deploying new LTE on 27 rural towers and implementing 3G capacity upgrades on 148 urban towers and 268 rural towers. The region will install more than 90 new microwave broadband connections to rural towers.

Mpumelelo Khumalo, managing executive for Vodacom Eastern Cape Region, said, "The upgrades will increase network capacity, and this will help us to provide our customers super-fast internet speeds, great quality voice and reduce dropped calls. In particular, the investment will ensure that many people, who only had access to 2G and 3G, will be able to access internet for the first time through 4G/LTE networks at a time when data traffic growth since lockdown stands at 50 per cent."

The network of the Vodacom Eastern Region extends from Albertinia in the Western Cape and covers all of the Eastern Cape, including Kokstad in KwaZulu Natal.

Standard Chartered and Airtel Africa join forces to drive financial inclusion across Africa

STANDARD CHARTERED BANK and Airtel Africa have formed a strategic collaboration to promote financial inclusion across major markets in Africa by providing increased access to mobile financial services for customers.

Through the collaboration, Standard Chartered and Airtel Africa will work together to co-create new products aimed at increasing the accessibility of financial services in Africa.

In line with this, customers at Airtel Money will be able to make online deposits and withdrawals in real time from Standard Chartered bank accounts, receive international money transfers directly to their wallets, and access savings products among other services.

The corporate clients of Standard Chartered will also be able to make rapid and secure bulk disbursements directly into the Airtel Money customer's wallet, such as payroll payments.

This reduces the risks of travelling long distances for cash payments, and customers can instead go to any Airtel Money agent, kiosk or branch to cash out their funds.

Sunil Kaushal, regional CEO of Africa and the Middle East at Standard Chartered Bank, said, "By collaborating with innovative organisations like Airtel Africa, we are accelerating our mobile and

This partnership supports the efforts of Airtel Africa to expand the range and depth of its Airtel Money offerings across its 19mn customer base.

digital-led strategy to provide best-in-class financial services to Africa."

Raghunath Mandava, CEO, Airtel Africa, said, "We continue to invest heavily in cashing in and cashing out locations for our customers and increase our distribution."

Mobile banking transfers between Airtel Money and Standard Chartered Bank are now live in Kenya, Tanzania, Uganda and Zambia. Remaining products will be rolled out later this year subject to regulatory approvals.

TNM launches first KaiOS-enabled phone

INTEGRATED MOBILE NETWORK and ICT services provider TNM has partnered with KaiOS Technologies to launch the most affordable 4G KaiOS-enabled smart feature phone in Malawi.

Priced at US$33.9 (MK 24,999), the TNM Smart 4G will come with a value of US$38 (MK28,000), worth of bonuses comprising 500 MBs, 150 SMSs and free caller tune every month for six months.

The phone will provide customers with access to major and popular apps such as WhatsApp, Google Assistant, Google Maps, YouTube, Facebook and many other KaiOS applications.

TNM CEO Michiel Buitelaar said this affordable device has been designed to suit the communication needs of first-time users and people in rural areas.

CFI and Liquid Telecom launch Sasai Wi-Fi Finder

CASSAVA FINTECH INTERNATIONAL (CFI) and the Liquid Telecom Group (LTG) have launched Sasai Wi-Fi Finder, a potential game-changer in Africa driving digital and financial inclusion.

A 2019 GSMA report shows that affordability remains a significant barrier to internet adoption in Africa, leading to social, digital and financial exclusion.

This partnership aims to offer a low-cost connectivity solution and expand those services across the continent.

"We see this launch as a critical piece in the social and digital inclusion agenda we are driving on the continent," said Darlington Mandivenga, the CEO of the CFI Group. "Through Sasai Wi-Fi Finder, we plan to establish an expansive network of data access points across Africa and build 'Africa's Missing Network' through partnering with broadband providers, internet service providers and local community hubs," Mandivenga said.

The intuitive and easy-to-use Sasai Wi-Fi Finder will be an in-app feature on the Sasai super app that will allow users to identify hotspots where

The Sasai Wi-Fi Finder is accessible and available by downloading the Sasai super App from the Google Play store or the Apple App store.

affordable data can be accessed.

The Sasai Wi-Fi Finder will enable enhanced connectivity in a variety of locations, including retail, health care, education, government and small business establishments.

The app will also give millions of Africans access to social, entertainment and on-demand services offered on the Sasai Super app.

The partnership between CFI and LTG will see the roll-out of the Sasai Wi-Fi Finder in Zimbabwe, Kenya, Tanzania, Uganda, Rwanda, Democratic Republic of Congo and South Africa in phases over the coming months.

Strong Roots selects Eutelsat 8 West B for new DTH platform in Ethiopia

EUTELSAT COMMUNICATIONS AND Strong Roots Ethiopia Broadcasting Service have concluded a master service agreement for Ku capacity on a 36 MHz transponder on the Eutelsat 8 West B satellite.

This capacity will allow Strong Roots to launch a new free-to-air DTH platform covering both Ethiopia and the Ethiopian diaspora in areas within the footprint of the satellite, notably the Middle East.

Strong Roots Ethiopia Broadcasting Services, a part of the Ethiopian-owned Strong Roots Group, is an upcoming player on the Ethiopian broadcast market. Its new DTH Platform will distribute high-quality content in SD or HD, including news, entertainment, education, kids' shows, documentaries, movies and sport.

Eutelsat 8 West B is a satellite dedicated to Ethiopia's East Beam coverage and is part of the 7/8° West video neighbourhood, one of the world's most dynamic satellite TV markets.

Etisalat launches cloud OTT service

UAE OPERATOR ETISALAT has launched SwitchTV, a new direct-to-consumer (D2C) service based on the infinite cloud TV platform of Synamedia and its end-to-end video network portfolio. Infinite enables Etisalat to process, secure, distribute and monetise video across all consumer devices. The benefits include the flexibility to offer a selection of SwitchTV subscription packages and various film rental models. With the cloud DVR solution provided by Synamedia, viewers can record programmes in the cloud and view them on any of their devices. Synamedia supports the multi-language requirements of Etisalat, with channels that offer Arabic, Western and Asian content.

Etisalat deploys the end-to-end video network from Synamedia to reduce latency at each stage of the video workflow, from encoding to CDN and player, while minimising bandwidth requirements.

Accenture and Anglo American extend services agreement

ACCENTURE AND ANGLO American, a South African mining company based in Johannesburg, have signed an agreement to extend Accenture's role as a strategic IT service provider to 2023.

The agreement will help speed up the development of information management capabilities for Anglo American using new technologies and delivery practices through a collaborative approach to drive innovation.

Pavan Sethi, managing director for Accenture Technology in the Asia-Pacific, Middle East and Africa, said, "Prior to the extension of the agreement, Anglo American and Accenture worked together to co-create future services and determine major priorities."

In 2011, Accenture was selected as a major provider of technology services.

Mindware signs distribution agreement with Keysight Technologies

VALUE-ADDED DISTRIBUTOR MINDWARE has signed a distribution agreement with Keysight Technologies, a technology company that helps companies, service providers and governments speed up innovation in connecting and securing the world.

Under the agreement, Mindware will offer the entire portfolio of network testing, visibility and security solutions to enterprises across the GCC, Levant, North Africa and Pakistan through its expansive network of channel partners to Keysight's Network Applications & Security group.

Network testing, visibility and security solutions from Keysight protect businesses from security threats by providing actionable insight into the performance, stability and security of their applications and networks. Keysight's solutions validate network functions, test security infrastructure integrity and provide an end-to-end view of the enterprise network.

This helps strengthen applications across physical and virtual networks for enterprises and governments, service providers and network equipment manufacturers.

Nicholas Argyrides, general manager - Gulf at Mindware, said, "Over the past few years we have seen cybersecurity emerge as one of the top priorities for regional CIOs. In line with this, Mindware has been building out its security capabilities to address the needs of the market and our channel partners. We are always looking to add best-of-breed vendors to our portfolio."

Photo: monsit/Adobe Stock

The company will distribute comprehensive solutions from Keysight.

Building on the strength of Keysight's Network Applications & Security group with customers in the telecom, government, and finance sectors, Mindware will seek to extend the same success to other verticals. The company will distribute comprehensive solutions from Keysight, while also providing value-added support, implementation, training and business development services.

Mindware intends to drive business for Keysight by upgrading channel partners through vendor technology-focused training and enabling sessions. The powerhouse for regional distribution will play a vital role in assisting its partners with potential business leaders and helping them to carry out proof of concept.

Schneider Electric partners with Fortinet to secure digital transformation

SCHNEIDER ELECTRIC, A digital transformation energy management and automation provider, and Fortinet, a specialist in broad, integrated and automated cybersecurity solutions, have partnered to provide solutions for cybersecurity that meet the unique needs of OT networks.

Under the terms of the agreement, Schneider Electric will integrate Fortinet's firewalls, secure access and other device protection solutions into its own cybersecurity solutions to help customers secure and protect their increasingly digital operations.

Photo: Pablo Lagarto/Adobe Stock

The agreement is structured to enable companies to jointly develop cybersecurity solutions for specific industries.

"Businesses must address cybersecurity at all levels of their operations and continuously throughout the life cycle, especially as they continue to take advantage of new digital technologies to extract more value from their operations," said Jay Abdallah, vice-president, cybersecurity services, Schneider Electric.

"By combining our technology, experience and expertise with Fortinet's products, we are better able to develop and implement custom, holistic solutions that not only enable our customers' digital transformations but improve their ability to manage their cybersecurity risks across the operations life cycle," he added.

Cybersecurity is not a one-time thing; threat vectors are changing practically by the hour and the critical infrastructure and global manufacturing industries are under increasing threat. The approach to managing and mitigating cyber risks must also be dynamic, as risks are dynamic.

Facebook unveils business lessons book from top South African women

FACEBOOK HAS UNVEILED 'Inspiring # Changemakers: Lessons from Life and Business' as part of its celebrations around Women's Month in South Africa – a book that highlights the careers, lives and life lessons of 13 inspiring South African businesswomen and change makers. Celebrating the positive impact these women have on entertainment, law, retail, beauty and food within society and across their respective fields, the book shares their advice and life lessons for South Africa's future leaders and changemakers.

Each chapter focuses on an insightful, personal lesson that hopes to resonate and inspire future generations; from how to turn your passion into a business to how strength can be a perceived weakness.

The book includes stories from women like Dr Precious Moloi-Motsepe, Nomzamo Mbatha, Bonang Matheba, Mogau Seshoene (The Lazy Makoti), Professor Thuli Madonsela, Catherine Constantinides and many more, featuring bespoke commissioned artwork by three South African female artists: Karabo Poppy Moletsane, Nontokozo Tshabalala and Zinhle Sithebe.

Commenting on the book, Nunu Ntshingila, regional director, Facebook Africa, said, "Inspiring #Changemakers: Lessons from Life and Business has been created to not only celebrate the women making a positive impact in our society but to inspire future leaders. These women are making a difference in their communities, from starting social movements that change the world through to businesses that positively impact their local communities.

"This Women's Month we continue to celebrate the achievements of all women, but also to acknowledge the gender entrepreneurship gap and under-representation of women leaders. We hope the stories and life lessons inspire the next generation with the possibilities that their futures hold."

All change for content provision and delivery

The Middle East and Africa's only event for content, broadcast, satellite, media and entertainment industry professionals continues to reflect a fast-changing landscape. Ron Murphy looks at the extraordinary evolution of the various industries CABSAT will be highlighting.

CABSAT IS BACK – albeit a lot later than expected. The show is now taking place at the Dubai World Trade Centre as usual, but due to the delays forced on this and other trade shows worldwide by the coronavirus, this year it's on from 26-28 October.

As ever, expect to see (and hear about) everything from satellite solutions to set-top-boxes that can stream content offline and from video analytics to content protection.

Considered to be one of the fastest-growing regions in the world for media and entertainment – at 11 per cent CAGR as opposed to the global rate of 5.1 per cent – the MEASA (Middle East, Africa and South Asia) region is experiencing a dramatic increase in spend, driven by a projected 22 to 35 per cent three-year growth rate in television market revenues.

Clearly, technological innovation will play a key role in this growth and the MEASA region will be a key target for innovators from both the production and hardware side of the content business.

Not surprisingly then, CABSAT attracts everyone from engineers to creative content professionals including broadcast and satellite engineers and marketing directors, as well as content buyers, sellers, producers and distributors. It's a broad spectrum of technical, marketing, managerial and creative talent from TV and film, audio, digital media, photography, e-sports and the satellite industry.

This diverse visitor profile usually assures CABSAT of an annual turnout of 14,000 or more visitors from the market in the MEASA region, Of course, given the rather unusual circumstances, guessing at this year's turnout might be unwise. No doubt with

that in mind CABSAT has launched CABSAT Virtual, a series of live webinars.

That said, the organisers are undoubtedly right to talk about an industry revolution. This is a world where virtual reality and downloading entire films in seconds via 5G may soon be the norm – a world where multi-screen and OTT viewing are on the rise, attention spans are short, social media is ubiquitous and the content industry is witnessing disruption on a grand scale.

CABSAT will reflect these changes, attracting not just visitors from the traditional broadcasting and content distribution and delivery sectors, such as content creators and distributors, production houses and advertising agencies, but also satellite carriers, telcos and companies driving OTT and IPTV well as network designers, regulators and even the licensing and merchandising industry.

Given the many potential ways forward for communications and content, CABSAT is working with a wide range of relevant participants to identify the traits of success across all verticals to identify common characteristics that will be the blueprint for growth.

As for the hardware and software that will make this growth happen, expect to see or hear about not just equipment for production and post production of audio, video and radio, but content and communications infrastructure, systems integration, cloud, augmented reality (AR) and virtual reality (VR) – and even drones!

Of course satellite remains an important part of this show. These days, satellite is just one of many ways to distribute video, yet it remains one of the most reliable and efficient methods, which

Photo: CABSAT

That was 2019 – but how will the show floor look this year?

Events/Événements 2020

SEPTEMBER/SEPTEMBRE

14-15	East Africa Com	Virtual	www.tmt.knect365.com/eastafricacom
29	Nigeria Com	Virtual	www.tmt.knect365.com/nigeria-com
30 Sep - 1 Oct	West Africa Com	Virtual	www.africa.com/events/west-africa- com-virtual-30-september-1-october/
30 Sep - 1 Oct	DTX Europe	London, UK	www.dt-x.io/europe/en/page/dtx-europe

OCTOBER/OCTOBRE

13-15	Broadband World Forum	Virtual	www.tmt.knect365.com/bbwf
21-22	NABSHOW	New York, USA	www.nabshowny.com
26-28	CABSAT	Dubai, UAE	www.cabsat.com

NOVEMBER/NOVEMBRE

9-13	Africa Com	Virtual	www.tmt.knect365.com/africacom
10-11	SECUREXPO EAST AFRICA	Nairobi, Kenya	www.securexpoeastafrica.com
22-25	CAIRO ICT	Cairo, Egypt	www.cairoict.com

MARCH/MARS 2021

9-10	INTERNET WORLD EXPO 2021	Munich, Germany	www.internetworld-expo.de
16-17	SECUREX WEST AFRICA	Lagos, Nigeria	www.securexwestafrica.com
18-19	Blockchain Africa Conference 2021	Johannesburg, South Africa	www.blockchainafrica.co

allows content providers to maintain their footing while learning how to make the most of the many new platforms.

The CABSAT organisers offer the following statistics derived from Research and Markets, Euroconsult Research and Verified Market Research:

- Global satellite communications market to be worth US$53 billion by 2027
- Fixed satellite services to accelerate at five per cent CAGR from 2019 to 2025
- Global small satellite market growing at CAGR of 14 per cent from 2019 to 2030
- In-flight connectivity to more than double by 2028
- Global maritime VSAT market to reach US$5.1 billion by 2025
- Government space programmes expenditure to reach US$84 billion by 2025

Which means this show isn't just going to be of interest to broadcasters, or indeed dedicated satellite companies, but also to maritime, space agencies, government, telcos, commercial business enterprise and aviation.

Returning to content, there's no doubt that telecommunications – and in particular mobile telecommunications – is going to play a major part in the content future. For instance regular readers will know that mobile video is revolutionizing the way we consume content. However, they might not know that, with 9.2 billion mobile subscriptions by 2020 and 80 per cent of new subscriptions between 2015 and 2020 coming from the MEASA region (according to the Ericsson Mobility Report), the demand for OTT technology solutions in this area is booming.

As for the markets of specific interest to Communications Africa, the CABSAT organisers cite a number of relevant statistics from various industry sources, including, for example, that MENA's collective video content market of today is worth just over US$3billion, with estimated growth of 40 per cent. It is expected to reach US$4.3billion

by 2021. In addition, the younger generation in MENA is expected to spur rapid growth in digital video revenues; over 25 per cent of the markets are composed of the 10-25-year age bracket.

Returning to the enablers for mobile video, smartphone penetration is 75 per cent in markets like the UAE and Saudi Arabia, while Saudi Arabia has an estimated share of more than 30 per cent of the overall MENA digital transformation market and the UAE and Algeria account for over ten per cent each.

Turning to sub-Saharan Africa, there are some impressive statistics here too. For instance, according to PwC's Entertainment and Media Outlook: 2017 – 2021: An African Perspective, Ghana's entertainment and media industry is beginning to gear up thanks to a 16.5 per cent CAGR and a total of US$1.5 billion forecast for 2021. Kenya's entertainment and media

industry is also expected to grow – at an 8.5 per cent CAGR, hitting the US$3billion mark in 2022.

The total revenue from the smaller Tanzanian entertainment and media market stood at US$504 million in 2016 but is set to more than double to $1.1 billion in 2021, a 17.2 per cent CAGR. Of course, Nigeria is one of the continent's biggest markets. Its total entertainment and media market is expected to be worth US$8.1 billion by 2021.

So it's all change for both content provision and delivery – growth, new technology and new ways of consuming content are both challenging and exciting prospects.

It's certainly true that one change is less welcome, however. This year's CABSAT is going to be very different from many of those that preceded it due to the coronavirus. And, given the likely care with which meetings are going to have to be arranged and managed, scheduling well in advance with qualified buyers via the show's Meetings Programme may well be more important than ever. ℭ

"This is a world where downloading entire films in seconds via 5G may soon be the norm"

Small distances — big market

Bluetooth has come a very long way some its inception as a short-range wireless communications specification. Ron Murphy discusses some of its evolutionary and standardisation changes with the trade association that oversees Bluetooth technology – and hears about some surprising modern uses for the technology.

What's on site and where?
Bluetooth can tell you.
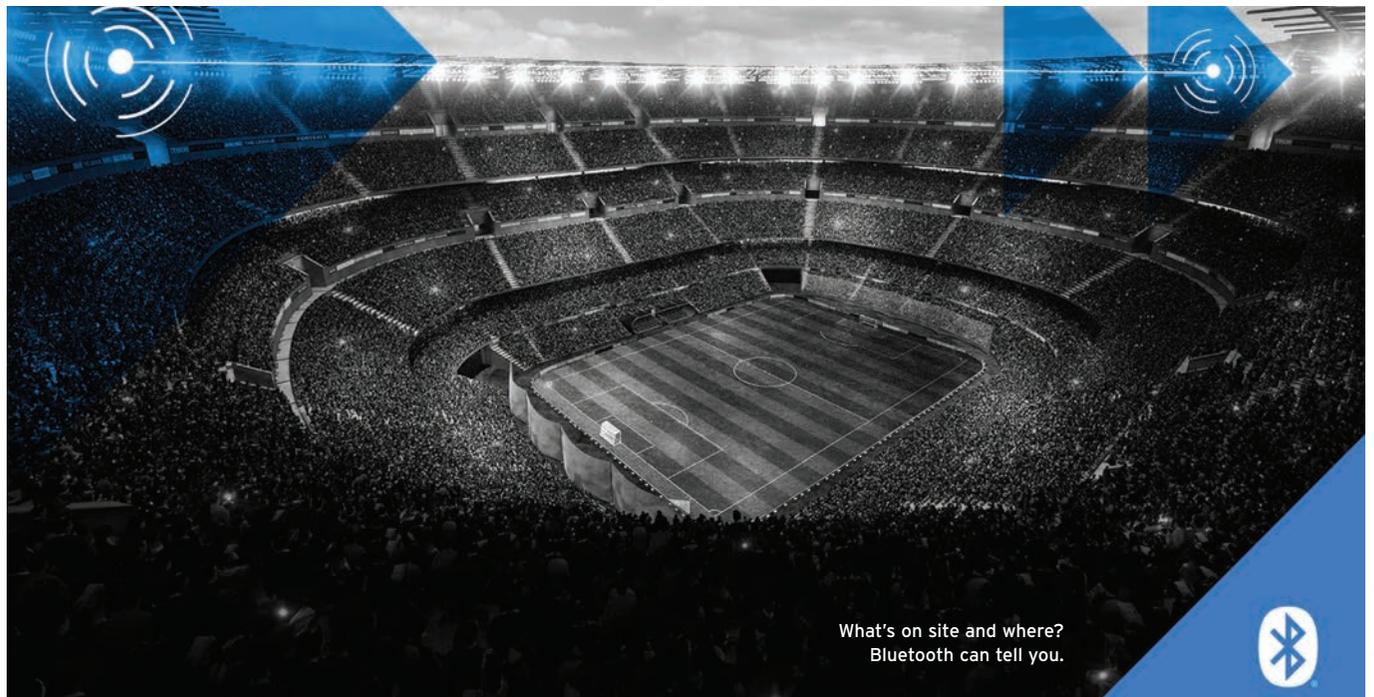
Photo: Bluetooth SIG

"MORE THAN A radio technology, Bluetooth provides full stack, fit-for-purpose solutions to meet the expanding needs for wireless connectivity. After first addressing audio streaming, Bluetooth expanded into low-power data transfer. Now Bluetooth is meeting the market demand for indoor location services and reliable, large-scale device networks."

That is a brief summary of the evolution of possibly the world's best-known short-range wireless communications specification. And it comes from the group that knows most about it: the Bluetooth Special Interest Group (SIG), a global community of over 36,000 companies serving to unify, harmonize and drive innovation in the vast range of connected devices all around us.

As Chuck Sabin, senior director, market development at Bluetooth SIG, says, "Today's Bluetooth standard is faster and more secure, with additional features. It is designed to support a wide range of achievable ranges between two devices, providing developers tremendous flexibility to create wireless solutions that best meet the needs of their target use cases."

In practice this means it is has evolved from simply being a replacement for audio wires to a way of supporting solutions that help businesses monitor and track inventory, to providing health care solutions, and to connecting tens of thousands of devices to boost energy savings.

More specifically, as Sabin explains, Bluetooth technology enables four solution areas. The first and best known is audio streaming, of course. The second is data transfer involving household appliances, fitness trackers, health sensors, medical innovations, and more.

Location services is the third area. Bluetooth is the developer tool of choice for creating

Bluetooth technology, whether used to unlock cars or control access to critical industrial spaces, is replacing key fobs and key cards

proximity solutions used for point of interest information and item finding (such as Bluetooth tags to keys and wallets) as well as positioning systems such as real-time locating systems for asset tracking (which could include inventory tracking to increase productivity) and indoor positioning systems for wayfinding through complex facilities. "Bluetooth technology, whether used to unlock cars or control access to critical industrial spaces, is replacing key fobs and key cards," says Sabin.

Device networks are a fourth area and a more recent innovation. Bluetooth mesh networking is ideally suited for creating control, monitoring and automation systems where tens, hundreds or thousands of devices need to reliably and securely communicate with one another. "Bluetooth technology enables automation of buildings – essential systems such as heating, ventilation, lighting and security – to lower operating costs," Sabin explains.

And a growing number of applications means a growing number of devices. "Companies ship roughly 4.5 billion Bluetooth-enabled devices each and every year – increasing to 6.2 billion annually by 2024," he points out. Devices are often built specifically

with Bluetooth in mind, especially when they are designed to be wirelessly connected to an application on a phone, tablet or computer, devices. And let's not forget either that Bluetooth is also the leading technology for the Internet of Things (IoT).

It's not just about PCs, tablets and IoT sensors. This is a world where many more devices are built with connectivity in mind – "and everything from tools and toys to toothbrushes can be a connected device".

The developing world can benefit from many of the use cases served by Bluetooth technology. "However," says Sabin "if you look at some of the basic needs, then access to healthcare, adequate screening, diagnosis and remote care may rank among the highest." Connected devices can have a significant impact on these needs. Take, for example, providing automated processing and communication of health diagnostics to doctors. There's no need to manually record readings; Bluetooth can connect to back-end systems and deliver data to the people who need it. "Likewise," Sabin adds, "continuous care and monitoring are possible with

> ## Connected devices can provide automated processing and communication of health diagnostics to doctors

Garmin Fenix 6S ProSolar. Music (and more) on your wrist.

Bluetooth technology connected to heart rate monitors, glucose monitors or insulin machines where the system both gets readings and also delivers the prescription as required."

But now and in the future Africa can benefit from other Bluetooth-enabled functions – like the deployment of sensor networks for condition monitoring to ensure vital equipment is operating properly and maintenance is scheduled in a timely manner. Or asset tracking to keep track of vital resources, inventory levels and the location of equipment necessary to a job.

"Additionally," says Sabin, "Bluetooth can support safety and security measures using geofencing, access control and monitoring to ensure individuals working in manufacturing, processing and other industrial applications remain safe."

Of course interoperability is a cornerstone value of Bluetooth technology – and that's where the SIG comes in. "The Bluetooth SIG manages both the specification process and the qualification process – ensuring quality features and capabilities, as well as assurance (depending on the use case) that all devices can work together."

And the future is even brighter for Bluetooth. "Bluetooth has been at the forefront of connecting data on devices with applications to turn that data into information for decision-making. Bluetooth can be credited for creating the wearables market we know today – these were some of the earliest IoT devices. Bluetooth is a compliment to Industry 4.0 efforts, using sensor networks for condition monitoring and machine communication."

It is also going to be complimentary to 5G "where Bluetooth provides simple, low power connectivity to millions of devices, and 5G can be used as a data transmission network to backhaul the data collected by Bluetooth sensor networks to central systems – many in remote areas".

And Africa? As Sabin puts it, "The selling point for African end users is not much different than other regions – ubiquity, interoperability, low power, reliable communication, convenience and freedom from wires." ✆

Taking Bluetooth outdoors

Two South African companies illustrate the growing role of Bluetooth in enabling or enhancing outdoor activities.

COMMUNICATIONS DEVICES COMPANY Sena has a consumer base mainly from South Africa and neighbouring states, comprising both on and off-road motorcycle enthusiasts. How does Bluetooth help them?

When part of a motorcycle headset, "Bluetooth allows for a seamless and effective way for riders to communicate with each other," says Harold Pienaar, managing member with Sena. "It can warn fellow riders of potential road hazards, allow riders to receive GPS directions without having to take their eyes off the road and allow them to receive weather and traffic updates." In addition, he says, "With a Sena handlebar remote a rider can control many of the headset's functions, without having to remove their hands from the handlebars."

You can also listen to music while riding, communicate with pillion riders and, with a Sena Bluetooth camera, do a bit of vlogging – applying voice overs to your riding videos – in real time.

Bluetooth has evolved considerably since its inception, Pienaar agrees, citing the arrival and refinement of mesh technology and adds, "Manufacturers have responded accordingly and will continue to do so."

Garmin too is a company that has consumers primarily based in South Africa, but many distributors on the continent. It is active in sports and fitness, outdoor recreation, automotive, marine and aviation – with a market ranging from the everyday consumer to high-level professional athletes.

And, says Christine Devenish, of the company's events and sponsorship department, "Bluetooth is part of the initial setup of Garmin devices, and is important because it links the user to our apps and delivers smartphone notifications."

She continues, "Bluetooth is used in different ways in various Garmin products. For example, in our automotive and motorcycle devices Garmin uses Bluetooth to make hands-free calling possible, an important safety measure. In Garmin wearable devices, which are able to store music from a provider such as Spotify or Deezer, Bluetooth is used to stream music from the Garmin device to compatible Bluetooth speakers or headsets."

She continues, "On some of Garmin's recreational devices Bluetooth is used to link the device to an iPhone or Android phone to sync activities with the Garmin Connect mobile application. It also allows for smartphone notifications to be displayed on the user's device."

And, like Bluetooth itself it won't end there. "Garmin has a strong focus on research and development as it strives to stay ahead of the competition and meet the needs of consumers."

For more on Bluetooth trends and forecasts go to www.bluetooth.com and search for 2020 Market Update

C-RAN: why is it taking so long?

What does C-RAN mean? One highly appealing interpretation is cloud-RAN, an approach that could reduce costs and commoditise infrastructure. This may seem attractive - especially in Africa - but as Simon Fletcher, CTO of Real Wireless, explains, such a reality is still some way off.

Photo: Adobe Stock

Will C-RAN and NFV simplify – and even speed up – network delivery?

THE TERM C-RAN has been around for many years – but it doesn't always have the same meaning.

If C-RAN describes architectures that centralise base stations to reduce capex, while driving network efficiencies and performance, then many would argue that C-RAN has been a commercial reality for at least three years. For Asian operators like KDDI, for example, C-RAN as shorthand for centralised RAN is a tried and tested solution that means centralised base stations, deep fibre in metro areas, and radio heads hanging off that fibre to ramp up capacity in hotspots.

However, for those dreaming of cloud-native C-RAN – constantly evolving functionality via software defined networks with access to unlimited on-demand compute – there's still quite a way to go.

The C-RAN concept can seem nebulous – but there are real drivers behind Cloud RAN (as opposed to cloud-native RAN).

Mobile operators in every market are looking to move away from hardware-based networks that tie them to particular vendors. They want to reduce the costs of network densification through commoditised, standardised, non-propriety kit, coupled with a shift to software architectures supporting network function virtualisation (NFV).

NFV is a critical element in the realisation of commoditised infrastructure. The idea is to employ standard IT technology to consolidate a wide range of network elements on to industry-standard high-volume servers, switches and storage, which can be located in data centres, network nodes or at enterprise premises.

The drivers for the virtualisation of cellular networks are well understood and are pretty much the same as the ones that led to the transformation of data centres. The headline benefits are obviously reduced equipment costs and power consumption, through consolidating equipment and exploiting the economies of scale of the IT industry.

But NFV also promises a less generic approach to service delivery, because the economies of scale required to cover investments in hardware-based functionality are no longer applicable in the context of software-based development. This is why Cloud-RAN is particularly important for private cellular networks for enterprises. NFV means service providers (and in a private network this might include the enterprise itself) can tailor functionality to suit the needs of customers in ways that are impractical in the context of conventional cellular network architectures.

So why is it all taking so long? Well, different markets have different relationships with their legacy networks. In Asia – where operators have centralised via classic telco architecture that meets their immediate needs rather well – there has been understandable pushback to the adoption of standards describing the Cloud-based architectures promulgated by operators and vendors in the US and Europe.

As we have seen, many Asian operators have highly integrated base stations that don't have virtualisation as a capability. Their C-RAN networks have evolved over time and are based on an architecture of large base station 'hotels' situated in switching centres. Such service providers have little interest in the push from vendors to swap out equipment that performs perfectly well and exchange it for fancy new architectures that add nothing to the functionality or performance of the base station. They are unmoved by claims that cloud architectures will deliver advantages such as improved network sharing economies.

Different markets have different relationships with their legacy networks

Cash in hand? Not anymore!

The use of cashless payments in Kenya has increased in recent months as customers aim at reducing person-to-person contact amid the fight against the Covid-19 pandemic. Mwangi Mumero reports.

WITH THE FIRST case of Covid-19 being reported in early March 2020, the government of Kenya encouraged people to reduce cash transactions, both as a way of limiting contact and also to limit the chances of passing the virus through bank notes.

Mobile money services providers as well as financial institutions were also called upon to offer incentives to boost the shift to cashless transactions.

"We appeal to mobile operators and banks to take into consideration the situation and reduce the cost of transactions during the next 90 days to fight this pandemic," said Kenya's president Uhuru Kenyatta in a televised address to the nation immediately after the first case of Covid-19 was reported in the country.

According to a report capturing the period between July 2016 and July 2019, from Financial Sector Deepening (FSD) , an organisation that supports the development of financial inclusion in Kenya, cash is still the preferred mode of payment in settlement of everyday transactions in the country.

Informal workers and traders are particularly likely to receive cash; in fact over 90 per cent of their payment comes in cash. Farmers also received 93 per cent of their payment in cash; only five per cent came via bank transfer. Only two per cent of this group received payment via mobile money. This tendency is even more pronounced in the case of casual workers – construction workers and farm hands in the main – who received 97 per cent of their dues in cash.

However, government and industry players have been eager to increase cashless transactions in the face of the pandemic. Following a meeting between the Central Bank of Kenya (CBK) and the payment service providers (PSPs) in mid-March 2020, a number of measures were instituted immediately to boost cashless transactions.

Service providers agreed to increase the transaction limit for mobile money from Ksh 70,000 (US$677) to Ksh 150,000 (US$1451) daily to allow for larger deals. This move has been specifically aimed at small and medium enterprises (SMEs).

For Safaricom Limited M-Pesa users, person-to-person transactions below Ksh 1000
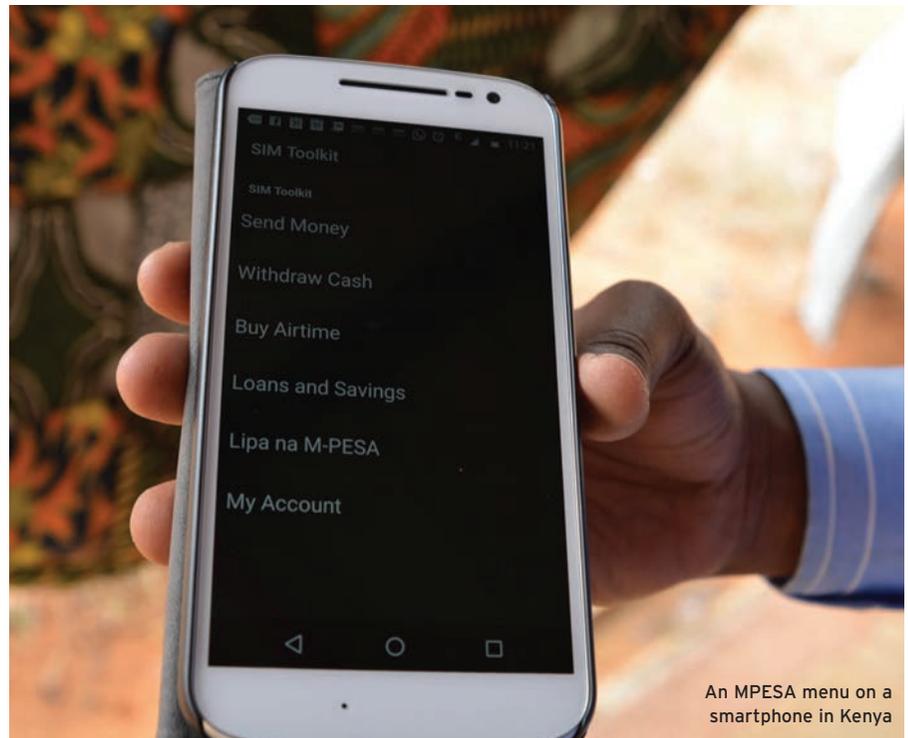
Photo: Fiona Graham / WorldRemit

An MPESA menu on a smartphone in Kenya

(US$9.67) would be free to Kenyan customers.

Safaricom is Kenya's biggest mobile money operator by volume and value of transactions. Its mobile money service has about 75 per cent of the country's market share, generating 25 per cent of the US$2.2 billion that Safaricom generated in 2018.

M-Pesa has 26.9 million customers and 176,000 agents across the country. It plays an important role in all cashless transactions – including supermarkets, petrol stations and other points of sale across the nation.

Even vegetable vendors in Kenya's sprawling open-air markets have embraced the service, further boosting the cashless mode of payment.

Commercial banks have also agreed to

Government and industry players have been eager to increase cashless transactions in the face of the pandemic

eliminate charges for transfers between mobile money markets and bank accounts.

For instance, transfers from M-Pesa to bank accounts or from bank accounts to M-Pesa have been zero-rated, allowing customers to withdraw money from their bank accounts and transact via mobile transfer.

Airtel Money, with about 3.7 million mobile money users, and Equitel Money, with 1.9 million users, have also instituted measures to increase cashless transactions. Smaller players such as Tangaza and T-Kash, with about 94,400 and 76,000 users respectively, have followed suit.

For its part, Mastercard, a global technology company in the payments industry, has increased its on-the-spot cashless payment facility to Sh3,500 (US$32.45) from Sh2,500 (US$23.18) to enhance the use of electronic transactions, according to Mete Guney, Middle East and Africa (MEA) executive vice-president in charge of service.

"This reflects the pace of those changing behaviours where we offer consumers an easier and convenient way to conclude transactions. It allows customers to adhere to

social distancing and enjoy a safer and cleaner mode of payment," said Guney.

He noted that a growing number of merchants were encouraging consumers to pay via contactless payment technology, thereby avoiding human-to-human contact.

Overall, according to Guney, since the start of a campaign to promote the use of digital and contactless payment technology, there has been 200 per cent growth in the MEA region. Mastercard has introduced a cardholder verification, enhancing safety during use for individuals and businesses.

A recent report by the Central Bank indicated that measures instituted in early March are having the intended effects – as shown by increased digital transactions and values. Emerging evidence suggests the steps taken are yielding direct and indirect impacts on payment at peer-to-peer payment and merchant levels. Even farmers are moving to

More and more customers are now paying for cabbages, carrots and fruits through mobile transactions

Butcher's shop next to an M-PESA agent, Nunguni, rural Kenya

cashless transactions – as indicated by a 54 per cent increase in agricultural businesses' and cooperatives' digital payments.

And with food and hygiene being a critical issue in Covid-19 transmissions, customers have moved to cashless deals – as shown by a 35 per cent increase in food and grocery digital payments. "It has become a new phenomenon for us. More and more of our customers are now paying for cabbages, carrots and fruits through mobile transactions. Many more customers just call, then pay via M-Pesa and the groceries are delivered directly to their homes," observed June Mwendwa, a greengrocer's shop owner in Kitengela, on the

outskirts of Nairobi.

According to the report, there was also a steep increase in digital payments to pharmacies, which peaked in April. Petrol, utilities, internet and pay TV digital payments showed a 30 per cent rise in April, although there has been a recent decline as the country eases restriction on movement.

Electronics, computer and mobile-related digital payments also grew – by 21 per cent – over the period. Working from home as well as the growth of online schooling for kids, has boosted these payments.

Expectedly, construction and contractors' digital payment decreased sharply in March and April – due to lockdown – but has been steadily rising as the country begins to reopen.

"As the impact of the pandemic is still unravelling, the trends in digital payment continue to change on a daily basis. The current trajectory could still shift depending on how long the pandemic endures and the measures taken to mitigate the impact to the economy, such as safety net programmes and economic stimulus plans implemented by both the private and public sector," observed Juliet Mburu, senior digital payments specialist at FSD Kenya. ✪

However, in Europe and the US many operators and vendors have embraced a Cloud RAN vision of higher capacity base stations that can, in theory, be shared among a number of operators, while delivering efficiencies that enable a large number of resources to be available for transmission (trunking gain).

It should be stressed that all this is still largely theoretical. Real Wireless studied these architectural changes as part of the European Commission's 5G NORMA project. The conclusion of the study was that the major architectural changes currently emerging from the standards were so significant that network design was indeed moving into the cloud native space. Which is another way of saying forget legacy architectures and reimagine network design with a blank sheet of paper. However...

Cloud RAN was meant to be all about simplifying things, but the architectural changes described in the standards are becoming

feature-heavy and extremely complex. In addition, end-to-end security is one of the main advantages cellular has over Wi-Fi – but the move to cloud-based systems threatens to compromise that advantage. For example, IEEE points to C-RAN vulnerabilities that include eavesdropping, denial of service and issues around authentication. All this and more is tackled as part of the standards development process, but it comes at a price. Security adds still more complexity in the interfaces of the system.

What's really slowing everything down are too many iterations of the standards, too many options, and a process that's building in too much complexity to the C-RAN concept.

The good news is that, in the immediate future, there's going to be a fair deal of trial and error via early deployments where we'll get to understand what's really important in the delivery of stable and efficient architectures and which of the nice-to-haves are

best stripped out. The outcome will probably be simpler than the current standards might imply and, eventually, will deliver the reliability and security that are the hallmark of cellular solutions.

So, are we there yet? In Africa, there's still a long way to go. But the African market can take the benefits of findings from the other markets so that MNOs don't have to go through the painful process of trial and error. Selecting the option that best suits the local requirement would be a challenge and that's where Real Wireless can help. The main role for Real Wireless in this context is to help enterprises, neutral host and the industry at large understand how robust – or otherwise – C-RAN solutions are and whether they are worth investing in. Some architectures might not last for long. Decisions will be informed not just by network considerations, but by the current and prospective state of the device ecosystem.

Ultimately, bells and whistles features can always appear

exciting but are generally less important than the core functionality a firm or sector needs to meet its connectivity requirements. And businesses need to be able to reach decisions without absorbing thousands of pages of technology standards or evaluating dozens of marketing pitches. And while experts like Real Wireless can help support such decisions, the heavy lifting really needs to be done by the wireless industry itself in forging and committing to robust, practical and cost-effective C-RAN architectures that deliver end-to-end security, core and future-proofed functionality that meets business requirements and an attractive ecosystem of handsets and devices. ✪

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

Raising the limits

Radical adjustments to charges have massively boosted the use of mobile money use in Rwanda – and growth is expected to continue, as Mwangi Mumero explains.
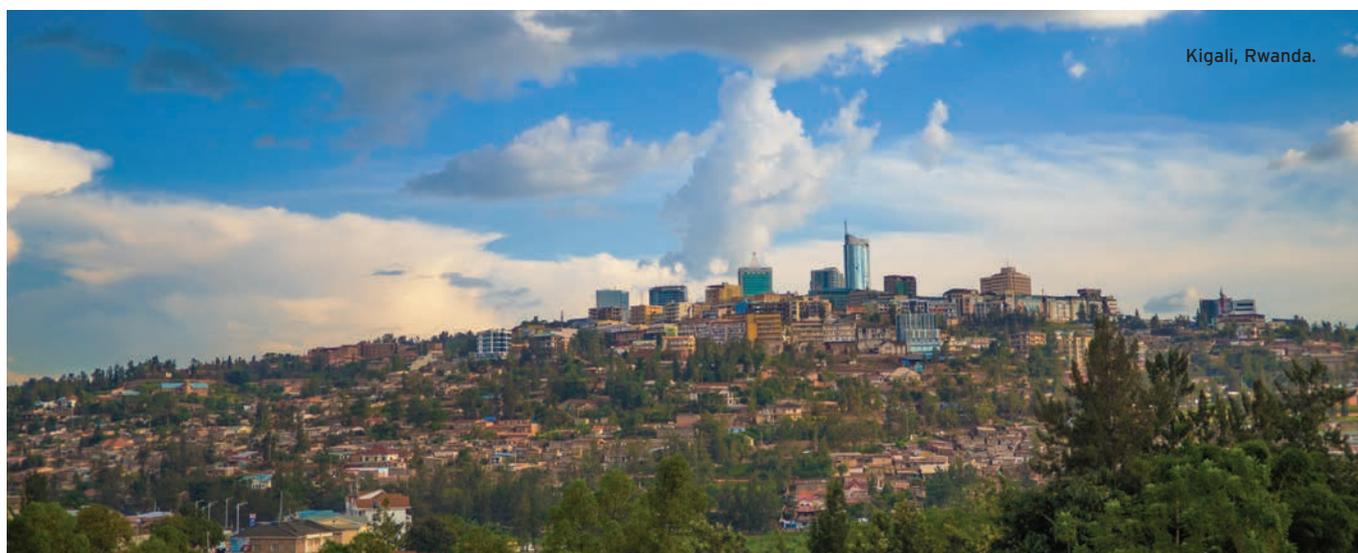
Kigali, Rwanda.

Photo: Adobe Stock

SLASHING OF TRANSFER charges in Rwanda has boosted the value of funds transferred via mobile money by 450 per cent between January and April this year, reaching over US$42 million, data from the Rwanda Utilities Regulatory Authority now reveals.

This has led to a sharp decline in the use of cash in payment of goods and services – a development analysts believe the government hoped to achieve in the wake of the Covid-19 pandemic.

A move in early March by the National Bank of Rwanda (BNR) and local telecommunications companies to temporarily remove charges on transfers between bank accounts and mobile wallets and on mobile money transfer – as well as removing merchant fees on payments on contactless transactions – was aimed at curbing Covid-19. It has enjoyed some success, according to Rwanda Utilities Regulatory Authority (RURA) analysis.

Decisive measures taken by the BNR and the telecom companies included zero charges on all transfers between bank accounts and mobile wallets, and zero charges on all mobile money transfers, as well as zero merchant fees on all contactless transactions.

Another move was to increase the limit for individual transfer using mobile money wallets from RWF500,000 (US$522) to RWF1,500,000 (US$1569).

Analysis by RURA further indicates that subscribers sending money approximately doubled from 600,000 in the last week before lockdown in March to 1.2 million in the week after lockdown, and then rose steadily to 1.8 million in the final week of April. Meanwhile, the weekly value of money spent digitally from February to April at merchant outlets increased by 700 per cent – a further testimony to the increased uptake of cashless payments.

Growth in person-to-person transfer was also clearly evident. In the first week of January, the total value of funds sent via a person-to-person (P2P) transfer was RWF7.2 billion (US$7.6 million). In the last week of April, the value shot up to RWF40 billion (over US$42 million) – an increase of over 450 per cent.

Rwanda had 142 per cent mobile money penetration in 2019, according to a report released last year by Egyptian investment bank EFG Hermes. The report The Mobile: Deepening Financial Inclusion but at a High Cost, noted that a percentage exceeding 100 means that some people have more than one line that has access to mobile money services.

Mobile money providers in Rwanda include MTN Rwanda and Airtel Rwanda. The third player, Tigo Rwanda, has merged with Airtel. Over recent years, the use of mobile money services has been growing, contributing to the overall profitability of these companies. Projecting a 20 per cent revenue growth in 2020, Mitwa Kaemba Ngámbi, MTN Rwanda chief executive officer, observed recently that mobile money will play an important role.

"Mobile money and data demand have gone up amid the Covid-19 pandemic as people make cashless payments. Use of mobile money has gone up fourfold," she said.

In 2019, MTN Rwanda earned RWF22 billion (US$23 million) from mobile money, 18 per cent of the company's RWF125 billion (US$131 million) in revenue. MTN Rwanda is currently the leader in the mobile money market, which analysts say remains a two-horse race with Airtel Rwanda. MTN Rwanda is the dominant player at 54 per cent followed by Airtel Rwanda at 46 per cent.

Available data indicates that out of four million Rwandan adults, fewer than 1.5 million use banking services. Of these, fewer than 100,000 Rwandans exclusively rely on commercial banks to do business.

"Access to financial inclusion is what will grow this industry going forward," said Airtel Rwanda MD, Amit Chawla.

A new report by Fiscope shows that financial inclusion in Rwanda – where individuals can access affordable products and services to meet their needs – has grown to 93 per cent. Mobile money use is expected to surge as the government targets 95 per cent financial inclusion by 2024. ✪

> **"Access to financial inclusion is what will grow this industry going forward"**

Embracing the potential of a communications revolution

A new communications world is not far off. It's a world where not just human beings but things can communicate, telling people – and each other – where they are and how well they are functioning. In fact the Internet of Things is already proving its use in Africa in a number of industries, as Phil Desmond explains.

IOT – THE INTERNET of Things – takes many forms. In the main, though, IoT is, as its name implies, a way to allow things to communicate – usually supplying tiny bits of information that, taken together, can provide useful data on everything from air quality and crop status to vehicle routes and repair requirements.

There are a number of IoT protocols too. SqwidNet is the exclusive South African licensed Sigfox operator, working with the Sigfox Low Powered Wide Area Network protocol; this is a standard used by a number of IoT networks around the world.

SqwidNet provides an IoT connectivity service based on the Sigfox protocol on a nationwide network, allowing millions of sensors and devices to send small packets of data for analysis, immediate action, and record-keeping. This network covers over 90 per cent of the population or 50.4 million people, and 90 per cent of South Africa's national roads.

"This, along with our growing partner network, enables us to provide strategic direction and advice on IoT solutions that solve business challenges and change lives," says Andrew Heuvel, chief technology officer at SqwidNet. He continues, "The simplicity of the Sigfox protocol has allowed us to develop a local ecosystem of application providers, backend system integration and device manufacturers."

Sigfox is successful elsewhere in Africa too. For example, Ben Roberts, group chief technology

An IoT-led revolution in health testing programmes.

Photo: SystemOne
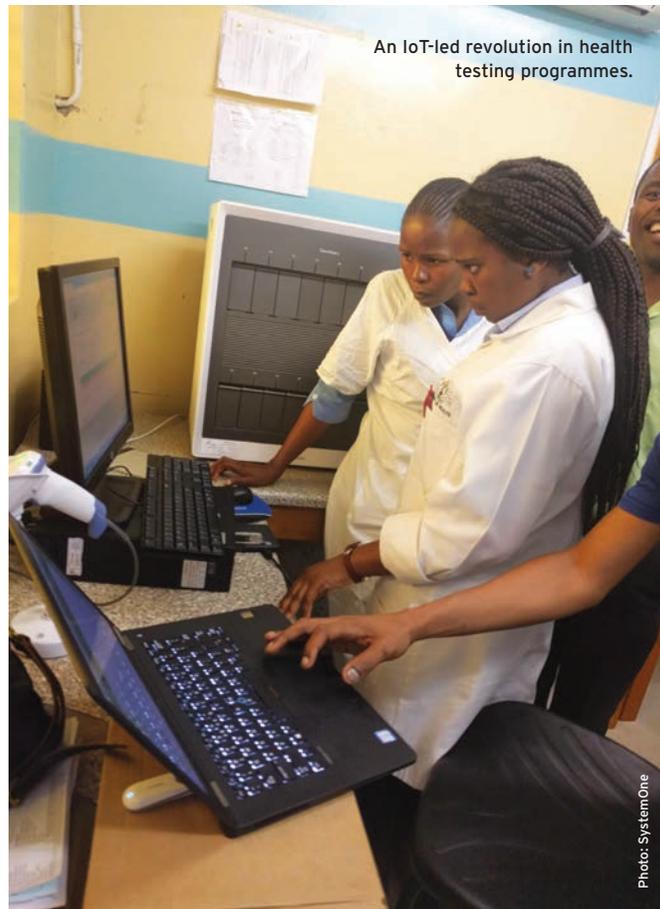
and innovation officer of communications solutions provider Liquid Telecom says, "We have invested in a countrywide IoT network in Kenya covering 85 per cent of the population with Sigfox network connectivity."

This allows Liquid Telecom to provide affordable low-cost communication for IoT solutions, in turn making IoT solutions accessible in the African market. "In addition to this, the technology supports battery-powered IoT sensors." This makes the

company's solutions energy-efficient and independent of grid power – and thus "affordable, mobile and accessible to rural setups", as Roberts puts it.

He continues, "IoT connectivity and cloud are the main products we offer which enable IoT technology companies to partner with us on solutions."

Precision agriculture is one such solution. He explains, "Real-time management of crops and animals is achieved by monitoring and reducing the environmental impact on farming, with the aim of managing risk in agriculture, cost optimization in farm operations and improving yields."

But there's much more. As he explains, locating assets using

smart sensor IoT technology can improve supply chain systems and logistics. In addition smart cities using IoT can promote sustainable living in African cities through monitoring of infrastructure and the environment with solutions such as air quality monitoring and smart utilities for water as well as energy and waste management.

Satellite company Gilat, while not committed to any particular IoT standards or protocols, provides IoT services for fleet management, and animal and fish tracking. In practice this means the company provides hybrid terminals that enable either cellular or satellite networks to be used. As Ami Schneider, VP Mobile Satellite Services, Gilat Telecom, explains, "We can put a satellite modem and antennae on a lorry that connects to the Intelsat satellite service and can provide 10mbps even while the lorry is moving."

He continues, "For fleet management we enable the owners of the vehicles to know the exact movements of the vehicle and every time the driver stops or removes the fuel tanker stopper. The people who own the contents of the vehicle can monitor the temperature and condition of their goods."

And, yes, IoT even applies to fishing. "We enable fishermen to know where shoals are by attaching sensors to buoys."

Robert Koldys, VP marketing, strategy and business development at Telecom 26, an independent, global mobile operator, has some interesting examples involving health. As he says, "We have built IoT networks across Africa for use in remote healthcare diagnostics, vehicle tracking and asset management, including maritime."

And he has a very timely

Smart cities using IoT can promote sustainable living through monitoring of infrastructure and the environment.

example of IoT use. Telecom26's long-term customer SystemOne offers an innovative approach involving integrating diagnostic devices with IoT networks that is changing the way healthcare is delivered. Across 43 countries, SystemOne tests around 250,000 people per month for TB, HIV, Ebola – and now Covid-19.

Koldys says, "Traditionally samples are transported by road to the nearest laboratory for analysis. SystemOne's technology has revolutionised testing programmes. Its software connects to any diagnostic analyser, into which samples are fed. Information is sent to a remote diagnosis system where diagnosis and treatment plans can be immediately developed and sent back."

Connectivity is obviously key to the IoT healthcare model. Telecom26 has been providing IoT connectivity to SystemOne across both Africa and Asia for the past two years. Most recently the contract has been extended to SystemOne's projects in Ghana, Mozambique and Zimbabwe.

The SystemOne diagnostic devices used by medical personnel now have Telecom26's global SIM cards inside them. They enable devices to

automatically access and switch between multiple networks both in-country and across borders, thus removing the need to worry about the coverage of a single MNO, or the existence of roaming alliances. Multiple-IMSI profiles are pre-loaded on every SIM, allowing for simple reconfiguration if the primary network has poor or no service.

In addition, SystemOne is trialling Telecom26's multi-SIM routers in Mozambique and Zimbabwe. These enable SystemOne's diagnostics devices to access connectivity and automatically switch between multiple cellular and satellite networks – and any Wi-Fi or LANs – so that they always use the best-performing connected network available.

IoT technology has been deployed to physically track wildlife and monitor their health in order to preserve species.

Koldys sums up, "It's an IoT healthcare approach that helps countries respond more effectively to outbreaks of infectious disease

Schneider: "We enable a vehicle's owner to know its exact movements"

by identifying positive cases faster and allowing a big-picture view of disease spread across a region."

For some companies the promise of IoT is one they feel could be part of a future vision. At the moment Project Isizwe has one product: free Wi-Fi within walking distance of every citizen. But it sees great promise for IoT. Tim Genders, chief operating officer, says, "Many African citizens are not creditworthy but they do spend when they have the money. Connectivity and other appliances can have a business model on a 'pay as you go' model. IoT becomes key for that."

Applications he suggests include controlling whether a device has been paid for to use, an IoT-controlled 'pay as you go' router for Internet access or IoT 'pay as you go' fridges, solar panels, and laptop computers. "It could totally change how credit is granted and therefore uplift the standard of living in a low-income home," he suggests.

In fact potential uses of IoT are an ever-lengthening list. Liquid Telecom's Ben Roberts cites agriculture. "The use of IoT can help manage climatic risk in food production, reduce the cost of food production and maximize yield for farmers in the sector, thereby helping to address food security issues," he says.

However he also mentions the growing urban population in Africa and an increased demand for utility services. "The use of IoT technology can help digitize utilities," he points out. The result

could be that urban authorities can better manage resources such as water and reduce waste and loss due to real-time visibility of their infrastructure operation. These efficiencies can help them to grow revenues to better serve the urban population.

Logistics, of course, is going to grow as a use of IoT. "Companies want to track and secure assets while in transit in order to reduce risk from loss and improve efficiency in movement of goods, demand for which is growing in Africa," Roberts points out.

Conservation too will benefit – and is benefitting already. "IoT technology has been deployed to physically track wildlife and monitor their health in order to preserve species."

Heuvel of Sqwidnet says it is evident that the South African market has a need for home security, tracking and protecting assets in transit and smart utilities in the water meter sector. "This is where we are seeing the highest level of innovation enabled by the IoT ecosystems and the highest deployment rate, contributing to more than a million messages per day across our network," he says.

And the list goes on. Schneider of Gilat also lists agriculture, fleet management and security but he adds aviation, construction and mining.

All of which is summed up rather neatly by Koldys of Telecom 26. "We are still in the early adopter stage with IoT in Africa – and there is bags of potential." ℂ

Ben Roberts: "We have invested in a countrywide IoT network in Kenya"

Increasing
speed and connectivity

2Africa is just the latest in a number of major subsea cable projects enhancing African telecommunications. How has the technological and regulatory situation changed to make this possible? Vaughan O'Grady asks Guy Zibi of Xalam Analytics for his assessment of Africa-related undersea cable initiatives.

WHY ARE THERE so many subsea cable initiatives involving Africa?

"The impact has been at two levels, for the most part: increased liberalization of broadband retail markets, driving competition, increased adoption and traffic, and increased demand for international bandwidth; and a gradual relaxation of regulations pertaining to international gateways and wholesale data markets."

As Guy Zibi, founder and managing director of research and advisory firm Xalam Analytics, points out, this means more flexibility on both the demand side and the supply side. He adds, "Some markets still have duopolies and monopolies in the international wholesale data segment, but overall, this is opening up."

In Africa, not surprisingly, demand is growing, and capacity supply has to keep up. Zibi estimates nearly 100 million new connections added over the past two years, around 400 million broadband connections in 2019, and a projection of more than 500 million connections within the next two to three years. Hence the growing demand for more submarine cable capacity.

So what is the attraction for participants in such initiatives? Of course projects like 2Africa are consortium-driven, and the sponsors all have a mix of incentives for participating. Zibi explains, "The global content providers seek diversity and capacity; they do not want to be dependent on a single, or small number of cables to connect their points of presence and reach their customers. And they need tons of capacity; the African telcos need the capacity to support their retail operations." Of course co-investing with the likes of Facebook is a good way to achieve that while keeping investment requirements down.

Preselling capacity also helps with such a massive investment but is never going to be enough to cover the large upfront cost. As Zibi points out, "Providers must take the long view. The returns – if they exist – will come over time, from cutting down international bandwidth spend and selling to more customers at a lower per-unit price."

As for who benefits, "The ISPs get more bandwidth and more diverse capacity at a lower cost and are thus able to offer better quality of service. The end user gets substantially improved quality and can do more with their connectivity. Increased availability of international capacity certainly strengthens the FTTH [fibre to the home] opportunity."

This is positive for African economies as a whole. Urban areas (or more accurately, coastal cities) will benefit more than rural areas, but, says Zibi, "This is more tied to the need to expand terrestrial fibre, to bring the capacity from the coast into the interior."

> **"The returns will come from cutting down international bandwidth spend and selling to more customers at a lower per-unit price"**
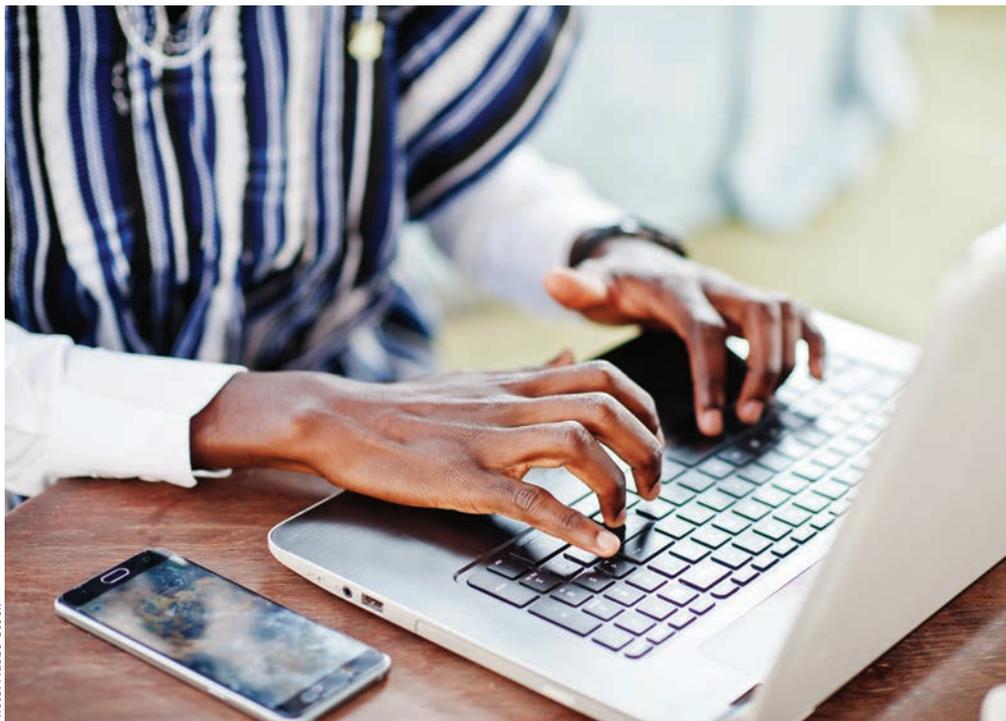
Photo: Adobe Stock

More capacity means more – and faster – connectivity.

Data: the new oil for Africa

Angola Cables has been involved in a number of subsea cable initiatives connecting Africa to other continents. We spoke to Angola Cables CEO António Nunes about his company's role in giving Africa new digital connectivity possibilities.

"THE ONSET OF the digital economy has brought rapid technological changes to the telecoms sector. We are currently living in a connected world made possible by the many undersea cables that connect continents and countries – and that form the backbone of the internet as we know it today."

Angola Cables, a telecommunications multinational operating in the wholesale market, is playing a part in a number of African undersea cable projects. Its South Atlantic ring with cable systems WACS, SACS and MONET is, as CEO António Nunes puts it, "giving Africa new digital connectivity possibilities that are driving consistent economic and technological leapfrogs to make the continent the central hub of South to South connection – and contributing in an essential part of African everyday lives". As this happens , data access is being integrated into the ways Africa's people work, interact and communicate as a society, "making the data economy the new oil for Africa".

This growing interest in Africa by the world's big data companies, and Angola Cables' successful partnerships with governments, regulators and other telecoms industry players, have made the company part of this change, as it adjusts and adapts to a fast-evolving digital world, at the same time contributing its own knowledge of the wholesale business to add value.

"Countries such as Angola, South Africa and Brazil have realized the importance of digital connectivity as a means to access new markets, explore new business opportunities, generate and share content – and use the internet as a gateway to promote and accelerate economic development," says Nunes.

That said, internet penetration remains relatively low in much of Africa when compared to developed nations, but governments and regulators are increasingly valuing connectivity to accelerate social and economic uplift. "Investment into telecoms infrastructure is being encouraged, telecoms networks are increasingly being privatised and spectrum applications and licencing for 5G are being fast-tracked. Mobile networks are being

Antonio Nunes, CEO Angola Cables: "We are seeing a steep rise in investment and activity."

Photo: Angola

migrated from 2 to 3 and 4G networks and certain geographies will have access to 5G networks in a not-too-distant future," Nunes points out, adding, "All of these initiatives are creating a more open and dynamic telecoms environment that is more flexible to the needs of business and the consumer."

Today, companies like Angola Cables are engaging in the intercontinental cable connections that provide the platform for the expansion of other digital ecosystems and networks.

And this activity will be its own driver for growth. "As more and more data is being used, there will be the necessity to provide telecoms infrastructure on an increasing scale, to provide bandwidth to accommodate the demand for streamed and unstreamed content, and to provide better processing capabilities and ensure security across networks."

Angola Cables started out as a wholesale carrier. It has evolved into a global ICT solutions provider with a robust subsea cable network. It now offers tailored connectivity solutions to the wholesale and corporate markets in Angola and the sub-Saharan region and across the world.

As for the company's subsea cable network, "we are actively engaged in the SACS ownership, Monet and WACS consortium submarine cable systems. The company also manages the Tier III Data Centre AngoNAP Fortaleza (Brazil) as part of the Ceará Estate

Government Telecom HUB vision; it is one of the first data centres in the region to achieve Tier III certification. And with our AngoNAP Data Centre in Luanda we provide end-to-end connectivity to SACS, providing multiple options for businesses to expand their digital ecosystems on either end of the cables."

Despite the fact that there is still a lot of legacy telecoms infrastructure across Africa, technological developments have provided the continent with what Nunes calls "the opportunity to leapfrog into a new and expanding technological telecoms environment. The demand for digital connectivity and the widespread use of mobile phones have been instrumental in accelerating change," he adds.

And governments and regulators have had to keep pace. The result? "We are seeing more operating licenses being granted to telcos who in turn bring investment and development in respect of the required telecoms infrastructure."

Angola, for example, has over recent years recognised the importance of technology in accessing and promoting its participation in the global digital economy. The government, along with telecom providers such as Angola Cables, has been working to initiate new revenue streams that can contribute to the social and economic development of the country and the region.

Notwithstanding the Covid-19 pandemic and the rise in internet traffic since its outbreak, Angola Cables has seen significant and robust growth on its submarine networks. "In the first quarter of this year traffic on our network has increased by 170 per cent when compared to the same period last year," says Nunes. We have been actively growing traffic volumes though the opening and upgrading of points of presence (PoPs) in the main global traffic exchange locations. Two PoPs were introduced in Brazil to boost connectivity between networks and digital ecosystems within the Latin American geography – providing services at a much better latency than our competitors."

Angola Cables has been instrumental in a number of projects, both in Angola and internationally, to improve access and connectivity to the digital economy. The

Photo: Angola Cables

From West Africa to the world: the Angola Cables network

investment and operation of the South Atlantic Cable System (SACS) is just one example of a system that gives Africa direct access to the global digital economy.

So why is there such a lot of activity involving Africa? Where telecoms investment and infrastructure are concerned, markets in the US, Europe and Asia are relatively advanced, whereas Africa has for a number of years been relatively neglected given the many challenges associated with the developing economies on the continent. Now however, says Nunes, "this situation is changing insofar as many international telecom and mobile operators see opportunities for growth as population numbers increase and more and more people become urbanized on the continent. As a result, we are seeing a steep rise in investment and activity."

For example, Facebook, in collaboration with a group of telecom companies, recently announced plans for the 2Africa project that will connect Nigeria and 22 countries in Africa, the Middle East and Europe to the internet by laying a large subsea cable with about 180Tbps capacity by 2024.

Last year, meanwhile, Google announced plans to build a new private subsea cable that will connect Africa with Europe, with its first landing point in Nigeria, by 2021. The new cable, Equiano, is to run between Portugal and South Africa. Together with its SACS Cable, Angola Cables is providing a direct link to the Americas and, with its onward partnerships in Asia, it is creating a more South-South-focused configuration for international traffic that is more effective, and a fast and secure, low-latency digital highway across the southern hemisphere.

Nunes sums up, "Given the explosive growth of the internet and related services in the Latin American, African and Asian markets, such a South-South configuration will fuel investments in data centres and related infrastructure, putting developing countries within the southern hemisphere on a firmer trajectory for economic growth and development. And given its location, the continent of Africa is ideally located to provide a bridge in global connectivity between markets in the East and West hemispheres." ✆

The second part of this interview will appear in issue 5 of Communications Africa

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Continued from page 22

It's not always a smooth process, however. Cable breaks, for example, are a big challenge – but they are an inherent feature of running a subsea cable. "Operators are using a variety of methods to mitigate this; cables are laid in deeper areas, where they are less likely to be cut accidentally, operators are coordinating more closely with shipping lines so that everybody is aware of sensitive locations, etc."

However, he adds, "The best mitigant against this is diversity; the ability to have access to three-to-four cables and divert traffic to another cable if one gets cut accidentally."

One obvious bonus is that the costs of projects like 2Africa are coming down. "The projects are still expensive – but you get a lot more bang for your buck," says Zibi.

As he points out, the capex per Gbps of design capacity of a cable becoming operational in 2018 was two times lower than in 2012 and more than 800 times lower than the cost of the initial SAT-3 roll-out in 2002. There is no announced investment number for 2Africa, but based on recent cables, he suggests that the cost per Gbps will likely be at least two to five times lower than 2018 levels.

And this activity will continue so long as there is demand, for the reasons Zibi mentioned earlier: the market still needs diversity, some regional sub-connections must be reinforced and so on. "That noted," he says, "international capacity is no longer the most urgent need when it comes to strengthening Africa's digital infrastructure. The biggest area of need is to strengthen the terrestrial fibre capacity – that's where we see the most potential."

Meanwhile 2Africa is expected to go live in 2023/4. There have been numerous initiatives in the past but is 2Africa the biggest?

"For African international cables, without a doubt. The distance, the number of landing stations, the investment – it is unprecedented in the African context." ✆

Xalam Analytics is a research and advisory firm focused on connectivity, cloud and digital infrastructure markets in emerging economies – and Africa and the Middle East (AME) in particular. / hello@xalamanalytics.com / Twitter: @xalamanalytics

Digitalisation of railways is on the way. Is Africa ready?

Photo: Adobe Stock

Catching up with digitalisation

African governments have invested mainly in road infrastructure improvement. Railways, it seems, have been neglected. At a recent event, stakeholders in the railway sector discussed embracing new technologies to improve the performance of railways in the region.

Due to the global outbreak of Covid-19, most railway companies have been forced to stop services in the African continent. Railway operators are now looking to new technologies to help them deal with these difficulties.

So is the African railways sector ready to welcome digitalisation in a big way? Some experts offered a perspective on this at a recent online event.

Hosted by Southern African Railways Association (SARA), Siemens Mobility and Huawei Technologies, the first Africa Digital Rail Forum 2020 focused on accelerating railway digitalisation and boosting economic recovery.

Hao Guoqiang, president of the Global Transportation Development Department in Huawei, shared some ideas from China's experience – how to fight against the effects of Covid-19 and how to use this opportunity to accelerate digital transformation in the rail industry.

He commented, "Here I would like share some of the lessons Huawei learned from our clients. Lesson 1: The pandemic will accelerate digital transformation of the rail industry. Lesson 2: After the pandemic, the rail industry

will rapidly help economic recovery, requiring advanced and unified technology. With these lessons in mind, Huawei is addressing how railways can use new technologies to speed up digitalisation, while helping customers at the same time. New technologies – like 5G and AI – will be used in the rail industry."

Huawei has been actively involved in the railway modernisation process in Africa. Its digital railway solution has been applied in South Africa, Kenya, Nigeria, and a number of other countries.

"The pandemic will accelerate the digital transformation of the rail industry"

Dr Joice Chidora, finance director of SARA, shared some thoughts from the regional association side. Given the so-called 'new normal' of doing business in the light of Covid-19, she suggested that railways need to embrace and catch up with technical advances in the areas of digital technologies.

Introducing the "Joint, Operating, Integrated, Control, Enhanced" (JOICE) system, she commented, "Now is the time that SARA

should forge ahead to implement the JOICE system to address the challenges and opportunities brought about by Covid-19."

Patrick Moodley, head of sales and business Development in Siemens Mobility South Africa, and his team explained what was happening on the front line of the fight against theft and vandalism in rail with the help of digitalisation.

Theft and vandalism is an increasing threat to the rail industry, causing disruptions to operators and negatively affecting commuters' lives and freight operations.

Using smart infrastructure, Siemens offers solutions that provide for real-time detection of acts of theft and vandalism.

"Our solutions leverage digitalisation and provide innovative ways of identifying these criminal acts to our clients. With this insight, customers can put in place effective measures to tackle theft and vandalism," he said.

Fang Jun, senior transportation solution manager in Huawei Enterprise Business Group, commented, "The Covid-19 epidemic is surely a challenge but also an opportunity for the railway industry. The 'new normal' state of the epidemic poses new requirements including agile business deployment. This will further accelerate the digital transformation trend of railway industry." ✆

Instant access to information and entertainment

The popularity of satellite TV is increasing across Africa, but many parts of the continent have room for growth. Clint Brown of SES assesses the satellite TV opportunity for viewers, broadcasters and satellite operators.
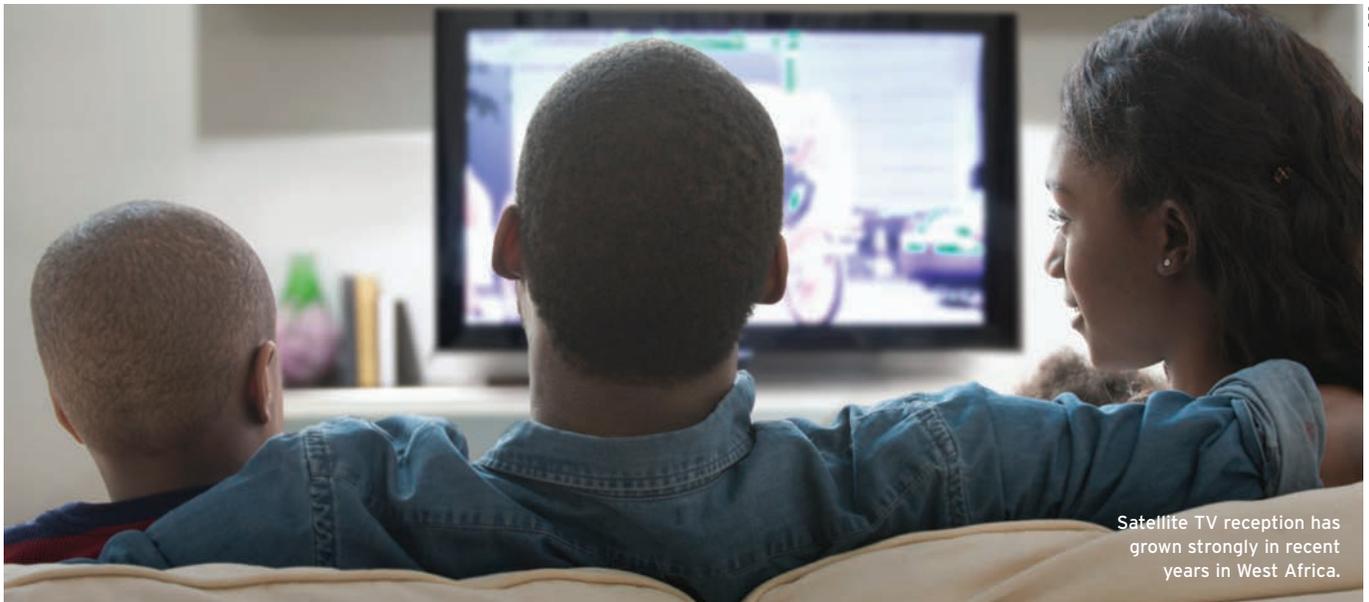
Photo: SES

Satellite TV reception has grown strongly in recent years in West Africa.

SES PLAYS AN important part in the continuing growth of satellite TV in Africa, leveraging a vast network that spans satellite and ground infrastructure. We asked Clint Brown, vice president, sales and market development for SES Video in Africa, to tell us what is driving this growth.

Communications Africa: What do you think is driving the increase in satellite TV reception across Africa in general – and West Africa in particular?
Clint Brown, SES: The main driver is the pull of satellite and the growing awareness of its ability to cover entire geographic regions with a single beam, making it the most cost-effective platform to expand and reach new TV audiences. In addition, satellite TV also offers an enhanced viewing experience and today makes it possible for millions of Africans to have instant access to information and entertainment.

The increasing popularity of satellite is reflected in our latest Satellite Monitor* results. The 2019 study showed that satellite TV reception increased by 23 per cent in Nigeria and 19 per cent in Ghana since the previous study conducted in 2017. Terrestrial TV, on the other hand, has declined.

In West Africa, our West Africa Media platform is hosted in the fastest growing direct-to-home (DTH) position for Anglophone West and Central Africa. This means that we are increasing the number of TV households we reach via our satellites much faster than anyone else. Our broadcasters are broadcasting content reliably across 227 TV channels to 10.5 million satellite TV homes across West and Central Africa using SES satellites.

The millions of households that we reach over West Africa are important to our broadcasters because this reach gives broadcasters access to millions of people – and eyeballs. There is also a readily available West Africa Platform Service (WAPS), which makes it easy for a single channel to onboard the platform and broadcast via satellite.

Communications Africa: Do you see growth continuing in Africa?
Clint Brown, SES: There are still large parts of the population across many parts of Africa which have not yet been penetrated. Satellite TV penetration in Ethiopia is quite high at 95 per cent. However, Ghana is currently at 70 per cent, Tanzania is at 55 per cent, Uganda 48 per cent, Nigeria only 33 per cent and Kenya less still at just 16 per cent. This represents lots of opportunity for us, particularly as satellite TV has the ability to reach underserved areas that terrestrial platforms simply cannot.

We also expect the mandatory digital switchover, which is currently rolling out across Africa, with the deadline imminent in many countries, to act as a growth driver. Homes purchasing a TV for the first time will have HD (high definition) or UHD (ultra-high definition) TVs – satellite TV offers the best quality for these TVs. Additionally, findings from our Ghana Satellite TV Monitor show that, for Ghanaians that have already switched over, many have switched to satellite TV as their preferred TV reception mode. Since 2017 satellite TV has grown from 3.9 million to 4.7 million TV homes (4.5 million of those are SES customers), while terrestrial TV has declined.

Communications Africa: What are the advantages of satellite TV in Africa for a company like SES?
Clint Brown, SES: Satellite connections go beyond geographical limitations to cover large areas of land better than ground-based networks – one satellite can cover an entire continent and provides higher bandwidth – and because they do not require complex, land-based infrastructure, they are more cost-effective and quick to deploy, making them ideal for Africa.

"Satellite connections go beyond geographical limitations"

A better way to watch TV

The digital transition is sweeping Africa: new – and better – ways to watch TV are on the way. Ron Murphy asks Christell Meyer of Intelsat what other advantages and challenges the arrival of digital television will offer African viewers and broadcasters.

DTT means more varied programming, and better-quality pictures.

Photo: Adobe Stock

"Digital transition can deliver a wide range of benefits across the entire broadcasting value chain including broadcasters, content providers, transmission operators, device manufacturers and consumers."

Christell Meyer, senior key account director, Africa sales, with Intelsat, a leading provider of satellite services, begins with the obvious benefits: good programming, better content and quality (including support of HD, ultra HD services and interactivity), convenience (video on demand and catch-up services to allow viewers to watch programmes at a time of their choosing) and better types of revenue.

But that's not all. As she says, "Consumers have greater choice and control over their TV viewing." And that's good for broadcasters and advertisers. "Digital TV could lead to positive upstream benefits in terms of increased time spent watching TV and greater demand for digital content."

Don't forget too that digital terrestrial television (DTT) also reduces barriers to entry for service providers; the delivery cost of provision of a TV service within a multiplex will be lower on a per unit basis than that of providing a single analogue TV channel. As Meyer puts it, "The lower barrier to entry enables DTT to provide more opportunities to deliver niche, regional and community content."

In Africa in particular DTT allows African broadcasters to target consumers with a wider choice of programming and services, with better quality, interactivity and convenience likely to boost commercial opportunities, giving international broadcasters new opportunities to enter the African market.

These are headline benefits, of course, but there are also broader benefits to the introduction of digital TV to Africa including, says Meyer, "the potential to use digital broadcasting to narrow the digital divide, to reach unserved areas, and to provide e-government and other digital services".

That said, the move to digital broadcasting, while overwhelmingly beneficial, is a complex and potentially long process, which may involve many stakeholders including government, policymakers, connectivity

"The lower barrier to entry enables DTT to provide more opportunities to deliver niche, regional and community content"

providers, regulators, broadcasters and consumers.

It also requires coordination with multiple actors including content providers, service providers, network operators, receiver manufacturers and equipment vendors.

This could be problematic if entrants to the DTT market do not see the long-term view of the actual benefits in moving to DTT and shy away from the investment.

What then is the answer? Meyer suggests, "An adequate simulcast period with analogue service is recommended to facilitate DTT take-up and minimise consumer disruption as they migrate to new DTT antennas to prepare for the analogue switch-off. This simulcast period will also provide time for regulators and industry to address coverage and content-related issues."

Consumer awareness, acquisition of set-top boxes and broadcasters' transformation are all considerations that will need to be managed through the transition process. "Successful deployment of DTT requires early engagement of all stakeholders," she reminds us.

Of course Intelsat is a major name in satellite services. How can satellite help broadcasters in Africa make the switch to a digital terrestrial service?

"Satellite is a critical part of the content delivery chain for DTT," says Meyer, "just as it always has been for analogue distribution."

She adds, "Intelsat satellite advantages are unique: 100 per cent reach, scalability quick deployment, unmatched cost-effectiveness, consistent quality all over the footprint, best possible quality and future-proof" – that is, ready for HD, as well as 4K and 8K resolution.

The ways in which satellite links are utilised vary from country to country. They include feeding DTT transmitters and reaching viewers directly. In the first example, says Meyer, "Satellites carry DTT signals from the multiplexing facilities that bundle together packages of television channels to the digital transmission towers that send the signals into homes."

However, she continues, "An added advantage is that satellite signals can be beamed directly to homes, reaching people who live in more remote areas – ideal for many parts of the African continent."

Satellite technology can also provide a way to export broadcast channels to viewers anywhere in the world, expanding the viewing audience of broadcasters and programmers – wherever they may be based.

The potential of DTT and the support of companies like Intelsat that provide it could bring major changes to viewing access and viewing habits across Africa. We'll soon see. Stay tuned, as they say. ✆

From here to there

INSELSAT HAS A significant presence in Africa. For example the company's C-band gives Africa's leading entertainment company MultiChoice the reception quality, reliability and reach that enable it to expand its DTT service offerings across more than 11 countries in sub-Saharan Africa.

In South Africa, Sentech, the signal distributor for the South African broadcasting sector, has been leveraging Ku-band

With DTT consumers have greater choice and control over their TV viewing.

services from Intelsat 20 for decades to cost-effectively deliver DTH (direct-to-home) and DTT services in South Africa.

Meanwhile in Kenya, Kenya Broadcasting Corporation (KBC) worked with Intelsat to provide backbone connectivity that carry multiplexed DTT signals from production facilities in Nairobi to terrestrial base stations around the country. The signals are then transmitted over the terrestrial airwaves to homes around Kenya.

And finally, if you want a brief guide to how Intelsat enables DTT signals to get from one place to another, the details are as follows:

- DTT signals are uplinked from a multiplexing facility to an Intelsat satellite
- The satellite sends the signal to broadcast towers around the country or region
- The towers send over–the–air signals to homes, where they are converted for viewing by digital set–top boxes
- For greater penetration, the basic backbone architecture can be complimented with a DTH overlay to service homes that are not in range of a broadcast tower.

Satellite operators simply don't have the same obstacles to overcome as terrestrial providers who have to navigate geographical limitations. This allows us more flexibility; we are therefore able to adapt our solutions more easily to match the needs of the market.

Communications Africa: What are your plans for serving this growing market in the coming years?
Clint Brown, SES: Today, SES provides coverage over Africa via more than 10 geostationary (GEO) satellites and the O3b constellation of 20 medium earth orbit (MEO) satellites. We currently reach 35 million households across the African continent – and we believe there is still room for customers to expand in this market.

Our video business sees us providing satellite capacity and turnkey video services to customers such as StarTimes, TNTSATAfrica, Zuku, Multi-TV,

Instant access to information and entertainment – by satellite.

Canal+ and Cell C who want to broadcast or stream content.

On the connectivity business, we serve both the mining and telco industries, working with Ivanhoe Mining and Resolute Mining as well as customers such as Orange, Airtel, Millicom, RCS and Vodacom. We also work with various governments in Africa to deploy connectivity services.

We intend to grow our network coverage through our upcoming next-generation MEO system – the O3b mPOWER communications system – to extend new bandwidth-intensive

network services and applications.

It is our aim to provide not only access to content, but to provide access to much-needed informative, meaningful content that adds value and has the potential to change the lives of many – and to hopefully have some small role to play in the future prosperity of Africans.

Communications Africa: The deadline for analogue switch-off is looming in much of Africa. How well positioned do you think satellite TV is to take

advantage of this?
Clint Brown, SES: Satellite TV is well placed to facilitate the digital switchover because the very nature of satellite TV is digital. In terms of SES, we believe we are extremely well positioned as we are able to serve 99 per cent of the world's population and also have years of experience in helping several European countries meet their analogue switch-off deadlines in the last decade.

Furthermore, our high-performance satellites support direct-to-home, cable and terrestrial operators with the services and bandwidth they need to deliver the latest digital TV technologies from HDTV to Ultra HD. In fact, in Ghana specifically, SES is supporting the government with its digital switchover campaign. ✆

For more on SES Satellite Monitor results for Africa, go to ses.com/africa/satellite-monitors-africa

Innovating to deliver the internet

African mobile internet penetration is still modest compared to some regions – but it is accelerating. The GSMA's Akinwale Goodluck tells Vaughan O'Grady how and why broadband connectivity in Africa will grow – and with it, mobile internet.

THE GSMA'S STATE of Mobile Internet Connectivity 2019* report brought some welcome news: the total connected population in 2018 exceeded more than 3.5 billion people globally.

However, just over 40 per cent of the population of low and middle-income countries (around 2.6 billion people) is connected, compared to almost 75 per cent of the population in high-income countries. But broadband connectivity will grow, and as Akinwale Goodluck, GSMA head of sub-Saharan Africa, says, increases in mobile broadband coverage are already being driven by a range of innovations in network infrastructure.

"One of the innovations, he says, "was the deployment of low-cost BTS sites using solar power in rural areas." Other innovations have been, at least in some countries, the possibility of refarming with the 900 MHz band, the introduction of UMTS with high-frequency bands which offer interesting ranges, the launch of 3G in rural areas, and the massive introduction of 4G since 2018.

"We can also note," he adds, "the acceleration of the 4G + coverage in almost all countries, the TDD networks for fixed broadband and FTTH fibre."

The GSMA refers to mobile broadband as technologies that are 3G or later. This is hardly surprising. The recent report says 3G will be relevant for some years to come and the GSMA feels it's important for ISPs and online services to cater for developing world users of 3G phones because, as Goodluck says, "3G adoption has doubled over the last two years as a result of network coverage expansion and cheaper devices. In 2019, 3G exceeded 2G to become the leading mobile technology in sub-Saharan Africa, with just over 45 per cent of total connections."

What does that mean for 4G in Africa? "By 2025, and maybe before, we anticipate that 27 per cent of all mobile connections in the region will be on 4G networks. This will be driven by an anticipated 50 per cent subscriber penetration and 67 per cent smartphone adoption in the region." In many countries, 4G data traffic is already higher than 3G data traffic, he points out.

Whatever the generation, mobile technology

Photo: GSMA

Broadband connectivity is growing in Africa

has a lot to offer the developing world. We have, Goodluck points out, seen mobile technology facilitating access to power supply with mobile-enabled solar-powered solutions being available to rural dwellers in such areas as Kenya and Zambia. Similarly, mobile-enabled sensor solutions are being used to remotely monitor water pumps and trigger timely maintenance.

In addition, digital healthcare solutions powered by mobile technology are addressing inefficiencies in the medicine supply chain, enabling access to higher-quality healthcare

> **"Digital healthcare solutions powered by mobile technology are addressing inefficiencies in the medicine supply chain"**

services and reducing the cost of healthcare delivery for governments and private providers in hard-to-reach areas in South Africa, Zambia and Nigeria.

And of course, as a number of articles in this issue of Communications Africa point out, mobile money is helping informal micro, small and medium enterprises access financial services and overcome some of the barriers to entering the formal economy and, in turn, boosting productivity, job creation and economic growth in such areas. Mobile connectivity is also accelerating digital and financial inclusion for women.

Also, as Goodluck reminds us, "People resident in areas affected by crisis continue to prioritise mobile technology to communicate, seek and share information, access humanitarian assistance and become more financially resilient."

Helping an industry to meet its green potential

Power has long been a big focus of the passive telecom infrastructure industry. Now an initiative called Greening the Network offers telecom tower professionals a chance to discuss how to reduce network emissions, as Matthew Edwards of TowerXchange tells Phil Desmond.
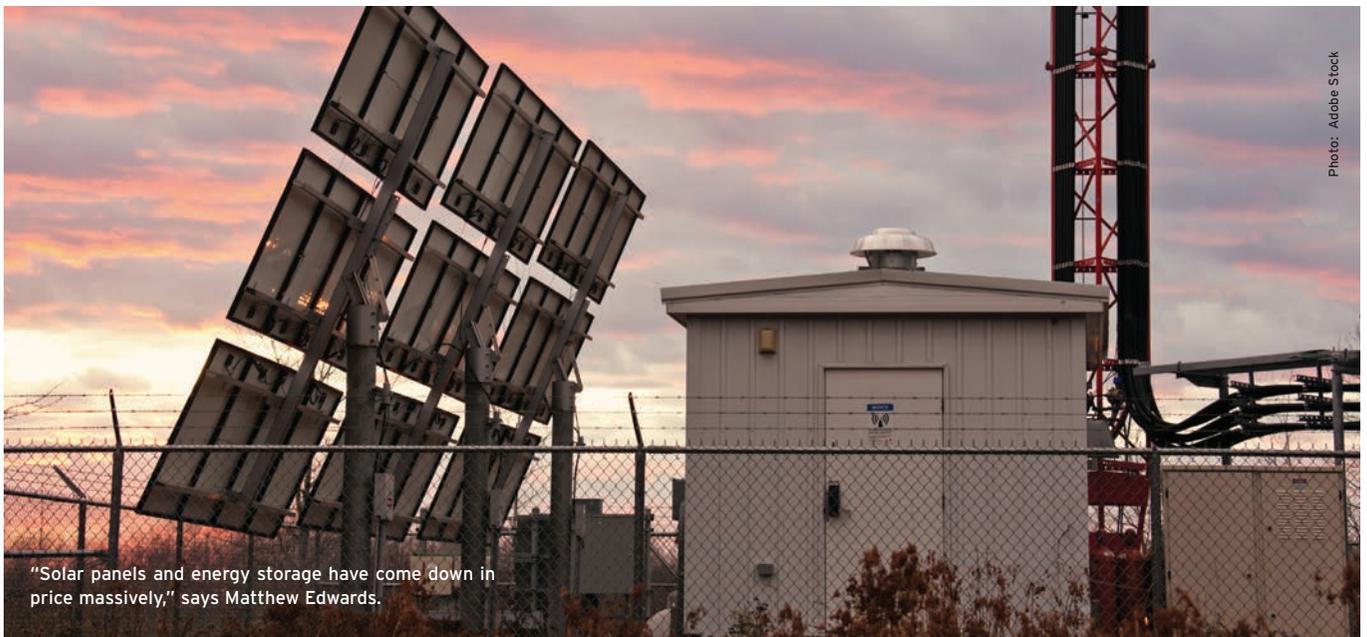
"Solar panels and energy storage have come down in price massively," says Matthew Edwards.

GREENING THE NETWORK is described as a community for telecom tower professionals to meet and discuss ways to reduce network emissions. It sprang from ongoing concerns about energy.

As Matthew Edwards, head of research, EMEA, TowerXchange, an open community for thought leaders in the global tower industry, explains, TowerXchange has been running energy-focused working groups for years.

"Power is the main reason communications networks go dark in emerging markets," he points out, "so power has always been a big focus of the passive telecom infrastructure industry. Mobile operators often contract for 99.5 per cent uptime or better in emerging markets and this is impossible without really resilient and reliable cell site power."

Diesel generators remain the biggest source of power for telecom sites in developing markets. Grid power is a useful backup – when it is available – but not something to be relied upon.

However, diesel comes with all sorts of drawbacks: it is noisy, dirty and requires frequent maintenance and refuelling. And of course diesel theft and shortages present major operational challenges. No wonder as Edwards puts it, "Green technologies like solar, wind, battery storage and smart power management are all being adopted to reduce reliance on diesel and reduce costs and operational complexity."

Hence Greening the Network. "Greening the Network was started as a natural evolution of our past sessions on cell site energy to enable the industry to coordinate and share insights on the transition to greener networks."

Telecom tower professionals are hungry to move towards a greener network. They are always concerned about keeping sites available and keeping costs down; the focus on greening the network also revolves around these two priorities.

Edwards explains, "First of all, much of the technology is now proven. Solar panels and batteries are becoming cheaper every year and that makes adoption much easier. They have been used as back-up on cell sites for many years, so adoption is easy and accelerating."

There is, however, less known about wind power or fuel cells "and so," he says, "there

In Africa there has been big investment in green energy, but we are still at the start of the curve.

have been lots of questions about how these technologies can be deployed and added to the cell site energy mix".

Another concern is around supply chain support. Diesel generators are not just common sights at cell sites; in many markets they are the primary source of power for commercial and residential properties. This means that spare parts, maintenance contractors and fuel are all easy to find. "For newer technologies without support networks in place, there can be concerns about introducing a new technology into the mix."

Similarly, the ground space at cell sites has been sized for a diesel generator, not for solar panels or a wind turbine – and at many sites it is not possible to use renewables for primary power. "So," says Edwards, "the industry is still working out how to move from a diesel default to a green default."

What then is the current state of tower power in developing world markets like Africa? "In Africa there has been big investment in green energy, but we are still at the start of the curve. If you look at Helios Towers for example, they have solar installed at 400-500 of their 7,000 sites. And telecom energy service companies (ESCOs) are currently in the process of upgrading 3,000 Orange sites to green configurations."

Advantage smart metering

How smart grids are transforming Africa's energy sector. Martin Clark reports.

Photo: Adobe Stock

SMART GRID TECHNOLOGY is already making a big impact in Africa but is poised for significant further growth in the years ahead.

Leading smart grid and meter vendors active already in the market include ambitious Chinese technology firms such as Inhemeter, ZTE and Sanxing, among others.

But the potential for growth is simply huge, given Africa's long-term development needs and comparative energy poverty.

The market for smart grid networks in South Africa, for example, the continent's biggest economy, is expected to grow at more than 3 per cent annually through to 2025, according to a report by Mordor Intelligence.

The country has already installed more than 10 million prepaid meters.

As well as helping to boost network coverage and management by generating data and other inputs, smart meters can also help to improve revenue collection for utilities, as well as address electricity theft in low-income areas.

The technology has the potential to make Africa's power sector more resilient, transparent and accountable.

Mordor Intelligence says this growth in South Africa and elsewhere will fuel further demand for smart metering systems, intelligent transmission lines, and other associated smart grid infrastructure.

It mirrors activity elsewhere, in which digital technologies are being deployed throughout the energy system to improve efficiencies and create a better, more reliable network system.

In West Africa, Côte d'Ivoire is rolling out smart grid technology among other energy initiatives, including a plan to achieve a 42 per cent renewables target by 2030.

Here, the government aims to use the grid network to expand access to electricity, tapping into new smart technologies, automation and control systems.

Consultancy firm EnerNex is currently working on a smart grid study to support Côte d'Ivoire Énergies (CI-Energies) in improvements to the Ivorian grid.

The project, funded by the US Trade and Development Agency (USTDA), will lead to a full loss-reduction strategy, while factoring in other major national priorities such as the heightened use of renewable energy.

The deployment of smart meters and grids comes at a time when interest in clean and alternative energy sources, such as solar and wind power, is at an all-time high right across the continent.

Increased use of advanced metering infrastructure (AMI) – which differs from automatic meter reading (AMR) in that it enables two-way communication between the meter and the supplier – can play a role in maximising the potential of any new generation, from renewables through to traditional thermal-based power.

In neighbouring Ghana, though it is focused on prepaid metering, medium-scale AMI projects have been completed, including a 200,000-meter deployment by El-Sewedy Electrometer, notes Northeast Group in its Emerging Markets Smart Grid Outlook 2020 report.

Its findings suggest that this decade will be one in which almost all emerging market nations begin, continue, or complete smart grid infrastructure rollouts.

And there is mounting competition for business, in turn.

China's Inhemeter became the first Asia-based smart prepaid meter supplier accepted by South Africa's Eskom and has already supplied half a million prepaid meters to the utility via a local partner, and established a local factory.

Elsewhere, it has supplied more than three million smart meters to Kenya.

International competitors include India's Genus Power, which is now exporting its smart meter products to Africa and other territories.

With its long-term potential given its vast energy disparity, Africa looks set to be a market hotspot for some time to come.

South Africa, Nigeria and other high-population countries – the likes of Kenya, Ghana and Ethiopia – will continue to pull in foreign know-how as the drive to expand smart grid use continues in the decade ahead. ✆

However, most of sub-Saharan Africa's approximately 170,000 sites are diesel only. Edwards explains, "With capital scarce in Africa, old generators are run for a long as possible, so it will take time for the capital replacement cycle to see sites upgraded. But," he adds, "it is happening."

Green power is also fairly competitively priced, it seems. Solar panels and energy storage have come down in price massively, so the question is less about cost competitiveness and more about reliability and the correct mix of green sources and diesel. "Of course some sites are hard to transition for space or local supply chain constraint reasons, but price is no longer the principal barrier."

The Greening the Network initiative refers to decarbonising tower power and improving network resilience, which, says Edwards, "go hand in hand: a real win-win situation." He explains, "Adding a new generating technology to a cell site energy mix adds resilience. If you run out of fuel because your maintenance crew is delayed but the sun is shining then your site stays up. If it becomes cloudy but you have a diesel generator on standby then your site stays up too."

Could a growing emphasis on asset sharing, outsourcing, neutral host and virtualisation

Matthew Edwards, TowerXchange: "Infrastructure sharing is inherently green and capital efficient."

also help with greening the network? As Edwards says: "Infrastructure sharing is inherently green and capital efficient. Virtualisation and neutral host systems can allow for much lower power draw from network equipment and that makes it easier for sites to rely solely on green energy and really minimise the need for diesel. A smaller site allows for solar and storage to cover much longer periods of operation, in some cases eliminating the need for a diesel back-up generator altogether."

Of course, Greening the Network isn't just an emerging market programme. TowerXchange

is, says Edwards, very encouraged to see towercos and MNOs in developed markets embracing network greening. As he says, "5G and 4G/LTE are very efficient on a watt per byte basis compared to 3G but, because data throughput is so much higher, the network equipment can be very power hungry. Keeping equipment power draw down and properly managing cell site power is going to be essential to a quick and cost-efficient roll-out of 5G."

Greening the Network has started very strongly, with two digital meetings so far. "We are building a membership of the top 100 tower power teams from across the world and we will be helping coordinate the industry to share best practice," says Edwards, but he is careful to add, "We aren't advocates for green power – that battle has already been won – but I see our role in helping ensure the whole industry is able to move as quickly as possible to meet its green potential." ☾

The next Greening the Network takes place on 23 September, please register here to watch https://meetup.towerxchange.com/greening-the-network/. Contact matthew.edwards@towerxchange.com to discuss speaking about your work in green telecoms.

With that in mind, does he think the recent pandemic and lockdowns have also boosted awareness of mobile internet and its usefulness in areas like sub-Saharan Africa?

"Mobile network operators (MNOs) across the region experienced a surge in demand for broadband connectivity – an indication of a possible growth of broadband adoption in the region. MNOs have made significant investment in network optimisation to ensure they are able to meet this demand," demand that now includes remote schooling, remote work and access to government services.

Of course this upsurge doesn't apply to all services. Some, such as roaming, have suffered from travel restrictions.

Despite the positive effects of broadband, sub-Saharan Africa still has some of the least affordable data globally. However, Goodluck says, "Recent studies have shown that data costs have come down significantly across several markets in sub-Saharan Africa."

Of course, the cost of mobile internet-capable devices and services is impacted by a whole range of factors, many of which are outside the direct control of the mobile industry. "In particular, sector-specific taxes, fees and other levies – including the upfront and recurring costs of mobile spectrum – have a significant impact on affordability," he says, adding, "In many cases, government

Akinwale Goodluck: 3G now the leading mobile technology in sub-Saharan Africa

policies inflate the upfront and recurring costs incurred by mobile operators that are ultimately passed on to the end user through higher prices."

He summarises: "In general, we could say that the cost of FH (frequency hopping) frequencies, especially in rural areas, and the prices to access submarine cables are the major obstacles to the affordability of data in Africa."

"MNOs have made significant investment in network optimisation to ensure they are able to meet demand"

But internet access is going down in price, nevertheless. "Retail prices are already falling. In some countries like Mali, there have been more than 75 per cent declines since 2017."

Will mobile broadband oust fibre to become the dominant provider of internet services? Goodluck is careful not to dismiss fixed lines out of hand.

He agrees that this will be the case, especially in rural areas where the deployment of a mobile network is faster and cheaper, with speeds equivalent to those that a fixed network can grant. But, he adds, "We believe that landline will remain a viable alternative in urban areas due to the high throughput and the use of fibre. With the implementation of 5G networks in the coming years, there will be a coexistence between fixed and mobile networks."

It's undeniable, of course that there are now several fixed offers that come with broadband internet, whether by boxes or by fibre, with text over internet protocol (ToIP). However, he adds, "What we will no longer see is only subscriptions for only fixed voice, because people no longer need it. They prefer to call with their mobile." ☾

The State of Mobile Internet Connectivity Report 2019 can be found and downloaded at www.gsma.com

Schneider Electric unveils high-density multi-circuit power meter

The HDPM6000's flexible and scalable platform meets the needs of ever-expanding electrical networks.

ENERGY AND AUOTMATION digital solutions company Schneider Electric has announced a new high-density power meter, the PowerLogic HDPM6000 range.

By leveraging the latest IoT-enabled technology, including MODBUS, SNMP, and BACnet TCP/IP, the HDPM6000 enables customers to manage power consumption better, optimise uptime, and allocate energy costs.

These panelboards or busway multi-circuit meters meet a wide array of customer power applications. Suitable for data centres, hospitals, or industrial facilities with critical power needs, PowerLogic HDPM6000 meters are versatile and equipped with enhanced features that facilitate simple installation. They provide valuable power quality data at the level of the branch circuit to the building operators and facility managers that can be easily integrated with EcoStruxure edge control software.

Delta launches energy-efficient solutions for 5G, IoT, e-mobility and smart manufacturing

DELTA, A POWER and thermal management solutions provider, has unveiled new smart and energy-efficient solutions for 5G and IoT edge computing and e-mobility, as well as smart manufacturing at its digital exhibition.

These include the SmartNode modularised data centre solution for fast and flexible implementation of energy-efficient edge computing data centres; the UFC200 Ultra-Fast EV charger, a 200kW system especially for charging point operators and fleet managers; and Delta's DIAStudio Smart Machine Suite, a digital platform that enables efficient machine development and configuration.

Delta's SmartNode Tier II and Tier III data centres enable rapid scaling of edge computing capacity, providing the perfect infrastructure for IoT and other applications that demand low latency, such as autonomous driving, remote healthcare and OTT media services.

Next-generation EVs, e-trucks and e-buses will demand access to faster and more powerful charging systems. The 200kW capacity of Delta's UFC200 provides a suitable solution for charging point operators (CPOs) and fleet managers. The output can be split to deliver 100kW DC charging to two vehicles simultaneously. It is equipped with an all-weather, seven-inch LCD information display screen and touchpad.

The DIAStudio SMS enables users to efficiently develop a machinery system, from product selection and programming, to exporting on a unified platform. Its software portfolio includes DIASelector, an application allowing users to select specific components of the machine system; and DIADesigner, which picks up to complete programming, configuration and commission on an integrated engineering platform.

Motorola Solutions presents two-way radio device for SMBs in sub-Saharan Africa

MOTOROLA SOLUTIONS, A mission-critical communications specialist, has launched a new two-way radio device designed specifically for small and medium-sized businesses (SMBs) in sub-Saharan Africa.

The two-way radio MOTOTRBO DP540 is designed for cost-conscious businesses looking to move to digital technology for reliable and efficient communication.

As demand for digital radio communication is rising, small and medium-sized enterprises are looking for affordable and straightforward solutions to their communication needs without compromising on

The MOTOTRBO device portfolio is equipped with a Voice-activated Transmission (VOX) feature.

quality. The new device, available in sub-Saharan Africa through certified Motorola Solutions resellers, is based on the ETSI Digital Mobile Radio (DMR) standard, which has been proven worldwide in low-complexity digital affordable systems.

Laurent Tribout, director of Motorola Solutions indirect sales for sub-Saharan Africa, said, "In today's economy, small and medium businesses are constantly under pressure to deliver more and deliver fast, all while keeping a conscious mind on reducing costs. With this in mind, we have developed a communication solution that holds all the necessary features in one affordable device.

The MOTOTRBO DP540 can operate on both analogue and digital modes. In this way, as the business transitions to digital technology, radio users can operate and communicate on their new MOTOTRBO DP540 radios while at work.

The compact, ruggedly-engineered device is built to withstand harsh conditions and resist corrosion.

Portwell introduces new range of industrial-grade touch monitors

AMERICAN PORTWELL TECHNOLOGY, a wholly owned subsidiary of Portwell, an innovator on the industrial PC (IPC) market and a member of the Intel IoT Solutions Alliance, has launched its 12.1", 15", 15.6", 17", 18.5" and 21.5" true-flat Projected Capacitive (PCAP) touch screens with 10-point multi-touch support and also five-wire Resistive LCD panel touch monitors.

According to Maria Yang, American Portwell's product

New MD-Series includes PCAP, true-flat touchscreen or resistive touchscreen monitors from 12.1" to 21.5".

marketing engineer, the new industrial-grade touch monitors offer an aspect ratio of 16:9/4:3 and ultra-wide viewing angle of up to 178°(H)/178°(V).

Other common features include 1x DVI, 1x VGA, 1x Audio input, 1x USB Type-A for touchscreen interface; integrated speakers; physical OSD button (located on rear); backlight lifetime of up to 70,000 hours; flexible mounting options including VESA, panel, desktop, open frame and wall mount.

Applications for Portwell's industrial-grade touchscreen monitors include a human-machine interface (HMI) for industrial automation equipment, process control, automated test equipment plus outdoor environment, digital signage, transportation, kiosks, ticketing, gaming and many more.

Airbus to build BADR-8 satellite for Arabsat
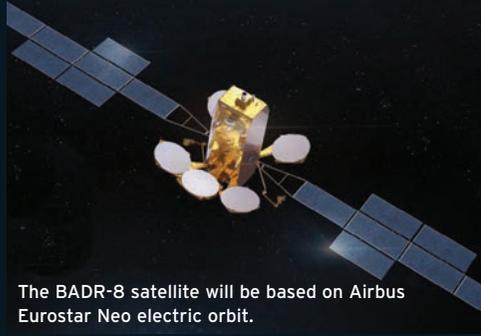
The BADR-8 satellite will be based on Airbus Eurostar Neo electric orbit.

Photo: Airbus

ARABSAT, ONE OF the world's leading satellite operators, has contracted Airbus to build BADR-8, a new generation telecommunications satellite.

BADR-8 will replace and increase Arabsat's capacity and augment its core business at the BADR hotspot 26°E.

The BADR-8 satellite based on the Airbus Eurostar Neo electric orbit raising platform, giving access to a wide range of launchers. It will include the innovative Airbus-developed TELEO optical communications payload demonstrator. This payload is expected to enable very high-capacity analogue optical feeder link communications, as part of the development by Airbus of a new generation of optical communications technology in space to be integrated in its future commercial products, which is highly robust against jamming.

Jean-Marc Nasr, head of Space Systems, said, "BADR-8 incorporates the best of our expertise and technologies, including a very innovative optical communications hosted payload."

Khalid Balkheyour, president and CEO of Arabsat, added, "BADR-8 will be joining our Badr network at the Arabsat 26°E hotspot, expanding our service over the EMEA region."

The satellite is scheduled for launch in 2023 and its electric propulsion system will enable it to reach geostationary orbit in four to five months, depending on the type of launcher used. It has been designed to remain in service in orbit for more than 15 years.

SPOT Gen4 satellite messenger

GLOBALSTAR EUROPE SATELLITE Services, a wholly owned subsidiary of Globalstar, has announced that SPOT Gen4, the new generation of the SPOT Satellite GPS Messenger, is now available in Europe, the Middle East and Africa.

SPOT Gen4 offers many new features including an enhanced, more detailed mapping interface with more display options, improved product specifications for water resistance, and geofencing capability, among others.

GOIL, GhIPSS launch gh-link card

IN PARTNERSHIP WITH the Ghana Interbank Payment and Settlement Systems (GhIPSS), GOIL has launched the use of a gh-link card on GOIL's Point of Sale devices throughout the country.

With this development, all gh-link cards that are mainly used by banks and other financial institutions can now be used to purchase fuel and other GOIL products.

Alex Adzew, GOIL's chief operating officer, noted that the company is pushing a drive to increase digitised payments to help eliminate the use of physical money in its service stations

Stating that digital payment for goods and services needs to be encouraged, Archie Hesse, CEO of GhIPSS, said that GhIPSS will pursue its mandate to migrate Ghana into an electronic payment regime.

Airtel Kenya launches Airtel TV app

AIRTEL NETWORKS KENYA has launched the Airtel TV app, which offers mobile entertainment.

According to the telecom operator, the launch of Airtel TV will make Airtel the first telecommunications firm to launch an entertainment streaming app in Kenya.

Airtel TV allows customers to enjoy the best of local and international smartphone entertainment, from movies, drama and documentaries to music and cartoons.

All Airtel mobile telephone subscribers in Kenya will be able to access premium content from the top studios including Universal, Nickelodeon and the BBC without a subscription.

Viewers simply use their Airtel SIM card to download the Airtel TV app and enjoy watching at home and on the go straight away in the palm of

Airtel TV app can be downloaded from the Play Store and Apple Store.

Photo: Airtel Kenya

their hands.

Prasanta Das Sarma, CEO of Airtel Networks Kenya, expressed his enthusiasm at the launch of the new service, saying that Airtel TV is set to revolutionise the on-demand video and live smartphone viewing experience, offering Airtel customers free access to the best shows, movies and live TV engagements.

"Airtel TV has no monthly subscriptions and is accessible as long as you have data for streaming," he said.

A unique connectivity proposition for South Africa

WIOCC
Africa's **Hyperscale** Infrastructure

As an established, award-winning, pan-African supplier of international connectivity, we lead the way in building Africa's hyperscale infrastructure. WIOCC's major investments in South Africa enable us to offer ISPs, MNOs and OTTs a unique connectivity proposition.

Expanded Metro reach + Hyperscale backbone + international subsea fibre

PLUS: a flexible service package based around your evolving business needs.

- Wholesale only: we won't compete for your enterprise clients

- Flexible: customised technical & commercial solutions

- Hyperscale: 16Tbps-ready; circuits up to 100Gbps and beyond

- Extensive national network: more than 100 live PoPs

- Metronets: Jo'burg, Cape Town, Durban, East London, Port Elizabeth

- Responsive: 24/7/365 support from our Client Champions

www.**WIOCC**.net   FIND OUT MORE   email **marketing@wiocc.net**