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A note from the Editor

HOW CAN WE improve urban services in low-and-middle-income countries? How can more cashless payments be enabled? How can entertainment be streamed to people who do not own TVs or computers? How can people in remote areas access information, content and services?

In Africa, the answer, as this issue shows, is often via telecommunications. But, as this issue also points out, telecommunications offers challenges of its own - challenges relating to security, the environment and affordability, to name only a few.

But telecommunications, which is now an enabler of everything from simple voice communication to payment, entertainment, health support and social services, is not going away. Even if we wanted to turn the clock back, we cannot.

Therefore in this issue we not only look at how we can get the best out of telecommunications, but we also discuss ways to address some of the challenges that have resulted from our reliance on it.

It won't be the last time we do so. Such concerns may only have arisen relatively recently, but they will grow in importance for many years to come.

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

Assitant Editor: Deblina Roy - deblina.roy@alaincharles.com

Editorial and Design team: Mariam Ahmad, Prashanth AP, Fyna Ashwath, Miriam Brtkova, Praveen CP, Robert Daniels, Shivani Dhruv, Matthew Hayhoe, Prince Kariappa, Unique Pattnaik, Rahul Puthenveedu, Deblina Roy and Louise Waters

Production: Srinidhi Chikkars, Dinesh Dhayalan and Eugenia Nelly Mendes
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

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Didi Chuxing expands to Cape Town, South Africa

DIDI CHUXING (DIDI), one of the leading mobility technology platforms, has started its registration process for drivers in Cape Town, South Africa, and has begun offering ride-hailing services to people in the country's second largest city.

"South Africa has been hit particularly hard by this pandemic that has upended all of our lives – so as this beautiful country looks to recover and rebuild, we would like to do our part, to be a partner in building back better by providing better earning opportunities for drivers as well as safer and more affordable mobility options for everyone," said Stephen Zhu, senior vice-president and head of DiDi's International Business.

The launch in South Africa also sees the arrival of a wide range of safety features to benefit users and driving partners, including facial recognition for drivers, SOS buttons for riders and drivers linked to local

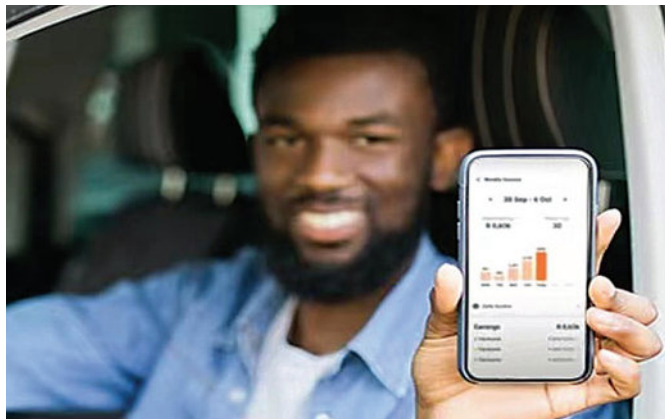


Photo: Didi Chuxing

The move follows the successful pilot in the city of Gqeberha, DiDi's first location in Africa.

police, 24/7 support via a dedicated safety hotline, preview information for riders and drivers, and safety training for drivers, among others.

Since February 2020, DiDi's anti-COVID experience has created strong and positive results in addressing local challenges by:

- Introducing Health Guard technologies to ensure that

masks are worn during trips and that all vehicles are disinfected

- Providing financial assistance to driver-partners in overseas markets through a dedicated US\$10mn relief fund

Beyond investments in these special programs, DiDi remains vigilant in protecting the health and safety of its users, providing safe, affordable and convenient services.

Ukheshe Technologies partners with Africa's tech startup Chipper

UKHESHE TECHNOLOGIES HAS announced a new partnership with Chipper, one of Africa's most valuable startups, to enhance and accelerate the roll out of Chipper's digital payment offerings.

These include free and unlimited P2P payments across South Africa, value-added services such as airtime and data, and the ability to legally buy, sell or transfer cryptocurrency. The partnership will also allow for more efficient transactions across Africa, while fulfilling the lives of its customers on the back of the Ukheshe Eclipse API framework.

With over four million users serving eight countries in Africa and the UK, Chipper's mission is to unlock global opportunities and bring Africa together.

New data centre set to open in Zambia

PARATUS GROUP WILL open a brand-new data centre in Lusaka, Zambia, offering colocation services and quality connections for local and multinational businesses, together with a highly sophisticated range of digital and aligned services.

With the new centre opening on 1 October, Paratus Zambia is helping local and international businesses in the region to perform at a new and unlimited level. The data centre offers customers colocation services, giving them the option to rent space within the facility for their equipment and servers. Businesses can choose from a range of options, including dedicated, shared, caged, and private suite options.

The benefits of using colocation services include unlimited 24/7 physical access to equipment and the facility and, if a customer is not able to physically make it to the facility, the Paratus Zambia DC team will offer their remote hands service which enables the DC team to perform any immediate functions on the customer's behalf.

In terms of overall maintenance, the data centre is designed with optimal resilience to allow for concurrent maintainability. It is also fitted with redundant systems ranging from power to cooling and connectivity, with each running system on a primary and alternate to achieve this. This essentially means each one works concurrently to ensure maximum availability and that the customer's systems are constantly online.

If a company loses its connectivity or power to their critical equipment and systems, it can lead to an unfortunate loss of productivity and other far-reaching effects such as loss of business. The benefit of moving offsite and migrating to one of Paratus' data centres is that the facility guarantees uninterrupted power and connectivity.

Each on-site data hall has connectivity resilience, and each cabinet has dual UPS feeds which deliver up to 3.5kVA. It is advantageous to have UPS systems in place as this allows for back-up power to be activated in case there is a utility power outage. However, having a dual UPS feed is more beneficial, as this means that there are two separate sets of these components always operating independently, so if the one cuts out, the other one automatically starts operating.

Digital payment trends accelerating a cashless future

WITH SOUTH AFRICAN e-commerce seeing unprecedented advancement last year, the payment technology grew in leaps and bounds, according to Andrew Springate, CEO of tech and financial gateway service provider PAYM8.

"South Africans resisted digital payments in the past because the existing system was so well-entrenched – familiarity, after all, breeds trust. But the pandemic meant more people stayed home and avoided physical retail spaces. Necessity prevailed and they embraced e-commerce, becoming more comfortable with digital payments and financial services.

"The acceptance of digital transactions will be a permanent shift after the pandemic – it's safer, contactless and more convenient. We've seen mainstream institutions and traditional banks accelerating their digital offering, and the race is on to push forward with innovation."

While cash is still the preferred payment method for the majority of South Africans, digital payments are booming, said Springate.

"With the increase in online sales, we're seeing greater uptake of mobile, QR and contactless payments as well as pre-authorised debit order payments (known as DebiCheck, where debit orders must be authorised by the debtor before processing). We're inching our way towards a cashless economy – PwC's Payments 2025 & Beyond report, published this year, says global cashless payment volumes are set to almost double from 2020 to 2025, and triple by 2030."

"Though the pandemic accelerated the digital shift, other reasons will give it staying power in the local landscape. Digital's contactless nature allows for faster payments and reduced queues – with zero pin exposure or cash-related security risk at checkout. QR code accuracy is also vastly improving.

"Lastly, but by no means least significant, the ability of messaging platforms like WhatsApp to offer in-app purchasing is making the buying process seamless, with customers no longer requiring a redirect to a web site to complete a payment," explained Springate.

It seems, according to Springate, that fintech companies are setting the trends in the race to the digital, cashless future.

NIGCOMSAT set to create two subsidiary companies

AT THE 2021 NIGCOMSAT stakeholders forum, Abimbola Alale, the managing director of NIGCOMSAT LTD, announced that the company will form two subsidiary companies in order to reposition itself for potential opportunities and future risks.

The two new companies include the Satellite Infrastructure Company (SIC) and the Satellite Broadcasting and Broadband Company (SBBC). Approval has already been granted for this operation.

SIC will provide satellite upstream services such as transponder leasing, in-orbit services, and carrier spectrum management services, while SBBC will provide satellite downstream services such as broadband Internet services and broadcasting internet services.

NIGCOMSAT has acquired the latest Dialog Hub with 51F for the satellite broadband Ka services.

Phishing attacks remain a threat in Africa

ACROSS H1 2021, Kaspersky recored more than two million phishing attacks in South Africa, Nigeria and Kenya and noted that spam email remains a threat.

In the first half of the year, there was a reduction in the number of phishing attacks recorded and blocked by Kaspersky South Africa (17% decline), Kenya (48% decline), and Nigeria (13% decline) when compared to the same period in 2020. While the decline suggests that cybercriminals have become more targeted, focusing their efforts on advanced persistent threat (APT) campaigns in Africa, the phishing threat is still very prevalent, the company has noted.

Bethwel Opil, enterprise sales manager at Kaspersky in Africa, commented, "This decrease is in line with global trends and supports the decline that Kaspersky research identified happening through the course of last year already. Of course, this does not mean that organisations and consumers can ignore the risk of traditional cybercrime attacks or that phishing, as well as spam, are still not of significant concern across Africa. Instead, people need to become even more aware of cybersecurity best practice and remain vigilant to protect their personal and business systems from the risk of compromise."

"Phishing and spam remain some of the most effective ways of targeting unsuspecting users and gaining access into corporate systems or compromising personal financial and other information that can be used to perpetrate identity theft," added Opil.

Spam reportedly constituted almost 30% of email traffic in South Africa and close on 35% in Kenya in H1 2021. The number of phishing attacks recorded in South Africa for the first half of 2021 exceeded one million. In Kenya, phishing attacks were recorded at more than 600,000, and in Nigeria nearly 400,000.

Phishing attacks across the continent have baited unsuspecting victims into handing over bank information, ID numbers, and more. Cybercriminals have become even savvier with their tactics, embracing more sophisticated technology to lure people into clicking on things they should not.

In addition to installing relevant cybersecurity solutions, individuals and businesses must consider the following tips to protect themselves against spam email and phishing:

- Use multiple email addresses - One can be for personal correspondence while another can be used for online shopping or social media.
- Never respond to any spam - Malicious users verify receipt and log responses of active email addresses.
- Always check the link.
- Do not rush or panic react - Scammers use such tactics to pressure you into clicking links or opening attachments.
- Keep your browser and operating system software up to date with the latest patches.
- Use anti-spam filters in addition to antivirus and Internet security solutions.

Nokia to drive digital transformation

NOKIA HAS SIGNED a Memorandum of Understanding (MoU) with the African Telecommunications Union (ATU) to drive digital transformation for socio-economic development across Africa.

Through the agreement, the two

parties will leverage the power of telecommunications, including 5G networks, to connect the unconnected and identify innovative use cases, as well as business models. The MoU will also lay ground for both organisations to better help governments shape telecom policy, develop talent and promote inclusion and diversity.

John Omo, secretary general of the African Telecommunications Union (ATU), added, "Our vision is to make Africa a full and active participant in the global information and knowledge society by enabling universal access to ICT systems and services across Africa. Collaboration with a global industry leader such as Nokia is therefore crucial in this regard and will help us accelerate towards a digital transformation and knowledge economy."

The MoU framework is guided by six tenets designed to facilitate this acceleration. They include: the sharing of best practices on telecom technology trends and developments; the identification of innovative industrial use cases; the recommendation on implementation of emerging technologies and business models; the promotion of connecting the unconnected with broadband; the development of emerging talent for digital innovation; and the promotion of inclusion and diversity.



Photo: Nokia

The ATU-Nokia MoU signing.

Three new solar-powered sites for South Africa

VODACOM HAS INSTALLED three new solar-powered sites in Polokwane, Vereeniging and Bloemfontein in South Africa as part of its ongoing commitment to securing alternative energy sources to power its operations where feasible. The sites are in addition to a solar project installed at a base station controller site in Randburg, Gauteng, in May last year.

Collectively, the three new sites will generate approximately 127 MWh of energy on an annual basis, which will help to reduce the telco's carbon emissions and lower its electricity consumption. The solar panels will also ease the load on the sites' batteries in the event of load-shedding, ensuring network reliability, quality and seamless connectivity for customers.

"As the demand for digital services grows, we will need more energy to keep these services running. In anticipation of this growth, and despite the current economic challenges, we are investing in strategies to decrease our energy consumption while reducing the use of carbon-intensive sources of energy," said Takalani Netshitenzhe, executive director of External Affairs at Vodacom South Africa.

"By reducing our carbon footprint, our aim is to mitigate climate change and its effects on the planet. Solar-powered sites are just one of the innovative ways to introduce cleaner, more sustainable energy sources to keep our mobile networks running and our customers connected in an ever-increasing digital society."

The solar projects are aligned with Vodacom's purpose-led journey, in which the company has committed to improve the lives of 100 million people and reduce its environmental impact by half by 2025.

The three solar-powered sites in South Africa form part of the 1,088 solar-powered sites across all of Vodacom's markets. The company also installed the largest single rooftop solar installation at its Century City offices in Cape Town in 2012, and Vodacom Lesotho's head office has been powered by solar energy since 2017.

“Young people are Africa’s strength. They have to be its luck too. This has proven to be true in the face of the COVID-19 pandemic. This is also true for the conversion of institutions and organisations to digital that the pandemic has helped popularise. This conversion gives young people new employment opportunity and the space to exercise their creativity. The partnership between UCLG Africa and o1 Talent offers a unique chance to African local authorities to contribute to the training of young people in the digital field and to speed up their entry into digital culture as well as that of companies operating in their territories.”

- Jean Pierre Elong Mbassi

secretary general
UCLG Africa

“Payment Gateway will allow for our Partner Government Agencies to monitor and validate the payments in real time, which speaks to our mantra on the ease of doing business.”

- Amos Wangora

CEO
KenTrade

“Ukheshe’s Eclipse API provides access to payment technology, products and services – all from one convenient platform. The rapid shift towards innovative digital-first solutions, is undeniable and we are thrilled to partner with Chipper, a company that shares our vision and enthusiasm for credible, seamless payment solutions that drive the payments revolution in Africa.”

- Clayton Hayward

CEO
Ukheshe

“We are delighted to deepen our relationship with Microsoft through this global launch and integrate our pan-African communications and technology capability directly into Microsoft Teams.”

- Nic Rudnick

Group CEO
Liquid Intelligent Technologies

“Examining Africa’s growth trajectory has allowed us to make investment decisions on new locations and confidently commit to expanding selected existing locations, resulting in the largest investment of its kind in history.”

- Stephane Duproz

CEO
Africa Data Centres

“The opening of our new offices provides us with an important gateway to the West African market, and to support the company’s accelerated business momentum and vision. It also marks a major milestone for Mitsumi, as we are now stronger than ever with our presence in 18 countries across Middle East and Africa.”

- Chintan Vyas

regional sales head
Mitsumi Distribution

“Following our successful first license issuance earlier this year... we now want to encourage more telecoms operators, of all sizes, to be part of this exciting opportunity.”

- Balcha Reba

director-general
Ethiopian Communications Agency

“Bboxx is the ideal partner and with their support we look forward to making smartphones more affordable and available all over our country.”

- Cina Lawson

*minister of digital economy and digital transformation
Togo*

“This [addition of two new satellites to the Nigerian satellite fleet by 2025] will not only inspire confidence in our customers and channel partners but also place NigComSat Ltd in the front line of communication satellite operators with a fleet of satellites in orbit.”

- Abimbola Alale

*CEO
Nigerian Satellite Company Ltd*

“Our vision is to make Africa a full and active participant in the global information and knowledge society by enabling universal access to ICT systems and services across Africa. Collaboration with a global industry leader such as Nokia is therefore crucial in this regard.”

- John Omo

*secretary general
African Telecommunications Union (ATU)*

“The qualification of the ThinSat 300 adds another excellent low-profile COTM option to our FlexMove for government offerings. In addition to other manpack, communications-on-the-pause and fixed terminals, the ThinSat 300 combines with the wide range of FlexMove service options to meet customer mission requirements.”

- Michael Radermacher

*director of product and market development
Intelsat General*

“We want to improve internet connectivity for 60 million Egyptians living in around 4,500 villages by upgrading broadband infrastructure... we plan to invest more than US\$360mn to connect one million households with fibre-optic cables.”

- Amr Talaat

*minister of communications and information technology
Egypt*

“Taara’s mission is to expand global access to fast, affordable internet and we’re proud to be supporting Liquid in their mission to close the connectivity gap between these two cities.”

- Bhavesh Mistry

head of Project Taara in Africa on a high-capacity communications bridge between Kinshasa and Brazzaville

“We are very pleased to work with Ericsson as their financial services platform is built upon the latest security technologies and open architecture framework principles which can further expand our ecosystem and achieve our vision of financial inclusion in Africa.”

- Alioune Ndiaye

*chairman and CEO
Orange Middle East and Africa*

“The acceptance of digital transactions will be a permanent shift after the pandemic – it’s safer, contactless and more convenient. We’ve seen mainstream institutions and traditional banks accelerating their digital offering, and the race is on to push forward with innovation.”

- Andrew Springate

*CEO
PAYM8*

Events 2021-2022

DECEMBER

1	Serbian Blockchain Summit	Belgrade, Serbia	www.cryptokonf.com
3-6	IBC2021	Amsterdam, the Netherlands	https://show.ibc.org/ibc2021-show-dates-announcement
9-10	ICECET	Cape Town, South Africa	www.icecet.com

JANUARY 2022

26	Digital Retail Africa	Virtual	https://itnewsafrika.com/events/event/digital-retailforum/
28-29	ICSET	Singapore	www.icset.net
28-29	Tech Unite Africa	Lagos	https://techuniteafrica.com/

FEBRUARY 2022

23-24	Africa Tech Summit	Nairobi	www.africatechsummit.com/nairobi
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MARCH 2022

15-17	Africa Agri Tech	Pretoria	https://africa-agri.co.za/
17-18	Blockchain Africa Conference	Johannesburg	https://blockchainafrica.co/
22-23	AIBC Summit Africa	Cape Town	https://hollandfintech.com/events/aibc-summit-africa/

MAY 2022

10-11	East Africa Com	Nairobi	https://tmt.knect365.com/eastafricacom/
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Connecting the entire value chain

East Africa Com will look at challenges and opportunities across the region's diverse tech ecosystems from 10-11 May next year. We take a closer look at what may be discussed.

EAST AFRICA COM 2022 is described as the only event in East Africa that connects the entire value chain – telecoms, media, broadcasting and technology.

Nominally it's at the Radisson Blu, Nairobi Upper Hill. In fact the show – from 10-11 May 2022 – may continue as a virtual event, although this has not been confirmed. In any case it will be an event that aims to unite the entire East African digital ecosystem over two days of online learning and networking.

In fact enhanced networking opportunities, including speaker Q & As and AI-matchmaking, panel sessions, presentations and pitches, and demos of the latest innovations in tech and telecoms will all be part of the proceedings, as will the East Africa Com Awards celebration.

As well as the main conference, the programme last year included exclusive workshops hosted by Twitter and a Connected Leaders Programme of curated, qualified meetings between those actively engaged in buying IT products and services and those providing the solutions they're seeking. The 2021 AHUB East programme meanwhile



Photo: Adobe Stock

Nairobi may be home to next year's East Africa Com.

unleashed the power of East Africa's start-up ecosystem. Attendees will no doubt hope that all these features can continue into 2022.

This year's conference agenda is still being developed. However, it will undoubtedly continue with the renewed urgency for accelerated innovation and digital transformation that was a major theme at the main conference in 2021. The 2021 event included panels on tech policy, start-ups, service provider strategies, last-mile

connectivity, smartphone and data affordability, digital health, 4IR, green electrification solutions, information access, tech for agricultural communities, fintech and digital equality.

There was also an impressive line-up of senior figures from industry and government. Perhaps they will be there in person next year...

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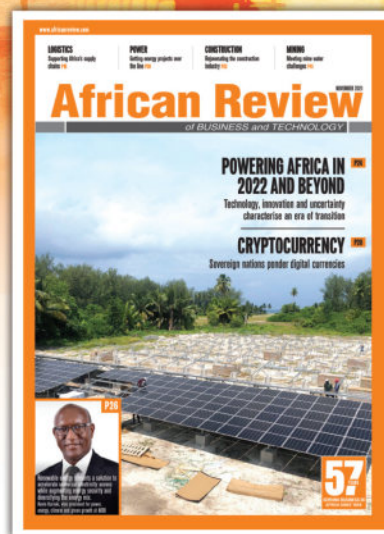
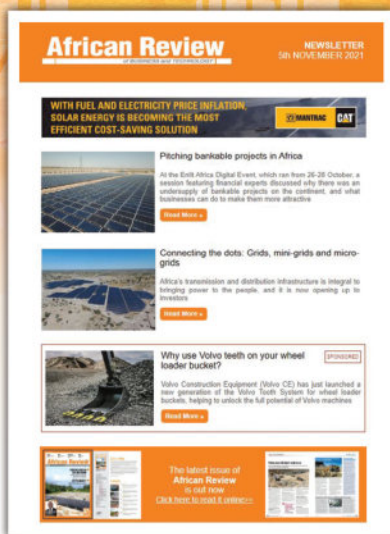
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MENA Tel: +971 4 448 9260
ASIA Tel: +91 98800 75908
USA Tel: +1 203 226 2882
EUROPE Tel: +44 20 7834 7676

e-mail: post@alaincharles.com
web: www.alaincharles.com
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Yabx expands African operations and offerings

EMPHASING ITS COMMITMENT to the African telecommunications sector, Yabx has expanded its regional operations and service offerings, aiming to capitalise on the continent's booming digital payments and e-commerce market.

The fintech venture, which offers credit products across 12 African nations, has appointed a director for Africa Business, Eunice Gatama, as part of its continental focus.

Yabx's strategic appointment is designed to continue its expanding market share in the digital lending market in Africa.

After delivering some of the best portfolio returns for its partner banks, Yabx is poising itself for market expansion, launching new service offerings and signing agreements with a number of leading banks and wallet operators across the continent.

Incubated by Comviva Technologies, Yabx aims to simplify financial access for new-to-credit customers and MSMEs in Africa by

providing financial access to the underserved. The company leverages technology and analytics to reduce delivery costs.

Founder and CEO at Yabx Rajat Dayal added, "Africa continues to be the mainstay of our business as we have a comprehensive understanding of the land in terms of the credit ecosystem.

"I am extremely happy to have Eunice on board with us to fuel the next level of growth for Yabx in Africa. She has hands-on experience of launching and scaling up the largest digital credit product in Africa. Her extensive knowledge and experience in the mobile financial services domain will further boost our growth in Africa region."

The newly appointed director for Africa Business brings 15 years of relevant experience in banking, previously working with NCBA Bank Kenyar and Safaricom PLC, delivering and scaling FULIZA M-PESA.

Upon her appointment, Gatama



Photo: Adobe Stock

The fintech company is expanding its operations across Africa.

commented, "I am excited to join Yabx, one of the leading fintechs in digital lending space. It's a moment of pride to be associated with a company which promises to simplify financial access to unbanked customers through digital lending offerings.

"With its strategic focus in the Africa region, we shall continue to seek strategic partnerships aimed at disrupting the market with innovative digitally led financial products."

Africell to end Ugandan operations

AFRICELL HAS CONFIRMED that it has ended operations in Uganda due to tough competition from a number of local units of African telecommunications firms.

The company first entered into the Ugandan market in 2014 after acquiring the local operations of France's Orange.

In a statement, the company confirmed, "Africell ... will end operations in Uganda on 7 October 2021, based on a careful assessment of the long-term commercial outlook for the business."

2.3mn Ugandans used Africell's service, which has a continent-wide subscriber base of 12mn.

Sam Williams, the firm's communications director, confirmed to Reuters that the company will begin Angolan operations by the end of Q4 2021.

MTN Ghana launches domestic internet service

MTN GHANA HAS launched a domestic home internet service, dubbed MTN Home, which strives to offer affordable and accessible internet services to customers in the comfort of their own homes.

The service provides high-speed and stable internet access, which facilitates live streaming, video-on-demand, and home internet automation services, to ensure subscribers are able to benefit from the digital world.

The service has been made available to customers across Ghana, and offers cheaper data, video and voice services.

Regarding the launch of the new MTN Home Service, MTN's chief marketing officer, Noel Kojo-Ganson, explained, "The Covid-19 pandemic has facilitated work from home, online schooling, webinars and e-commerce and it takes access to fast and reliable internet service to make these possible.

"As a network that is working towards leading the delivery of a bold new digital world for customers, we believe that every home and office deserves to experience the benefit of a modern connected life and that is the driving force behind MTN Home service.

"We continue to invest in technology solutions that will enable our customers to enjoy the best value propositions," concluded Kojo-Ganson.

MTN Home expands the telecommunications company's catalogue of products and services, all of which are designed to offer fast and reliable broadband services and increase accessibility to the digital world.

The launch of MTN Home adds to the catalogue of other products and services designed by MTN to offer fast and reliable broadband services to Customers.



Photo: Adobe Stock

The service aims to provide high speed domestic internet access.

Botswana floats tender for village connectivity

BOTSWANA HAS FLOATED a tender for the design, supply, installation, commissioning, operation and support of internet and backhaul connectivity in 61 villages across the nation.

The project is aiming to transform the public sector's efficiency in providing services to its citizens and businesses, while reforming the education system with a focus on building the human capital towards a knowledge-based economy (KBE). The nation's secretary for Ministerial Tender Committee in the Ministry for Presidential Affairs, Governance and Public Administration, Kagiso Boikanyo, explained that the tender follows on from the government's digital transformation strategy, SmartBots.

"SmartBots strives to make it easy, seamless, and secure to transact with the Botswana government. Botswana will leverage the SmartBots strategy to take advantage of the opportunities presented by the Fourth Industrial Revolution (4IR) and move the country towards the KBE, without leaving anyone behind."

The secretary continued, explaining that SmartBots will connect all villages to high-speed broadband and internet connectivity by 2022/23, with a phased approach ensuring universal broadband coverage.

"The initial phase covers villages with existing backhaul infrastructure followed by villages with minimal to no backhaul infrastructure and electricity," concluded Boikanyo.

The floated tender aims to identify solutions to connect 61 villages which have minimal to no backhaul infrastructure and electricity to high-speed broadband.

Recently, the government issued digital connectivity standards for villages, with an aim of ensuring high-speed connectivity is made available. According to the standards, villages with a population under 5,000 will be connected through the UASF by providing a subsidy to mobile operators. Villages with populations over 5,000 will be upgraded to 4G and above, utilising Botswana Communications Regulatory Authority interventions.

Photo: Adobe Stock

Cape Town is home to some of the many landing points in Africa for subsea fibre. But how does the fibre get inland?

From the shore to the interior

The arrival of subsea cables has changed the communications landscape in Africa. But, asks Ron Murphy, has this change gone beyond the shoreline? What could slow down the advance of fibre across the African continent?

WIOCC DESCRIBES ITSELF as the leading player in the deployment of carrier-scale, future-proofed network infrastructure into Africa. It has certainly been instrumental in improving subsea connectivity in Africa.

It has also seen a lot of changes when it comes to the use of fibre. Chris Wood, CEO of WIOCC, said, “The biggest changes for network infrastructure companies in the landscape have been the continuous reduction in cost and price of bandwidth, improvements in availability of subsea and terrestrial bandwidth and the scale of bandwidth demand: typical circuit sizes ordered from WIOCC have grown from a few Mbps 10 years ago to multiple 100Gbps today.”

But he agreed that last-mile connectivity and extending fibre across the continent are lagging behind. “Africa is a huge continent and the situation varies

enormously country by country,” he said. “While some countries have yet to fully liberalise the telecommunications services section, deregulation has had a significant positive influence in many markets, encouraging competitive environments that stimulate investment in metro and national infrastructure. However, with such a large proportion of the continent’s businesses and disposable income focused within urban and semi-urban areas, it is unsurprising that investment in connectivity to rural and remote areas continues to lag.”

But WIOCC is certainly planning to play its part in making fibre connectivity more affordable and available in Africa, he said. “WIOCC continues to invest in operating and extending a unique hyperscale network that provides telcos, ISPs, content providers and cloud operators with cost-effective access to reliable, high-capacity connectivity into, within and out of Africa.”

What about approaches that could accelerate the process of extending fibre from the shore to the interior? Liquid Sea is a fibre optic submarine telecommunications cable system owned by Liquid Intelligent Technologies. David Eurin, Liquid Sea (international wholesale) CEO, suggested that to make broadband affordable, the entire value chain – from subsea cables to interior backbones to metro networks and all the way to the last-mile infrastructure – needs to be considered.

He said, “Landing a subsea cable requires authorisations and licences as well as environmental permits (to name a few), and, once on land, the operation of a cable landing station is necessary to interconnect with the interior backbones. We sometimes see incumbent players hoard the subsea cable capacity at the landing station, making it hard and costly to bring the capacity to the ISPs and end users. An open-

access and cost-oriented approach is necessary – and should be made compulsory by governments as part of the licence.”

Of course rolling out additional interior backbone routes takes time, given the distances in Africa. Eurin said, “Liquid Intelligent Technologies has rolled out almost 100,000km of fibre across the continent already. Cooperation with electricity transmission providers, railway operators and gas/oil pipeline operators, as well as road authorities, is necessary to accelerate the roll-out and lower the cost per kilometre.”

Importantly, there seems to be more interest from global investors in interior backbones in Africa. Thus Liquid Intelligent Technologies has been rolling out thousands of kilometres of new fibre this year, notably in DRC, Nigeria and other locations where good infrastructure is lacking. “A good example is Liquid Intelligent Technologies’ new east-west corridors connecting the largest

cities in Southern and Central Africa, from Dar Es Salaam to Lusaka, Kinshasa, Luanda, Kampala, Kigali, Khartoum, N'Djamena, and others," said Eurin.

The good news is that fibre is now a very mature technology. "We still see innovations in transmission equipment every year, which is now able to transmit several millions of Mbit/s (Terabit/s) over a single fibre pair. These advances are lowering the cost of transporting each bit of information from wherever the end user sits to the internet and back."

Liquid Intelligent Technologies itself has invested in new techniques and tools to roll out backbone fibre along long stretches of land (including in the heart of the DRC forests), to accelerate the build and lower the cost. "We cooperate closely with local building companies to achieve the best result," said Eurin, "but it does not remove the need for a large local workforce to build the network."

The company is also working with its technology partners on new 'fibre over the air' infrastructure to extend the reach of fibre, while keeping a very high throughput, closer to its end users and to cross particularly difficult terrain such as jungle or rivers.

At policy level, there are a number of concerns about the issues related to getting fibre to those who need it. The Alliance for Affordable Internet is the leading advocate for affordable internet globally. It argues that you should not be spending more than two to three per cent of your average monthly income on one gigabit of data.

Eleanor Sarpong, deputy director and policy head for A4AI, agrees that there's a lot of competition in the subsea cable space already. Eassy, WAC, MainONE, Simba and Equiano are just a few major names in this space. "The challenge," she said, "is that capacity at the shoreline is being underutilised because we have bottlenecks getting it inland."

There are of course a lot of civil costs: you may need to build a trench to put in fibre – and there are obstacles like buildings (in urban areas), forest or difficult terrain.



Photo: WIOCC

Chris Wood, WIOCC: "Deregulation has had a significant positive influence in many markets."

"Then," she said, "there are multiple legislations from various municipal authorities. In Nigeria the government has mandated that you should not charge more than 145 naira per linear metre of fibre. In some states it goes up to 5,000 naira for the same linear metre. Prices change between states. It makes it very difficult for companies to roll out fibre if you don't have a harmonised system."

Why is this? "A lot of municipal authorities see the roll-out of fibre as a money-making venture, so they are taxing the infrastructure rather than looking at the benefits of making sure people are connected" – which could, of course, include more jobs and more tax revenue from those jobs.

But she agrees that there is a lot of demand for fibre across not just Africa but Asia and Latin America. "The key thing is the demand is out there, but policymakers have to remove the obstacles that are there to ensure there's better connectivity."

Despite that, quite a few companies are making a business model out of fibre. We've already mentioned Liquid and WIOCC but CSquared, for example, has rolled out fibre in Liberia, Ghana and Uganda. "It has focused on metro fibre, connecting a lot of university



Photo: Liquid Sea

David Eurin, Liquid Sea: "We cooperate closely with local building companies to achieve the best result."

campuses and various enterprises as well," said Sarpong. "The demand is out there. The key thing is to make sure you have a business proposition that works. And if you have government policies and regulations that are supportive, that can happen."

There is another issue, however: what you might call joined-up planning. "In Africa in particular there isn't proper harmonisation between utilities and roads ministries, so we are having multiple trenching to lay broadband fibre. One of the things we are encouraging at A4AI is infrastructure sharing." Thus, if a road is going to be built, ducts could be created that allow for utilities and also for cables to be present. "We call this the 'dig once' policy," she said. Similarly, where electricity is supplied by overhead cables, space could be made for aerial fibre for broadband.

One example in recent months has been Electricity and Fiber To The Village (E-/FTTV), a shared infrastructure concept that combines the roll-out of electricity distribution lines and fibre optic cable in rural areas of Uganda and includes an ICT eco system. However, it is far from the norm.

That said, the signs of fibre rollout are encouraging. Ghana's Eastern Corridor Fibre Optic Backbone Project is one. There's also an open access network in Rwanda built, in a public-private partnership with KT, a big South Korean telecoms company, though its main focus has been 4G. However policy and regulations need to catch up and working with national governments to shape decisions is key. A4AI itself recently announced a strategic collaboration with Smart Africa, an alliance of 30 African countries, international organisations and global private sector players tasked with setting Africa's digital agenda.

There is demand, there are many expert companies and there is a will to improve communications across Africa. There is also a lot of fibre reaching the Africa shoreline. How soon will all that add up to a truly connected Africa? ☎



Photo: Adobe Stock

A number of cable systems have, or plan to have, landing points in Lagos, Nigeria.

The unstoppable growth of digital finance

Twenty years ago banking was out of reach for many Africans. Not anymore. Branchless banking and cashless payment are booming across the continent – and mobile phones are undoubtedly a major reason for that boom. Vaughan O’Grady looks at the unstoppable growth of digital financial services across the African continent.



Photo: Adobe Stock

Mobile money has now arrived in Djibouti.

CASHLESS PAYMENTS HAVE certainly come a long way since the mobile phone-based systems that emerged in Kenya in the early 2000s. In fact the past 18 months has seen extraordinary activity in digital payments in Africa.

A round-up of recent news relating to mobile money makes this clear. For example, in September this year Orange Middle East and Africa announced that it had selected Ericsson as a strategic partner for its pan-African Orange Money service, tapping Ericsson’s Wallet Platform to accelerate financial inclusion for its customers across 14 African countries.

Another pan-African deal involved Standard Chartered Bank, which in August joined forces with operator Airtel Africa. Under the deal, Airtel Money’s customers will be able to make real-time online deposits and withdrawals from Standard Chartered bank accounts, receive international money transfers directly to their wallets, and access savings products.

Banks are clearly no longer letting phone-

only systems make the running. For instance, the Ecobank Group and Semoa, a fintech based in Lomé, are enabling mobile money users in Togo to carry out banking faster and easier, across the West African Economic and Monetary Union (WAEMU) through a new digital banking service via Whatsapp called ‘Express cash by Semoa’.

“We witnessed a dramatic shift during the Covid-19 pandemic as consumers pivoted towards digital payments”

The Ecobank Group, whose network covers 35 countries across Africa, is the first bank to integrate this type of service at its ATMs and Express Point Agency locations. Customers simply send a Whatsapp message – which means the service is available 24/7 – to

Semoa’s bot (a software program that performs automated, repetitive, pre-defined tasks), called Dédé to request tokens for withdrawals, payment of bills or money transfer to friends and relatives in Togo and across the WAEMU region.

Among operators a very new entrant is Telebirr, launched on 11 May 2021, a mobile money service developed by Huawei that is owned and launched by Ethio Telecom. It has already attracted millions of customers – not surprisingly given Ethio Telecom’s dominant position as the only telecommunication and internet service provider in Ethiopia.

However, new licensees are on the way and the Ethiopian authorities are planning to allow the new licence offered to a Safaricom-led consortium in May to be upgraded to include mobile financial services. The other new market entrant – as yet not chosen – will be given the same privileges.

Mobile money has also reached the much smaller market of Djibouti, where Djibouti Telecom’s D-Money allows users to carry out

digital money transfers and payments directly from mobile phones. The service enables user to make deposits or withdrawals via agents across Djibouti, to transfer money to friends and family from a phone and to pay bills. Users can also buy airtime, recharge mobile credits for themselves or others and manage all their payments via an app.

The pandemic certainly accelerated the cashless trend. Telkom Kenya announced plans to develop a youth-focused digital wallet to relieve young people from financial exclusion during the pandemic. The telco signed an agreement with the Ministry of ICT's National Youth Council of Kenya (NYCK) to co-create 'Fursa' (Swahili for opportunity), a platform that allows the council to disburse funds to young people conveniently, faster, more securely and in a more timely fashion.

And the list goes on – with many new entrants making their mark in recent years. Apps were largely unknown in the early days of M-Pesa. However, Nigeria recently welcomed to the market PurplePay, a mobile app that, it says, “welcomes you to a world of convenience for both local and international transactions with 24/7 access to a wide variety of transaction types directly from your mobile phone wherever you are”.

Then there's Flutterwave, founded in 2016 by a team of ex-bankers, entrepreneurs and engineers, who decided to provide the award-winning technology core needed to provide businesses all around the world with a powerful, reliable and intelligent payments gateway. Flutterwave says its mission is to simplify payments, making it easier for Africans to build global businesses that can make and accept any payment, anywhere from across Africa and around the world.

Equally innovative is OPay, a one-stop mobile-based platform for payment, transportation, food and grocery delivery, and other important services in everyday life. Millions of users rely on OPay every day to send and receive money, pay bills, and order food and groceries.

Another service, called Boku, was founded to enable people to make purchases for digital content with their mobile phones. For much of Boku's life, mobile payments have been driven by mobile operators and carrier billing. However, the advent and mass adoption of mobile wallets has created a sea change in not just mobile payments, but in the global financial system. Thus in 2021, Boku launched the M1ST Payments Network, combining carrier billing and mobile wallets into a single payments scheme.

One reason for this upsurge in cashless activity is customer demand. Another, however, is that governments have seen the health benefits. In Kenya, for example, as the Covid-19 pandemic unfolded, digital financial services systems have been used to support social



Clayton Hayward:
“We have a huge underserved market.”

distancing efforts, aiding business continuity during movement restrictions that have been implemented in Kenya and across the world.

Last year, the Central Bank of Kenya (CBK) directed all banks and telcos to actively encourage the use of mobile payments. Telkom Kenya joined other telcos in eliminating charges on person-to-person transactions of less than KSh1,000 for an extended period, and also raised the transaction ceiling from KSh70,000 to KSh150,000. It wasn't good for the participants' balance sheet in the short term, but it probably helped to encourage the mobile payment habit.

“Banks are clearly no longer letting phone-only systems make the running.”

With this trend in mind, we asked a couple of companies relatively new to the market how they thought it would evolve. One of them was pawaPay, which originated as the payments part of pawaTech, a UK software company with more than a decade of experience building mobile money solutions for African markets.

Today, pawaPay is a mobile money payments leader on the continent, processing more than 100 million mobile money transactions per year across more than 10 countries – and is confident that it can compete in this busy market. Nikolai Barnwell, CEO, said, “We are experts at mobile money. None of our competitors are mobile money first in their approach to payments on the continent.”

As for the future, he said, “Mobile money will continue to grow and entrench itself even further as the de facto finance tool on the continent. Credit cards will struggle to achieve broad adoption, with merchants preferring the mobile

money product – because it's both a superior product with instant settlement and because it's where the consumers are.”

Clayton Hayward is CEO & co-founder of Ukheshe, a global, digital-first financial services enabler. Its footprint includes South Africa and Mauritius. He said, “We witnessed a dramatic shift during the Covid-19 pandemic as consumers pivoted towards digital payments. Aside from the convenience of a digital-first approach, consumers now prefer to make contactless payments and there is no end in sight in terms of this preference.”

He continued: “Ukheshe is excited to be at the forefront of the rapid shift towards innovative digital-first solutions, especially in markets that are ripe for disruption. Ukheshe also created Eclipse which is a truly unique solution: as an innovative orchestration framework layer, Eclipse enables single API integration to access multiple payment solutions with the inclusion of third-party products, allowing Ukheshe partners a variety of customisable payment products.”

He added: “The Eclipse API offers user authentication and KYC, virtual and prepaid cards, digital wallets, loan management, messaging, fraud detection, payments, eCommerce, Mastercard acquiring and issuing, all in one integrated credible payment solution.”

But that's not all. “Ukheshe's value proposition is that we are a market-leading fintech enablement partner. Rather than compete with major institutions, traditional banks and telcos who may not have the time and resources to build their own fully integrated SaaS platforms, Ukheshe has responded with a fully integrated solution in Eclipse API that fast-tracks financial inclusion for them.”

Having established relationships with financial service players including Mastercard, as well as a number of high-profile telecommunications providers, and other organisations throughout Africa and in other key global locations, the company has made strategic acquisitions. “This has ensured we have brought in the right skills, knowledge and talent to continue our growth path.”

As for the future, “merchant-based lending as well as buy now pay later (BNPL) are both integral parts of our Eclipse unified API. These services are becoming more and more mainstream where transactional history and receipts are used to perform credit scores to offer lending to merchants. The digitisation of small and micro businesses will allow them to have access to responsible lending which in turn helps them better manage their growth and working capital requirements.”

It's clearly an exciting time for digital payments in Africa. Both global giants and local innovators are joining the rush to encourage this trend. Will they help to make Africa a cashless continent? ☺

Delivering broadband connectivity to the oil and gas industry

Why is demand for satellite capacity from mining and oil and gas companies still strong, despite the continuing spread of terrestrial connectivity? HTS, new LEO constellations, ever-more remote operations and innovations like hybrid connectivity are keeping satcoms relevant, as Joel Schroeder, Director, Land Mobile, Intelsat, tells Ron Murphy.

THE ADVENT OF high high-throughput satellites (HTS) has undoubtedly been a game-changer both for the satellite industry and for the companies that use satellite communications.

Joel Schroeder, Director, Land Mobile, Intelsat, explained that HTS satellites have been designed to meet booming demand in connectivity. They can provide far more throughput than existing wideband satellites, with increases in throughput of up to 400%. The use of focused spot beams enables enhanced performance, coverage footprints, and connectivity efficiency.

He continued, “Combined with wide-beam satellites, users benefit from improved performance – not only in bits per second per Hertz, but also in the aggregate MHz available and the geographic area covered, enabling bandwidth-hungry applications anywhere, anytime.”

And demand isn’t slowing anytime soon. Research organisation NSR predicts that demand for HTS capacity for land mobility should reach 24 Gbps by 2028, up from less than one Gbps in 2017.

But why is demand for HTS capacity from mining and oil and gas companies still strong, given the continuing spread of terrestrial connectivity?

In fact all these companies, operate in harsh environments and hard-to-reach areas. Whether it is to inspect facilities, monitor leaks, service equipment or monitor workers traveling between locations, they require always-on network availability.

As Schroeder pointed out, “With its ubiquitous service footprint and high network uptime, satellite communication is the best way to deliver broadband connectivity to the oil and gas industry on a global basis.”

In fact seventy percent of respondents to a recent survey conducted by Intelsat among oil and gas executives say “support for remote operations” is one of the top three benefits of satellite connectivity in supporting mobile vehicles and/or temporary site operations.

Schroeder added, “More specifically, HTS can help improve operational efficiency and performance, enabling technologies such as IoT and AI, and allowing the workforce to make value-based real-time decisions.”

The bottom line then, is that, despite the spread of terrestrial connectivity, many of the areas where the oil and gas and mining industries operate are unconnected and satellite technology provides a powerful, cost-effective and easy-to-install solution to the oil and gas industry’s connectivity challenges.



Joel Schroeder: We are already working on defining the connectivity of tomorrow.

That’s not going to change. The International Energy Agency (IEA) expects global oil demand in particular to rise every year through to 2026. Thus, oil and gas companies are exploring new areas – on land and at sea. “They need to find new operational efficiencies to help them operate optimally in these faraway, often harsh

Satellite communication is the best way to deliver broadband connectivity to the oil and gas industry on a global basis

areas,” said Schroeder. “For this, operators need technologically advanced solutions that enable always-on and robust connectivity even in the most remote regions.”

But there’s a choice of bands. “There have long been discussions on the topic of Ku- and Ka-bands,” Schroeder agreed. “When it comes to rain, Ka-band is much more impacted by heavy rainfall that can lead to a weaker signal or even its complete loss – not ideal for the oil and gas industry that requires robust connectivity at all times, regardless of the location.”

He added, “Global constellations of Ku-band satellites such as operated by Intelsat, combine wide-beam and spot-beam, ensuring a depth of coverage that provides end users with resiliency and redundancy unavailable in Ka-band. Switching between these Ku-band options to direct capacity to where it is needed most is possible because of the open architecture compatibility between Ku-band HTS and wide-beam satellites.”

He summed up, “Therefore, when selecting a satellite solution, the oil and gas industry should assess link budget, network uptime / availability and the needs of some applications or end users that might require a very high uptime which could be impacted by rain fade.”

These days, of course, bandwidth is less of an issue. With its multiple layers of redundancy making it available at any time, Ku-band remains an ideal solution for oil and gas users who operate in off-the-grid locations. But, with the industry looking for optimal connectivity solutions, the past few years have seen many ground-breaking innovations.

We’ve already mentioned high throughput satellites (HTS); these have pushed the boundaries further by providing far more throughput than traditional satellites, while two mission extension vehicles (MEV-1 and MEV-2) have given five years of extra life to two satellites. As its name implies, a mission extension vehicle is a type of spacecraft designed to extend the functional lifetime of another spacecraft through on-orbit satellite servicing.

In addition, low earth orbit (LEO) constellations are being launched and will be operational in a few years, adding further options, notably high bandwidth and low latency.

Schroeder added, “Also, new managed services such as Intelsat FlexMove enable connectivity on the go, meeting the requirements from on-site oil and gas exploration to the trucks and vehicles travelling hundreds of miles through unconnected areas.”

And that’s not all. “We are already working on defining the connectivity of tomorrow, with a new class of incredibly powerful software-defined satellites that will launch over the next few years. They will allow capacity to be instantaneously reconfigured and repositioned in response to ever-changing customer demand, significantly improving the economic equation for customers, and making networks even more flexible, accessible, relevant, and cost-effective for them.”

And it’s not just about voice, of course. Oil companies in particular are increasingly relying on bandwidth-hungry complex applications to operate and have started introducing technologies such as IoT and AI to help them improve operational efficiency and performance. As Schroeder explained, “For example, such applications will help address leak and flow issues that can affect well integrity, the dynamic nature of leaks and flow events requiring constant monitoring to capture their intermittency.”

Hybrid solutions are a concept that Intelsat has been keen to promote lately. That’s because recent advancements in satellite connectivity are making it possible to use high-throughput satellite connectivity in a cost-effective way in combination with terrestrial wireless services, creating a ‘network of networks’ hybrid solution that can provide organisations with remote operations and on-the-move site workers with easy-to-deploy communication options that can help quickly scale operations where and when they’re needed most.

Schroeder summed it up thus: “Where cellular/fibre networks aren’t available or are

cost-prohibitive, oil and gas companies can switch to satellite connectivity anywhere needed to ensure operations and data continue to run seamlessly.”

Intelsat FlexMove, mentioned earlier, is part of the move towards hybrid connectivity he described. How does he see it evolving? He said, “Intelsat FlexMove is the first HTS solution for land mobility users and enables robust, reliable internet access via public internet or private IP connection to support access to a private network for users in remote, hostile, emergency, or temporary locations. FlexMove creates the ultimate connectivity safety net by enabling bandwidth-hungry applications at speeds up to 20x faster than narrowband satellite solutions, relying on Intelsat’s global network.”

Oil companies have started introducing technologies such as IoT and AI to help them improve operational efficiency and performance.

He continued, “With ‘difficulty of network setup and management’ cited as a top drawback of satellite adoption for land mobility organisations surveyed by Intelsat, we believe that FlexMove will play an increasingly important role as it helps overcome this barrier.”

He added, “The Intelsat FlexMove network is paired with a portfolio of pre-configured, fully integrated terminals which enable an array of comms-on-the-move and comms-on-the-pause applications including autonomous and remote vehicle operation as well as real-time video streaming for advanced site security. This is made possible because of the easy-to-deploy

design of these very compact, highly portable and mobile terminals. For instance, our portable connectivity solutions have auto acquisition of satellite signal capabilities that enable any user to connect to the internet, complete VoIP calls and run data-intensive applications in under five minutes.”

Redundancy is important too, and, said Schroeder, Intelsat has this covered – literally – blanketing the earth with multiple layers of wide-beam and spot-beam capacity, “ensuring the network not only provides high-density coverage where it is needed most, but also a high-degree of redundancy should bandwidth become constrained or an asset encounter anomalies. The Intelsat global network has one of the highest network uptimes, operating consistently at 99.9% availability, which makes it attractive for remote operations like oil and gas.”

While it’s often mission-critical, especially where other options are not available, satellite is still more expensive than cellular. However, that’s a situation that is improving. Intelsat, for example, is continuously working on making satellite connectivity simpler and more cost-effective.

“Our HTS solutions’ higher performance means a lower cost per bit, while enabling smaller, more affordable, and easier to install terminals, reducing upfront costs, said Schroeder, adding, “Also, our network’s open infrastructure means that customers can use their existing infrastructure. Our managed service FlexMove has been designed to make it easy for oil and gas operations to benefit from speeds up to 10Mbps for a fraction of the cost when compared to narrowband satellite services.”

The future is bright too. “The next generation, software-defined satellites, in which Intelsat is actively investing, will further improve the economic equation for customers.” ©



The future is HTS! Intelsat 33e, a high throughput geostationary communications satellite.

Photo: Intelsat

It's time to talk about cyber security

Cyber security threats are an inevitable consequence of the growing digitisation of the workspace. But a new report suggests more needs to be done to combat such threats in sub-Saharan Africa, as Ron Murphy discovered.

OVER 90% OF IT decision makers across South Africa, Kenya and Zimbabwe have accelerated their cyber security efforts due to the substantial emergence of digital ways of working, according to research undertaken by leading pan-African technology group Liquid Intelligent Technologies.

Ignus de Villiers, Group Head of Cyber Security explained that Liquid has a strong presence in these markets, where, he said, “our research has indicated many common elements indicative of the business landscape in East Africa and Southern Africa”. There is in particular a high degree of communality when it comes to the world of cyber security. “However,” he added, “we did also find some differences. For example, more people in Zimbabwe are back at the office when compared to South Africa and Kenya.”

While what the company calls “digital ways of working” had already become more common, de Villiers said, “The global pandemic acted as the primary catalyst leading to businesses adopting these new technologies, which has led to a significant shift in the way we work and live.”

He continued, “This acceleration in digital adoption has ensured that businesses on the African continent can develop African solutions for African challenges. Unlike other more mature economies, African organisations do not have as many legacy issues, and they can leapfrog technologies to level the playing field with their global counterparts.”

In addition to ensuring a better work-life balance for employees, a direct result of the ‘work from home’ culture, African businesses can now expand their operations digitally to international markets. “However,” de Villiers warned, “if organisations do not invest in the digital space, they are in danger of becoming irrelevant.”

Which brings us to cyber security. More than half of the countries on the continent have inadequate cyber security safeguards, laws and regulations. However, as the report says, IT decision-makers across South Africa, Kenya, and Zimbabwe have accelerated their cyber security. This is because of the increasing number of reported data breaches; staff working from home are no longer protected by their private network safeguards.



Photo: Liquid Intelligent Technologies

De Villiers: “Cyber security should be at the centre of every business conversation.”

Liquid IT certainly feels that there is a need to improve the type and effectiveness of security controls implemented and that there should be compliance with legislative and regulatory requirements to sustain socio-economic development on the continent.

In today's digitally transformed business world, and given the evolving nature of threats, cyber security should be at the centre of every business conversation.

“Moreover,” de Villiers added, “in today's digitally transformed business world, and given the evolving nature of threats, cyber security should be at the centre of every business conversation. Therefore, there needs to be a robust cyber security framework.”

In fact Liquid IT itself has adopted a cybersecurity framework that adheres to best practices. This framework has two pillars.

De Villiers explained, “The first is that an information security management system (ISMS) is utilised to cover governance, risk, compliance, people, process and technology; it is enabled by the ISO 27001 Standard. The second pillar is that the ISMS is enabled by a cyber security resilience control framework consisting of security controls covering identification, detection, protection, response and recovery, testing, situational awareness, learning, and evolving.”

The company's cyber security team structure supports the delivery of the overall framework and has four competencies: security consulting services; product solutions and professional services; managed security services; and the security operation centre. “These competencies are responsible for delivering solutions and services that align with the adopted cyber security framework,” said de Villiers.

This response is far from common. Funds allocated to cyber security in countries like Zimbabwe have been comparatively low, possibly due to wider budget concerns. But cyber security threats are real, and there is a need to protect not just data but the integrity and reputation of an organisation and its clients.

De Villiers explained, “According to our report, 58% of businesses indicated concern about the loss of company and client data, and over 75% are concerned about said illegal access to information directly resulting from them getting hacked. The situation will only worsen as geographical boundaries do not restrict malicious entities, and the digital world is growing by leaps and bounds.”

Liquid hopes to amplify the findings of its research, to raise awareness among businesses and the communities. “With that awareness,” said de Villiers, “those who were not placing cyber security at the centre of their business conversations will hopefully realise that they cannot afford not to do so.” ©

Liquid Intelligent Technologies is a pan-African technology group with capabilities across 14 countries, primarily in sub-Saharan Africa. For more on the recent cyber security report go to www.liquid.tech/insights/innovation-reports

A digital response to rapid urbanisation

How can digital technology, and in particular mobile telecommunications, help to deliver energy and water and improve waste collection? That's what the GSMA Innovation Fund for Digital Urban Services aims to find out, as the GSMA's head of sub-Saharan Africa, Angela Wamola, explains.

THE GSMA INNOVATION Fund for Digital Urban Services aims to scale digital solutions that provide essential urban services to underserved populations from low and middle-income countries in Africa, South Asia and Southeast Asia. We asked the GSMA's head of sub-Saharan Africa, Angela Wamola, to explain its aims and how the mobile ecosystem can support the improvement of essential urban services.

Communications Africa (CAF): What inspired the development of this fund?

Angela Wamola (AW), head of sub-Saharan Africa, GSMA: Cities in Africa and Asia are faced with the concurrent challenges of rapid urbanisation, climate change, and persistent inequality. As we highlighted in our report *Digital Solutions for the Urban Poor**, these challenges make urban service provision particularly difficult for city governments and utility service providers. Inclusive utility services such as energy, water, sanitation, waste management and transport support urban resilience, which allows cities in low-and-middle-income countries (LMICs) to better withstand challenges related to population growth, climate change, and inequality.

With the support of the UK Foreign, Commonwealth and Development Office

(FCDO), this fund was set up with the objective of extracting insights from business models to inform the improvement of essential urban services delivery across four verticals: plastic and waste management; energy; water; and sanitation. The grants will be utilised to test digital innovations, enable scale and provide essential services to underserved populations across all four sectors.

CAF: Who is judging the applicants? What are they be looking for?

AW: An independent panel of experts appraise proposals based on the submitted material as well as recommendations from the GSMA and the Fund Manager. Successful grants will be awarded to start-ups, SMEs or social enterprises that leverage digital technology, especially mobile, to deliver urban services with socio-economic, commercial and environmental impact.

CAF: Why did you highlight plastic and waste management, water, energy and sanitation?

AW: Two-thirds of the world's population will live in cities by 2050, with most urban growth concentrated in Africa and Asia. This poses challenges to basic service provision as city authorities and urban service providers struggle to meet the demands of rapidly growing

populations. Digital solutions can provide essential urban services to underserved populations in LMICs.

As we stress in our report*, urban services such as plastics and waste management, energy, water, and sanitation are essential to well-being and the creation of more circular economies. While there has been a historic rise in mobile connectivity in LMICs, billions of people lack access to basic services. With rapidly expanding informal settlements across Africa and Asia, where 90 per cent of global urban growth from now until 2050 will be concentrated, water shortages, unsanitary conditions, unreliable power provision, and inadequate waste management could remain a defining reality for many.

Providing basic urban services to rapidly expanding informal settlements poses unique challenges to municipalities and state-owned utilities. For instance, extending piped networks and sewer infrastructure to informal settlements faces a range of financial, technical and political barriers. The result is often highly disproportionate distribution of basic services between richer neighbourhoods and poorer informal settlements, with preference given to the socio-economic core. Experts warn that instead of benefiting from pathways to greater prosperity, many people living in informal settlements risk being locked into 'poverty traps' given that they often settle in areas deprived of public and private investment.

Innovative solutions that can make cities work for low-income populations, provide sustainable urban services, and allow cities to become true engines of upward mobility need to be tested and scaled.

CAF: Is it right to argue that mobile communications in particular can better and more quickly reach informal housing than fixed?

AW: Digital solutions can unlock business models with the capacity of extending service provision to low-income urban populations. For example, prepaid smart meters in the water sector can make safe water sources more affordable to low-income populations who otherwise rely on variably priced, unsafe sources. There is also growing recognition that 'downstream' innovations in plastic supply chains will help ensure that global and domestic



Could digital technology improve waste management in places like Cote d'Ivoire?

Photo: GSMA

brands have a consistent supply of high-quality recycled plastic and enable 'upstream' innovation where products use less virgin plastic and are designed to be reused or recycled.

However, these solutions require strong partnerships between the public and private sectors, as well as mobile operators and other technology providers. Innovators bring new approaches and solutions and mobile operators provide the digital platforms and underlying connectivity infrastructure to reach and communicate with customers, while municipalities and utilities have crucial service mandates to fulfil.

Together, these partners can leverage the power of digital technology to create innovative service models to enable access to more reliable, affordable and sustainable urban services.

CAF: How much are projects like this important in raising awareness of the importance of wireless in developing regions?

AW: Mobile-enabled digital innovations such as pay-as-you-go do not only make services more accessible to low-income populations but also drive mobile usage and digital literacy. In a recent report*, we showcase how pay-as-you-go solar customers increase their mobile usage (data, voice and SMS, mobile money) after becoming pay-as-you-go customers.

CAF: How can mobile aid sustainability?

AW: For over a decade, GSMA Mobile for Development, with the support of its donors, has helped advance the use of mobile technologies and digital solutions to deliver socioeconomic and climate impact across a wide range of areas, including, but not limited to, energy, water, agriculture, circular economy solutions, and disaster response.

Uniquely placed, we work within the mobile ecosystem and the development sector advancing the use of mobile technology, connected devices, and other digital tools so they can make a positive difference to the planet and millions of lives. We acknowledge there is still more to do. It is imperative to create partnerships, develop best practices, identify innovation, and further leverage digital technology and assets to address the challenges spanning climate mitigation, adaptation, and resilience.

We are proud to have been recognised by the UN's Race To Zero campaign as one of the first industry sectors to 'Breakthrough' with 36% of the industry, by total revenue, committed to net-zero emissions. And the momentum continues to build as almost two-thirds of the mobile industry has set science-based carbon reduction targets to cut emissions rapidly over this decade. Our ambition goes beyond our sector, as we help other industries reduce their



Photo: (Bangladesh): GSMA

Two-thirds of the world's population will live in cities by 2050, with most urban growth concentrated in Africa and Asia.

carbon emissions through the use of mobile and network services for their digital transformation.

Research conducted by the GSMA with the Carbon Trust found that, while the mobile industry is currently responsible for around 0.4% of carbon emissions globally, it enables carbon reductions in other sectors that are 10 times larger, equivalent to approximately 4% of global emissions.

In addressing the climate crisis, we recognise that the mobile industry has a unique role to play. And we must adapt to a changing climate; as an infrastructure business, the mobile industry is at risk of extreme weather events, flooding, and loss of electricity. Like all sectors, we must rapidly reduce our emissions and we are taking significant steps to do so. Beyond the mobile industry's footprint, we provide solutions to help other sectors reduce their emissions through digitisation.

We call on all governments to align their carbon reduction targets to net-zero by 2050 at the latest and create suitable energy market frameworks for businesses to access renewable electricity at competitive prices.

CAF: Do you feel that mobile operators in particular may be more open to such new ideas as they look for new ways to promote their social usefulness - and of course new sources of revenue?

AW: Start-ups and mobile operators bring important synergies to one another. While start-ups in emerging markets have the potential to excel in both the innovation ecosystem and the wider economy, many start-ups struggle to reach scale due to insufficient investment capital; lack of payment infrastructure; difficulty reaching new users as a less-known company; and a shortage of market insights and limited government support.

While mobile operators have reached scale

across many population segments, they also face challenges in retaining subscribers and increasing service revenue. As operating costs for network services rise, and the price of basic mobile services falls, mobile operators seek to grow revenue by increasing usage of existing services through new and attractive use cases, and new services.

While mobile operators have reached the scale that start-ups seek, start-ups can dynamically innovate in adjacent areas that mobile operators may lack. Mobile operators are also seen as trusted entities with the potential capacity to facilitate public-private partnerships between start-ups and governments.

Increasingly mobile operators see partnerships with innovators as key to their growth, and many operate their own accelerator programmes, with some investing significant venture capital in start-ups.

CAF: Could the fund extend its scope beyond the four key areas in the future?

AW: Applications to The GSMA Innovation Fund for Digital Urban Services are now closed and successful grantees will be announced in 2022. There is no scope to extend this funding round beyond the four key verticals. However, The GSMA Innovation Fund(s) continue to support innovative digital solutions with positive socio-economic impact in LMICs.

We believe digital solutions have the power to sustainably reduce inequalities within our world by connecting everyone and everything to a better future. ☺

**Digital Solutions for the Urban Poor, The Value of Pay-as-you-go Solar for Mobile Operators, Supporting Innovation in Digital Urban Services and other development-focused GSMA reports can be accessed at gsma.com/mobilefordevelopment/*

How green is Africa's data?

What challenges face data centres in general when it comes to energy efficiency and sustainability? What challenges, if any, are specific to Africa? And how are they being overcome? Vaughan O'Grady asks two of Africa's biggest names in data centre development how their data centres will manage the demands of a greener future.

“GLOBAL CHALLENGES AFFECTING energy efficiency and sustainability are mainly driven by economic growth across the world that has sparked the rapid scaling of data centre capacity. Servers are not only growing in volume, but also in processing power. As a result of this, power consumed by data centres is surging and there is an increasing push for these data centres to be powered by renewable sources of energy and to move away from non-renewable energy sources such as coal and gas.”

It's hard to argue with this assessment by James Byaruhanga, General Manager, Raxio Data Centre – Uganda. And, as he says, Africa throws up other problems: in this continent, he suggested, poor design and equipment selection are the primary challenges to improving energy efficiency.

He explained: “This is partly due to limitation of resources and expertise and inefficient use of capital. Given the lack of colocation data centres on the continent, many enterprises are forced to build their own data centre infrastructure. These enterprises inefficiently allocate capital to build non-core data centre infrastructure which often yields sub-optimal performance if not done correctly. Most in-house data centre facilities are not fully redundant and are operating on relatively high PUEs [power usage effectiveness] and therefore fall short of providing a solution that companies need.”

Inevitably the availability of power from the grid is another major challenge affecting data centres in Africa. National electricity grids frequently suffer from downtime and, as a result, data centres are forced to rely on diesel-powered generators as a back-up source of power. This not only affects the economics of operating a data centre but is also harmful to the environment.

In addition, according to Byaruhanga, “Often enterprises that build their own data centres in-house have not optimized their site selection to achieve the best possible grid power availability because it is quite difficult to do so when building at a small scale. These data centres are situated inside office buildings in dense areas that may not be served with redundant power supply and lack the infrastructure required to deploy alternative sources of power – for example solar.”



ADC's new state-of-the-art data centre facility in Midrand, Johannesburg

Photo: ADC

Katie Hill, director of business operations for Africa Data Centres, agreed that energy is an issue. As she said, “ADC Data centres in their nature are very energy-dense and the cost of energy is one of the biggest operational costs in a data centre.”

Thus Africa Data Centres aims to be resource-efficient, an approach which has the net effect of cost reduction as well as carbon emission reduction.

Hill continued, “The data centre sustainability trend is towards renewable energy goals and targets. Most data centres across the globe have either set official targets or have unofficial internal targets.”

Echoing Byaruhanga's comments, she added, “With renewable energy comes the need for space, natural resources (sun and

wind) and one of the biggest factors, storage. Currently storage is expensive and therefore pushes the cost of renewable energy to values where it becomes a premium to procure renewable energy.”

Of course, with regards to energy efficiency there is a great drive towards making both the critical (IT) and non-critical data centre equipment more efficient. “However,” Hill said, “this comes at a cost and this is one of the major challenges with energy efficiency.”

As for challenges specific to Africa, one obvious one Hill mentioned is that most of the energy efficiency technologies are produced outside of Africa “and as such getting this equipment to some African territories is expensive”. And don't forget that, despite its amazing growth, the data centre industry is still in its infancy in Africa and “there is a huge gap with regards to energy efficiency and sustainability standards in Africa; most African countries do not have fully developed renewable energy policies and this hinders the ability for data centres to achieve 100% renewable energy or to set targets.”

“Smaller servers, more responsive systems and lighter hardware are some of the advances that will drive a greener environment within the data centre industry.”

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Continued from page 20

But these challenges are not insuperable. Both companies are making efforts of their own to overcome them.

Raxio, together with its technical partners Future-tech and Master Power, both of which have extensive experience in building and designing data centres across the world, has taken several strategic design decisions to improve the energy efficiency and sustainability of its data centres.

Byaruhanga explained, “Across the portfolio of data centres, we use best-in-class equipment to ensure we can guarantee high levels of uptime whilst remaining energy efficient so that we can pass on the savings to our customers. We work with industry-leading manufacturers such as Schneider, FläktGroup and Caterpillar to supply and maintain our equipment.”

The company has also implemented as standard the latest energy-efficient cooling technology that uses indirect adiabatic cooling (IAC) units that will operate in both compression mode and free cooling mode. “These cooling units use less electricity compared to traditional direct exchange (DX) cooling and have helped us to set a new benchmark for PUE in the region,” Byaruhanga explained.

The power challenges and advantages can be regional as well as continent-wide. To manage the sustainability challenges related to downtime of grid power, Raxio works closely with utility providers to achieve maximum uptime by using redundant sources of grid power. “At our site in Uganda, power is sourced from two hydroelectric generation facilities and fed to the site via two redundant rings. Furthermore, where feasible, we evaluate the option of using solar energy to partially substitute the use of diesel generators.”

ADC has standardised its design to be highly energy efficient and sustainable. The new ADC design standard is being implemented in the expansion projects with some of the following measures:

- Target a lower-than-industry-standard design annualised PUE
- Selection of high-efficiency, free cooling chillers
- High-operating chilled water temperatures to facilitate free cooling
- Efficient cooling controls on precision cooling units and pumps.
- Selection of high-efficiency UPS modules
- Cold aisle containment in the data hall to optimize the cooling application to IT equipment.

Again there’s the point that while the need to reduce carbon emissions in order to improve sustainability is high, this, coupled with the reduction in energy costs, makes a sound business case.



James Byaruhanga: “There is an increasing push for these data centres to be powered by renewable sources of energy.”

Hill explained, “ADC has set a target to achieve 100% renewable energy across all our facilities. Given this, the new sites have been selected in areas where there is an abundance of renewable energy and a potential for additionality.”

As for sourcing renewable energy, ADC follows three steps. The first step is to maximize the usable space on each site (rooftops, carports, etc) for distributed renewable energy—solar being the most practical. However, she pointed out, “Given space constraints and energy density, onsite solar will only generate 2-5% of our total facility power requirement.”

The second step, where regulation allows, is to generate additional solar on neighbouring rooftops. “We have a project that we completed on a neighbouring warehouse in Nairobi and are currently generating energy into our facility from the solar installation.”

The third step could actually enable ADC to reach 100% renewable power. It will be to “access larger renewable energy projects offsite and wheel the energy to our facilities. This is also dependent on regulation,” she added.

So what do the two companies think technological advances offer in this area in the future?

As you might expect, the use of more energy-efficient designs and equipment availability is highlighted. Byaruhanga explained, “This involves constructing or upgrading buildings that are able to get the most work out of the energy that is supplied to them by taking steps to reduce energy loss such as decreasing the loss of heat through the building envelope.”

Solar will contribute more than it does at present. “In particular the improvement of output and lower cost of solar PV (solar cells/ photovoltaic cells, convert sunlight directly into electricity) will drive an uptick in its use and reduce the reliance on diesel generators.”

There’s also the rise in long-duration battery storage. “We will see energy storage technologies improve to have exceptionally low self-discharge, high round-trip efficiency, and long lifetime,” Byaruhanga said.

But the centres themselves can play a part, using for example, improved data centre operations that monitor the environment in data centres using the latest, cutting-edge technology solutions to optimise energy consumption. Byaruhanga added, “Advances in technology are driving forward the need for better software and hardware; smaller servers, more responsive systems and lighter hardware are some of the advances that will drive a greener environment within the data centre industry.”

ADC’s views are similar, with a few additions. Obviously Hill agrees that we can expect further improvements in energy-efficient technologies and a reduction in the capital costs of such technologies. And like Byaruhanga, Hill is hopeful for an improvement in storage technologies to unlock the capability of 100% renewable energy usage

But, Hill pointed out, a regulatory push is also needed, in particular “the creation of Africa-specific standards and bodies to benchmark energy efficiency, the development of renewable energy-friendly policies in most African countries and the decarbonization of the national grid in some countries”. ©

Could FWA be better than fibre for remote users?

Across large parts of Africa, there is limited legacy internet infrastructure. Wim van Thillo of Pharrowtech told Phil Desmond why this could be an opportunity for fixed wireless access (FWA).

IS FIXED WIRELESS access (FWA) the most logical option for delivering high-speed connectivity to everyone, everywhere?

“It can be deployed rapidly and with minimal environmental disruption, unlike fibre, and it offers far higher throughput and lower latency than satellite internet. It is also significantly more cost-effective than both fibre and satellite internet, as unlicensed bands can be utilised and no large-scale physical infrastructure is required.”

So said Wim van Thillo, CEO and Co-Founder at Pharrowtech, a company that designs and develops hardware and software for next-generation wireless applications. He believes FWA will roll out gradually in sub-Saharan Africa depending on the infrastructure and demand in each individual market. However, he added, “As with every technology or public project, the organisations involved need to be sure of demand and potential for profit before moving ahead.”

As FWA becomes more commonplace, that will also support a decrease in manufacturing costs.

Although fibre deployments have been successful in some dense urban environments, they simply aren't suitable for rural and remote locations as the cost of deployment would never be recouped. FWA is different: it specifically allows for high-speed internet to be delivered to those in less populated suburban and rural areas.

Recent events have helped to make the case for FWA of course. The positive impact of high-quality



Photo: Pharrowtech

Wim van Thillo: “Where possible, governments should consider funding FWA service providers.”

internet access was demonstrated when the pandemic meant that the ability to work remotely became a necessity for many. And smartphone prices are continuing to fall. In turn there is greater reliance on digital services for basic necessities such as work, education or shopping for food, as well as for things like entertainment.

And FWA pricing will also fall. “Because FWA is cheaper than fibre to install by design,” said van Thillo, “this means that the cost of subscriptions for end users will also be cheaper and therefore, in theory, uptake should be faster comparatively. As FWA becomes more commonplace and demand for the hardware also increases, that will also support a decrease in manufacturing costs, which will in turn benefit others in the supply chain.”

Of course there will always be some cost involved. Thus, van Thillo advised, “Where possible, governments should consider funding FWA service providers, and facilitate access to lamp posts, telephone poles, and other public infrastructure to deploy network equipment, to enable high-speed, low-cost and reliable broadband services.” He added, “In time, the financial benefit to the economy will be realised by giving people the ability to work virtually and by

FWA allows for high-speed internet to be delivered to those in less populated suburban and rural areas

supporting businesses to establish themselves and serve local communities.”

Of course this is Pharrowtech's area of expertise. It designs and develops mmWave radio frequency (RF) technology for next-generation wireless applications. Van Thillo explained, “The mmWave 60GHz unlicensed 5G spectrum band delivers gigabit data speeds as fast as fibre.” However, to date, FWA solutions have struggled to transmit a signal outdoors to reach individual homes and businesses, without it being disrupted by obstacles such as buildings and trees.

“We have developed the first and only high-performance, carrier-grade RF chip capable of offering reliable, carrier-grade performance for the FWA market. Our technology is a low-cost, easy-to-deploy alternative to fibre. Pharrowtech's technology operates on the 60GHz unlicensed spectrum which already exists, so we aren't reliant on new spectrum becoming available.”

As for why the high-speed connectivity FWA can offer matters, van Thillo explained, “We see high-speed connectivity on the same level as basic utilities such as electricity. There is a ‘digital divide’ between those in cities who usually have access to the internet, and those outside who may not, and this will become more and more damaging if it is not addressed. A digital divide often results in an education divide, and an educational divide has a lasting impact throughout an individual's life. There can be no meritocracy without equal access.” ©

Pharrowtech designs and develops mmWave radio frequency (RF) technology for next-generation wireless applications. See www.pharrowtech.com

Live from Amsterdam – at last!

IBC describes itself as the world's most influential media, entertainment and technology show. Last year, however, its many halls fell silent. Now IBC is back – and, as Michael Crimp, CEO of IBC, explains, IBC2021 will bring the content and technology industry together once again to discover the future of media and do business face-to-face.

IN 2019, MEDIA, entertainment and technology show IBC attracted more than 56,000 attendees from 150 countries around the world to Amsterdam. Last year, like so many other trade shows, it was cancelled. Michael Crimp, CEO, IBC, told us what it's like to be back and what topics are likely to be discussed at IBC2021.

Communications Africa (CAF): What do you think will be the main talking points at this year's IBC?

Michael Crimp (MC), CEO, IBC: Firstly, I can't wait to be back in Amsterdam in December. Our industry has been apart for too long, and I know there's a huge desire among the media entertainment community to get together again in person to learn, network and do business.

We've always had an unwavering commitment to encouraging knowledge sharing within the industry, which is exemplified by the fact this year's content programme will be available for free to all IBC2021 attendees. This year we have a number of exciting keynotes from top speakers from Discovery Inc., Fox Sports, HBO Max, Netflix, Olympic Broadcasting Services, Starz, Unity Technologies and Warner Media. The keynotes will be hosted in the new Showcase Theatre in Hall 12, alongside thought-leadership-led sessions on pertinent industry

Streaming has boomed over the past two years, with new platforms emerging around the globe

trends from exhibitors and sponsors.

We'll also have four themed show floor stages placed in the main exhibitors' halls with dedicated themes: Production & Post Production; Content Supply Chain; OTT/Direct to Consumer (Content Everywhere); and Live & Remote Production. Innovation is the fifth content theme at IBC2021, which will be reflected in sessions from the IBC2021 Technical Papers Programme. The IBC2021 Accelerator Media Innovation Programme also falls under the Innovation umbrella and will deliver groundbreaking projects and fascinating trends that I think will generate lots of interest this year,



The show is an opportunity for technology vendors, broadcasters and media service providers to re-engage with one another.

including in areas such as 5G, XR, facial recognition, voice control, cloud, AI, and advances in audio.

The IBC Innovation Awards will also return and this year we'll be spotlighting collaborative projects and announcing the recipient of IBC's highest accolade: the IBC International Honour for Excellence. Previous recipients of the IBC International Honour for Excellence include Ang Lee, Andy Serkis and Sir David Attenborough, to name just a few, and I'm incredibly excited to see who will be presented with the honour this year.

CAF: It sometimes seemed that demand for entertainment was if anything stronger over the past two years. Is this true?

MC: Absolutely — entertainment was a real saving grace for many of us throughout difficult periods of lockdowns and quarantine measures. We saw demand for content constantly growing, but that's not just because people have been spending more time at home; streaming has boomed over the past two years, with new platforms emerging around the globe.

The media industry adapted to a new reality, with many content owners distributing new cinema releases direct to streaming platforms while movie theatres were forced to close. And in the action-packed summer of sports this year,

millions of viewers were glued to their seats for live events like Euro 2020 and Tokyo 2020 – the most-streamed Olympics in history. There's undoubtedly been a huge demand for entertainment, and the way audiences are consuming that media is evolving. That presents new business and technology challenges of course, but also huge opportunities.

CAF: And how did modern technology enable broadcasters to keep working – and help them to serve demand safely?

MC: Innovative technology workflows and many talented, creative thinkers in our industry played a huge role in keeping media services on air and running smoothly. Remote production enabled teams to overcome logistical and technological challenges over the course of the pandemic, but the trend toward remote workflows was already well underway, and we'll continue to see cloud technology and remote production models deployed in our industry to enable highly flexible, efficient media operations.

CAF: Did the pandemic inspire any innovation in the broadcast equipment industry?

MC: Our industry is forward-thinking and innovative by nature — but the pandemic definitely accelerated the adoption of new technologies, including remote and cloud-based workflows. In many respects, vendors

and their media customers were forced to rethink how we can create and deliver content, and that certainly accelerated innovation within our industry.

Emerging technology such as 5G has become a key industry trend recently – and it'll be a focus in this year's IBC Accelerator programme, which will spotlight trends such as the role of 5G in three areas: Innovation in Live Production Workflows; Remote Production in Live Sports; and how it is enabling LB XR (Location-Based eXtended Realities). Innovation is something we pride ourselves on at IBC – and it's the bedrock of our Accelerator Programme. This year, 85 companies will collaborate towards developing innovative solutions to common business and technology challenges. Associated Press, Al Jazeera, the BBC and RTE will be involved in championing accelerators for a third year, with others, including BT Sport, the EBU, ITV, Reuters, Sky, TV2, Yle, Unity Technologies and Unreal/Epic and ViacomCBS, taking part in the programme for a second time. Each Accelerator Project is 'championed' and led by broadcasters and studios, supported by teams of expert vendors and solutions providers.

There is a huge amount of innovation happening in our industry right now – and the Accelerator Programme will showcase a wide range of these innovations and emerging trends. Al Jazeera is this year leading a project on how AI can be used to detect, measure, and flag bias and tonality in the representation and portrayal of diverse genders, cultures, and ethnicities in reportage and news coverage. Sky is leading the RT-3D Interactive Content Creation Project for Multi-Platform Distribution. In addition, there are projects focused on providing low-cost smart animated remote production and immersive audio and sound imagery. Also, a team of world-class broadcasters will lead a project on



Photo: IBC

Michael Crimp: "There's a huge desire to get together again in person."

sustainability in live production, exploring how to improve production efficiencies and reduce energy consumption.

CAF: Was the actual trade in broadcast equipment badly hit in the past 18 months?

MC: Like all technology industries, the last 18 months presented commercial challenges, and

the global chip shortage has naturally had its effects on broadcast manufacturing. But we're already seeing a rebound as media organisations look to deploy advanced technologies to fuel innovation and differentiation. IBC Show has a role to play here; it's a long-awaited opportunity for technology vendors, broadcasters and media service providers to re-engage with one another, share insights and knowledge – and drive business leads.

CAF: Which of the areas IBC covers do you expect to attract the most interest at the show – and in general in the coming year?

MC: IBC Show is a broad church that spans a wide array of technology trends. New technologies and business strategies that can have the greatest impact for companies within media entertainment and unlock new and exciting opportunities will always attract a huge amount of interest. Programmes like our Accelerator Programme are showcasing groundbreaking use cases for exciting technologies such as 5G, AI and remote production, so I'm expecting these topics to generate lots of discussion at this year's show. ☺

To find out more about IBC2021 and register, go to <https://show.ibc.org>



Photo: IBC

There is a huge amount of innovation happening in the broadcasting industry right now – and it will be on show at IBC2021

Mixed messages from a major market

Ethiopia has long claimed that it plans to open up a number of state-run sectors to private investment. One of the most attractive is undoubtedly telecommunications. Phil Desmond looks back at how this story has developed.



Is entering the telecoms market in Ethiopia an opportunity or a risk?

Photo: Adobe Stock

TO SAY THERE has been a lot of telecommunications news from Ethiopia recently would be something of an understatement. Barely a day passes without an update from a country that is finally opening up its telecommunications sector to competition, albeit slowly and, some would say, erratically.

It was back in 2018 that the government announced plans to allow domestic and foreign investors to acquire minority holdings in the state-run operator Ethio Telecom, the country's only operator at the time. Then, in mid-2020 the government announced plans to award mobile licences to two new players.

Big names like MTN, Orange and Vodacom had shown interest in entering the market well before this, so the response looked like being a positive one. However, the operators didn't get to set the rules.

The lack of permission to offer mobile money services was one of the earliest issues. Nevertheless, despite the fact that Airtel withdrew from the bidding process at a fairly early stage, some newspaper reports suggested that Orange looked a likely participant as did Axian, MTN, Saudi Telecom

Company, Telkom SA and Liquid Telecom.

In the end only MTN and a consortium of Vodafone, Vodacom and Safaricom took part. The winning bidder was the Safaricom-led consortium. It offered to pay \$850 million for its licence.

MTN's \$600 million bid, was deemed too low but, at the time, MTN chief executive Ralph Mupita suggested that MTN might reapply should the Ethiopian government reissue the licence and permit mobile money services.

Which the government did. The licence-winning Safaricom-led consortium was also permitted to offer mobile money services. But MTN decided not to bother after all.

Meanwhile Ethio Telecom launched its own mobile money service – called Telebirr. This was rumoured to have passed the 10-million-subscriber mark by late September, buoyed up by zero-rated transfers and ease of loan access.

Other services are now being assessed, including an international remittance service system. Safaricom's M-Pesa is not

set to launch before next May, giving Telebirr a chance to snap up even more customers.

Meanwhile the – potentially – very attractive prospect of gaining a stake in Ethio Telecom is under way after the government launched a tendering process for the proposed sell-off of a 40% stake in the state-owned carrier to private investors.

It's worth noting, however, that over a year ago attempts by the Ethiopian Communications Authority (ECA) to bring in foreign telecom infrastructure firms were said to have angered Ethio Telecom, whose executives had argued that it had spent billions of dollars on infrastructure across the country in recent years and should be able to profit from leasing towers to any new operators that are licensed.

The government then suspended the entry of foreign telecom infrastructure companies into the country.

There is movement in other sectors too. In late 2019, First Brick Holdings announced it is

establishing and investing in Raxio Ethiopia, which will build and operate the first state-of-the art, privately owned data centre in Ethiopia. RedFox Web Solutions, ScutiX and wingu.africa look like they will also be implementing data centres in the country.

As for the chances of a second new entrant into the market after Safaricom, requests for proposals for the second national telecoms licence have been reissued with a deadline for delivery of 20 December.

Balcha Reba, director general of the ECA, was quoted as saying "Following our successful first license issuance earlier this year ... we now want to encourage more telecoms operators, of all sizes, to be part of this exciting opportunity."

But how exciting will it be with mixed messages coming from government about freedom to compete – let alone the uncertainty caused by the ongoing conflict between federal troops and the Tigrayan Peoples Liberation Front?

However, this is Africa's second-largest country, home to more than 115 million people. Even a constrained opportunity may seem attractive in a market of that size. ☺

The lack of permission to offer mobile money services was one of the earliest issues.

Growing smartphone ownership will influence Nigeria's development in the coming years.



Photo: Adobe Stock

Smartphones for all?

Nigeria's vast population has embraced mobile technology - and is now embracing non-voice services as falling smartphone prices enable greater use of data. Ron Murphy reports.

MOBILE PHONE OWNERSHIP is growing fast in Nigeria. But the country's government has found it hard to manage some aspects of this mobile explosion.

For example, the drive to encourage people to register a valid National Identification Number (NIN) with their network provider and link it to their SIMs could undoubtedly have been handled better.

Initial deadlines of only weeks in late 2020 led to crowds outside enrolment offices (not ideal during a pandemic) and, inevitably, delays and new deadlines. The country has just reached its seventh, and presumably last, extension; this one halts the registration process at the end of 2021.

More recently, social media was in the spotlight when Twitter's service was suspended after it deleted a post by President Buhari which contained what could have been interpreted as a threat to separatists. Nigerian officials apparently denied that the post and the shutdown were connected.

It's no surprise that this move was seen as an attack on free speech. However, it also lost Nigerian businesses a lot of revenue, underlining the fast-growing reliance on non-voice communications in the country.

This observation has been backed up by the Nigerian regulator the Nigerian Communications Commission (NCC), which in August reported an increase of over 200% in data usage over the past three years in the country.

According to Pew Research Centre, only 32% of Nigerians used smartphones in 2018. In 2021, according to Statista, 48.12 percent of the

Nigerian population accessed the internet via a mobile device. This share is projected to grow to nearly 60 percent in 2026. Another study, this time from Data Reportal, shows that 92.4% of the total internet users in Nigeria are from smartphones.

All of which demonstrates the importance of mobile internet connectivity in the country and the falling cost of access: these figures are partly driven by an increasingly low price point for smartphones in Nigeria's mobile market.

Of course, that may not be enough. Although a report by Research ICT Africa shows that the price of 1GB of data in Nigeria fell from \$11.18 in Q3 of 2014 to \$2.78 by the end of 2019, an estimated 40% of the population lives in poverty; mobile and internet access may still be out of reach for large portions of the population.

Many businesses in Nigeria are now leveraging SMS, mobile apps and websites to reach new business prospects; Statista points out that the mobile advertising market in Nigeria is also booming. Thus, as mobile internet penetration rates continue to grow in the country, even more services will be tailored for mobile - and especially smartphone - users.

MTN Nigeria's quarterly update for the period ended 30 September 2021 underlines this point. The report referred to another strong

performance in the period in which data continued to drive revenue growth, supported by fintech and digital services.

Change is not just being driven by business and smartphones, of course. Satellite operators and others are focusing on bringing communications to the underserved areas of the country. For example in October Eutelsat Communications announced that it had been selected by African digital solutions provider Globacom to bring satellite broadband to underserved regions of Nigeria. And around the same time YahClick, the satellite broadband service offered by global operator Yahsat and its partner Hughes Network Systems, signed a strategic partnership with core telecommunications services provider Global Communications Extension Services Limited (GCES) to provide satellite connectivity for 9mobile, one of Nigeria's leading mobile network operators.

Less well-off city dwellers are also being targeted. Local entrepreneur Akin Marinho of Fiam Wi-Fi has come up with a clever business model that is bringing Wi-Fi services to some of the most deprived communities in Lagos for a modest price.

Such initiatives are essential to bring communications to all of Nigeria. However, data-driven initiatives will still have a very high profile in the coming years.

Smartphones for all may still be some way off, but a glance at the Nigerian technology press, where mobile-data-focused start-ups are regularly announced, shows that, as smartphone ownership increases, so will businesses targeting smartphone owners. ☎

Many businesses in Nigeria are now leveraging SMS, mobile apps and websites to reach new business prospects.

Connecting the 3.8 billion unconnected

What is the state of mobile internet connectivity worldwide? How are regions faring in which mobile internet is a still relatively new phenomenon? A new report* from mobile industry organisation the GSMA takes a closer look.

THE COVID-19 PANDEMIC has accelerated digital transformation around the world. That's one of the findings – and possibly the least surprising one – of a new report* from the GSMA, which represents mobile operators and organisations across the mobile ecosystem. The report is called the State of Mobile Internet Connectivity 2021.

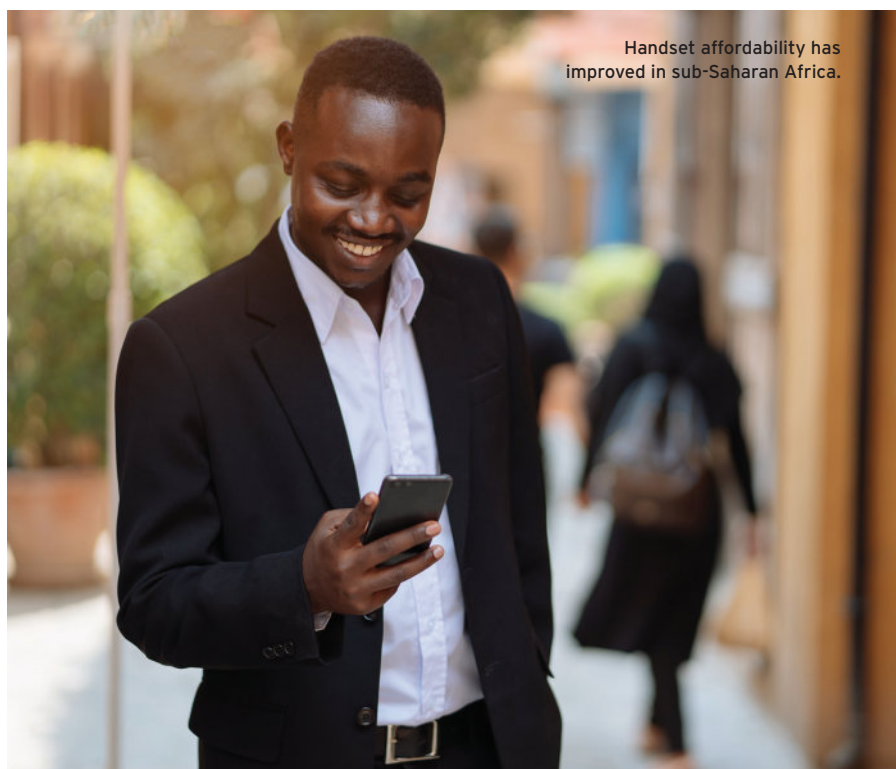
The rapid expansion of online education and health services, e-commerce and remote working has highlighted the importance of the internet. In low and middle-income countries (LMICs) most people access the internet via mobile, and for many it is the only way to get online. Thus it has provided people with a key means to keep in touch and access important information, services and opportunities to support their lives and livelihoods, particularly during lockdowns.

This is a rapid change. As the report points out, six years ago about a third of the world's population were using mobile internet. Today, it is more than half. But, while more than four billion people are using mobile internet as of late 2020 (an increase of 225 million since the end of 2019), 3.8 billion people still do not have access to the internet – most of them in LMICs.

This, the report says, is usually due to a lack of mobile broadband coverage or because of other barriers, including a lack of awareness of the internet and its benefits, lack of literacy and the required skills, affordability, lack of perceived relevance, and safety and security concerns.

The coverage gap – those living in areas without mobile broadband coverage – stands at 450 million people, or 6% of the world's population. Sub-Saharan Africa is still the region with the largest coverage gap, at 19%.

The usage gap – those living in areas with a mobile broadband network but not using mobile internet – has reduced for the second year in a row but continues to be substantial; it represents 43% of the world's population. The



Handset affordability has improved in sub-Saharan Africa.

Photo: Adobe Stock

unconnected are more likely to be poorer, less educated, older, rural and women.

In fact women in LMICs are still 15% less likely to use mobile internet than men, with 234 million fewer women than men using mobile internet. It's true that people living in rural areas are increasingly using mobile internet. A significant rural-urban gap nevertheless persists across the surveyed countries.

In fact the GSMA suggest that a quarter of adults are still not aware of mobile internet and its benefits across the LMICs surveyed. As noted earlier, a lack of literacy and digital skills, as well as affordability, continue to be key barriers to mobile internet adoption.

What about handsets? Despite falling prices, internet-enabled handsets and data actually became less affordable in many LMICs in 2020 due to the economic impact of the Covid-19 pandemic. The decline in per capita income due to the pandemic was one reason for this. However, handset affordability improved somewhat in sub-Saharan Africa and data became more affordable in South Asia.

All that said, across the LMICs surveyed, the diversity and frequency of online activities has

increased. Mobile internet users have been using their mobile phones for a wider range of online activities and, in many cases, more frequently. There has also been growth in more data-intensive activities, such as video calling, music streaming and watching videos online.

Despite the increase in data usage resulting from the pandemic, mobile networks were resilient and network capacity improved. And of course, as we all know from regular reports on the subject, 4G network coverage continues to expand, while a number of countries have also seen significant increases in 5G coverage.

More people than ever before are able to access information, content and services through mobile internet. The report claims that these increased levels of mobile broadband connectivity have a particularly strong socio-economic impact in LMICs, including the reduction of poverty.

However, it warns that, if not well managed, increased levels of digitisation can exacerbate existing inequalities. While increasing coverage of mobile broadband remains an important issue in emerging markets, it is the usage gap that is key to closing the digital divide.

The report suggests that mutually beneficial private-public partnerships should be pursued.

Policy makers and regulators, the report suggests, should shift from the traditional infrastructure-focused approach to a more people-centric one, doubling down on efforts to tackle barriers preventing the adoption and use of mobile internet services.

So what specifically can be done to accelerate mobile internet adoption and use? The report says that a comprehensive approach is required that focuses on the usage gap. For example, improving digital skills and literacy as well as increasing awareness and understanding of mobile internet and its benefits are critical to driving digital inclusion.

Among a number of recommendations, the report suggests that mutually beneficial private-public partnerships should be pursued, digital skills development integrated into education policies at all levels and ‘train-the-trainer’ programmes implemented to enable ongoing community-based learning.

Of course there’s also a need to improve the affordability of both handsets and data. This could be enabled by partnerships that lower the cost of internet-enabled handsets, financing mechanisms that reduce the upfront cost to consumers, and promotions or subsidies that make handsets and data bundles more affordable for different user segments.

Governments can also impact affordability by, for instance, removing sector-specific taxes and considering subsidies that do not increase costs for others. Further driving down investment and operational costs will also be key to making connectivity more affordable.

However, the report adds, broader poverty reduction initiatives will be essential given the significant impact of low incomes on the affordability levels of data and handsets.

Relevant content and services are also needed. This includes content and services available in relevant languages, the lack of which the GSMA describes as a significant barrier preventing many people from benefiting from mobile internet. However, improving relevance requires investment in local digital ecosystems that can accelerate growth in local content, services and applications that meet the needs of people in their communities.

Another recommendation is that more people should have access to financial services so that they can make transactions and purchases online. Governments can take the lead by accelerating the digitisation of public services, specifically focussing on mobile channels.

A lack of literacy and digital skills, as well as affordability, continue to be key barriers to mobile internet adoption.

Like just about everywhere LMICs have safety and security concerns. Awareness campaigns, digital skills training programmes, the development of safety apps and services, and the setting up of helplines can all help to moderate these, the report says. The tricky job

of balancing the fundamental rights of individuals to privacy while at the same providing the flexibility to innovate will also have to be managed.

And of course even where mobile broadband coverage exists, people may not have access to key enablers such as electricity and formal IDs, or the services may not be accessible as a result of factors such as restrictive social norms or a lack of accessibility features.

The needs of underserved groups including women and persons with disabilities should also be considered to enable greater access to sales channels, as well as training facilities. To promote better access to mobile internet for individuals with low literacy levels or for persons with disabilities, awareness of simplified products and services, as well as accessibility features, should be improved and their development encouraged.

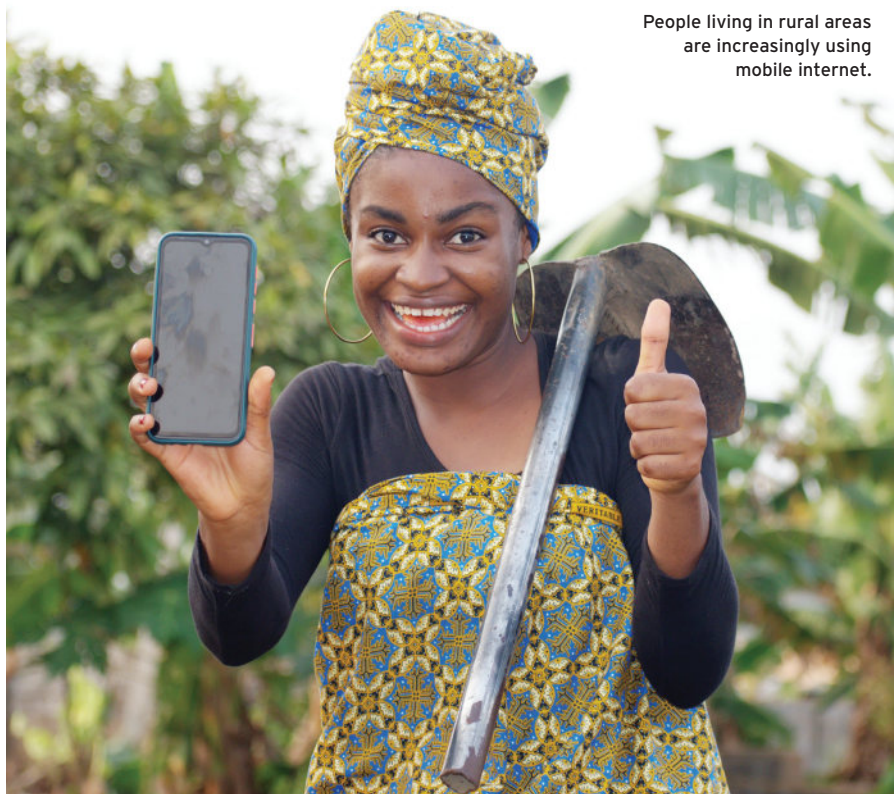
As for increasing mobile broadband coverage, the report says mobile operators should explore the use of innovative technologies that reduce the cost of deploying and operating networks in remote areas. Supported by policies that enable rationalisation of resources, such as spectrum technology neutrality, such innovations can help extend coverage in a commercially viable manner.

Industry collaboration, in the form of voluntary infrastructure sharing and public/private partnerships, can increase the efficiency of private and public capital, and extend the reach and capacity of mobile broadband networks. Proactive policies that target rural areas – such as using universal service funds (USFs) to subsidise infrastructure or providing timely access to public infrastructure – are effective mechanisms to increase investment levels in rural connectivity.

The report adds that a forward-looking spectrum policy is also key to incentivise investments in mobile broadband coverage and capacity. This includes the timely release of relevant spectrum, and pricing that spectrum correctly, so that mobile operators invest in infrastructure that puts the spectrum to use. Finally, it points out, technology neutrality allows mobile operators to reallocate 2G spectrum for deploying 3G and 4G services more swiftly.

Despite no shortage of challenges, the report concludes on a positive note. Connecting the 3.8 billion people that are left unconnected requires a collective effort, it agrees. However, it adds, “By recognising and acting on our shared responsibility to advance mobile broadband coverage and use, we can ensure the internet will benefit everyone.” ©

**To access the report, go to: www.gsma.com/r/somic/*



People living in rural areas are increasingly using mobile internet.

Connecting possibilities across Africa

In a major development, InterSAT, one of Africa's leading internet providers, partnered with SES to enhance satellite-enabled connectivity for major organisations, government institutions, broadcasters and the private sector in 32 African countries.

InterSAT is now offering truly differentiated services to their customers.

Photos: InterSAT

THE FIBRE NETWORK in many African countries is still under-developed, with a significant population living beyond its reach. Growing demand for internet connectivity from rural communities and remote businesses motivated InterSAT to expand its coverage capabilities. To do so, they needed to deploy evolved networks comprised of terrestrial fibre, wireless and satellite technologies.

As a company that strives to make service delivery better and faster, InterSAT continuously seeks to invest in state-of-the-art services. That's why SES made a fitting partner to help them achieve their goals.

Powering InterSAT's growth

Partnering with SES enables InterSAT to deliver high-performance connectivity and expand their coverage, including to a single site, to multiple rural

villages, and to larger, semi-urban areas.

Reliable fixed data

Smaller communities have an increasing need for faster, more reliable broadband to support business growth, as well as healthcare and educational services. Leveraging a range of technologies, SES's network solutions help InterSAT increase network reach, improve network resilience and intelligence, and enhance their end-

user quality of experience for essential cloud services.

Better broadcasting service

InterSAT's broadcast customers can deliver live, linear, and nonlinear sports and events content to viewers across Africa on any device. This is thanks to the flexible, continuous redundant connectivity provided by SES, coupled with innovative video content management, playout, and distribution solutions.

Accessible cloud capabilities

Taking advantage of SES's partnerships with top-tier cloud service, InterSAT optimised the performance of critical cloud services and applications for their end-users. Standards-based Layer 2 interconnection makes it simple for users to interconnect with cloud operators.

Exceptional user experience

InterSAT is now offering truly differentiated services to their customers. They have new and upgraded capacity and customised connectivity platforms, made available by SES satellites. Now InterSAT delivers an exceptionally high-quality experience across Africa, whether end-users are simply accessing the Internet, viewing a live broadcast event, or using advanced cloud applications and services. ©

"The partnership between SES and InterSAT has paved the way for a wealth of digital opportunities and has built a stable support network for Africa's businesses. With a solution that can meet demand and fulfill connection needs, Africa's industries can now look towards the future."

Hanif Kassam, CEO of InterSAT

For more information, visit www.ses.com/case-study/intersat

Cybersecurity a key focus at Intersec 2022

The UAE Cyber Security Council has announced a strategic partnership with Intersec, the world-leading emergency services, security and safety event - to introduce the first ever Cyber Security Lab at the global event running from 16-18 January 2022.

THE 23RD EDITION of the flagship event, held under the patronage of His Highness Sheikh Mansoor Bin Mohammed Bin Rashid Al Maktoum, has the theme of 'Uniting the world's leading industry specialists for the safety and security of future generations.'

The new Cyber Security Lab was developed to focus on investigative techniques, forensic capabilities, and public-private partnerships to prevent cross border digital terrorism.

Intersec's elevated programme is reaching new heights in 2022 and will include cyber security as one of the many new additions taking centre stage as part of the event's ground-breaking new conference framework. Intersec's innovation and technology focus is introducing the Cyber Security Lab to enable global and regional industry leaders to discuss critical aspects of the industry in a dynamic, knowledge exchange platform.

Highlighting its importance, HE Dr Mohamed Al Kuwaiti, head of the UAE Cyber Security Council, will be inaugurating the Cyber Lab conference. HE said, "The Cyber Security Council aims, during its participation in the global event, to shed light on the UAE's innovative and advanced initiatives in cybersecurity and the country's efforts to establish effective global partnerships, exchange experiences, and unify global efforts to address cross-border cyber-attacks to enhance global digital security."

Alex Nicholl, Messe Frankfurt Middle East's head of Intersec, added, "Intersec's partnership with the UAE Cyber Security Council demonstrates the importance of this sector and the innovative developments at the show in 2022. We are thrilled to bring the highest level of Government partners to collaborate and participate at the event. The UAE Cyber Security Council has embarked on a number of initiatives that reinforce a safe and secure cyber infrastructure in the UAE, we are honoured to be a part of their plans to share their vision across the world."

Intersec 2022 will also feature some of the world's best speakers in the UAE for the first time with global experts and Government leaders headlining Intersec's inaugural Cyber Security Lab at the three-day conference.

The cyber programme will include discussions on rapid changes in the industry, key trends and the growth in emerging

innovations and technology advancements. An innovative line-up of live activities including an interactive three-day hackathon will include some of the region's most ambitious students and exciting Start-Up's.

Also new to the programme is the Intersec Cyber Awards recognising global and regional talent. A significant focus on diversity in Cyber Security will feature throughout the programme, plus the role of education and academia in growing talent.

A significant focus on diversity in Cyber Security will feature throughout the programme, plus the role of education and academia in growing talent.

Intersec will run at the Dubai World Trade Centre and brings together thousands of the industry's most powerful stakeholders for bilateral government and business discussions on mitigating and addressing vulnerabilities of the future. They are joined by leading regional

and international brands exhibiting the most innovative systems and solutions in a dynamic environment that enables face-to-face exchange through interactive roundtables, workshops, and 'closed-door' confidential conversations.

Cyber Security is one of seven product sections at the annual event, joining Commercial Security; Fire & Rescue; Perimeter & Physical Security; Safety & Health; and Homeland Security & Policing.

"The UAE is a global leader in cyber security, which was evident in the global competitiveness indicators, where the protection of our cyber security and maintaining business continuity in strategic sectors is a top priority in the council's strategy to confront suspicious cyber-attacks proactively and with high efficiency. Cyber Security and the protection of digital assets remains top of the Cyber Security Lab agenda with wide global participation which enhances UAE's position as an international innovative laboratory that presents new tools and advanced technologies capable of facing current and future cyber-attacks worldwide," added Al Kuwaiti. ©

www.intersecexpo.com



The cyber programme will include discussions on rapid changes in the industry.

ThinkKom Satellite antennas qualified for operation on Intelsat Flex Networks

THINKKOM SOLUTIONS HAS announced that its land-mobile ThinSat 300 phased-array antenna has been qualified for use on Intelsat's FlexMove for government satellite network.

The qualification was awarded following an extensive battery of over-the-air tests conducted at Intelsat's Mountinside Teleport in Maryland with Intelsat General. As a result, the ThinSat 300 is now fully authorised for use with Intelsat's FlexMove service packages.

Intelsat's FlexMove next-generation tiered service offerings are built around a high-performing multi-layered Ku-band satellite fleet centered on the Intelsat high-throughput Epic satellites combined with the world's largest wide-beam satellite constellation to create a global service area.

Based on ThinkKom's patented VICTS (Variable Inclination Continuous Transverse Stub) technology, the field-proven ThinSat 300 phased array is a low-profile, lightweight vehicle-mounted antenna that provides high-quality voice, data and video communications-on-the-move (COTM). It supports robust IP networks, streaming video and voice-over-IP applications on- or off-road at high rates of speed without stopping the vehicle to deploy a fixed satellite dish or waiting for a blockage recovery.



Photo: ThinkKom Satellite

The field-proven ThinSat 300 phased array is a low-profile, lightweight vehicle-mounted antenna that provides high-quality voice, data and video communications-on-the-move (COTM).

Bill Milroy, chief technical officer and chairman of ThinkKom Solutions, said, "This FlexMove qualification is an important validation of our VICTS technology and opens the door for Intelsat to provide immediate access to mission-critical information and reliable communications to government and enterprise customers around the world, even in the most remote and challenging regions."

"The qualification of the ThinSat 300 adds another excellent low-profile COTM option to our FlexMove for government offerings. In addition to other manpack, communications-on-the-pause and fixed terminals, the ThinSat 300 combines with the wide range of FlexMove service options to meet customer mission requirements," added Michael Radermacher, director of product and market development of Intelsat General.

OFIN develops behaviour-based financing mobile app

OFIN, A FINTECH startup specialising in behavioural data analytics, has developed a first-of-its-kind mobile app that endeavours to change financial behaviour, which will ultimately address financial inclusion, aimed, in this case, at South African distribution operators, trucks and drivers.

The app uses an online marketing technique called gamification, which encourages engagement with a product or service. By gamifying financial spend, the aim is to encourage usage, assist logistics businesses to run more profitably, and, more importantly, to uplift and educate drivers to better manage the vehicle.

The app connects to the vehicle, empowering the driver to be financially healthy as expenses are monitored and incentives provided for effective cost control. There are infinite possibilities on what the user can automate. All the user needs to do is choose a trigger, such as 'after every 100km travelled', then an action, such as 'put aside R45', a function, such as 'for tyres', and then the supplier can accept or reject an automation.

There is currently a revolution in

the space of financial inclusion, with around 70% of people worldwide now having access to financial services, up from just 50% a decade ago, according to the World Bank. One of the key drivers behind this phenomenon is the huge increase in mobile phone usage, allowing institutions to deliver services more easily and cost-effectively to the underbanked.

A recent paper released by research lab Ideas42 revealed that after studying 14 digital financial service providers across South Asia and Africa, the average proportion of accounts with activity was only about 25%. This shows a worrying and unsustainable disparity between innovation and impact.

Sakhile Mabena, CEO at OFIN, said that research in the fields of behavioural science has revealed numerous behavioural barriers that prevent people from building their financial health. One of the most significant barriers is the so-called intention-action gap. Even though people may have knowledge and awareness, neuroscience has confirmed that these factors, in isolation, are poor indicators of behaviour.

TECNO brings Helio G96 chipset to Africa

INTERNATIONAL SMARTPHONE BRAND TECNO has confirmed that it will feature MediaTek's Helio G96 chipset in its CAMON 18 series, which will launch in October.

This will make it the first smartphone brand to do so for the African market. The MediaTek Helio G96 chipset is ideal for powerful 4G smartphones for the

mainstream market, and is equipped with enhanced technology features which boost display and photography experiences.

TECNO is the premium brand from TRANSSION Holdings dedicated to bringing innovative camera technologies and stylish designs. Its CAMON series has been known for its photography feats, having broken a Guinness World Record and collaborating with international partners like National Geographic previously. MediaTek's latest chip offering will combine with TECNO's AI Vision Optimization Solution (TAIVOS) to create smoother, sharper and clearer photos and videos for the digitally native generation.

The MediaTek Helio G96 SoC ensures premium everyday user experiences with its support for 120Hz displays with up to FullHD+ resolution for notably smoother scrolling of webpages and animations in apps. The Helio G96 120Hz display support has no limitation in DDIC supply, C-phy or D-phy interface, and support both LCD or AMOLED display. Combined with support for up to 108MP cameras for the most detailed images, fast Cat-13 4G LTE WorldMode modem integration, dual 4G SIM and VoLTE and ViLTE services, as well as its Intelligent Resource Management Engine and Networking Engine, MediaTek's Helio G96 brings an impressive breadth of features and capabilities to 4G smartphones.



Photo: Adobe Stock

MediaTek Helio G96 chipset is ideal for powerful 4G smartphones for the mainstream market

Huawei launches OceanProtect data protection solution

HUAWEI HAS LAUNCHED the OceanProtect Data Protection Solution, covering both Disaster Recovery (DR) and backup fields to offer comprehensive protection for diversified types of data throughout the lifecycle.

Launched at the Huawei Connect 2021 event, it belongs to the Huawei All-Flash Data Centre Solution to build a fast, green, reliable and intelligent infrastructure for various industries. The solution is built on the concept of "full DR of hot data, and quick backup and restore of warm data", which ensures zero service interruption, zero data loss, and long-term data retention.

During Huawei Connect 2021, Huawei kicked-off one session with the theme of All-Flash Data Centre Builds a Green, Reliable, Intelligent Data "Highway" with a speech from one of the speakers, Michael Fan, director of data storage solution sales department of Huawei Enterprise BG. Michael introduced the wide range of protection levels that are covered by the OceanProtect solution, saying, "In terms of disaster recovery scenarios, it provides various features, such as gateway-free active-active or 3DC solutions, one-click DR drills, and failover (within seconds). While for backup scenarios, the OceanProtect X series provides fast backup and recovery and efficient space reduction."

The solution is firstly designed to offer full DR of hot data. This means it integrates DR for SAN and NAS, and provides worry-free device upgrade to maximise return on investment (ROI). The solution can also flexibly adopt the Huawei active-active DR design to reduce customers' initial investment and meet their evolving DR requirements. This design also guarantees the non-disruptive upgrade from one system to active-active or active-passive dual-system deployment, and then to three-data-centre (3DC) or even multi-DC four-copy solution. This allows equipment to be upgraded online as and when required. Customers can smoothly upgrade the DR protection level to achieve better, effective protection for production data.



Photo: Adobe Stock

It helps enterprises effectively protect their data using fast backup and recovery bandwidths while enabling better utilisation of backup space.

Furthermore, the solution achieves quick backup and restoration of warm data – specifically, fast backup, quick reuse, and efficient storage. This feat uses OceanProtect A8000 Appliance and OceanProtect X8000/X9000 Backup Storage, which provide industry-leading backup and recovery bandwidths. These products implement full, accelerated backup and recovery for warm or hot data, enabling backup data to flow like production data.

The Huawei OceanProtect Data Protection improves the overall data protection level throughout the lifecycle. It helps enterprises effectively protect their data using fast backup and recovery bandwidths while enabling better utilization of backup space.

Avanti Communications launches Avanti EXTEND

AVANTI COMMUNICATIONS, ONE of the leading providers of high throughput satellite capacity across EMEA, has announced the launch of Avanti EXTEND – a new managed satellite service for rural connectivity.

Designed specifically for mobile network operators (MNOs), Avanti EXTEND provides high-performance and cost-effective 2G, 3G and 4G solutions to remote and hard-to-reach areas across sub-Saharan Africa. This enables customers to provide reliable cellular service to the 100 million people living in these challenging locations that would otherwise be impossible to reach using traditional terrestrial infrastructure.

Avanti EXTEND's built-in and fully operational CAPEX solution integrates seamlessly into MNOs' terrestrial networks to reduce network complexity and increase efficiency. This means customers do not need to manage satellite configurations, hub infrastructure or terrestrial networks to deploy a successful satellite cellular backhaul topology.

The service also offers MNOs the opportunity to quickly and effectively undertake large deployments and scale operations to support long-term rural expansion at no additional CAPEX to customers.

And with Avanti's technical expertise, high-throughput Ka-band, and proven ability to roll out thousands of sites across sub-Saharan Africa and Europe, customers can be assured they are receiving the highest quality and service available on the market.



Photo: Adobe Stock

The service offers MNOs the opportunity to support long-term rural expansion at no additional CAPEX to customers.

Interswitch and Interstellar to develop blockchain-powered infrastructure services and solutions

INTERSTELLAR AND INTERSWITCH have been working together over the last two years, carrying out blockchain technology research, with an aim to advance the shared vision of the businesses to drive greater financial inclusion and prosperity across the continent.

As part of the partnership, Interstellar's Blockchain technology stack called STARGATE will be integrated with Interswitch's industry-leading payments and digital commerce technology.

The companies have been preparing for the blockchain revolution in the African market with several ongoing initiatives including a Pan African Payment Ecosystem (PAPE) powered by a private permissioned blockchain network which includes a consortium of banks and fintech players.

Ernest Mbenkum, founder and CEO at Interstellar, commented, "This marks the genesis of an innovative and collaborative partnership aimed at delivering impact-focused and enterprise-grade blockchain-powered services across the African continent."

Akeem Lawal, divisional CEO for transaction switching and payment processing at Interswitch, commented that the new alliance underscores the directional evolution of the company's blockchain innovation strategy, which is premised on three core pillars:

- Strategically developing a native, proprietary enterprise-grade distributed ledger technology stack that is practically tailored to the African context
- Progressively digitising multiple industry value-chains across African markets
- Supporting the actualisation of the Pan African Payment Ecosystem (PAPE), riding the wave of opportunities created by such initiatives as the African Continental Free Trade Area (AfCFTA)

Opera Ads is launching a self-serve platform powered by leading provider DanAds

OPERA HAS ANNOUNCED the launch of its self-serve advertising platform Opera Ad Manager, powered by DanAds, a customisable and scalable self-serve ad tech infrastructure for tier one publishers.

It is designed to create, manage, and report on digital advertising campaigns in one place, allowing advertisers to reach customers in all phases of their journey from discovery to conversion.

Recently, Opera Ads proudly celebrated its two-year anniversary. Since its launch it has become a force to be reckoned with, reaching and engaging millions of Opera users worldwide with innovative, content-based ad experiences from Opera's global inventory, across its portfolio of products and partner inventories.

Hundreds of millions of engaged users choose Opera products to lead their online lives. Consolidated financial results from the second quarter 2021 showed advertising revenue has increased 128% year-over-year, to US\$28.9mn, predominantly fuelled by monetisation growth within Opera News and mobile browsers. The standalone revenue for Opera News grew 442% year-over-year and 49% sequentially versus the first quarter of 2021.

Over the last two years, the Opera team has maintained a commitment to improving user experience by introducing innovative, feature-rich ad formats.

Opera Ad Manager is a portal that offers individual businesses and service providers the opportunity to advertise to their ideal audience around the globe, leveraging an easy-to-use interface to access the scaled inventory of Opera's trusted browsers and news apps in the most transparent way.

Meta unveils business coach tool on WhatsApp for African SMBs

META HAS LAUNCHED Facebook Business Coach, an innovative and easily-accessible way for owners of small-and medium-sized businesses (SMBs) in South Africa, Nigeria and Kenya and other English speaking countries to learn more about how to grow their business online with Facebook, Instagram and WhatsApp.

The Facebook Business Coach, available on WhatsApp, is a free-to-use, low data cost educational chatbot tool that users can interact with in a simple, conversational and convenient way. SMBs have access to automated, self-paced lessons that teach them how to establish a presence in today's ever-evolving digital economy.

As a free curriculum platform, it features step-by-step courses and tutorials as well as helpful infographics, videos and audio clips. Learning material is recommended based on the user's needs and queries, with an option to navigate the curriculum via the menu.

The content was created to assist business owners with multiple queries – from how to create attention-grabbing business pages on Facebook and Instagram, to how to use Messenger and WhatsApp to communicate effectively with clients.

ADVERTISERS INDEX

Company	page
China Satellite Communications Co Ltd	36
Es'hailSat	2
New Skies Marketing BV	35
Siemon	21

Econet Group launches Cassava Technologies

AFRICAN TELECOMMUNICATIONS GROUP Econet has announced the launch of Cassava Technologies, which brings together Econet's digital services and digital infrastructure product segments, encompassing fibre broadband networks, data centres and renewable energy, as well as cloud and cybersecurity, fintech and digital platforms.

Cassava Technologies, headquartered in London, is Africa's first integrated tech player of continental scale at the forefront of technology innovation, with operations and activities in most African countries. Its product segments provide digital solutions to more than one million enterprises and enable access to the internet for over 500 million people. Its Sasai Super App is projected to provide access to fintech services for over 75 million customers across Africa by 2025.

Cassava Technologies aims to empower individuals and businesses in Africa through digital solutions which drive the vision of a digitally connected future that leaves no African behind. The company encompasses well established and leading technology brands, including Liquid Intelligent Technologies, Africa Data Centres, Liquid Cloud, Sasai Fintech, Vaya Technologies, and Distributed Power Technologies. Cassava Technologies is backed by significant investment and extensive collaboration with some of the world's largest technology businesses and institutional investors interested in Africa's nascent but rapidly growing digital economy.

Strive Masiyiwa, founder and executive chairman of Cassava Technologies, said, "Technology creates pathways to democratize access to opportunity. Only through accelerating digital innovation in Africa will we empower individuals, families, businesses, and economies to reach their full potential. As Africa's economy transitions to digital, there is a tremendous opportunity for increasing connectivity to usher in a new wave of digital tools and solutions that will improve the lives of millions of Africans."

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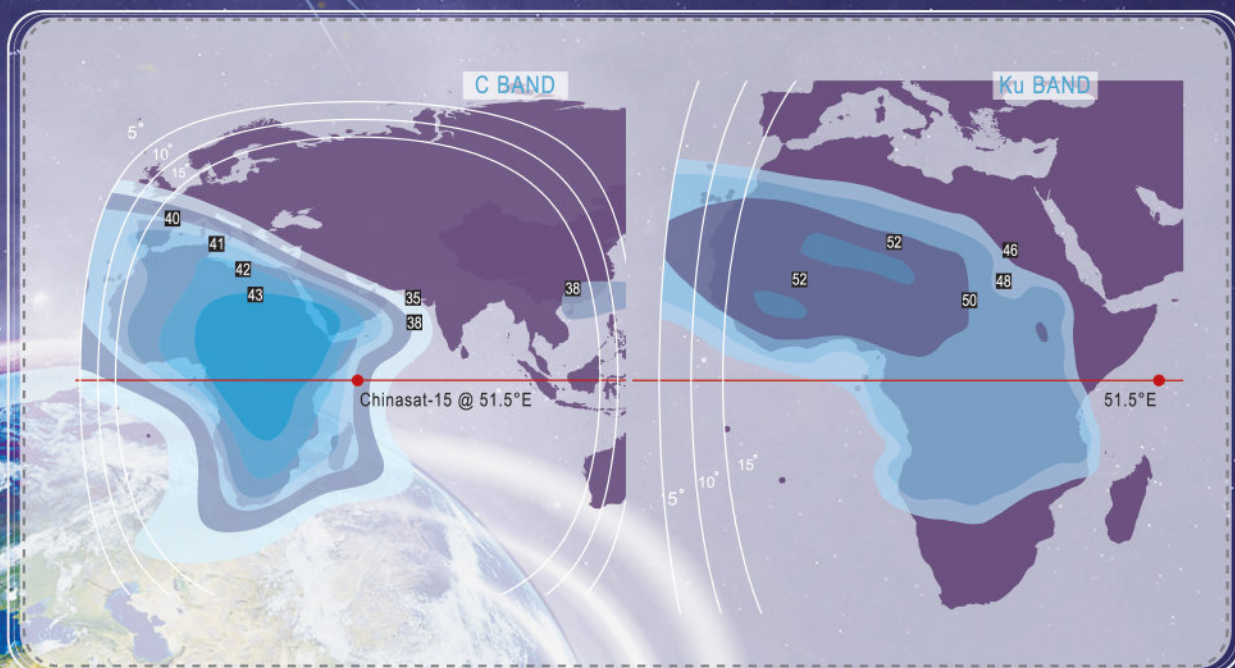
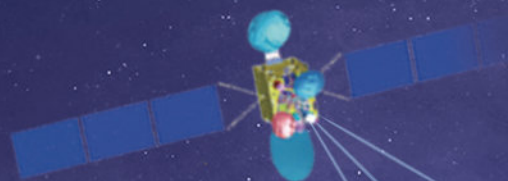
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