

Communications Africa Afrique

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MOBILE DEVICES

Kenya gets social with smartphones



Nigeria: Will Lagos welcome its new Wi-Fi network?

Côte d'Ivoire
All change for fixed and mobile
Data centres
Investing in Africa
Smart cities
Could smarter cities save lives?

FEATURES: ● New plans for subsea cables ● New ideas for fibre ● New opportunities for banks

REGULAR REPORTS: ● Agenda ● Solutions

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Cover: A young boy films riders in the Mt. Kenya Epik cycling challenge race on a smartphone. Credit: MAKE IT KENYA PHOTO / STUART PRICE.

A note from the Editor

When this magazine first appeared – nearly 30 years ago – concepts such as data centres, smartphones, mobile payments and Wi-Fi were unknown. Once wireless communications and data storage took hold, conventional wisdom suggested that Africa would be a very limited market for most, if not all, of these innovations. But a quick glance at this issue of Communications Africa proves otherwise. Smartphone usage is growing, Wi-Fi is available in many countries (in this issue we report on a Wi-Fi project in Lagos) and data centres are appearing not just in South Africa but close to business areas in Uganda, Kenya, Senegal and elsewhere. And as for mobile finance, East Africa has a good claim to having invented it.

Enabled by the ingenious pricing mechanisms and pent-up demand that have encouraged Africa to embrace these and other telecommunications innovations, who knows what could happen in the next 30 years?

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Overview of Africa's data centre industry.



Packing scrap and its impact on fibre lengths.

Editor: Vaughan O'Grady - vaughan.ograd@alaincharles.com

Assitant Editor: Abhishek Paul - abhishek.paul@alaincharles.com

Editorial and Design team: Mariam Ahmad, Prashanth AP, Fyna Ashwath, Miriam Btrkova, Praveen CP, Manojkumar K, Nonalynka Nongrum, Unique Pattnaik, Abhishek Paul, Rahul Puthenveedu, Deblina Roy, Vinita Tiwari and Louise Waters

Group Editor: Georgia Lewis

Production: Srinidhi Chikkars, Swati Gupta, Eugenia Nelly Mendes and Arjun S
Email: production@alaincharles.com

Publisher: Nick Fordham

Magazine Sales Manager: Edward Somgal - Tel: +91 88841 93373
Email: edward.somgal@alaincharles.com

Country	Representative	Telephone	Fax	Email
India	Tanmay Mishra	+91 98800 75908		tanmay.mishra@alaincharles.com
Nigeria	Bola Olowo	+234 8034349299		bola.olowo@alaincharles.com
UAE	Murshid Mustafa	+971 4 448 9260	+971 4 448 9261	murshid.mustafa@alaincharles.com
USA	Michael Tomashefsky	+1 203 226 2882	+1 203 226 7447	michael.tomashefsky@alaincharles.com

Communications
Africa Afrique

Head Office:
Alain Charles Publishing Ltd
University House
11-13 Lower Grosvenor Place
London SW1W 0EX, United Kingdom
Telephone: +44 20 7834 7676
Fax: +44 20 7973 0076

Middle East Regional Office:
Alain Charles Middle East FZ-LLC
Office L2-112, Loft Office 2,
Entrance B, PO Box 502207
Dubai Media City, UAE
Telephone: +971 4 448 9260
Fax: +971 4 448 9261

Subscriptions: circulation@alaincharles.com

Chairman: Derek Fordham

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Alain Charles
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Airtel selects Ericsson to modernise its 4G network in Kenya

AIRTEL AFRICA IS expanding its strategic partnership with Ericsson to enable 4G coverage in Kenya. With Ericsson's Radio Access Network (RAN) and packet core products for 4G, Airtel subscribers can experience enhanced quality of voice and data.

The network modernisation deal, signed in August 2020, is in line with the 'Kenyan Digital Economy Blueprint Vision 2030', which aims to provide connectivity in rural areas and facilitate e-commerce platforms. The modernisation deal is expected to simplify and upgrade the existing network while future-proofing it for the anticipated and rapid expansion of mobile connectivity in the country.

With Ericsson radio system and packet core solutions, Airtel Kenya's network will have 4G coverage, while driving enhanced use cases in both the consumer and the enterprise segments. Ericsson technology will also get the network in Kenya ready for 5G deployment.

Prasanta Das Sarma, CEO at Airtel Kenya, said, "Robust and secure communications are an essential component of a digital society in Kenya. We are firmly anchored to the strategy of delivering reliable connections across the country and are looking forward to expanding the high-quality mobile broadband services to our subscribers."

Fadi Pharaon, president of Ericsson Middle East and Africa, said, "Together with Airtel, we will



Photo: Ericsson

Ericsson plans to deploy Kathrein Mobile Communication antenna solutions to further strengthen Airtel's network performance.

implement this project and establish an advanced LTE network in Kenya, providing Airtel's customers with an enriched experience – both in the consumer and business segments. Through this partnership, we reaffirm our ambition to set 'Africa in motion' by partnering with Airtel to grow and support an increasingly digitalised society in Kenya."

As part of this project, Ericsson will deploy its Kathrein mobile communication antenna portfolio, which will provide additional enhancements to the network. The technologically advanced network management system, Ericsson Network Manager, will also be utilised to support Airtel in seamlessly managing the network by integrating various network elements into a single platform.

SuperSport acquires broadcasting rights

MULTICHOICE GROUP (MCG) has announced that its subsidiary SuperSport has acquired exclusive rights to broadcast Ethiopian Premier League matches. SuperSport adds Ethiopia to its portfolio of soccer properties, which includes the Zambian Premier League and the Premier Soccer League (PSL) in South Africa. The Ethiopian Premier League is the top association football division in Ethiopia, and comprises 16 clubs. Broadcasts of the Ethiopian Premier League will be carried across sub-Saharan Africa and the adjacent islands.

This is an opportunity to support Ethiopian football and its fans, and to affirm MCG's commitment to investing in Ethiopia and across the African continent, the company said.

MTN partners with TIP for development of communications transport infrastructure

MTN GROUP AND Telecom Infra Project (TIP) have joined forces to support the evolution of MTN's communication transport infrastructure, which aims to become a platform for future revenue growth and profitability.

Through the partnership, communication transport capacity will be deployed to support traffic growth over the next three years. In addition, it will provide support for new services as part of the evolution of 5G and new enterprise services. It will also reduce the time to market through more focused agile service provisioning.

"Through the use of open protocols and interfaces, and the ability to incorporate specific innovations focused on the performance of each network component, TIP's open disaggregated, standard-based transport networks can help MTN move closer to its ideal transport infrastructure," said David Hutton, TIP's chief engineer.

The TIP community, which aggregates members across the whole transport network value chain, is a vital tool for MTN to build its future transport infrastructure. To achieve the objective of increasing network efficiency, MTN has identified a set of requirements named CASSI that will support its work by:

Convergent and congestion free: Delivering on the capacity requirements from all network access technologies, including the most demanding, like access to fibre, next-generation radio systems, enterprise and consumer requirements.

Always on: Implementing a fully automated resilient transport network to support high availability as demanded by advanced digital services.

Scalable: Allowing for an easy / efficient capacity expansion, able to accommodate fast-growing traffic demands at a lower cost.

Simplified: Making use of standardised network configurations and open protocols to drive lower unit costs and increase capital expenditure efficiencies.

Intelligent: Automation of the network operations by using software to optimise network resource planning and management, achieving higher operational efficiencies by enabling use cases such as smart planning, auto provisioning, network visualisation and forecasting and network slicing among others.

Showmax adds five Kenyan channels to its streaming platform

SHOWMAX SUBSCRIBERS IN Kenya can get even more local and international content with five popular Kenyan entertainment and news channels now available on streaming service Showmax, 24 hours a day.

Showmax already streams some of the most talked-about Kenyan series including Selina, Kina and Njoro wa Uba as well as Hollywood movies, series, and kids' content, not to mention live sport from SuperSport on Showmax Pro. Now Showmax has added a selection of live channels to its content catalogue. The channels include K24 TV, KBC Channel 1, KTN Home, KTN News and NTV.

The live channels will be available to Showmax and Showmax Pro subscribers, including the mobile plans, and will be available on web and mobile devices, as well as select Samsung and LG Smart TVs.

"With the addition of these live channels, Showmax offers Kenyans a one-stop streaming destination featuring the best of international and Kenyan shows, movies and kids' shows, the world's best sport from SuperSport on our Pro plan and now, live streams of Kenya's biggest channels," said Yolisa Phahle, CEO of Connected Video at MultiChoice.

"We're constantly working on new ways to improve the Showmax experience for our subscribers. Whether it's M-Pesa payments or daily episodes of Maisha Magic favourites like Selina, Kina and Kovu as well as weekly episodes of Sol Family and Hullabaloo Estate, our local-first approach keeps our Kenyan subscribers top of mind," Yolisa Phahle added.

Both Showmax and Showmax Pro are available on a mobile plan that is half the price and available to stream on mobile devices.

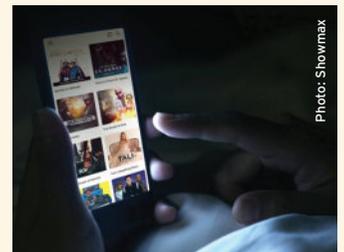


Photo: Showmax

The live channels will be available to Showmax and Showmax Pro subscribers.

STARZPLAY now available across MENA

STARZPLAY, THE SVOD service in the MENA region, is now available across the region on the iPhone, iPad, Apple TV, iPod touch, Mac and select Samsung and LG smart TVs through Apple TV channels on the Apple TV app.

The service offers entertainment, including Hollywood and Arabic movies, TV shows, documentaries, kids' entertainment and original content.

By signing up, users can enjoy a seven-day free trial in the UAE, Saudi Arabia, Oman, Bahrain, Qatar, Lebanon, Jordan, and Egypt and subscribe directly to STARZPLAY for US\$11 per month on the Apple TV app.

Subscribers can watch online on-demand or enjoy offline downloads. With family sharing, up to six friends or family members can use their Apple ID and password to share Apple TV channel subscriptions.

Kenya Bankers Association, Huawei sign deal to promote financial inclusion and Fintech ICT capacity

THE KENYA BANKERS Association (KBA) has signed a collaboration agreement with tech firm Huawei-Kenya that seeks to deepen financial inclusion in the banking sector through further deployment of technology and building fintech capacity.

In the partnership, KBA will work closely with Huawei-Kenya to spearhead industry-wide capacity-building initiatives aimed at promoting knowledge on financial technology innovation, digital transformation, and other ICT-related programmes in the banking industry.

Under the partnership, KBA and Huawei will also aim to promote financial inclusion activities in line with the KBA Strategic Plan for the period 2020 to 2023. Launched last year, the Plan seeks to promote access to affordable financial services through tech-aided operational efficiency.

Dr. Habil Olaka, CEO of KBA, said the cooperation would go a long way in promoting the delivery of efficient banking services in Kenya through knowledge-sharing programmes that will be organised by the two institutions.

"This partnership will further focus on research and knowledge-sharing activities, which will supplement the research initiatives that continue to be spearheaded by the Association's Centre for



Photo: Huawei

Under the agreement, the two organisations will organise financial ICT-related activities.

Research on Financial Markets and Policy. In this regard, the collaboration will certainly augment KBA's and member banks' knowledge base in engagements with diverse stakeholders from a fact-based perspective," Dr. Olaka added.

The partnership comes on the heels of the 2020 edition of the Huawei-KBA Online FSI Summit slated for 30 September this year.

Will Meng, CEO of Huawei-Kenya, said technology will remain a core driver towards enhancing convenient access to financial services in light of disruptive occurrences such as the ongoing coronavirus pandemic.

The Africa Channel moves operations to cloud with Amagi

THE AFRICA CHANNEL has partnered with Amagi, a cloud-based TV broadcasting and streaming technology provider, to streamline its entire broadcast workflow across cable, satellite and digital OTT services.

"As we cater to both cable and streaming TV audiences, having two different broadcast operations impacted our ability to scale and swiftly respond to rapidly changing viewer and platform preferences," said Narendra Reddy, vice-president and general manager, The Africa Channel. "Partnering with Amagi allows us to leverage their deep technical integration with leading video service platforms, enabling The Africa Channel to reach the underserved African diaspora audience worldwide."

The Africa Channel's Amagi technology stack consists of CLOUDPORT, a cloud-based channel playout platform, and THUNDERSTORM, a Server-Side Ad Insertion (SSAI) platform. Using a simple web UI, The Africa Channel moved all its content to Amazon Web Services (AWS) cloud, generated playlists, schedules, added dynamic graphics and created broadcast-grade linear channels to be distributed to cable and streaming TV platforms. The entire workflow can be managed from any remote location, including 24x7 monitoring of broadcast operations.

"As traditional broadcast TV networks expand to OTT and on-demand formats, the ability to seamlessly unify both offerings is an important success factor. By leveraging the right cloud and automation tools, TV networks can accrue the benefits of integration such as a streamlined approach and lower costs," said Srinivasan KA, co-founder, Amagi.



Photo: Jan Alexander/Pixabay

The Africa Channel's Amagi technology stack consists of CLOUDPORT and THUNDERSTORM.

Frost & Sullivan recognises Master Power for its data centre power solutions

FROST & SULLIVAN HAS recognised Master Power Technologies with the 2019 African Customer Value Leadership Award for its modular data centre solutions that have the Universal Controller (UC), a remote monitoring and management system, at their core, based on its recent analysis of the African modular data centre market.

In terms of power availability and quality, the UC is specifically designed to meet the needs of the local African market. This system provides critical information on specific components and equipment that are affected by the power available in Africa.

It aims to enable complete equipment integration on a single platform and greater operational reliability, while reducing site downtime through predictive failure monitoring. It also monitors mechanical and electrical efficiencies and issues a warning if it detects a decline in efficiency levels.

"The UC will be pivotal in helping data centre operators improve reliability and efficiency, reduce energy costs, and achieve their sustainability goals. It helps data centre operators swiftly detect the problem before it occurs, and identify the necessary skill set required to rectify it," said Gautham Gnanajothi, global research director. "Master Power offers a strong pedigree of data centre expertise, equipping leading African organisations across multiple end-user verticals with best modular data centre products."

The first one is called 'BattSure', which is a battery monitoring application designed to eliminate fire risks, downtime costs, and premature battery replacement. The other is the Triple Changeover Management (TCO), which monitors utility power supply and controls the switching of the supply from utility to generator when it detects a break in utility supply. Furthermore, it monitors the status of the standby generator and the number of restarts and time between the restarts.

“The partnership with Google to offer the Sanza Touch smartphone for sale will enable us to solve this problem [of limited internet use in Africa] thanks to its affordable price and advanced functionalities.”



- Alioune Ndiaye
CEO
Orange Middle East and Africa

“The partnership we are launching with inwi money will simplify the lives of this community as well as the lives of millions of Moroccans who wish to receive money transfers from Moroccans resident abroad.”

- Dare Okoudjou
CEO and founder
MFS Africa

“Mobile advertising is for the mobile industry the VAS of tomorrow.”

MNOs need to secure new sources of income to safeguard their future.”

- Kostas Kastanis
Deputy CEO
Upstream

“Partnering with one of the world’s major mobile groups such as Telenor helps us to scale our retail roaming services and improve operational efficiency, which is very important to cater for our corporate and leisure travellers in South Africa.”

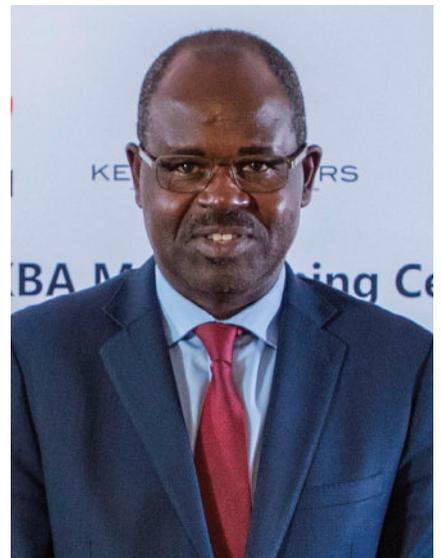
- Althon Beukes
CEO of Telkom’s wholesale division
Openserve
(on a new managed roaming agreement)

“The authority will make available 406 MHz of spectrum for the provision of mobile broadband services in South Africa.”



- Keabetswe Modimoeng
Chairperson
ICASA
(on confirming plans for South African 4G and 5G spectrum auctions next year)

“I have no doubt that the KBA-Huawei collaboration will play a significant role in our collective efforts to entrench technology in our operations and sustain our contribution to the national development agenda.”



- Dr Habil Olaka
CEO
Kenya Bankers Association
(on a partnership agreement with Huawei to promote technology-driven financial inclusion)

“We are very excited to have Vodafone as our telecom partner for OSN streaming in Egypt... We are committed to expanding our reach in Egypt and our partnership with Vodafone is a great opportunity to grow our base and target high ARPU customers.”

- Zahra Zayat
Senior vice-president of telco, digital and OTT
Entertainment network OSN

“This a crucial project for us as it introduces LTE in our networks and allows us to bring new and innovative services to our subscribers.”



- Kendall Ananyi

CEO
Tizeti

(on plans for Nokia to provide the Nigerian company with an LTE fixed wireless access solution)

“We set the goal of launching an ambitious technological innovation every year... In 2021, we will create our first Digital Village, a model that aims to reinvent connectivity in the Mozambican countryside.”

- Nuno Quelhas

Chairman of the board of directors
Vodacom Mozambique

“The retail environment has changed, and this has been fast-tracked by the impact of Covid-19 and the evolving

purchasing habits of consumers.”

- Cell C

(statement after the South African operator announced planned closures of up to 128 stores)

“We are proud of the quality and scale bar we have set in the region and are scaling to be the de-facto digital data hub for West Africa.”

- Dr Ayotunde Coker

Managing director
Rack Centre

(on a \$100m expansion to create West Africa's largest data centre)

“This highly connected location for PAIX Nairobi-1 is an ideal entry point into the Kenyan data centre market. This will allow us to serve a diverse customer community, generating new business opportunities for all connected businesses.”



- Wouter van Hulsten

CEO
PAIX Data Centres

“This business restructuring will enable Telkom to sharpen its efficiencies, with respect to service provision and overall customer experience. It will also enable us to partner more strategically with like-minded entities, for example, in the telecommunications, technology and financial services sectors.”



- Mugo Kibati

CEO
Telkom Kenya

“We want to continue to support and fast-track the digital economy drive of the Federal Government of Nigeria and this has led to the creation of a Digital Economy Department in the Commission.”

- Prof Umar Garba Danbatta

Executive vice chairman
Nigerian Communications Commission, NCC

Trace, Molotov partner to develop OTT platform worldwide

TRACE (TRACE.TV), AN international media group dedicated to empowering and entertaining African-urban people, has entrusted Molotov Solutions with the development and operation of the new version of its OTT platform, TracePlay.

TracePlay will offer more than 25 live TV channels, 100 radio channels and some 1,000 hours of on-demand content using the Molotov platform.

The platform will be distributed in 180 countries (a first for Molotov), notably in Africa, Europe, the Caribbean and North and South America. It will be available in French, English and Portuguese at the beginning of Q2 2021.

TracePlay will benefit from the full application suite of Molotov Solution, which has already attracted some 12 million users in France. Molotov's technology can enable TracePlay to empower its audiences to connect with Afro-



Photo: rolffimages/Adobe Stock

Molotov's technology will enable TracePlay to empower its audiences.

urban culture seamlessly using: a video platform in the cloud with live, replay and on-demand; and a complete back-office suite with interface control, content editorialisation, users and offers management, and data analysis. In addition, the solution offers a flexible and robust API that seamlessly interconnects with third-party applications (CRM, analytics, payments) and telecom operators to promote Trace's content offerings on STBs and to propose an SSO login and carrier billing to users.

Other features include multi-language, delinearisation of streaming programs, radio and podcasts, personality tracking, watch list, in-app purchase and parental control.

"The digital and non-linear consumption of TV and radio channels and content continues to grow, especially among young and urban audiences, who particularly enjoy Trace. We chose Molotov Solutions for the quality of its technical platform and the expertise of its team," said Olivier Laouchez, CEO of Trace.

Facebook to open new office in Lagos, Nigeria

FACEBOOK HAS ANNOUNCED that it will open its second office on the African continent, in Lagos, Nigeria.

The office, which is expected to become operational in H2 2021, will house various teams, including sales, partnerships, policy, communications and engineers, serving the continent from across the company.

Ime Archibong, Facebook's head of new product experimentation, said, "All across Africa we see immense talent in the tech ecosystem, and I'm proud that with the upcoming opening of our new office, we'll be building products for the future of Africa, and the rest of the world, with Africans at the helm. We look forward to contributing further to the African tech ecosystem."

Crown Agents Bank and Vodacom Congo's subsidiary to facilitate mobile payments

CROWN AGENTS BANK Ltd has partnered with VodaCash SA, a subsidiary of Vodacom Congo, to facilitate international mobile payments in the Democratic Republic of Congo (DRC) through the M-Pesa brand.

The partnership is set to allow VodaCash, through Crown Agents Bank, to assist international development organisations (IDOs) to further the transitioning of their payments to recipients and vendors from cash to digital, enhancing financial access, while at the same time reducing costs and delays.

Crown Agents Bank will integrate its payment gateway with the VodaCash platform and services to provide an easy and secure way for IDOs, to pay individuals directly into their mobile wallets.

The relationship with VodaCash will give Crown Agents Bank greater coverage across the country, drawing on Vodacom Congo's cellular network and VodaCash agent network. The partnership marks the first in a series of planned integrations across Africa.



Photo: greenbuttefly/Adobe Stock

The collaboration allows Crown Agents Bank to extend its mobile payments reach to 13.4mn of Vodacom Congo's subscribers.

With 54% market share, M-Pesa is aiming to ensure availability of float service to payment beneficiaries and a rich product ecosystem to encourage customers to do more digital transactions.

"Being able to provide payments to mobile wallets in the DRC is an important step towards financial inclusivity. Along with our well-established FX capabilities across the continent, we are building out a suite of payment services that allow us to reach those who previously were unable to access financial services," said Steve Marshall, chief commercial officer at Crown Agents Bank.

Inmarsat joins forces with CPN and MinFarm

INMARSAT HAS COLLABORATED with CPN Satellite Services and MinFarm Tech to launch the MF 400 IoT Satellite Bridge incorporating Inmarsat's IsatData Pro (IDP) service.

The solution is expected to enable data from IoT sensors operating on LoRaWAN networks to be optimised for transmission over Inmarsat's IDP service, which will bring much-needed additional connectivity to IoT devices deployed in remote locations across a range of different sectors.

The success of a remote operation – such as dam monitoring or agricultural resource management – depends on having robust, reliable equipment in place to do the job. IoT devices are having a significant impact in this area, due to their ability to record and transfer data in a way that reduces the need for expensive on-site visits and lowers overall maintenance costs.

The MF 400 IoT Satellite Bridge offers organisations an off-the-shelf and ready-to-use solution to meet these challenges, simplifying the connectivity between sensor and application. Powered by a single 80W solar panel and with battery backup capacity of two to three days, the device uses protocol optimisation to forward sensor payload traffic over the high-latency, non-IP packet data satellite services of the Inmarsat IDP.

Tara Maclachlan, vice-president of IoT, enterprise at Inmarsat, commented, "IoT is already proving to be hugely influential in enabling effective remote operations across many different sectors, and we are continually focused on innovation with the objective of making our services even better."

According to Christian Nicolai, M2M and IoT consultant at CPN Satellite Services, the MF 400 IoT Satellite Bridge will solve some of the major problems facing organisations operating IoT sensors in remote regions. Connecting these devices to Inmarsat satellite networks brings added reliability and resilience, with the guarantee that accurate data can be transmitted and received regardless of location.

ITU, EIF partner to reduce the digital gender divide in Burundi, Ethiopia and Haiti

THE INTERNATIONAL TELECOMMUNICATION Union (ITU) has partnered with Enhanced Integrated Framework (EIF) to launch a cooperative project to enhance the digital ecosystem and build digital skills for women in Least Developed Countries (LDCs).

The project will address the ongoing digital gender divide which has been widening in developing nations and the LDCs since 2013, while narrowing in developed regions. The proportion of women using the internet across Africa is 12% lower than the proportion of men; in African LDCs, the disparity is widening to a gap of 31%.

The ITU and EIF will combine their resources to enhance efforts to benefit women in Burundi, Ethiopia and Haiti. This will be achieved by building capacity at the policy level, increasing governments' ability to mainstream gender and



Photo: Christina Morillo/Pexels

This partnership between ITU and EIF will result in vital policy support to ensure the sustainable expansion of ICTs.

information and communication technologies (ICTs), and by expanding the horizons of thousands of women entrepreneurs in sectors such as textiles and apparel, and the coffee and cocoa value chains.

ITU secretary-general Houlin Zhao said, "More than ever before, digital technology is a crucial driver of women's economic opportunities. This partnership between ITU and EIF will result in vital policy support to ensure the

sustainable expansion of ICTs where it is most needed and will benefit women as they access and use ICTs to participate fully in their economies."

This joint project, a contribution to the EQUALS Global Partnership and part of the Power Trade initiative of the EIF, Empower Women, will help match supply and demand on the job market and facilitate women's entrepreneurial activities through the use of ICTs.

Somali remittance services

MONEY TRANSFER SERVICES company Juba Express and payments company WorldRemit have partnered to provide Somalis with the opportunity to receive money from family and friends in 40+ countries around the globe, including the UK, the USA, Australia, New Zealand, Canada and Europe.

The WorldRemit payment platform enables customers to digitally send money to Somalia 24/7 at their convenience.

To benefit from this service, recipients do not need a smartphone and can collect their money at various Juba Express cash pick-up locations across Somalia.

According to the World Bank, around two million Somalis in the diaspora send an estimated US\$1.4bn in remittances annually to Somalia.

Nokia to provide Tizeti with LTE FWA solution for high-speed internet services in Nigeria

NOKIA HAS ANNOUNCED that it will supply Nigerian mobile operator Tizeti with its Fastmile and Long Term Evolution (LTE) technology.

This partnership will enable Tizeti to provide superior internet services to more than one million subscribers in Port Harcourt, Edo and Ogun in Nigeria.

Tizeti will deploy Nokia's AirScale Base Station TDD-LTE and Fastmile Fixed Wireless Access (FWA) gateways to deliver premium internet and virtual private network (VPN) services to residences as well as small and medium enterprises (SMEs). The solution will also enable Tizeti to deliver a more robust, high-speed internet service to subscribers and the flexibility to seamlessly evolve to 5G fixed wireless access when needed.

Nokia's FWA solution enables Tizeti to fast-track broadband access and provides a best-in-class broadband experience to its subscribers. Nokia's AirScale Base Stations ensure high-quality connectivity and coverage and enable Tizeti to evolve the network in line with customer demand.

Nokia's Fastmile gateways connect

wirelessly to the existing network to create a fast broadband connection and enhanced Wi-Fi experience in the home. The Nokia Network Services Platform will help Tizeti to simplify operations and quickly respond to changing market demands.

"We are confident that Nokia's proven technology and expertise will help us differentiate our services based on quality. This a crucial project for us as it introduces LTE in our networks and allows us to bring new and innovative services to our subscribers," said Kendall Ananyi, CEO, Tizeti.

"We are thrilled to work with Tizeti on the initiative to upgrade its network to bring the latest products and services to its subscribers. Nokia Fastmile will help Tizeti to cost-effectively enhance the customer experience. The project will also enable them to delight their subscribers by providing more reliable data services. On the other hand, Tizeti will benefit by adding new revenue streams," said Eniola Campbell, head of customer business team - Nigeria, Nokia.

African money transfer accelerates as World Bank aims for full digitisation

PAYSEND HAS CONTINUED to increase its digital coverage across Africa, in the wake of the World Bank's plans to digitise the continent by 2030.

Paysend will allow its two million users to send money to countries such as Benin, Madagascar, Malawi, Mozambique, Niger, Uganda and Zambia, thus bringing the total amount of countries to 18, covering 30% of the total market.

The African continent has been a strong example of nurturing strong digital payment infrastructure in recent years – particularly in East Africa with the growth of digital wallets – and the World Bank aims to go further over the next decade with new solutions, services and start-ups. Despite the Covid-19 impact across the continent, Africa has shown a visible resilience as well as a boost in digital growth as more people have made the switch to digital payments. In Rwanda, April 2020 saw five times the amount of digital payments

when compared with the pre-pandemic norm. The hunger for more digital coverage in Africa has been recognised by the World Bank, which wants to take digital coverage in Africa from the 27% it had in 2019 to 100% by 2030.

"Paysend has been present in Africa already some time in several major countries like Ghana, Kenya, South Africa, as well as Nigeria, which is one of the biggest receiving countries in the world," Ronnie Millar, CEO of Paysend said. "Paysend is focused on building an even stronger presence in Africa by opening more relevant corridors, allowing people to send money to more countries across the continent."

Paysend will continue to drive digitisation in Africa over the coming months by opening more African corridors and allowing more African expats to send money home to friends and family digitally.

Paysend is a global Fintech company born in 2017, based in the UK and authorised by the FCA.

MTN Zambia signs a partnership with ZTE

ZTE CORPORATION, AN international provider of mobile Internet telecommunications, enterprise and consumer technology solutions, has signed a partnership with the operator MTN Zambia to build a cross-border optical transmission network backbone in Zambia.

ZTE will use technology to build an optical transmission network to connect Lusaka, the capital city of Zambia and the border of Namibia. By providing a large bandwidth to the backbone network, ZTE aims to break the bottleneck of international egress traffic.

In addition, this backbone network will effectively reduce the megabyte (MB) cost of accessing internet data, greatly improving user experience and increasing economic benefits.

As a reliable partner of MTN Zambia, ZTE will provide MTN Zambia with an industry-leading, customised optical transmission network solution using ZTE's

ZXONE 9700 G2K system based on its in-house chipsets.

In addition, this system can provide over 100 G wide bandwidth and Optical Time Domain Reflectometer features.

Bart Hofker, MTN Zambia CEO, said, "In our pursuit to create a digital global hub in Zambia, we are happy to announce the construction of fibre connectivity from Lusaka through Sesheke to Mongu, which will make Zambia a major transit point to international destinations."

"This partnership will help us provide stability on our network and cheaper internet for our customers to connect with family, friends and colleagues," he said.

ZTE will also offer a full range of devices with large bandwidth (up to 1T/slot), low power consumption and small size to fully meet MTN Zambia's high availability, high reliability and high integration requirements for the next-generation carrier



Photo: Chaitawat Pawapowadon/Pikabay

ZTE will provide MTN Zambia with an industry-leading, customised optical transmission network solution.

In addition, this backbone network also has high scalability for future developments.

Dong Renjie, CEO of ZTE Zambia, said, "We will be committed to working with MTN Zambia to promote the upgrade of its networks and build the most advanced and leading digital communication network in Zambia."

Datamatics expands to META region with Ingram Micro

DATAMATICS GLOBAL SERVICES (DGSL), a technology, BPM and intelligent automation and digital solutions company, has announced that it has expanded its strategic alliance with Ingram Micro in the META region.

The distribution agreement is for its intelligent automation products including, Datamatics TruBot, TruCap+, TruBI and TruAI. Teaming with Ingram Micro will provide Datamatics with access to Ingram Micro's vast network of technology allies across the META region and Tier 2 and 3 locations.

Ingram Micro delivers a full spectrum of global technology and supply chain services to businesses around the world.

South Africa, Kenya and Nigeria saw 28 millions of cyber attacks in 2020: Kaspersky

KASPERSKY SECURITY SOLUTIONS reported that there were 28 million malware attacks in South Africa, Kenya and Nigeria in 2020 and 102 million detections of potentially unwanted programmes (PUAs).

These numbers show that it's not just the malware that attacks users, but also the "grey zone" programmes that grow in popularity and disrupt their experience, while users may not even know that they are there.

Potentially unwanted applications are programmes that are not usually considered to be malicious on their own. In general, however, they influence user experience in a negative way. For example, the report said, adware fills user devices with ads; aggressive monetising software spreads unsolicited paid offers; and downloaders can download even more different apps on the device, sometimes malicious ones.

While calculating the interim results of threat landscape activity in African countries, researchers have noted that PUAs attack users almost four times more often than traditional malware.

They also eventually reach more users: for example, while in South Africa, 415,000 users would be attacked by malware in the seven-month period of 2020, the PUA figure would be 736,000.

"The reason why 'grey zone' software is growing in popularity is that it is harder to notice at first and that if the program is detected, its creators won't be considered to be cybercriminals. The problem with them is that users are not always aware they consented to the installation of such programs on their device and that, in some cases, such programmes are exploited or used as a disguise for malware downloads," said Denis Parinov, a security researcher at Kaspersky.

By looking more closely at PUA, it becomes apparent that they are not only more widespread but also more powerful than traditional malware. Evaluating results over the same seven-month period in Nigeria, there were 3.8 million malware attacks and 16.8 million PUA detections. Kenyan and South African threat landscapes have become more intense.

Epsilon, BCX partner to provide global data centre interconnection for African enterprises

Epsilon, a provider of connectivity and communications services, has partnered with Business Connection (BCX), one of South Africa's leading technology companies, to deliver high-performance data centre interconnection (DCI) services to African businesses.

BCX uses Epsilon's Network as a Service (NaaS) platform Infiny for seamless global connectivity and managing network services from a single portal.

The partnership will enable BCX's enterprise customers across South Africa, Kenya, Mozambique, Namibia, Nigeria, Zambia and Tanzania to connect seamlessly to data centres around the globe. BCX is headquartered in six African countries. It delivers its managed services to customers across the financial, retail, mining, manufacturing, healthcare and government sectors.

"BCX can rapidly spin-up connections to multiple data centres across continents from a single portal. This also gives its customers the ability to interconnect cloud services and other networks on our network fabric. It is an exciting time to be connecting African businesses, and we're proud to deliver new global reach on demand," said Michel Robert, CEO at Epsilon.

With Epsilon's DCI solution, BCX can link its presence in Johannesburg with data centres in Europe, a major market outside Africa. In addition, BCX has access to Epsilon's extensive network of 220+ data centres and an ecosystem of global cloud providers, internet exchanges and other networks. Using the NaaS model, it is easy for BCX to scale its services up or down to meet customer demand and business needs.

Epsilon's DCI solution is offered through Infiny. The platform also offers a range of MEF-certified ethernet services, such as cloud connect and remote peering, with flexible terms and scalable bandwidth options.

Accelerating payment digitisation in East Africa

UNIONPAY INTERNATIONAL (UPI) AND Interswitch East Africa (Kenya) Limited have announced their partnership, confirming that Interswitch has become a third party service provider (TPSP) for UnionPay International in East Africa. The partnership supports a vision and mission that enables further payment digitisation across the continent, enabling cardholders and traders across the region to operate seamlessly and conveniently across various platforms across the global UPI network.

The agreement with Interswitch will facilitate UnionPay card acceptance across ATMs, points of sale, QR payments and online payments, thereby consolidating the existing partnership with Interswitch in West Africa, helping to drive wider acceptance on the continent.

Rack Centre to create West Africa's largest data centre

RACK CENTRE, A leading carrier-neutral data centre operator in West Africa, has announced an expansion programme to increase capacity to a total net lettable white space of 6000 sq m and allow 13 MW of IT capacity on its Lagos campus.

This will be in addition to the current expansion already underway in early 2021, doubling existing capacity to 1.5MW and 1,200 sq m of white space. The expansion will bring unprecedented carrier-neutral scale to West Africa and is in response to increasing demand for data centre space from cloud uptake, investment in telecommunications and IT facilities outsourcing by companies in the region.

Actis, a private equity firm in London, announced an investment in Rack Centre, taking a controlling stake in the business alongside Jagal, in March 2020. Funding for this expansion will come from a US\$250mn pan-African data centre platform created by Actis and Convergence Partners, a leading investor in Africa's

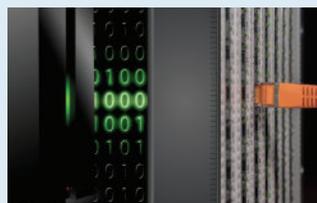


Photo: Ugochukwu Ebu/Pixabay

The design of Rack Centre's Phase 2 facility will target regional industry-leading Power Utilisation Efficiency (PUE) benchmarks.

ICT infrastructure.

In addition to Rack Centre, the platform is also actively developing additional buying and building opportunities across Africa to establish a network of carrier-neutral data centres aimed at catering to the carrier, cloud and hyper-scale customers.

Tim Parsonson, the co-founder of Teraco Data Environments, a neutral carrier operator in Africa, joins the Board as chairperson. The platform has also engaged Frank Hassett, a veteran of the global data centre industry and previous vice-president of infrastructure at Equinix, who

brings over 1300MW of build and operate experience, to assist with hyper-scale expansion.

Dr Ayotunde Coker, managing director of Rack Centre, said, "Mass adoption of digital working models and content distribution is driving growing investment in the region and Rack Centre offers a world-class location to house these IT and telecoms facilities."

With the data demands ever-increasing, the design of Rack Centre's Phase 2 facility will target regional industry-leading Power Utilisation Efficiency (PUE) benchmarks. It will contribute in particular to achieving Sustainable Development Goals for affordable and clean energy, industry innovation and infrastructure and climate action. Rack Centre is working on various initiatives by green data centres to set other benchmarks in the landscape of the African data centre. Supporting this ambition, engineering consultancy Arup has been appointed for the project.

Eutelsat, Paratus bring network connectivity to South Africa

SATELLITE OPERATOR EUTELSAT Communications and telecom company Paratus have signed a multi-year distribution agreement to bring high-quality network connectivity to South Africa.

Paratus will leverage the operational flexibility and power of EUTELSAT KONNECT, the new generation high-performance satellite, to bring connectivity to remote and rural locations across South Africa to businesses operating in farming, game farms and small and medium-sized enterprises, and consumers, for homework, homeschooling and general internet use.

Launched at the beginning of September 2020, Paratus' offers are already experiencing a high level of demand, based on packages of 10, 20 and 30 mbps, with 24/7 technical support, and operating with small, cost-efficient dishes, highlighting the strong need for high-speed connectivity in remote regions.

Kallie Carlsen, managing director, Paratus South Africa, said, "Getting connectivity in remote locations is not easy; while the price is crucial to attracting customers, the quality of network – both connection and support – quickly proves more important. There is too often a disconnect between customer expectations and the delivery of service. With the partnership between Paratus and Eutelsat, we aim to overcome these boundaries and provide superior services for South Africa."

Guido Merien-van Sprundel, sales director, southern Africa, of Eutelsat, added, "This agreement reflects the significant demand on the African continent and the unparalleled assets of the EUTELSAT KONNECT satellite in enabling it to be efficiently met."



Photo: Donald Giannattini/Unsplash

Paratus offers packages of 10, 20 and 30Mbps, with 24/7 technical support.

USTDA expands support for internet connectivity in Nigeria

THE US TRADE and Development Agency (USTDA) has continued its 20-year support for Nigeria's telecom sector by funding two projects that will help deliver fast and reliable internet services to thousands of Nigerian households using US technology solutions.

Ambassador Mary Beth Leonard, US ambassador to Nigeria, said, "These projects will support the development of Nigeria's telecoms infrastructure and help to achieve the goals of the National Broadband Plan. The US government has committed significant resources to improve telecoms infrastructure in Nigeria, and this support is crucial as we believe that investment in critical ICT projects will strengthen the resiliency outlined in Nigeria's economic sustainability plan." Specifically, USTDA has committed funding for a feasibility study to help ipNX Nigeria Limited expand its fibre optic network to more than 200,000 homes in Lagos and other locations, including Abuja and Port Harcourt. The study will be conducted by North Carolina-based CCG Consulting.

Bimpe Olaleye, ipNX group executive director, commercials, stated, "This expansion will see us meet our strategic intent of being the bedrock of the Nigerian ICT ecosystem by providing solutions that help mankind thrive."

USTDA also committed funding for a study to help Aldreda Fields Ltd develop aerially installed broadband networks to connect multiple neighbourhoods across Lagos to broadband infrastructure. The study will be conducted by S2 Associates International LLC based in New Jersey.

Adebisi Adebute, Aldreda managing director, commented, "Aldreda Fields is delighted to partner with USTDA in the development of a metro broadband and fibre infrastructure-as-a-service in Nigeria to deliver available, accessible and affordable high-speed connectivity for all."

Submarine schemes take centre stage (virtually)

In the year when plans were announced to build the most comprehensive subsea cable ever to serve the African continent and Middle East region, one would expect the world's leading annual submarine communications gathering to attract even more interest than usual from Africa. In fact, as Vaughan O'Grady points out, there is a lot of African activity to discuss at Submarine Networks World - even if the discussions will mainly be online.

THERE'S BEEN NO shortage of plans to link Africa to other parts of the world via submarine networks over the past year. In May, of course, we saw the biggest of the lot: China Mobile International, Facebook, MTN Global Connect, Orange, etc, Telecom Egypt, Vodafone and WIOCC announced that they were partnering to build zAfrica, which will be the most comprehensive subsea cable ever to serve the African continent and Middle East region.

The parties have appointed Alcatel Submarine Networks to build the cable in a fully funded project which, they said, will greatly enhance connectivity across Africa and the Middle East.

At 37,000km long, zAfrica will be one of the world's largest subsea cable projects and will interconnect Europe (eastward via Egypt), the Middle East (via Saudi Arabia), and 21 landings in 16 countries in Africa.

However, that was not the only big news. Last April Huawei Marine Networks announced what it called the kick-off of the Senegal Horn of Africa Regional Express (SHARE) cable. The system, as the first high-capacity direct link from the African continent to the offshore islands of Cape Verde, is expected to be completed in Q1 2021.

A little earlier, in March, there was also news of the landing of East Africa's largest submarine cable, Djibouti Africa Regional Express (also known as DARE 1). The 4,000-kilometre fibre optic cable which has landed in Nyali, Mombasa City, is further expected to enhance high broadband connectivity in the region, delivering 36 terabytes of data.



Photo: Adobe Stock

Praia, Cape Verde: soon to have a high-capacity link with mainland Africa.

DARE 1 becomes the fifth undersea cable broadband infrastructure to link Kenya with the rest of the world after the landing of SEACOM, East African Marine Cable System, Eastern African Submarine Cable System (EASsy) and the Madagascar-linked Lion2.

In January Nokia announced that Angola Cables was trialling Nokia's Photonic Service Engine 3 (PSE-3) chipset for the first direct optical connection between the USA and Africa. The route provides direct, low-latency trans-Atlantic routing and greatly simplifies the turn-up of services to better serve rapidly growing data consumption markets in Africa.

That's far from all. There's also SACS (South Atlantic Cable System), owned and managed by Angola Cables, which operates between Fortaleza, Brazil, and Luanda, Angola - and even internet giant Google is getting in on the act. It announced a new private submarine cable between Africa and Europe. Called Equiano, it will initially link Portugal to

South Africa, with branches planned in Nigeria and - potentially - other African countries.

Due to be in operation by 2021 and laid by Alcatel Submarine Networks, this is Google's third private cable. All told, Google now has 14 investments in international cables including joint ventures.

And of course, some news headlines reminded us that these things don't always go smoothly. This year Ethiopia, Sudan and Tanzania were affected by cable cuts to the FLAG Alcatel-Lucent Optical Network (FALCON) undersea cable off Yemen, while breaks on both the SAT-3/WASC and WACS cable systems affected connectivity on the African continent. All of which will no doubt contribute to at least some of the conversations at the world's leading annual submarine communications gathering. The 23rd annual Submarine Networks World is this year being held virtually from 3 - 5 November 2020.

This is the leading global event in the industry's annual calendar, one that expects to attract more than 75 expert speakers, and over 1,000 key decision-makers from across 65 countries.

Not surprisingly it describes itself as an event not to be missed if you are in the subsea communications business - and the statistics back this up. With global submarine cable capacity forecast to grow by 143% by 2022, the role of the undersea network has clearly evolved into mission-critical infrastructure, supporting today's fast-paced global economy.

However, as the event organisers point out, with connectivity and bandwidth needs growing exponentially, demand for low latency, greater capacity and more flexible networks continues to escalate. Meeting this challenge will require agility, scalability and innovation. Hence Submarine Networks World's role not only as the world's largest annual gathering of the global subsea communications

Events / Événements 2020

OCTOBER/OCTOBRE

27-28	Telecoms World Asia	Virtual	www.terrapinn.com/virtual/telecoms-world-asia/
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NOVEMBER/NOVEMBRE

9-10	CABSAT	Virtual	www.cabsat.com
10-12	AfricaCom	Virtual	https://tmt.knect365.com/africacom/
22-25	CAIRO ICT	Cairo, Egypt	www.cairoict.com

DECEMBER/DÉCEMBRE

2-3	Wireless China Summit	Beijing, China	www.wirelesschina-summit.com
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FEBRUARY/FÉVRIER 2021

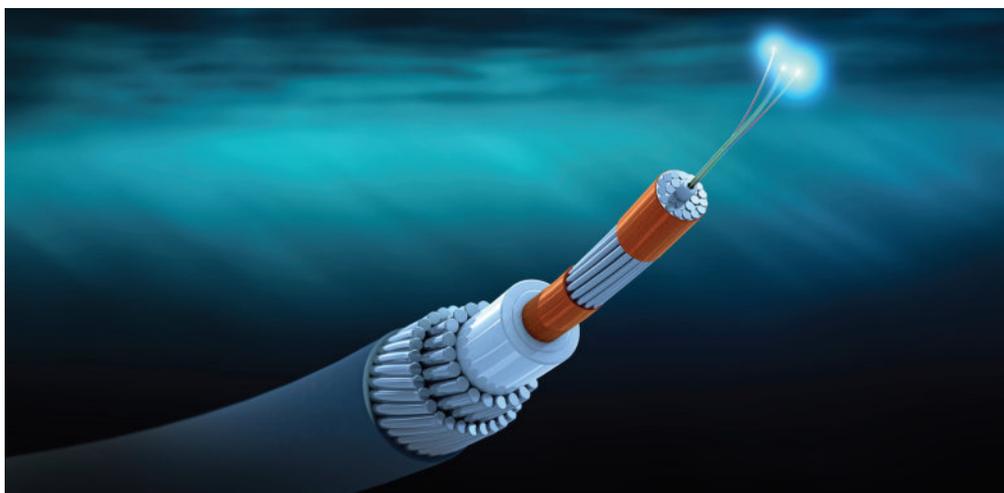
3-4	Future Datacentres and Cloud Infrastructure Summit	Dubai, UAE	www.expotradeglobal.com/events/futuredatacentre
17-18	Smart Data Summit	Dubai, UAE	www.expotradeglobal.com/events/smartdatasummit

MARCH/MARS 2021

9-10	INTERNET WORLD EXPO	Munich, Germany	www.internetworld-expo.de
18-19	Blockchain Africa Conference	Johannesburg, South Africa	www.blockchainafrica.co
24-25	CLOUD EXPO EUROPE	London, UK	www.cloudexpo-europe.com

APRIL/AVRIL 2021

5-7	COMEX	Muscat, Oman	www.comex.om/2020/
12-16	HANNOVER MESSE	Hannover, Germany	www.hannovermesse.de/en



The way forward for Africa's international communications.

community, but as a dedicated platform to exchange knowledge, explore the latest projects and develop strategies and lucrative new partnerships to drive the industry forward.

So what is being discussed? A quick glance at the schedule brings up a panel on Getting O&M Right, one of whose participants will be Kebaso George Mokogi, managing director, Telkom Kenya Limited, while a session entitled A

Consortium Approach that Works includes Farhan Mohamed Bouh, strategic lead of Djibouti Telecom, who will also be discussing O&M in 'the hottest country in the world' during an Operations and Maintenance session on challenging environments.

Assessing cable upgrades is another important topic and it's no surprise perhaps that Funke Opeke, chief executive officer, Main One Cable Company Nigeria,

will be among those discussing it.

Among the cable projects being presented is one from Mohamed El Dahshory, director, global projects & submarine cable development, Telecom Egypt. And, inevitably, there will be a look at 2Africa Cable, this time from Ricardo Orcero of the submarine cables division of Facebook.

Chris Wood, chief executive officer, WIOCC Kenya, Artur

Mendes, VP sales, Angola Cables, and Mustafa Burai, wholesale and carrier relation senior manager, Sudatel Telecom Group, will be among the other speakers with African links that you can hear from – virtually – this year.

They will be joined by many other experts from such well-known names as Bharti Airtel (India), HAWAIIKI (New Zealand), Orange France, GlobeNet (United States), Telstra Hong Kong, China Mobile International Ltd, Orient Link (Japan), EllaLink (Ireland), Bulk Infrastructure (Norway) and Datawave Networks Ltd (United Kingdom), to name only a very few of an exceptionally diverse line-up.

You can find out more at the Submarine Networks World 2020 website or, if you miss the show, there will no doubt be an opportunity to catch up virtually too.

As for finding your way to the event – for once that's relatively easy. As the publicity material says, it's coming to you live – wherever you are. ☺

Harnessing digital technology to drive African trade

Digital technologies will be playing an increasing role in the expansion of trade in the coming years. Ambassador Abdelmoniem Mahmoud, IATF2021 ambassador, explains how this will happen - and how capitalising on an array of digital technologies will benefit African trade in particular.

AFRICA MUST CAPITALISE on the array of digital technologies that are integrating all areas of organisations and their business processes, altering payment systems, and optimising storage and the delivery of goods and services. Technologies are transforming value chains, delivering skills development, introducing efficiencies and lowering production costs, assisting diversification into value-added products, changing the dynamics of commodity dependence, expanding trade and increasing export competitiveness.

When implemented, the African Continental Free Trade Area (AfCFTA) will, in tandem with other favourable economic and demographic factors, turbocharge intra-African trade, despite Africa facing many demanding challenges. However, significant investments are needed to close the physical and digital infrastructure gap. This has been exacerbated by the Covid-19 pandemic, whose full impact is as yet unknown, and dealing with the devastating social and economic scars that it has created.

Digital platforms have become the marketplace of the 21st century and are facilitating trade in goods and services, whether delivered physically or digitally. In terms of connectivity, they are the springboard for trade connectivity with prospective customers, both across the African continent and globally. In addition, companies are increasingly refining their sales techniques by harnessing artificial intelligence and big data to profile customers and adapt their products accordingly.

Digitisation has empowered P2P, B2P and B2B ecommerce transactions globally and, for the



Digitisation has empowered P2P, B2P and B2B ecommerce transactions globally.

Photo: A Freixbank

consumer, it is progressively shifting shopping habits from 'bricks' to 'clicks'. This behavioural shift has been accelerated by the Covid-19 pandemic and the associated preventative requirements for social distancing, which are actively encouraging the safety of remote and contactless digital transactions.

Blockchain, digital platforms and the Internet of Things are continually decreasing trade costs by connecting buyers and sellers directly and lowering the costs of marketing, sales, transportation and storage. They automate

document processing, enable just-in-time storage, inventory and delivery routes, track shipments in real time, reduce delivery times and enable electronic systems to decrease the time taken for customs compliance.

Some ports have already introduced automated cranes and guided vehicles to load and stack. How long will it be until we see fleets of self-driving delivery trucks from Dakar to Djibouti and from Algiers to Cape Town?

The application of blockchain technology is also driving easier and faster processing of trade finance and insurance

documentation, as well as reducing cross-border payment costs. The World Trade Organization has estimated that – if trade costs decline, complementary policies are put in place and technological diffusion and regulatory challenges are addressed – developing countries' share of global trade could grow from 46% in 2015 to 57% by 2030. Africa must position itself to be the major beneficiary.

Technology is also beneficially impacting manufacturing and productivity. Digital technologies are driving diversification, integration into production networks and movement into more sophisticated products. They are also increasing Africa's market access and participation in global value chains. By way of example, Megh Industries in Kenya has invested heavily in modern technologies and moved from the

Digital technologies are driving diversification, integration into production networks and movement into more sophisticated products.

manufacturing of automotive equipment and parts to full transport seating, van conversions and lightweight modular bullet-proofing, making it more sophisticated and value-added in nature. The use of market-related data for product design and development is helping firms to enter new sectors.

The extent to which 3D printing can eventually replace mass manufacturing and reduce production time and cost remains the subject of debate, but it is already making inroads into products such as medical devices, shoes and toys.

Parts of Africa's agricultural sector already embrace digital technology (AgTech), but it needs significantly wider take-up and further advancement. Africa has 60% of the world's uncultivated arable land, yet it is still a net importer of food. Also, despite over 60% of sub-Saharan Africa's population being smallholder farmers, only 23% of the region's GDP comes from agriculture, reflecting the preponderance of subsistence-level farming.

Together, this issue, along with challenges such as lack of seeds, fertilisers, farming mechanisation, irrigation systems and storage facilities, and the failure to effectively aggregate farmers' produce through cooperatives for marketing and to increase sales prices, all act as major constraints to productivity and trade growth.

These issues need addressing – but AgTech could also help in other areas. Farm Africa in Tanzania has farming apps that ease access to farm inputs and provide best practice advice for crop growth. Uganda's AgroMarketDay app allows farmers to upload pictures of their produce, which is then auctioned to the highest bidder. The African Open Data Initiative collects big data to optimise decision making and create reliable insurance and climate risk management products. Data-capturing devices, such as sensors and video imaging, can collect geo-spatial data to create customised farmer details for marketing and sales purposes. Africa also hosts Binkabi, the world's first

commodity exchange on blockchain, while trade in African agricultural products and its other commodities could benefit considerably from the creation of a pan-African commodity exchange.

Digitisation is delivering opportunities, but African countries face challenging handicaps necessitating catch-up. Their level of digitisation is lower compared to more developed countries and, where it exists, it is having a lesser impact on GDP per capita growth. There are also concerns that it is causing de-industrialisation in African countries, with the share of manufacturing value-added in GDP declining by 4% from 2000 to 2016.

African governments must encourage foreign and domestic investors with policies and environments to encourage investments in sustainable projects and trade-boosting developments that will drive the economic development and prosperity of the continent. There is also a responsibility for governments to ensure that digital trade continues to drive inclusive economic development, but they are likely to need international cooperation to do so. In addition, multilateral financial institutions and export credit agencies must play a pivotal role in facilitating projects and trade development in Africa.

Regional economic organisations also have a big part to play in increasing intra-African trade. For example, ECOWAS's long-envisioned monetary and currency union and adoption of its single currency (ECO) should help harmonise trade regimes and significantly boost trade and investment flows.

There are other digital initiatives that are facilitating and increasing intra-African trade, such as Afreximbank's MANSA



Photo: Afreximbank

Regional economic organisations also have a big part to play in increasing intra-African trade.

repository, which has filled an information gap by serving as a primary and single source of data collection for due diligence on African corporates, SMEs, financial institutions and African investment information.

The second biennial Intra-African Trade Fair (IATF2020) is being held in Kigali, Rwanda, from 1 to 7 September 2020. Owing to the Covid-19 pandemic, it will now be a virtual trade fair: an online platform to enable buyers and sellers to network, exchange trade and market information, showcase their products and services to new markets and conclude contracts – even after IATF2020 has ended. The event is predicted to result in US\$40 billion of African trade and investment deals being signed.

Digital transformation is a general-purpose technology that continually evolves, branches out and increases productivity and efficiency, regardless of industry or sector. It will increase the capacity, range and delivery of trade, lower cost-to-serve and hasten speed-to-market, while digitally connecting customers – wherever they are. It also accelerates diversification, revolutionises payments, and

expands market access and trade and investment opportunities.

Make no mistake, digital technologies will be playing an increasing role in the expansion of trade, so we must ensure that Africa is at the forefront. To do this it is vital that Africa prioritises its transition towards a digital economy, as it is an enabler for the continent to expand intra- and extra-African trade and take full advantage of the economies of scale proffered by the AfCFTA. ©

Ambassador Abdelmoniem Mahmoud is an IATF2021 ambassador

Over 10,000 buyers, sellers and conference delegates are expected to attend the second Intra-African Trade Fair in Kigali from 6 to 12 September 2021. The Fair is designed to drive intra-African trade and to support the implementation of the African Continental Free Trade Agreement. It will provide a platform for sharing trade, investment and market information and will enable more than 1,000 exhibitors to showcase their goods and services to buyers, sellers and investors from over 50 countries, allowing them to meet, discuss and conclude business deals. IATF2021 is a joint initiative between Afreximbank and the African Union and is being hosted by the Government of Rwanda. For further information about IATF2021 please visit: <https://www.intrafricantradefair.com/>

Blockchain, digital platforms and the Internet of Things are continually decreasing trade costs by connecting buyers and sellers directly and lowering the costs of marketing, sales, transportation and storage.

Why African banks should be more like African operators

Can banks compete in the African mobile payments space? Can they afford not to? Tijsbert Creemers, managing director and partner at Boston Consulting Group Johannesburg, tells Ron Murphy why - and how - banks need to provide mobile payment services.

A NEW REPORT* RELEASED by Boston Consulting Group (BCG), suggests that banks in Africa must provide mobile payments and other digital services to remain competitive.

As Tijsbert Creemers, managing director and partner at Boston Consulting Group Johannesburg, points out, so far mobile payments have been most successfully operated by telecommunications companies: Safaricom/MPESA, MTN and Orange have led the way in Africa. Banks have followed by creating mobile wallets and mobile payment solutions, but at a much smaller scale.

But is it worth the while of banks to up their game? Aren't there, for example, tight margins involved in serving (often) unbanked customers?

Creemers isn't so sure. He says: "When done right, mobile payments can solve the paradigm of lower cost to serve for unbanked customers. Mobile payments will eliminate the need for manual steps and will reduce the need for cash. For example, the M-Pesa scheme in Kenya is quite profitable."

Of course, the ongoing pandemic has created an environment that is more conducive to electronic payments – a move away from cash to cards, electronic transfers and mobile banking. For unbanked customers who do not have access yet, mobile is the most logical entry point in the electronic space.

The report argues that there are five potential strategies that banks in Africa may adopt to harness the possibilities that mobile payments present – depending on the bank's size,

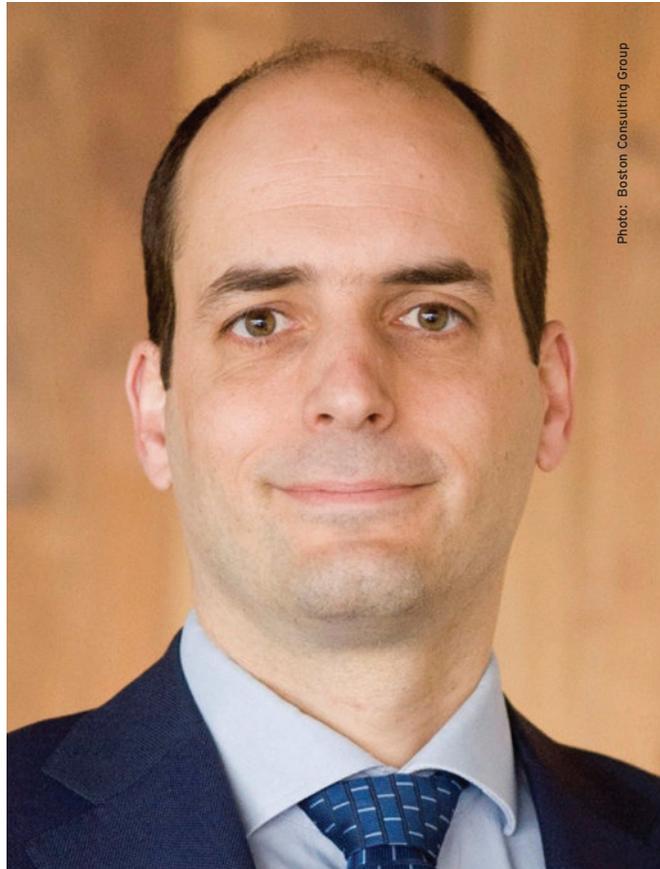


Photo: Boston Consulting Group

Tijsbert Creemers: "Banks will have to create a way to increase their reach by partnering."

capabilities, technological experience, and the role that it might play in its local or regional business ecosystem.

Three strategies tend to be suitable for large banks. In the ecosystem leader strategy the bank typically shares an interoperable platform and orchestrates a group of operations and services. Ecosystem leaders should have a strong retail focus,

a broad base of current and prospective customers including SMEs, and the ability to coordinate activities on a broad scale.

In the customer relationship builder strategy, the bank uses its own brand, focusing on customer-facing mobile payments solutions with a broad reach. A bank that follows this path may have to disrupt its existing business model

by relying less on high fees paid by affluent customers for banking services and transactions and more on a broader revenue base with a wider range of services, more customers, and ecosystem support. The bank may also have to provide a distinctive customer experience on mobile devices.

The third approach for large banks is the back-office champion strategy. Here the bank provides the services and support needed on the back-end of other companies' ecosystems. A bank in this category uses other banks' brands to develop the scale it needs to reach retail customers and plugs into application programming interfaces (APIs) to enable different computer systems to interrelate. The contributions of the back-office champion enable the front-end players to upsell a wider range of banking services to mobile wallet customers.

For small banks two strategies are suggested. The ecosystem contributor approach involves the bank providing technically adept, API-ready services, connecting closely with the offerings of one or more front-end mobile money players. The report points out that small banks tend to play this leading-edge 'bank of the future' role because they do not have the scale to compete otherwise.

In the niche market master strategy, by contrast, the bank focuses on particular offerings such as wealth management, where the bank can take advantage of its customer insight and innovate on highly functional solutions. So what skills and infrastructure can African banks bring to the mobile payment market that other players

The ongoing pandemic has created an environment that is more conducive to electronic payments.

Continued on page 18

Where fun and business meet

While older Kenyans may look back fondly to the robust 2G and 3G handsets of their youth, things like features, ease of use and affordability are driving an ever-increasing take-up of smartphones - and not just in urban areas, as Mwangi Mumero explains.

SCHOOLTEACHER JANE MBUGUA remembers with nostalgia her first mobile handset, a Siemens C35 that she purchased almost 20 years ago. Like other Kenyans over 40 years of age, Ms Mbugua has experienced the evolution of handsets in the market in the intervening years.

“The handset allowed me to make calls, text, keep time, set an alarm and perhaps little more. I really valued the freedom possession of the handset gave me to make calls at will,” she says.

The handsets of that period were using 2G and 3G mobile technologies. Some of the popular brands in Kenya in the 1990-2000 period included the Siemen series C25, C35 and C45, the Nokia series 3310, 130, 3120, the Alcatel OT 301 and a number of Sagem phones.

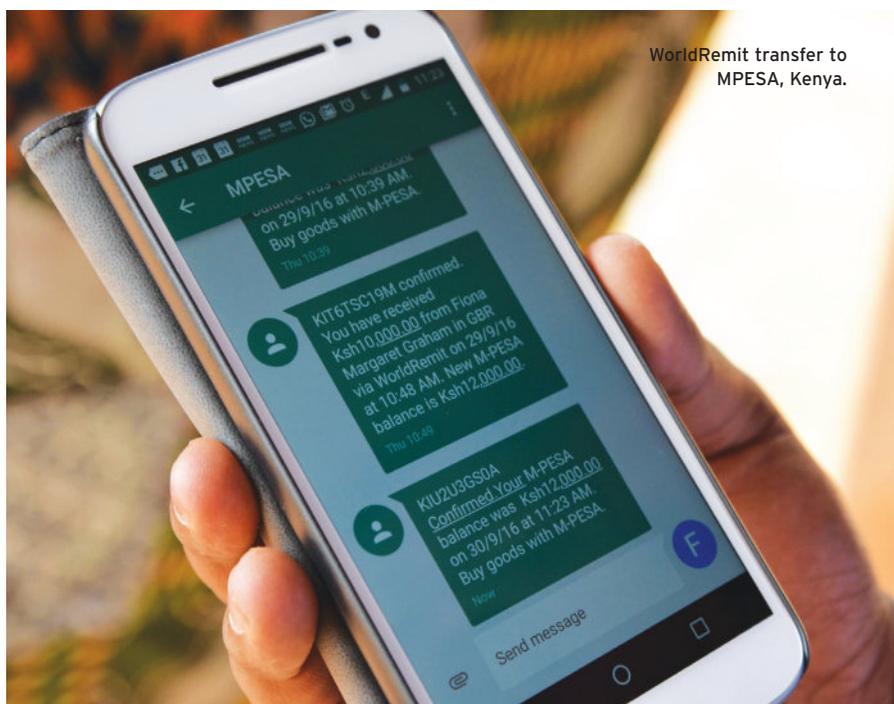
“Even if they look archaic compared to the current smartphones, these older brands were more durable, waterproof and were resilient to conditions found in rural and urban areas. They opened up interpersonal communication and improved business practises,” observes David Sabugo, a fresh vegetables transporter who ferries food produce from Nyandarua County – over 200 km north of Nairobi – to the capital city.

In rural Kenya – sometimes in places where roads were impassable especially during the rainy season – possession of a mobile handset has opened up trade and businesses. With the entry of the M-Pesa money transfer service in 2007 in particular, there was a transformation in the way business was conducted using even simple handsets.

“Using a simple Siemens C45 phone with the M-Pesa service, I could receive orders through calls, receive a down payment via M-Pesa and then use the night bus to deliver fish to Nairobi – quick and fast,” says Ms Imelda Akinyi, a fishmonger in Homabay Town on the shores of Lake Victoria, almost 380 km west of Nairobi.

Even today, having a simple, cheap mobile handset has allowed business transactions to grow in rural and inaccessible areas of the country.

With the introduction of 3G and 4G technologies, mobile handset makers have increased the number of applications available to users. Smartphones have replaced the older models – with Chinese brands outcompeting



WorldRemit transfer to MPESA, Kenya.

Photo: Fiona Graham / WorldRemit

others. As of mid-2020, Tecno, Samsung, Huawei and Infinix are the most dominant mobile phone brands in Kenya.

In a survey done in November 2019 by Consumer Insight Kenya, Techno leads at 11.29%, followed by Samsung at 9.41%. Infinix at 4.89% is in third place, while Huawei is

Chinese-made mobile phones have seen impressive growth due to their aggressive marketing strategies and affordability.

fourth at 4.88%.

Other brands are itel, Spice, Apple, Oppo, Nokia, Xiaomi, Wiko, Alcatel, LG, HTC, Vivo, Sony, Motorola, Gionee, Outikel, Blackberry, Oneplus, Cubot, XTE, X-tigi, Asus, Pixel, Realm, Omobile, Blu, Azumi, Lava, Tesla, Cherry Mobile, Dooge, BQ, Tichips, iNews, Hisense and Karbonn.

Chinese-made mobile phones have seen an impressive growth in Kenya over the last five years due to their aggressive marketing strategies and affordability. South Korean

brands such as Samsung and LG have been struggling to fight off the onslaught of Chinese brands.

Apple, which is the most popular cellphone brand in the US, is not even among the top four in Kenya because of its high price and unpopular operating system.

Available data indicates that most smartphones in Kenya are in the hands of users aged between 25 and 34 years. The number of educated older users is also increasing with the introduction of useful applications such as banking apps.

At least 9.24% of smartphone users in Kenya use mobile phones with a screen resolution of 360x640. Android is the most popular operating system in Kenya with 87.42% of users having smartphones that run on Android.

According to the Kenyan news site tuko.co.ke, the top 10 smartphones in the country in 2020 have been: Tecno Spark four retailing at US\$90, Tecno Camon 12 (US\$125), Samsung Galaxy A20 (US\$160), Infinix Hot 8 (US\$123), Huawei Y 7 Prime 2019 (US\$155), Nokia 5.2, Huawei P20 Lite (US\$220), Oppo A83 (US\$190), Oppo Reno2 (US\$370) and Infinix S5 (US\$150).

Continued from page 16

may not have – especially in the back-office champion, ecosystem contributor or niche market master models?

“On back-office champion,” Creemers explains, “the winners will be reliable, trustworthy and have scale on payments solutions; banks have that, but other players will have difficulty to develop it.” As for the ecosystem contributor approach, in this model, the banks have to become easy to integrate with. In other words, “the ecosystem players that have innovated or those that orchestrated the ecosystems will choose partners for the payment services. They will choose banks that have a rich set of standardised services or APIs.”

“Niche market masters,” says Creemers, “will be driving ecosystem solutions in smaller, focused markets. They need to be highly skilled at focusing on their client segment pockets and very good at customer engagement

through integrating digital and human interaction in a seamless way for their customers.”

Branding is, of course, another issue, as the image of bank brands in the mobile payment market may not be as attractive and dynamic as that of (say) Vodacom, Orange or Safaricom. Could that be a problem? “Yes,” said Creemers, “and even more so the limited reach of banks compared to telcos is a problem. Banks will have to create a way to increase their reach by partnering.”

On that point, some banks and credit card companies have already formed mobile payment alliances with operators. Is this the way forward for African banks? For ecosystems he suggests it is important to quickly gain scale. “Scale is required to bring services at attractive cost and to attract the best partners to provide additional services on the platform. There is a network effect

It is important to expand beyond payments and banking into other use cases like education, healthcare and holiday services.

“Smartphone features, ease of use and affordability are what determines demand for smartphones, especially with the under-30 age bracket. Some young college students also consider some models status symbols among their peers,” observed Nick Mwangi, a software developer and data analyst based in Nairobi.

Smartphones are particularly important to college students. From writing term papers to general research on any subject on earth, internet-enabled phones have become every university student’s best friend.

From writing term papers to general research, internet-enabled phones have become every university student’s best friend.

“With my Huawei smartphone, I can access emails, download music and chat online without having to carry my laptop around. It also reduces the risk of theft as a phone can be safely tucked in the pocket,” says Jane Rotich,

a university student, currently undertaking her course through online studies following the closure of institutions of learning due to the Covid-19 pandemic.

For the young tech-savvy generation of students and newly employed workers, social networks such as Google +, Twitter, Instagram, WhatsApp and Facebook have become a focal point where fun and business meet.

According to Jumia Mobile Report 2019, Kenya has 91% penetration mobile subscriptions compared to 80% in Africa as a whole. Internet access through mobile phones recently hit 83%, underlining the increased adoption of smartphones in Kenya.

But smartphones are no longer the preserve of urban Kenyans. A recent random survey of 10 boda boda (motor cycle taxi) riders by Communications Africa at Ndunyu Trading Centre in Nyeri County – a rural area – found all of them with smartphones: four Tecno handsets, two Huawei, two Infinix, one Samsung Galaxy and one itel.

“Most of these riders are high school or college graduates. They are keeping up with the trends, socialising on social media

EXHIBIT 1 | The Global Mobile Financial Services Market

Transactional volume (\$billions)

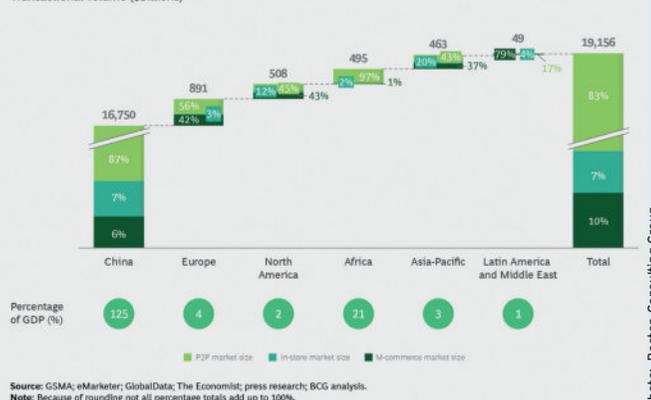


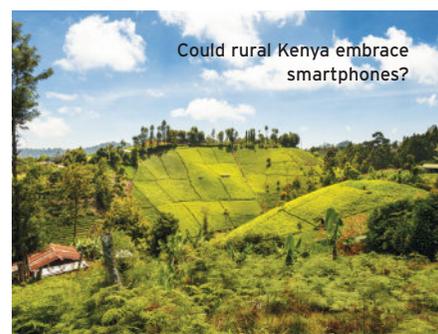
Photo: Boston Consulting Group

in payment ecosystems that is even more important, because the number of transaction possibilities goes with the square of the number of users.”

The report’s recommendations to banks also involves ‘other digital services’. What does BCG mean by this? “We believe it is important to expand beyond payments and banking into other use cases like education, health care, holiday services and at the same time to provide the integrated payments underneath,” Creemers explains.

Whatever else happens, banks will need to accept that mobile payment in Africa is pretty much unstoppable. “The main question,” says Creemers, is to what extent it will become the dominant payment vehicle with the same viral adoption that we see in China – with 900 million plus customers on Alipay and WeChat platforms.”

For more information on the BCG report *Five Strategies for Mobile-Payment Banking in Africa* go to www.bcg.com



Could rural Kenya embrace smartphones?

Photo: Adobe Stock

platforms as well as [using] betting apps. Smartphones have better utility compared to older handsets,” observed Mr Kariuki Nguru, a 26-year-old rider.

Interestingly, data from the Kenya National Bureau of Statistics (KNBS) shows that the importation of smartphones and other related devices such as laptops and computers has surged by 56.29% – from US\$50mn in the four months to July 2019 to US\$76mn over the same period in 2020.

As more people work from home and students have turned to e-learning services, clearly growth in this sub-sector has surged.

Opportunities in the Middle East and North Africa satellite market

Hamad Al Mannai is vice-president commercial of satellite operator Es'hailSat, a company with a growing interest in the Middle East and North Africa region. He spoke to Communications Africa about the satellite market in MENA, advances in satellite technology, and his company's plans for the future.

ES'HAILSAT, THE QATAR Satellite Company, is a communications satellite operator headquartered in Doha, Qatar. Es'hailSat was established in 2010 with the goal of managing and developing Qatar's presence in space. The company provides independent, high-quality, advanced satellite services to broadcasters, businesses and governments in the MENA region and beyond. Hamad Al Mannai, vice-president commercial of satellite operator Es'hailSat, recently discussed ongoing opportunities in the region with Communications Africa.

Communications Africa: Is satellite broadcasting a growing market in MENA? Why?

Hamad Al Mannai: Direct-to-home broadcasting in the Middle East and North Africa has predominantly been a free-to-air service on satellite. The Middle East and North Africa has a huge population but has low pay TV penetration. Other than a handful of countries in MENA, such as Qatar, UAE, Bahrain and Turkey, all other countries in the region have lower than 20% pay TV penetration. This will change over time as more and more premium content and channels enter the market – especially sports content.

Sports, news and entertainment channels are the most popular genres on satellite television in MENA. Demand for live sports content is always going to be high from sports fans, and with rights holders increasing their portfolio of sports feeds to be carried live in this region, satellite distribution will be crucial to support this growth. We have also noticed that consumer demands



Photo: Es'hailSat

Hamad Al Mannai: "We believe there is still room for growth for broadcasting via satellite."

for newer Arabic and Turkish entertainment channels have been on the rise.

Other than the few countries mentioned above, most other countries in the region come under the lower income bracket with little disposable income that they can use for other forms of content consumption, be it OTT or IPTV. Given the demand for sports, news and entertainment channels and the need for the majority of them to be in free to air, we believe there is still room for growth for broadcasting via satellite.

Communications Africa: How complex are the demands of satellite newsgathering? How do you meet them?

Hamad Al Mannai: Having instant access to news is very important for consumers and having live pictures of the events unfolding in high quality is even more important. For newsgathering teams, it is vital they have the right tools to take with them to any part of the globe and be able to send signals back to the studios.

Satellites are unquestionably advantageous for newsgathering services, due to their ubiquitous coverage, and the fact that they can reach any part of the globe – especially where terrestrial infrastructure is limited or non-existent. With advancements in technology, the newsgathering teams are able to travel to remote locations with portable

transmitters, to set up quickly and to be up and running in a matter of minutes.

Challenges come in various forms for newsgathering. They include lack of trained staff in the field to set up the newsgathering equipment, having pointing errors when transmitting to satellite, having inadequate satellite bandwidth available when required, managing multiple capacity bookings, etc. Having trained personnel on field addresses some of these challenges. However, we have trained engineers in our 24x7 control centre to guide the field team to get on to the satellite, to make sure the signal levels sent from remote locations to the satellite are as planned, to allocate satellite bandwidth as booked, and to monitor the signal from the satellite. Once the initial set-up is done, satellites will provide reliable connectivity and are the best medium to send signals from remote locations.

Communications Africa: Is satellite capacity ever a problem – or has it continued to meet demand?

Hamad Al Mannai: Frequency spectrum for satellites is a finite commodity. Hence, there is always a limit to the capacity available on a satellite or orbital location. However, utilising various frequency bands – such as Ku band, Ka band and C band – for different applications, we can meet demand from broadcasters and telecommunication companies and enterprises.

The long-term success of a satellite operator is dependent on building scale. Hence, having multiple satellites in adjacent or similar orbital locations is a prerequisite for commercial success; it also adds needed

Backhauling telecommunications services via satellite can connect mobile base stations quickly and cost effectively.



Photo: Adobe Stock

Corporates use satellites for fast and reliable connection.

capacity to support customer needs.

Technological improvements to ground equipment with improved efficiency enable customers to meet the said service requirements with less satellite capacity; this then enables satellite operators to support other customers with the remaining capacity.

In addition, innovations on satellite payloads – such as on high throughput satellites – also provide customers with improved efficiency to be able to get higher throughput of up to 400% from the same capacity. With all of the above and other innovations, satellites will continue to meet the capacity demands of the market.

Communications Africa: What business and corporate services do you offer that fixed or mobile cannot?

Hamad Al Mannai: The advantages of satellites are that they offer cost-effective, reliable, instantaneous and multi-point connectivity. For businesses and corporates with remote offices, they provide the best way for the HQ to connect, collaborate and

share critical information with remote personnel.

Corporates use satellites for fast and reliable connection through a private network to remote and offshore facilities to monitor remote assets and share important information.

Satellites keep remote workers connected to the enterprise network for internet, emails, voice, data and corporate network and office applications. The nature of the satellite network is such that it provides secure connectivity with high quality of service and with redundancies within a private network.

Communications Africa: Why is satellite backhaul an important part of GSM cellular provision in your markets?

Hamad Al Mannai: Communications requirements in MENA are expanding dramatically, with demands for connectivity anytime anywhere being a prime driver for telecom operators to expand service beyond urban areas. Expanding services beyond urban areas in MENA is difficult, given the vastness of land and harsh conditions in the desert

regions. It becomes difficult for telecom operators to justify the high expenditure of implementing, operating and maintaining terrestrial backhaul infrastructure such as fibre or microwave links.

In addition, backhauling telecommunications services via satellite can connect mobile base stations quickly and cost-effectively, bringing bandwidth to remote areas reliably. It can provide flexible and scalable solutions and can seamlessly connect any region within a coverage area.

Communications Africa: What sort of advances in satellite technology are on the way that could benefit your customers?

Hamad Al Mannai: Some of the advances that would help satellite operators – and ultimately customers – are electric propulsion satellites, high throughput satellites and dynamic software-defined satellites. Electric propulsion satellites cost less to manufacture and launch, due to the reduced mass of the satellite. This, in turn, can potentially reduce the cost per MHz for the customer.

High throughput satellites, as explained earlier, provide customers with improved efficiency to be able to get higher throughput of up to 400% from the same capacity. Customers are able to use less capacity for the

same throughput and hence provide improved service or improved price to their end users. Dynamic software-designed satellites are the next big step to providing customers with dynamic flexible focused beams to suit customer needs. This enables customers to better utilise the power from the satellite, to focus the beam on their area of interest and to switch it or redefine it if the requirements change.

Communications Africa: Which countries do you serve in Africa?

Hamad Al Mannai: Our main area of coverage is the Middle East and North Africa. In North Africa, we cover from Morocco in the West to Somalia in the East and the regions in the Sahara belt. At present we do not cover the sub-Saharan region.

Communications Africa: What is your coverage area today? Do you plan to expand it?

Hamad Al Mannai: Although the coverage with our satellites is currently limited to the Middle East and North Africa, we do cover other regions by extending our footprint working with our partners – mainly in the Indian Ocean region, and Southern and Eastern Europe.

We are also actively working to extend our coverage with new satellite programmes and partnerships. ©

Satellites keep remote workers connected to the enterprise network for internet, emails, voice, data and corporate network and office applications.

Can Ivorian operators meet growing data demand?

It's no surprise that mobile is the dominant form of telecommunications in Côte d'Ivoire - but better coverage - especially for data - would certainly be welcome in some parts of the country. However, things are changing - for both fixed and mobile communications - as Henry Lancaster, lead analyst on a recent report tells Vaughan O'Grady.

A RECENT REPORT* FROM research and consultancy company BuddeComm on telecommunications in Côte d'Ivoire notes that the country's fixed internet and broadband sectors have remained underdeveloped. This may not be a major surprise in a continent where mobile dominates, of course.

Henry Lancaster senior analyst for Africa with BuddeComm and also lead analyst on the report, explains that, in this case, it is largely the legacy of underinvestment in fixed-line infrastructure. "In addition," he says, "the incumbent telco Orange CI had a monopoly on access to cables serving the country, and so the pricing for services to most end users was prohibitive."

That said, the situation began to change after the landing of the ACE (Africa Coast to Europe) cable in 2012, while MTN's involvement in the West Africa Cable System (WACS) also improved international bandwidth.

Also, MainOne, in September 2019, completed a spur line to its submarine cable running from Lisbon to Cameroon. This spur line is connected directly to a data centre built next to MainOne's landing station at Abidjan.

As Lancaster points out, "There is always scope for new cables, particularly since MainOne links to partner networks covering inland countries (such as Burkina Faso). The greater the capacity, the lower the wholesale cost for backhaul. Admittedly," he adds, "this mainly benefits costs for mobile backhaul; the mobile sector accounts for 99% or so of all voice and data traffic. However," he says, "competition among the cable providers, coupled with improved bandwidth, has enabled operators such as Vivendi to invest in fibre broadband, believing that there is a business case - affordable access - for fibre in some urban areas. This would not have been viable without the additional bandwidth made available during the last three years."

As Lancaster has noted, mobile usage is more widespread in Côte d'Ivoire - but it isn't yet universal. Mobile penetration is dependent on the technology platform as well as the provider. The important dynamic is population coverage, rather than geographic coverage.

Unless spurred by coverage obligations determined by their licence conditions, or universal service obligation (USO) considerations, operators generally weigh up how many potential customers could be covered by investing in infrastructure in a given area. "Thus," says Lancaster, "for purely commercial considerations the more highly populated areas are serviced first. As of March 2020, GSM networks covered 92-94% of the population."

This applies mainly to basic voice. Basic data via 3G is less generous, ranging from 54% (operator Moov) to 91% (Orange). LTE can offer more, allowing for greater digital inclusion with m-commerce, for example, but coverage is as low as 34% (Moov), ranging to 55% (Orange again). Also

There is always scope for new cables, particularly since MainOne links to partner networks covering inland countries.



Photo: Adobe Stock

worth noting is the concentration of infrastructure in densely populated, urban areas; geographic coverage is 22% for Orange, falling to only 6% for MTN and less than 4% for Moov.

But, Lancaster suggests, there is pent-up demand for LTE, since data services and platforms such as m-money are based on LTE rather than 3G. And the paucity of fixed-line broadband makes mobile data the only option for the vast majority of the population.

"So" says Lancaster, "with only just over half of the population able to access a 'proper' mobile data service you can see how much more investment is required in infrastructure." That said, he adds, "There are options as a cheaper alternative to building more base stations. These can include refarming GSM spectrum for LTE, repurposing GSM/3G base stations for LTE, or creating a RAN wherein all spectrum assets can be used for any platform."

Not surprisingly, BuddeComm assumes that the mobile platform will remain dominant in Côte d'Ivoire for the foreseeable future. This is only partly due to the greater expense required for building fixed-line infrastructure.

"The main factor," says Lancaster, "is the continuing development or improvement of mobile services, which makes mobile a compelling medium for voice and data. Three MNOs in any well-regulated market are capable of providing effective tariff competition." There is also the One Area Network, which has eliminated international roaming charges among most West African states (further reducing the cost of calls and intended to stimulate business activity).

LTE for now provides sufficient capacity for customer needs, so 5G is not an urgent need. However, says Lancaster, "all three operators have the backing of their parent companies, and so the 5G lessons drawn from Orange Group, MTN Group and Etisalat in other markets will in time be translated to Côte d'Ivoire".

As for mobile finance, this requires considerable cooperation among players on several levels before the platform reaches a stage where it becomes a natural concept for customers and worthwhile for continuing investment for MNOs. This stage, Lancaster reckons, has

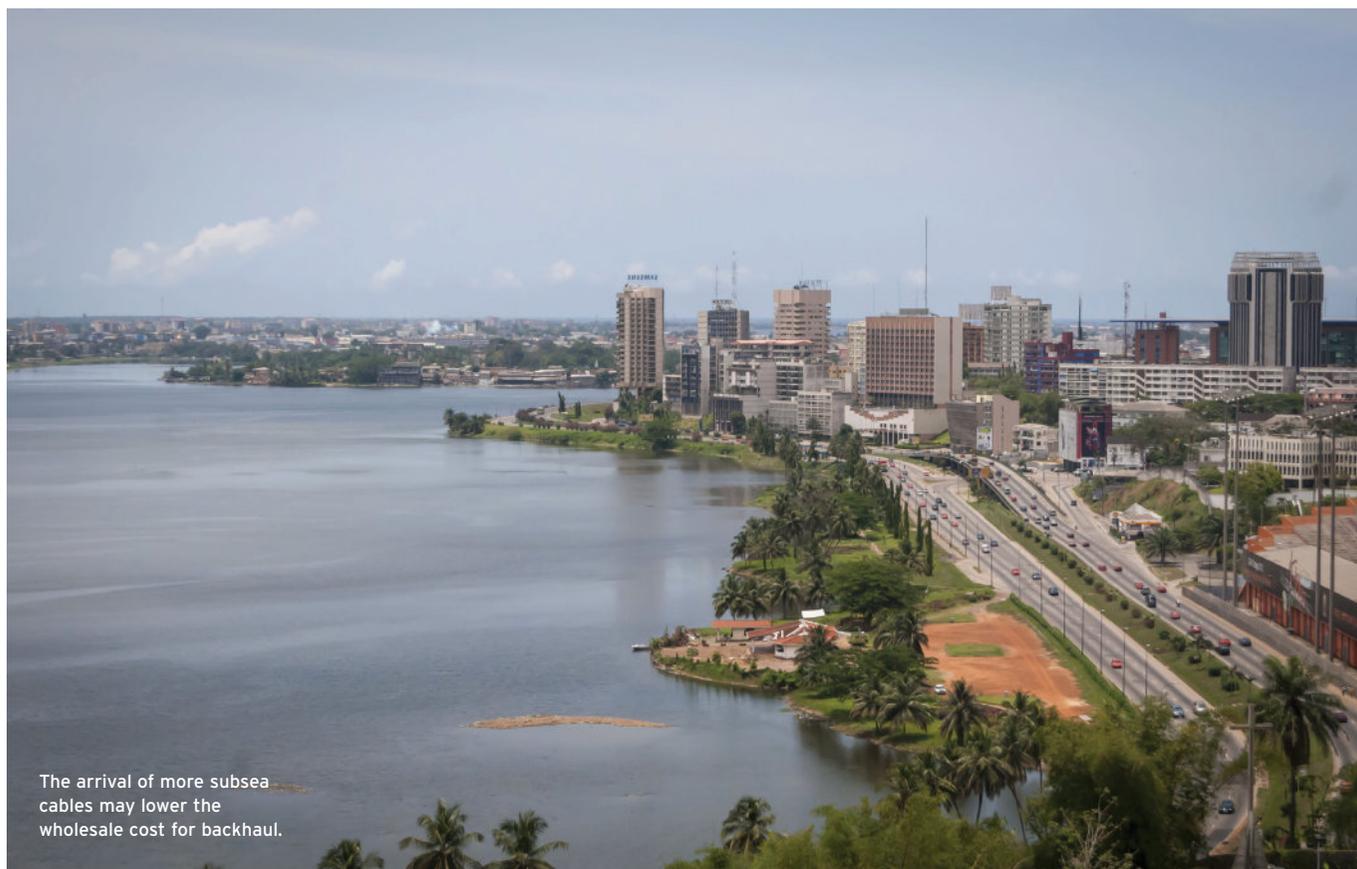


Photo: Adobe Stock

The arrival of more subsea cables may lower the wholesale cost for backhaul.

certainly been reached in Côte d'Ivoire. He says, "The regulator estimated that two-thirds of the population makes use of m-money services (including m-payments)."

Recently, Orange Group established Orange Bank Africa in a number of its West African markets. "Launching the bank in this region was logical for the group," says Lancaster, "given the close human ties between France and the ex-colonial countries – think of remittances – as well as the support which the French government gives to the banking systems in ex-colonial countries: the currency in some West African countries is backed by the French state."

M-money interoperability

To help the sector along (that is, improve the level of digital inclusion), the government last July began the process of implementing m-money interoperability, meaning that customers can make use of services across mobile networks and banking systems.

Lancaster explains, "The move formed part of the government's National Strategy for Financial Inclusion (SNIF). The government has its own fiscal interests to attend to as well: last February a new tax came into effect for all money transfers via mobile phones, including the MNOs as well as banks and other financial institutions. The tax was part of the Fiscal Annex to the 2020 Finance Law. The government noted that between CFA15 and CFA18bn (about US\$27mn and US\$32.3mn) circulates daily via money transfer services."

Lancaster says the Covid-19 crisis is having some immediate effects on the sector but points out, while economic insecurity could affect subscriber numbers, growth can be stimulated by general requirements for people to work from home. This could mean an increase in the demand for additional SIM cards for work purposes, though conversely it could mean a reduction in the number of SIM cards as people focus on core spending needs. "These pressures are likely to be most intense through to the end of 2020, though, are likely to retain an influence into 2021," he adds. Despite all these considerations, Lancaster says, "The net effect is expected to be

balanced, with only a moderate adjustment to forecasted growth. Demand for services – data traffic – is high but growth in subscriber numbers is muted."

General trend of lower tariffs

As for whether device costs are falling, BuddeComm does not carry out tracking of device availability for MNOs. But Lancaster does say, "We expect that the general trend of lower tariffs (influenced by competition and regulatory intervention), and hardware costs will continue in the long term. Any interruption to the trend affecting the latter would be a temporary response to difficulties associated with supply chains."

As for challenges in the coming year, he says, "Covid-19 may continue to place unfamiliar pressures on customer disposable incomes, while additional taxes will be burdensome. Otherwise, we anticipate that operators will capitalise on the additional bandwidth from the MainOne cable to offer improved services, with the side benefit of reduced end-user pricing. New infrastructure such as MainOne's new Tier 3 data centre has improved QoS."

Other developments that may support the sector include the November 2019 joint agreement – a charter – signed by telcos and which is concerned with peering agreements, QoS, internet speeds, and a reduction in the cost of carrying data.

All telcos in the country have been obliged to pass traffic through the CIVIX exchange since the end of 2019. However, the regulator and telcos (Orange, MTN, Moov, VipNet and YooMee) have agreed to build a new IXP, though no completion date has been fixed yet.

"This augurs well for the future, since the maturing telecom infrastructure supports the operators in their plans to expand the reach of their networks and the quality of services to customers," says Lancaster. ☺

**BuddeComm is a research and consultancy company, focusing on the telecommunications market. To read the BuddeComm report on Côte d'Ivoire: Telecoms, Mobile and Broadband - Statistics and Analyses visit www.budde.com.au*

Data: the currency of the future digital economy

In the second part of our interview with Angola Cables CEO António Nunes, we look at how subsea cable projects can benefit both participants and end users - and the continuing potential in Africa for subsea cable as data demand rises.

ANGOLA CABLES HAS played – and continues to play – a pivotal role in positioning Angola as a primary communications hub for the African continent. The installation and commissioning of the South Atlantic Cable System (SACS), for example, has provided a digital highway for governments, businesses and end users to connect to the rest of the world.

And, as António Nunes, CEO of Angola Cables, a telecommunications multinational operating in the wholesale market, points out, SACS has other benefits.

He says, “The fast, low-latency and secure connection provided by SACS presents many opportunities for developing countries in Africa to accelerate social and economic development across the continent.”

But that’s not all. SACS also provides a reliable redundancy option for telecom service providers and operators in Africa. Nunes explains, “The recent faults that impacted the delivery of services on the SAT-2 and WACS cables meant that by switching to the SACS cable many internet connections and services could be restored quickly and without hassle while the repairs were undertaken to the faulty cables.”

The company has also expanded its operations in Brazil, with investments being made into the data centre in Fortaleza, the upgrading of PoPs and seeking out new peering arrangements.

However, the evolution of the Angola Cables business has also been built on partnerships. The company has established agreements with the likes of De-Cix, Ciena, Nokia, Microsoft, Malaysia Telecom and others.

Nunes says, “These partnerships have been fundamental in expanding our network reach, capabilities and services. In doing so, businesses and customers connected to our global network can benefit from high-performance connections to the major telecommunication hubs from PoPs and international connection points connecting the major cities across the world. Customers using our SACS cable can benefit from an up to 60% improvement in latency and connection speeds when compared to other available traffic routings.”



Photo: Adobe Stock

The company has also been actively engaged in promoting improved internet traffic routing across the southern hemisphere, which will, in effect, be more direct than the traditional routings through European exchanges.

Impressive though these achievements are, Nunes adds, “While Angola Cables has made many advances, there is much still to be done; therefore we are constantly looking for solutions to broaden our network and efficiencies.”

Angola Cables is also a regular contributor to the various think tanks and programmes that are hosted under the banner of the World Economic Forum and ITU. “We aim to play a contributory role in shaping the future of telecoms on the continent and we are committed supporters of the 17 Sustainable Development Goals as prescribed by the UN in working towards a more equitable world,” says Nunes.

He continues, “More recently the company has been actively seeking out opportunities where our network and services can promote co-operation and collaboration, not just in

Africa but across continents and sectors such as agriculture, telemedicine, research and endeavours that can promote a more inclusive digital future to the benefit of all.”

Returning to the many subsea cable projects now under way, an important question is who benefits and how. For example, what is the business opportunity for participants in such projects?

Nunes says, “There are multiple benefits and advantages to business partners, resellers, CDNs, ISPs, edge and cloud service providers and the like in expanding digital ecosystems across the world and across the continent of Africa. With Angola Cables providing the backbone connectivity to many of these providers, digital connectivity and related services can be enhanced and advanced.

There is also, he suggests, a growing need for collaboration and cooperation. “The evolution of the Internet of Things will see many more sectors of industry – from automotive to agriculture – relying on digital data and solutions to improve business and manufacturing processes. In the field of collaborative research, companies such as Angola Cables can play a primary role in providing connectivity between different research bodies – from academic to medical research. This is all being made possible by the subsea cable networks that exist in our world today.”

The global Covid-19 pandemic underlined the value and importance of digital connectivity.

Continued on page 25

What is driving data centre investment in Africa?

Datacentrepricing.com (DCP), which provides analysis and research worldwide on the data centre industry, recently launched a new report on data centre activities across Africa. As Keith Breed, DCP research manager, tells Phil Desmond, there are still challenges for new data centre developments, but more investors are now entering Africa.

ALACK OF FIXED lines, regulation and power would once have made investors in data centres think twice about moving to Africa. However, growing activity seems to indicate that investors are no longer deterred. What has changed?

Keith Breed, research manager for analysis and research group Datacentrepricing.com, which has just reported on the growth of the African data centre market*, agrees that there are still infrastructure challenges for new data centre developments, but says investors are now entering Africa. “The market for third party African data centres is still at an early stage of development – but it is becoming more mature,” he says. “It is also attracting private equity funds and funding from Interxion (a Digital Realty company) looking for new facilities as an investment [and]

attracted by the growth in demand for space and the potential for digital commerce.”

And costs seem to be coming down. “Over time in most established markets rack space rates tend to be stable,” says Breed. “Although well-connected data centre providers (including Equinix or Interxion) charge a consistent price premium when compared with the market average – based on their superior connectivity – average rentals across the market are stable as lower-cost regional providers also enter the market with lower-priced offers.”

However, as he points out, “In Africa average rental rates are higher as there have been fewer entrants, with the exception of South Africa. As new data centre providers enter individual markets our expectation is that average rental rates will fall.”

As for areas driving this business, demand is coming from cloud solution providers (CSPs), content providers, hosting, telecoms and broadband providers. “Governments are also starting to use third party data centre sites rather than build their own facilities and are moving to the cloud,” says Breed. “Enterprises are using third party facilities, but in most cases are not large users of African data centre space.”

The carrier-neutral data centre segment is emerging in a number of countries, including Ethiopia, Senegal, Uganda and Zambia. However, the most established carrier-neutral data centre provider is Teraco Data Environments (South Africa) offering NAPAfrica [a not-for-profit neutral internet exchange (IXP)] and cloud interconnects. “Telecom providers account for 45

percent of total third party data centre facilities with the carrier neutral data centre accounting for 27% of facilities,” says Breed.

Africa is still a new market for CSPs, with Microsoft Azure Cloud first opening in Africa in 2016 followed by AWS and others. There is a wide range of resellers, particularly telecoms providers, who are reselling into the SME segment throughout the continent.

Breed adds, “Although cloud services in Africa can be more expensive than in other regions, DCP believes there is considerable suppressed demand for pay-as-you-go storage and computing services offered by the cloud in Africa.”

Another factor that plays a part in driving growth is pre-fabricated modules (PFMs), which are widespread in Africa. Breed explains, “Data centre modules can be built and equipped off-site and delivered to Africa for installation. PFMs can be used for a mix of services, including network, mobile base station and collocation services. They were first installed by mobile operators such as MTN, Tigo and Vodacom with some space available for collocation services. PFMs can be a low-cost and quick way of putting small amounts of collocation space in new locations.”

As for where these locations are, large data centres to date have been located close to existing population centres in large cities – due mainly to the availability of power and fibre. “Areas with power sub stations and resilient power supplies are receiving investment. Data centres are also being located close to subsea cable landing stations,” Breed adds.

In Africa average rental rates are higher as there have been fewer entrants, with the exception of South Africa.



Photo: Adobe Stock

The carrier-neutral data centre segment is emerging in a number of countries, including Senegal.

Continued from page 23

As for the benefits of such networks to end users and governments, he points out, “The future global economy is a digital one and data will be the new currency. It is therefore important for governments and players within the local and international telecoms sector to cooperate and collaborate – especially when this comes to bridging the divide between those on the continent of Africa who are connected and the many millions of people that still need to be provided with affordable, secure connectivity.”

He continues, “Digital connectivity will be the conduit towards providing the access and benefits that are available within the rapidly evolving digital economy. Through the Angola Cables’ network, customers have access to a range of international connectivity, data centre and cloud computing options and services.”

And there is still a lot of potential in Africa

Recent faults and outages underline the need for redundancy options on cable networks.

As for data centre interconnection across countries, to date there are few networked data centres across African borders, and investments by Liquid Telecom (Africa Datacentres), Actis and Fast Brick Holdings (FBH) are yet to develop networked facilities across African countries. That said, “Interxion (a Digital Realty company) has acquired a majority shareholding in Icolo – with data centres in Mombasa and Nairobi, Kenya – which may become part of the PlatformDIGITAL interconnection fabric in the future.” PlatformDIGITAL is a global data centre platform developed by Digital Realty.

So what is the present state of play? At the time of writing half of the countries in Africa have launched third party data centre facilities but to date South Africa alone accounts for 54% of African third party data centre space. However, that proportion is forecast to decline to 45% by 2025. The country remains the main hub for the cloud on the African continent. “It has been boosted by the attractiveness of South Africa as a content and cloud location, with connectivity and wholesale space

To date there are few networked data centres across African borders.



Photo: Angola Cables

Antonio Nunes CEO Angola Cables: “Partnerships have been fundamental in expanding our network reach.”

for subsea cable, not least after the global Covid-19 pandemic underlined the value and importance of digital connectivity. Such connectivity is essential in keeping

continents, countries, communities and enterprises connected, Nunes argues, and he notes, “Subsea cables are responsible for the transmission of more than 99% of all data in our digital world and will continue to play a major role in being the carrier and conduit for the expansion of future digital ecosystems – be these mobile, network or cloud solutions.”

However, he warns that we must not be complacent. “At the same time, the recent faults and resulting outages experienced on the Sat-3 and WACS cable systems also underline the need for redundancy options on cable networks to ensure the continuity of services.”

The global demand for data will continue to rise as more people and devices are connected to the Internet of Things. This demand will require bandwidth and as many of the older cables are decommissioned there will be a continued demand for subsea cable infrastructure. As a company, says Nunes, “Angola Cables is well placed to offer capacity and services to business and commerce as well as the backbone infrastructure to manage and cater to the growing demand for digital content.” ©



Photo: First Brick Holdings

Raxio Data Centre Uganda on the outskirts of Kampala.

provided for CSPs by Teraco Data Environments,” Breed explains.

But other countries are nevertheless attracting interest. Breed says, “East Africa is seeing investment in new data centres – particularly Kenya – with investment made by Interxion and in Icolo. Interxion is also partnering with PRIF (Pemani Remgro Infrastructure Fund) to invest in Africa.

Ghana is seeing investment by PAIX (Pan Africa Internet Exchange) in Rack Africa and

by Ngoya Etix.

Nigeria is seeing investment in Rack Centre from private equity fund Actis, which intends to allocate US\$250mn in data centre investment across Africa. So there is scope for further investment in African data centres from a number of private equity and investment funds.” ©

**More information on DCP and its report, The Cloud and Data Centre Revolution in Africa, is available on the DCP website at: www.datacentrepricing.com.*

Internet access via Wi-Fi: can Lagos lead the way?

Akin Marinho is an entrepreneur - and Fiam WiFi is his company. It's hoping to attract Nigerian consumers with a low-cost Wi-Fi service that also represents a viable business model. Marinho told Vaughan O'Grady what stage Fiam WiFi is at now - and where it hopes to be very soon.

IN OUR LAST issue we briefly mentioned Project Isizwe. This is an award-winning, non-profit organisation which works with the public and private sector to bring free, public Wi-Fi internet access to low-income communities across South Africa.

The potential role of telecommunications - in this case Wi-Fi - in allowing people to access the internet cheaply, with all that implies for business opportunities and information transfer, has not been lost on companies in other countries either. Take Fiam WiFi, for example.

Fiam WiFi is one of Nigeria's newest telecommunications companies, providing internet via hotspots to underserved communities that have been, as the company puts it, short-changed for internet by incumbent operators.

The company's business is based on a disruptive way of delivering internet access to communities based on proven Wi-Fi technology. This is a strategy focused on driving down the cost of delivery and ensuring integration into the communities Fiam serves by actively driving digital inclusion through partnerships with healthcare and educational providers of content.

As the company's website puts it, "Our DNA is designed to maximise social impact alongside a financially sustainable model."

Akin Marinho is founder and CEO of the company. He has more than 20 years' corporate legal experience in the United



Getting connected: thousands of Wi-Fi hotspots are coming to Lagos

We hope to install thousands of Wi-Fi hotspots all over Lagos and throughout Nigeria, making it more affordable for the average person to access the internet.

Kingdom and Nigeria, having worked at law firms and investment banks in London and Lagos. He's also an entrepreneur - and Fiam WiFi is a business he feels has a future in Nigeria.

Of course the first and most obvious question is: Why Wi-Fi? What are its advantages over traditional cellular - which is widely used in Nigeria, though smartphone take-up is still modest - for internet connectivity?

"The main consideration for us was cost," says Marinho. "It's much affordable to deploy a Wi-Fi network than a traditional cellular or LTE network. These are the most common forms of connectivity in Nigeria. However, with Wi-Fi, we don't have to get an expensive licence."

It's clearly a reasonable argument but how enthusiastic is the market? Is Wi-Fi widely understood and used in Nigeria?

As Marinho points out, public outdoor Wi-Fi is a fairly new service in Nigeria; not many establishments offer Wi-Fi to their customers. "But," he says, "we hope to change that by installing thousands of Wi-Fi hotspots all over Lagos and throughout Nigeria, making it more affordable for the average person to access the internet." Of course installation is only part of the service, given that Wi-Fi is not well-known in Nigeria. "As Wi-Fi is still in its infancy we do have to educate people on its limitations," Marinho explains. "Many people who use our outdoor community Wi-Fi complain that the signal doesn't get into their homes. So we have had to educate people on Wi-Fi and how it's used."

Residents of Lagos will no doubt also be able to point out potential practical problems with rollout of Wi-Fi in high-density areas - problems like power, connectivity and limited



Fiam WiFi is spreading the message to residents of Lagos.

coverage. Of this list Marinho notes that power is the main challenge his company encounters in Nigeria. “Reliable and stable grid power in Nigeria is a problem for all businesses. In order to mitigate that we power our network using solar, inverters and batteries. We want to be zero carbon-neutral in our operations.”

That said, Wi-Fi coverage is obviously an issue as each hotspot has a fairly limited radius of 100 metres, so the company will need to install more hotspots. “We will, though, be meshing our network as we roll out more hotspots” [wireless mesh networks are a way of extending signals via nodes].

You might expect there to be regulatory issues, but apparently not. Marinho says, “The Nigerian Communications Commission is one of the foremost telecom regulators in Africa. It



Akin Marinho: It's much affordable to deploy a Wi-Fi network

We are finalising plans to bring in our own branded devices for a competitive market price under US\$100.

has had decades of experience in regulating one of the most dynamic telecom markets in Africa. We have had audits by them and we have attended a few of their stakeholder events and consultative fora. We have a cordial working relationship.” He adds, “The NCC just approved our new pricing of US\$0.50 cents for 1 GB of data without validity or expiration period.”

The Wi-Fi iteration in this case is Wi-Fi 5. Marinho confirms that there is limited penetration of high-end devices, saying, “Android devices are pretty much the standard in Nigeria and we are dealing with lower-income earners, so they typically have older clunky Android phones that use up a lot of bandwidth and slow the network down a little.”

On the other hand if the market won't come to the devices you could bring the devices to the market, if you can offer a decent price – and that's what Marinho is hoping to do. “We are finalising plans to bring in our own branded devices for a competitive market price under US\$100,” he says.

That all seems reasonable, but what is the business model? “It's a very simple model for Lagos,” says Marinho, pointing out that Lagos has a population of approximately 22 million. He explains, “If you then strip out the HNI [high-net-worth individuals] and middle classes and those that are maybe very elderly or too young you have an addressable market of 10 million people. If we can get 10% of that as our paying customers monthly buying US\$1

of data from us the maths is quite convincing. It's a numbers game for Africa's most populous country.”

In addition, the company drives down the cost of delivering the service by integrating into the communities it serves. “We essentially build community networks,” says Marinho. “Our strategy involves leveraging on the community by employing as far as possible only personnel who are from the community.

“We also leverage on the community by using community buildings to host our equipment. All of these factors enable us to drive down the cost of delivery of connectivity to our communities and have enabled us to offer data at 0.50 US cents for 1 GB.”

It's all a matter of finding the right market and the right business model, it seems. In this case, an advertising-led model is of limited use. Akinho explains, “Our target customers – those in the high-density, low-income areas of Lagos and rural communities – are looked on as non-consumers by the big players who advertise goods and services, as they consume very little and are thus probably not a target segment for their marketing teams. I think though that a few other WISPs have tried that advertising model and haven't been successful. The advertising model works where there is a discernible middle class.” That said, he adds, “We will get there in the medium-to-long term as the Nigerian middle class moves from single to double digits as an overall percentage of society.”

NigeriaCom and the virtual event calendar

NIGERIACom 2020 TOOK place in September - but virtually - focusing on a number of points Nigerian telecoms might need to address in the coming years.

The topics highlighted by the event's organiser Informa included Nigerian tech's response to Covid-19, MNO strategies, Nigeria's power problem and the role of satellite.

For mobile technology company Upstream, which helped kick off the event as part of a panel entitled The Future of Nigerian Telecoms - Exploring Telco & MNO strategies, there is clearly tremendous potential for MNOs to drive change and close the digital gap.

As the company points out, with low penetration and prepaid connections dominating the country's mobile market itself is on a dynamic upward track. According to data from the GSMA, out of 179 million connections, 96% are prepaid, with only 7.7% of those 4G-enabled. Market penetration is also less than 50%, with just over 102 million unique mobile subscribers out of a population of 206 million.

Not surprisingly, Upstream's focus was on its business model: Zero-D, an online platform that allows MNOs to offer free, ad-funded access to key internet services when their users have run out of data. It seems to have been useful during the pandemic which, the company pointed out, has forced a shift to digital, underpinned by the closure of physical stores and some call centres.

An interesting point, and one we can expect to hear more and more in future,

is that with digital transactions becoming the new norm for consumers, MNOs need to look into ways to capitalise on this trend and digitise their portfolio, improve their customer reach, reduce churn and increase ARPU.

For Upstream the vast reach of mobile network operators in Nigeria highlights the potential in advertising when it comes to driving revenue for operators, though the company added that to eliminate fraud, protect their customers and revenues, and stay ahead of regulation, MNOs must always add a layer of security across their digital offerings.

NigeriaCom was made exclusively virtual for the first time ever due to the Covid-19 pandemic. It regularly brings together more than 650 executives and digital tech leaders to discuss the region's digital economy.

The question, inevitably, is how much this changes the dynamics of conferences and whether they remain relevant. Certainly a number of companies appear to be adopting a virtual event schedule and even hiring virtual booths at events. We will no doubt see how the conference and trade show ecosystem is adapting to the changing environment in which it operates when AfricaCom 2020 arrives. It will run from the 9th to the 13th of November and it will be another virtual event.

The choice of virtual events or no events is unlikely to change until sometime next year. However, it will be interesting to see whether the virtual experience continues and in what form when the pandemic eases enough to permit international travel.

How satcoms support mining

At the Boffa port in Guinea, where 3G and 4G connectivity is poor, mining ships need reliable satellite communications. Pieter-Paul Mooijman of iDirect tells Ron Murphy how this can be enabled.

ENSURING RELIABLE, HIGH-SPEED connectivity to mining ships based in Guinea isn't easy. Vessels move from the mouth of the river Pongo in Guinea to the Port of Conakry. Occasionally they will exit that area, but the main service is provided there.

The vessels and their crew require constant and reliable communications to keep in permanent contact with their headquarters on land, and with other shipping vessels during operations at the Boffa port in Guinea. However, 3G/4G connectivity is poor and internet services are limited.

That's why ST Engineering iDirect, which provides satellite communications technology and solutions, recently announced that its long-term customer Paratus, which provides satellite connectivity across Africa, had deployed its iDirect modems – with marine antenna from manufacturer and integrator KNS Inc – on these ships.

The satellite solution is a viable one for these ships, but there are challenges – for instance, handover between satellites. As Pieter-Paul Mooijman, regional vice

president, Africa, at ST Engineering iDirect, says, "This is GEO [geostationary satellite] connectivity, and handover between satellites is managed through OpenAMIP-enabled hardware and our built-in advanced mobility capabilities."

OpenAMIP is an IP-based protocol, a specification for the interchange of information between an antenna controller and a satellite modem. Mooijman explains, "It allows the modem to command the controller to seek a particular satellite and allows the modem and controller to exchange the information necessary to permit the modem to initiate and maintain communications through the antenna and the satellite for seamless connectivity."

The ships were installed with the iDirect modem and KNS 1.2m Maritime Antenna Z12Mk2 in Shanghai, China. Paratus remotely configured the modems and commissioned the antennas for the ships when they arrived in Boffa. Installation, however, was not always straightforward. "The first vessel was a bit challenging because installation took place in February and our team could not travel to the site. We had to



Photo: iDirect

All aboard for satellite connectivity.

remotely guide our local VSAT installer, who had very little experience of maritime VSAT. The second vessel was quick, once the local and remote team had better knowledge. The third had some line-of-sight issues that we managed to solve using a satellite with higher elevation."

Of course, there was a completely unforeseen challenge too. "The first installation was completed pre-Covid-19. Installation of the antennas on the second and third vessel was carried out in Shanghai during the pandemic. Modem installation, commissioning and LAN using router and APs were completed in the port of Guinea during the early stages of Covid-19."

The Ku-band portion of the spectrum is being used for this service. The main vessel and crew requirements were messaging apps, "which are used professionally to communicate with the team on the ground or HQ offices and personally on their leisure time". The real-time communications are based mainly on WeChat and WhatsApp, with high bandwidth required for some

YouTube applications.

Cellular continues to reach remoter areas but Mooijman believes that opportunities like this one in Guinea will remain strong. "Cellular is quite limited in rural Africa and rural coastal Africa," he explains. And, of course, satellite also provides security based on an independent connectivity source.

In addition, the demands of maritime connectivity are growing. "As digitisation in the maritime environment increases, leading to more functions taking place in the cloud, more automated processes on board the vessel, and the ever-growing need for crew connectivity, a variety of communications approaches will be required to work in harmony to create the most robust connectivity solution."

Not just satellite but cellular could be involved. Mooijman explains, "Adding cellular into a hybrid solution, where available, only strengthens the solution, and companies like Paratus are well-placed to manage the overall network to meet each of their customers' unique needs." ©



One of the mining ships supplied by iDirect and its partners.

Photo: iDirect

How network deployment affects optical fibre cable manufacturing

How is it that almost one-tenth of the output of fibre is not even making it to new networks? The answer lies in how networks are typically deployed. Ron Murphy takes a closer look at packing scrap and its impact on fibre lengths.

FOR MORE THAN three decades, optical fibre cable manufacturing units have been serving as the backbone of telecommunications networks around the world. From 3G rollouts to the upcoming 5G infrastructure, optical fibre continues to be the essential ingredient empowering data networks in the 21st century.

In 2018 alone, the world's communications networks consumed 512 million fibre kilometres of optical fibre cable. Interestingly, 556 million fibre kilometres of optical fibre was manufactured to cater to this cable requirement. It is often asked why global fibre production is usually 8-10% higher than the global cable consumption, precisely in terms of fibre kilometres.

In a world that is hungry for fibre, how is it that almost one-tenth of the output of fibre is not even making it to new networks? The answer lies in how networks are typically deployed, and in turn, how this affects optical fibre cable manufacturing.

In building a single part of an operator's telecom network, a constellation of engineers, technicians and labour spanning one or more network integrators and infrastructure vendors is involved. Considering the complex ecosystem and tough conditions, certain standard practices have been adopted to streamline network installation projects.

While planning a network rollout, network installers consider everything from installation distances and terrain characteristics to infrastructure availability. This ensures easy handling, minimal damage, higher speed, and better network quality.



Photo: Tomislav Jakupec/Pixabay

The world's communications networks consume millions of kilometres of optical fibre cable every year.

This comprehensive planning also includes the engineering of the cable, including its material, weight, and lengths, apart from obvious characteristics, such as fibre count, the characteristics of optical fibre and so on.

Standardisation is the key to reducing the risk of in-field failures, which can be costly in terms of time, labour and capital. For outdoor cable networks, the most commonly used cable lengths are 1 km, 2 km, 3 km, and so on. In order to allow some extra cable length on hand, operators often allow some flexibility in length. It is worth noting that these

cable length requirements may vary in different regions across the globe.

For example, in India, one telecom operator specifies lengths of 2 km / 4 km / 8 km / 10 km with a flexibility of $\pm 10\%$, whereas another specifies that cable lengths be $3 \text{ km} \pm 10\%$. In practice, only $+ 10\%$ is acceptable, as shorter lengths can cause productivity losses during deployment.

In order to meet the target cable lengths, optical fibre cable manufacturers must produce cables of slightly greater lengths. The usual practice is to target 5-

10% extra length for the cable to achieve a minimum 2 km cable length. This means that, for a requirement of 2 km, the target cable length should be 2.1 to 2.2 km. The excess length ensures that the cabler is able to deliver a minimum 2 km length to the customer or network installer in the field, taking into account losses and damage.

The optical fibre cable lengths, as specified in the purchasing document of the user, depend on the specific application requirements – for example, installation distance, installation techniques, weight of the cable, easy handleability and easy transport. The length of the cable can vary from 100m to 12 km in a drum. The most common lengths for outdoor cables are 1 km / 2 km / 3 km and so on.

For cable manufacturers, it is important to procure the right volume of commercially usable optical fibre.



Photo: Adobe Stock

Optical fibre continues to be the essential ingredient empowering data networks.

For cable manufacturers, it is important to procure the right volume of commercially usable optical fibre. Therefore, cable manufacturers must share specifications that state the precise minimum length of fibre – along with acceptable increments. For instance, 2.1 km, 4.2 km, 6.3 km and so on take into account the required length plus excess cable.

Since optical fibre manufacturers do not have absolute process control over the length of fibre that will be coiled, they must prepare fibre spools as close to (but greater than) an acceptable multiple of fibre length ordered by the cable manufacturer. In most regions of the world, fibre spools are in the range of 25.2 km to 50.4 km of optical fibre.

Once received, cable manufacturers can cut longer spools of fibre into 2.1 or 2.2 km increments and prepare them for cabling. The length that precisely meets the specified multiple is considered commercially usable. Therefore, any residual length of fibre in the spool is not commercially usable and has no commercial value.

For instance, in a 27 km spool, 1.8 km (27 - 25.2 km), is commercially unusable and considered packing or testing scrap. It is used for testing the

optical properties of the fibre in the spool and is rendered scrap during the winding or ramp up or ramp down process.

The higher lengths allow for more cable efficiency and less scrap of fibre. However, any deviation from a precise multiple of 2.1 km or 2.2 km (or any other multiple as specified by the cabler) means that the commercial length of the fibre spool will be measured to the lower increment.

For instance, a 42 km fibre spool will be measured as 42 km of commercial length, since it is a multiple of 2.1 km. However, a 43 km fibre spool will also be considered only as a 42 km of commercial length, since it falls short of the next increment, i.e., 44.1 km and the unusable extra 1 km (43 - 42 km) fibre will be declared as packing scrap.

The excess fibre is neither marketable independently nor commercially useful for the customer, since it is less than any typical acceptable length of cable. However, it is critical in the fibre

spool to ensure that the customer can meet the minimum cable lengths it plans to manufacture, while still having adequate length to test the fibre, and compensate for losses during ramp up and ramp down.

Given the complex interdependency of the length of strands of optical fibre in network rollout practices, short or residual lengths of fibre have no commercial value. However, instead of simply being scrapped and disposed of by optical fibre manufacturers, these residual lengths in the form of excess length are shipped to cable manufacturers to ensure higher precision and success rate in downstream cable manufacturing.

As such, the value of excess fibre, non-commercial and non-marketable by itself, is implicit in the overall price charged to cable manufacturers. The optical fibre is cut into small pieces during cable manufacturing. The length of the cut piece is matched with the end cable length. Additionally, some length of extra fibre is kept for

testing, repair, and rewinding or recoiling purposes. Most of the time, it is entirely consumed during testing or recoiling.

Cable manufacturers pack about 0.5% extra fibre inside the cable to ensure that no individual fibre strand in the cable is shorter than the entire length of the cable. In some particular cable designs like loose tube designs, where fibres are loosely placed inside a hollow tube, the length of the fibre inside the tube is typically 0.2-0.3% longer than the cable length. This is also known as excess fibre length of cable. Excess fibre length is a critical cable design parameter, which controls cable performance in extreme weather conditions and under high tensile load. Of course, an optical fibre cable may have anywhere between 1 and over 5,000 fibre count. As such, every single strand of fibre must meet the target cable length. Any strand of fibre that is shorter is a waste.

The 2.1 - 2.2 km length multiple is a mandatory requirement for efficient cable production, and is the global standard practice followed by all cable producers who require an excess 100 - 200 m fibre length. This excess fibre length is required to ensure the final finished cable length achieves the minimum 2 km target sales length.

Many cable customers do not allow delivery of any short cable lengths, and hence it is essential that the starting fibre length cable is longer than the finished cable length. This excess fibre length is required to cover ramp up and ramp down losses during the various cable manufacturing steps, and any subsequent length mismatches between all the individual fibres inside the cable.

As manufacturing efficiency improves, fibre breakage reduces, and fibre yield accuracy is enhanced, manufacturers of optical fibre and optical fibre cable will be able to manufacture precise lengths of cable with minimal wastage of raw materials. Technology will play a major role – not just in fibre rollouts and network infrastructure but even in optimizing fibre manufacturing and production. ©

Excess fibre length is a critical cable design parameter, which controls cable performance in extreme weather conditions and under high tensile load.

Hard times, smart investments

Smart cities won't just help local governments to deliver more efficient services. They could also save lives. Simon Fletcher, CTO of independent wireless advisory firm Real Wireless, explains how.

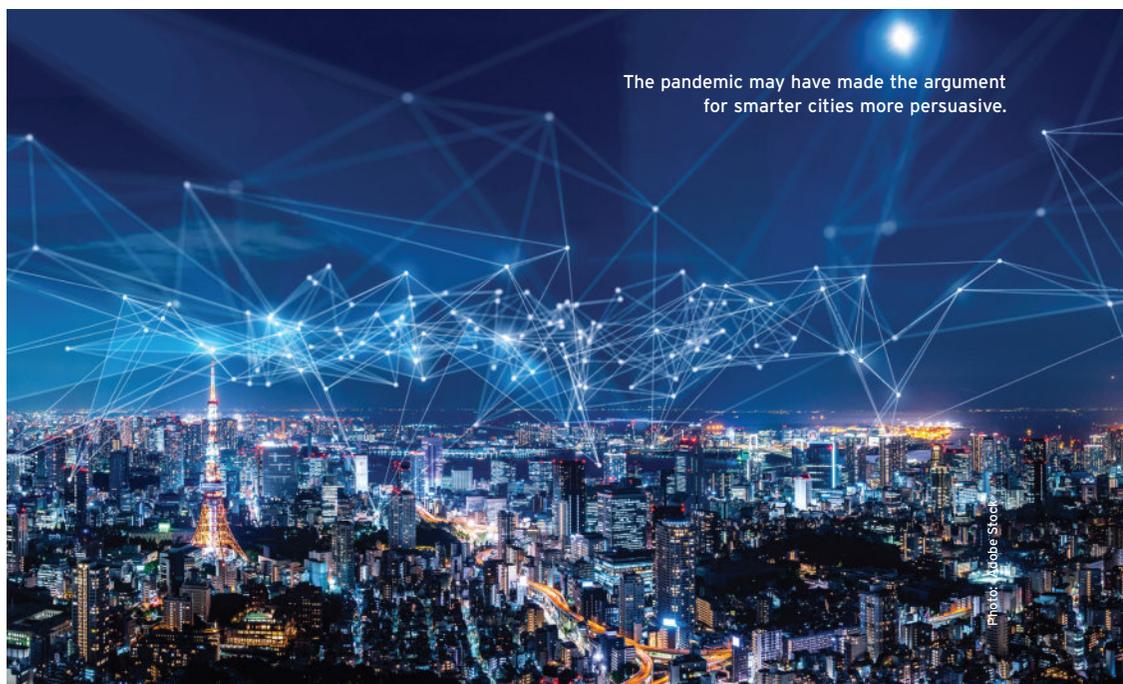
IT'S BECOMING A bit of a cliché to suggest that Covid-19 has created inflection points that will change behaviours forever. Nevertheless, right now the collection and analysis of huge volumes of data is accepted as key to bringing the spread of the virus under control – and those communities with the connectivity infrastructure and technologies to do this best have fared better than those that have struggled to keep up.

From healthcare apps that enable access to services to the mobilisation of city-wide screening systems, governments and public service providers are seeing the concepts and theories of connectivity benefit materialise, with health and socio-economic paybacks that can be associated with the digitisation of urban life.

In particular, the argument for smarter, safer and more digitally integrated cities seems more persuasive.

Until recently, there have been four main barriers to a more general adoption of smart city strategies. First, public unease about infrastructure that implies any kind of surveillance culture. Second, the availability of reliable, universal connectivity. Third, standardisation of connectivity infrastructure that can ensure the interoperability of a plethora of systems and devices. And finally, a business case that convincingly underpins such significant investment.

Most of these barriers have been eroded over recent months. The business case for investing in high-quality, interconnected network infrastructure for cities now seems glaringly obvious. While the use of tracking apps, thermal cameras, IoT sensors and



AI are not in themselves enough to defeat a pandemic, as recent events in China have shown, their application and integration in urban settings can lead to accurate real-time data on the life cycle of outbreaks, enabling better management, the mitigation of risk and the preservation of higher levels of normal economic activity.

Even a small percentage improvement to the significantly greater economic damage from Covid-19 to regional economies makes the price of strategic investment in smart city infrastructure seem trivial.

The pandemic has also demonstrated that, if the need for specific data becomes sufficiently compelling – i.e.,

sharing particular data is evidently in the best interests of the individual – most citizens are prepared to sacrifice their privacy to a surprising degree.

This is already apparent where the concepts of 'smart city' and 'safe city' collide. For example, since 2009, Mexican operator Telmex has partnered with security firm Thales in a state-sponsored safe-city initiative that reduced auto-theft by almost 60% and overall crime in parts of Mexico City by more than 50%. Telmex used its network to link some 15,000 CCTV cameras, panic buttons and loudspeakers not only to reduce crime, but also to alert citizens in the event of natural disasters like earthquakes.

Similarly, edotco has led the way among developing nation towercos by deploying small cells in street furniture in Sri Lanka, Malaysia and Bangladesh, not just to monitor traffic congestion but also to help prevent crime and terrorism.

These approaches have proved popular with both state and citizens. There are hundreds of similar examples globally.

During the current crisis, in March the EU Commission asked mobile operators to share data with the Commission to track virus spread and determine priority areas for medical supplies. Similar initiatives have been reported in Africa, MENA and Latin America. This approach has been taken to the next level in China, Taiwan and South Korea, where personal smartphone location data is also used to trace the contacts of individuals who have tested positive, or to enforce quarantine orders.

The collection and analysis of huge volumes of data is key to bringing the spread of the virus under control.

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Orange introduces Sanza Touch smartphone in Africa

TELECOM COMPANY ORANGE has announced the launch of Sanza Touch, an exclusive affordable 4G Android (Go edition) smartphone, in Africa.

This launch is supported by Google and builds on efforts since the launch of Android (Go Edition) in 2018 to accelerate the pace of digital adoption across the continent. The device will retail at around US\$30, which is intended to make it the most accessible on the market, with the aim of driving digital inclusion.

This 4G Android (Go edition) smartphone has a 4-inch screen, 8GB memory and 1750mAh battery, offering more than four hours of battery life while streaming videos. Customers can use the Orange app collection (My Orange, Orange Money and Livescreen) to stay up to date with news trends and access the most popular apps, including YouTube Go, Google Go, Facebook and WhatsApp.

The Sanza Touch smartphone will be available with a bundled mobile data plan (voice, SMS, data) from



The Sanza Touch smartphone is available with a bundled mobile data plan (voice, SMS, data) from October 2020.

October 2020. It will be sold in most Middle East and African countries, starting with Guinea Bissau, Côte d'Ivoire and Madagascar.

Alioune Ndiaye, CEO of Orange Middle East and Africa, said, "Orange wants to strongly accelerate access

to connectivity on the African continent. One of the barriers to internet use is the price and ease of use of most smartphones. The partnership with Google to offer the Sanza touch smartphone for sale will enable us to solve this problem thanks to its affordable price and advanced functionalities.

"While 90% of the world's population is now covered by mobile broadband, 3.3 billion people who live in areas covered by mobile broadband remain unconnected for reasons such as affordability, low levels of literacy and digital skills."

Mariam Abdullahi, director, platform partnerships, Android and Play, Africa, for Google, said, "The goal of our Android devices, including this first-of-its-kind highly affordable Android (Go edition) device, is to bring the power of computing equitably to all. We can only achieve this mission if everyone is able to access devices at affordable price points to use in their daily lives."

KT SAT launches world's first satellite-5G router connectivity

KT SAT, THE satellite-operated subsidiary of KT Corporation, South Korea's largest telecommunications company, has shown the world's first 5G hybrid router transmission technology at the SatelliteAsia 2020 exhibition.

The technology for seamless connectivity between satellite and 5G was developed jointly by the KT Institute of Convergence Technology last November. The KT SAT presentations at the Expo highlighted the possibility of using satellites as communication backup networks and extending their use to broadcast communication.

"Our participation in the SatelliteAsia online exposition this year opens a new page in global communication in a COVID-19 world," said KT SAT CEO Song Kyung-Min.

TE Connectivity rolls out new antennas for 5G, NB-IoT and LTE-M

TE CONNECTIVITY (TE), A specialist in innovative wireless communication connectivity solutions, has introduced new 5G, NB-IoT and LTE-M antennas to address the broad frequency band and different bandwidth demands of cellular Internet of Things (IoT) devices.

The specialist stated that the growth of cellular IoT devices is driving the market demand for 5G and wide-area cellular low-power network (LPWAN) products.

NB-IoT and LTE-M are standards for LPWAN radio technology, with the former focusing on indoor, low-cost, long battery life and high-density connection, and the latter focusing on machine-to-machine communication. The optimised 5G and cellular LPWAN connection performance relies on wide frequency bands and reliable RF performance that can be supported by TE antennas. A range of band solutions ranging from 600 MHz to 6 GHz can be provided by new antennas introduced by TE for 5G, NB-IoT and LTE-M.

Customers can choose new antennas with various mounting types, cable length and connector options, depending on their system architecture. Since no tuning is required, these antennas can be easily integrated into end devices and TE can offer services for embedding and even complex multiple antenna assemblies.

Han Sang Cheol, product manager at TE's data and devices business unit, said, "5G will bring 10x to 100x improvement over the existing 4G LTE. Cellular LPWAN is vital to make our life intelligently connected."



Offering cellular IoT devices frequency bands ranging from 600 MHz to 6 GHz.

Liquid Telecom unveils its cybersecurity unit to offer digital security solutions

LIQUID TELECOM, A pan-African telecommunications group, has unveiled its cybersecurity unit that offers end-to-end managed services for digital security solutions.

The cybersecurity services are designed to protect customers at every intersection of their digitally transformed business, including network, people and systems.

Cybersecurity is a real and imminent threat to companies and their end users, as the survey commissioned by Liquid Telecom in August 2020 highlighted.

IT decision-makers across Africa have been asked for their insights into cybersecurity trends, with 57% of those surveyed reporting increased threats during the Covid-19 pandemic period.

And while many employees are returning to work across the continent, organisations embrace a hybrid model of digital and on-site work. As such, there are growing concerns about data security, shadow IT and the financial consequences of a security breach.

To address these growing concerns, Liquid Telecom has streamlined and enhanced its cybersecurity offers into one unit. The offer is designed to address the major concerns of IT decision-makers by effectively securing businesses to increase productivity.

Liquid Telecom's end-to-end solution is aimed at covering all aspects of security working together seamlessly, decreasing the opportunity for breaches and risks.



Liquid Telecom has streamlined and its cybersecurity offers into one unit.

7SIGNAL announces portable enterprise-grade wireless monitoring appliance

7SIGNAL, A SPECIALIST in enterprise wireless experience monitoring, has announced the general availability of the Sapphire Eye 250 wireless monitoring appliance.

The hardware acts as a portable Wi-Fi sensor that addresses the industry's need for optimised user experience across application environments and alignment of KPI technology to

business metrics.

The Sapphire Eye 250 appliance is powered by 7SIGNAL's patented SaaS technology, which analyses user experience metrics, wireless metadata, access point (AP) service level agreements (SLA) and radio frequency (RF) interference patterns to enhance and stabilise endpoint connections.

"The enterprise wireless network is just as important as the wired network," said Simon Renouf, vice-president of product at 7SIGNAL. "With the rapid growth of the Internet of Things (IoT), enterprise endpoints rely on wireless connectivity to save lives, increase sales and maintain production levels. The Sapphire Eye 250 has all of the features and functions of the Sapphire Eye 2200 but was designed to be portable with plug-and-go functionality."

The Sapphire Eye 250 portable appliance can be deployed over the air (OTA) or with an Ethernet connection and includes a full spectrum analyser

with packet capture to help diagnose and solve network problems and identify security threats. Customers

can connect to remote sites with easily deployable sensors without the need for expert installation.



Photo: 7SIGNAL

The portable Sapphire Eye 250 appliance can be deployed over the air (OTA) or with an Ethernet connection.

Vertiv unveils monitoring solution for small and medium-sized edge data centres

VERTIV, A PROVIDER of critical digital infrastructure and continuity solutions, has introduced Vertiv Environet Alert, a new software offering that brings enterprise-level infrastructure monitoring and management capabilities to smaller data centres and edge facilities.

Vertiv Environet Alert performs real-time, vendor-agnostic monitoring of critical infrastructure systems and alerts appropriate staff immediately when such systems are at risk.

The software acts as a single glass pane with a new, modern and intuitive user interface that delivers visibility and data to users. Users can customise the data points that are monitored and reported to focus on what they need to protect and optimise their business most effectively.

Mike O'Keefe, vice-president for service and software solutions at Vertiv in Europe, Middle East and Africa, said, "Purpose-built data centre monitoring is crucial to provide visibility to operations and to reduce risks and costs, but few solutions have been able to economically scale for smaller operations."

Vertiv Environet Alert provides superior monitoring, alerting, trending and data organisation capabilities for companies in vertical sectors such as healthcare, financial services, government, education and other industries that rely on smaller data centres and edge facilities.

Globalstar unveils new satellite messenger

GLOBALSTAR EUROPE SATELLITE Services Ltd has announced that SPOT Gen4, the new generation of the SPOT Satellite GPS Messenger, is available in EMEA.

SPOT Gen4 is the latest addition to the SPOT satellite-enabled tracking and safety product portfolio. It provides users with ubiquitous reliable tracking and a vital line of communication with colleagues, friends and family, and emergency support enabled by Globalstar's second generation satellite fleet in low earth orbit (LEO).

Some of the SPOT Gen4 features include upgraded IP68 rating, motion activated tracking, long battery life, SPOT mapping, map layers, alerts, shared view enhancements, customised position icons, geofencing, SPOT map showing check-in/ok and track points etc.

As with its fellow SPOT devices, in an emergency, with a simple press of SPOT Gen4's SOS button, an alert along with the user's GPS co-ordinates are instantly transmitted to the GEOS International Emergency Response Coordination Center (IERCC) which, in turn, engages with local first responders to swiftly dispatch help to precisely where it's needed.

Globalstar partners with a worldwide network of highly innovative value-added resellers (VARs) who continuously innovate to create and develop advanced complementary software and operations platforms specifically designed to support businesses and non-commercial agencies to protect their at-risk, lone or remote working staff.

The new SPOT Gen4 is designed for outdoor recreation, adventure enthusiasts and field personnel who travel beyond reliable mobile coverage.



Photo: Globalstar

SPOT provides ubiquitous satellite coverage.

KaiOS, Telkom Kenya introduce smart feature phone in Kenya

KAIOS TECHNOLOGIES AND Telkom Kenya have introduced the Kaduda T-Smart, a new KaiOS-enabled smart feature phone. It also marks the first operator launch in Kenya for KaiOS.

The T-Smart is said to be an important upgrade of Telkom Kenya's feature phone portfolio. The device aims to help address the growing demand for competitively-priced internet-enabled devices with affordable data packages.

The phone enables Kenyans to access the internet via 3G/4G/LTE and Wi-Fi. It has a user-friendly interface that is optimised for first-time internet users. The phone comes with popular apps such as WhatsApp, YouTube, Google Assistant, Google Maps, and Facebook, and provides access to hundreds of other applications through the KaiStore. The phone retails at KSh 3,100 (around US\$28) and comes with a variety of data packages, including a free daily bundle comprising 100 MB for internet browsing and 200 MB to access WhatsApp and Facebook.

Steve Okeyo, Telkom Kenya's managing director for consumer, said, "Entry-level smart-feature devices constitute about 40% of phones sold in Kenya, affirming their acceptance and popularity due to longer-lasting batteries and the ability to pick signal faster in areas that are underserved with regard to connectivity."

Sebastien Codeville, CEO of KaiOS Technologies, commented, "Less than half of the people in Kenya are going online using their devices and only 20% of them are on social media.

"At KaiOS, we are focused on closing the digital divide by providing affordable smart feature phones along with relevant and useful apps and services for first-time internet users."

The phone features a KaiOS 2.5.3 operating system with 3G, 4G, LTE and Wi-Fi network bandwidth. It has a 2.4 inch colour display and supports dual SIM card with a battery capacity of 1,900 mAh.

Continued from page 31

But this does not imply a general acceptance of everyday surveillance. In normal times, the ownership of personal data is a far more vexed issue – an unresolved negotiation between the citizen, the state and a mixed bag of service providers. In the case of the latter, the ownership of data is also intimately linked to monetisation and, indeed, the ownership of the customer. What might be willingly shared in an emergency may be at risk of being hoarded when the crisis has passed.

While delivering the high levels of network availability and integration a truly smart city requires may still be some way off, this is largely because issues associated with security and standards for Internet of Things networks and technologies remain at the formative stage.

On the other hand, most governments and many municipalities are coming to recognise that ubiquitous cellular and/or Wi-Fi coverage has significant socio-economic benefits. We have already seen notable regulatory shifts in both Europe and the US to make it easier to densify networks in urban environments and improve coverage in rural areas. And the pandemic has shown that both states and service providers can move fast and effectively when the socio-economic drivers are sufficiently powerful.

Most governments recognise that ubiquitous cellular and/or Wi-Fi coverage has significant socio-economic benefits.

For example, the FCC’s Keep America Connected initiative (which ended in June) made spectrum available to improve coverage and capacity during the pandemic; China has expanded its 5G health programme in both scope and rollout; carriers in Malaysia pledged back in April to increase network densification investment and 5G buildout to support economic recovery. The challenge now is to turn emergency responses into long-term investment strategies.

There’s certainly an argument that the effective interconnection of digital systems doesn’t just improve lives but also save them. However, our final major smart city challenge – the interoperability of devices, systems, networks, protocols and applications – remains a huge barrier.

For example, how many lives could have been saved by the global availability and take-up of a universal track and trace app at the beginning of the Covid-19 outbreak? And the fragmentation evident in track and trace applications (and associated data storage and privacy protocols) is amplified exponentially when we consider the lack of standardisation in sensors and other IoT devices, along with the challenges associated with operating such devices across different types of network.

Real Wireless is working on a number of city projects, some focussed on the detailed practicality of barrier-busting and operational deployment now, and some through our research and innovation programme, where we work in an ecosystem of suppliers and users shaping next-generation capabilities.

The EU’s 5G-TOURS initiative is deploying full end-to-end 5G trials of 13 representative smart-city use cases across three cities. Our role in the project is to assess the socio-economic benefit of areas such as transport, healthcare, airport operations and tourism and determine how sustainable business models emerge from the deployment of infrastructure and services.

We shape the concept of a city ‘digital services platform’ that enables operational use cases for health, tourism and transport workers but also supports services for consumers. We’re also supporting the Liverpool 5G initiative that is directed by the health and social care sector, which owns the benefits and the services and shapes the infrastructure, service and device approaches. But the economics and processes of the health worker are a major focus. And the needs of patients remain the main priority.

This is as it should be. The democratisation and opening of communications systems will enable cities and public services to get what they need – and not what the members of the supply chain think they want. This is the path to sustainable adoption beyond the current Covid-19 crisis. It’s also the path to a city that is resilient to future challenges – be those viruses or other events. ©

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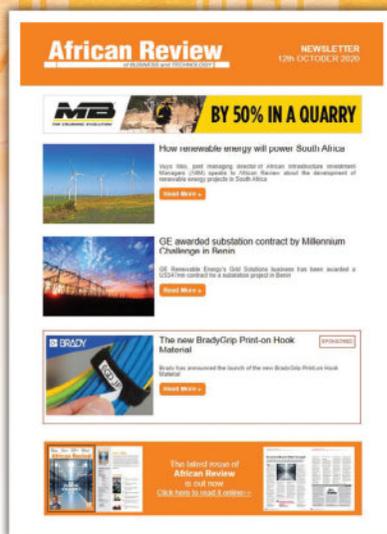
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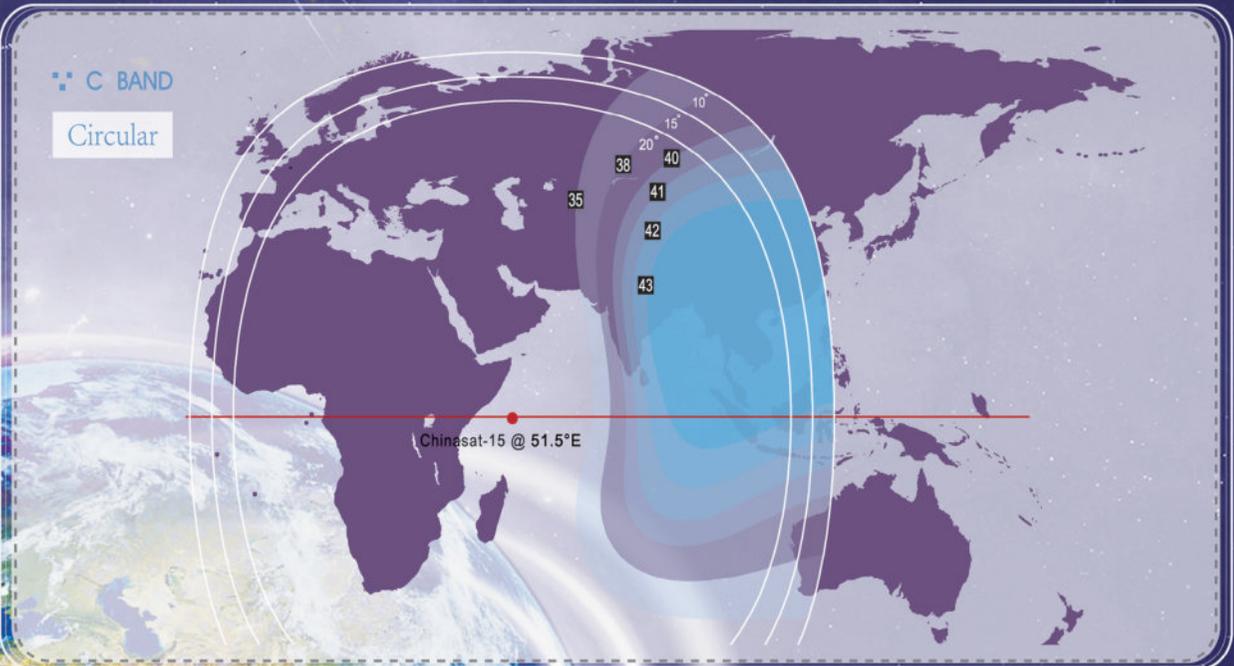
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