- **Bridging the digital divide with FWA**
- **How are CPaaS vendors revitalising telco operations?**
- **Tower inspections: safety first in Cameroon**

NORTHERN AFRICAN WIRELESS COMMUNICATIONS

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KADIUM

Vodacom closes in on Vodafone Egypt acquisition

Vodacom is understood to be finalising its long-awaited Vodafone Egypt acquisition after the operator gained approval from the National Telecommunications Regulatory Authority.

According to *Daily News Egypt*, the R41bn deal will be concluded before the end of 2022, However, the transfer of the 55% majority stake still requires further approval from the Financial Supervision Department of the Reserve Bank of South Africa.

It is understood that circa 80% of the transaction will be funded through the issue of 242 million new ordinary Vodacom shares to Vodafone at an issue price of R135.75 per share. This will see Vodafone's ownership in Vodacom increase from 60.5% to 65.1%. The remaining 20% will be settled in cash. Telecom Egypt will retain its 45% stake.

Reporting on the three months to June 30, 2022, Vodafone chief executive Nick Read reaffirmed his confidence that Vodacom could close out its *"slightly protracted"* takeover of Vodafone Egypt, *"in the near term"*.

In January this year, Vodacom minority shareholders overwhelmingly approved the deal at a General Meeting, with 99% of votes in favour of the transaction. A total of 43 shareholders were present at the meeting, representing 93% of the issued ordinary shares. At the time, regulatory approval was expected before the end of March 2022.

Vodafone has witnessed repeated turbulence in its attempt to part with its Egyptian entity. Back in December 2020, the operator's long-running talks with Saudi Telecom were abandoned. Though reasons were not given at the time, it appeared that Saudi Telecom failed to reach an agreement with Vodafone Egypt minority owner Telecom Egypt.

Negotiations were terminated just under a year after Saudi Telecom signed a non-binding *memorandum of understanding* (MoU) to purchase Vodafone's 55% share — a deal that would have netted the operator US$2.4bn.

Africa lags on mobile internet speeds

Ookla's 2022 Speedtest Global Index shows that Africa's leading mobile internet speed is way below the global average. South Africa has a reported average mobile internet download speed of 68.9Mbps, well below the global average of 77.7Mbps.

Reviewing mobile download speeds for northern African countries, we found the following speeds, listed high to low (northern African countries not listed here were omitted from Ookla's report): Togo 36.71Mbps, Morocco 27.93Mbps, Egypt 22.75Mbps, Kenya 18.81Mbps, Uganda 17.04Mbps, Senegal 16.8, Nigeria 16.67Mbps, Ethiopia 15.61Mbps, Algeria 12.6Mbps, Libya 11.74Mbps, Cameroon 11.26Mbps, Sudan 10.35Mbps, Somalia 9.62Mbps, Ghana 7.93Mbps.

Ookla has also compared mobile internet performance on modern chipsets across 21 MNOs. The median download speeds were highest in South Africa, at 65.95Mbps, and lowest in Guinea at 2.89Mbps.

"We can clearly see the impact that 5G has on overall performance as South African operators came first thanks to having 5G networks in place. MTN South Africa was well ahead of the rest of operators, despite facing challenges with load shedding, with median download speed of 65.95Mbps, followed by Vodacom South Africa with a median download speed of 48.70Mbps. If we take 5G out of the equation, Safaricom Kenya was the fastest operator among the analysed operators," said Sylwia Kechiche, principal industry analyst, enterprise at Ookla, in the report.

A massive number of internet outages is contributing to the African continent's low internet speed, with 46,810 incidents reported for Vodacom and 34,882 reported for MTN in the second quarter of 2022 alone.

"There were two top issues reported: no signal and no mobile internet: lack of signal accounted for the majority (46%) of Vodacom's reported outages, followed by inability to access mobile internet (36%)," the study reported. But that was reversed for MTN where majority of the hitches were related to mobile internet (43%), followed by no signal (40%). "Noteworthy is the fact that there were reports of total blackouts: 7% for Vodacom and 5% for MTN."

MTN entrusts Tecnotree with the digital transformation of 5G network in Nigeria

South African telecom giant MTN has signed a partnership agreement with Tecnotree for the digital transformation of its operations in Nigeria.

Under the terms of the deal, the Finnish company specialising in the provision of business support systems to telecommunications companies will provide the mobile operator with digital business support solutions (BSS) suitable for 5G.

MTN has selected Tecnotree's cloud-native 5 BSS suite, which Tecnotree says provides superior digital operations with easy integration and customer interactions. In particular, it enables the creation of a range of new products and services quickly and efficiently.

The signing of this agreement is part of MTN Group's "Ambition 2025" strategy to become a "leading provider of digital solutions for Africa's progress". It comes about four months after MTN signed a similar agreement with Tecnotree regarding its operations in Ghana. As of June 2021, the company had already begun digitising its operations in Benin, eSwatini, Zambia, South Sudan and Ivory Coast.

The partnership comes as MTN is in the home stretch of the commercial launch of its 5G services in Nigeria. The company launched a pilot phase last week as a prelude to the actual launch of the technology in the coming weeks.

"The deployment of our solutions will not only contribute to automation coupled with a new set of digital features and capabilities, but it will also streamline business processes, execute operations efficiently and at lower cost, and help accelerate revenue growth through new digital service offerings," said Padma Ravichander, managing director of Tecnotree Corporation.

Avanti and Turksat to deliver satellite coverage to Africa

Avanti Communications has announced a new five-year partnership with Turksat to deliver extensive, continuous coverage across Africa and the Middle East in regions where terrestrial infrastructure is limited.

Capacity from Avanti's HYLAS 4 and HYLAS 2 satellites will be combined with that of Turksat's new Turksat-5B satellite to deliver more than 100Gbps of state-of-the-art high throughput GEO Ka-band capacity.

"We are delighted to be announcing this new partnership with Turksat, particularly at one of the most high-profile satellite events of the year. Given the rapidly changing satellite industry landscape, it is a powerful proposition for our respective customers for Avanti and Turksat as two strong regional GEO operators to join forces to offer wider coverage and increased capacity," said Kyle Whitehill, CEO of Avanti. "We have a strong working relationship with Turksat, and share a goal for the sector, to combat the digital divide by creating better connections in

areas of the world where terrestrial infrastructure is limited. We are excited to see the positive impact this latest partnership will have, and opportunities it will unlock for individuals, businesses, and governments."

"As Turksat, we are happy to announce that we are strengthening our current partnership with Avanti especially at this great event of World Satellite Business Week 2022 where we all meet to discuss and seek ways to make sure satellites

better serve against digital divide by making use of our resources more efficiently," said Hasan Hüseyin Ertok, CEO of Turksat. "We believe Turksat and Avanti are great match to complement each other for coverage and capacity at both Africa and Middle East where we see the highest increase for connectivity requirement. We believe this partnership will unlock great potentials, bring more value and ease to many customers at many verticals."

MTM Nigeria launches 5G

MTM Nigeria has officially launched 5G mobile technology in Nigeria with the help of Ericsson, which has provided the 5G radio access network and a non-standalone (NSA) packet core.

The new network was first rolled out in Lagos, and will be extended

to Abuja, Port Harcourt, Ibadan, Kano, Owerri and Maiduguri next. Nationwide rollout will follow by 2025. MTM Nigeria has deployed 127 5G sites already in preparation.

"5G will revolutionize our way of life and communication in all sectors," said Mohammed Rufai, CTO of MTN

Nigeria. "With the speeds offered by 5G, we will be able to enjoy the Internet with low latency, that is, no lag, making our virtual interactions more real. At MTN, we will continue to pursue the deployment of 5G technology to revolutionize internet access across the continent."

Orange Côte d'Ivoire opens Orange 5G Lab

Orange Côte d'Ivoire has opened the Orange 5G Lab, a collaborative space for businesses, start-ups and digital professionals.

The lab site will host a 5G demo space for business sectors, conferences, training, co-working sessions, co-innovation and practical 5G application sessions. The fully equipped space is expected to play a valuable role in developing practical 5G applications as the market anticipates 5G network rollout nationally in 2023.

The 5G Lab has been designed around two principles: allowing economic players to discover new possibilities enabled by 5G and the way it could positively impact their activities; and supporting businesses keen to experiment with 5G's potential for their product or service. Orange 5G Lab offers services and support to economic players devised with expert partners such as Huawei, Nokia or ZTE.

"We recognise that 5G is a new opportunity for businesses eager to diversify, optimise or revitalise their activity," said Mamadou Bamba, CEO of Orange Côte d'Ivoire. "To support them, it is crucial that this space offers ready-to-use tools and allows the results of these experiments to be assessed in a practical fashion. This initiative reflects our historic commitment to digital inclusion. We aim to foster innovation and help create value within the local ecosystem."
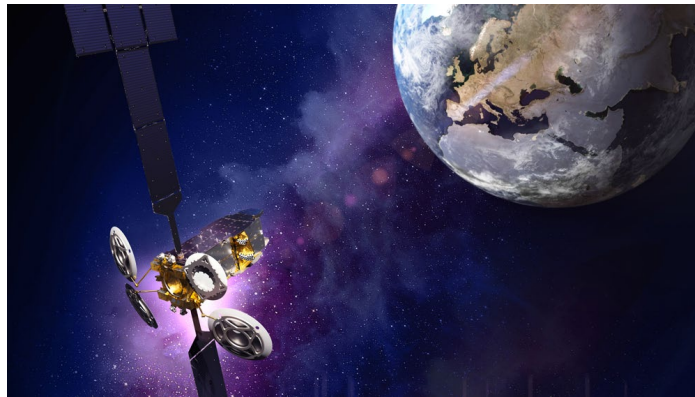
Liquid to offer SMEs new connectivity via satellite

Liquid Intelligent Technologies and Eutelsat Communications have signed a multi-year, multi-beam agreement for capacity on EUTELSAT KONNECT to meet the connectivity needs of SMEs and Small Office/Home Office (SOHO) customers in Uganda, South Sudan and eastern parts of the DRC.

The agreement will see Liquid use the EUTELSAT KONNECT capacity to deliver affordable internet services in locations underserved by terrestrial networks. Liquid already uses connectivity from EUTELSAT 7B for VSAT services in sub-Saharan Africa.

"We offer satellite services in over 27 African countries, impacting the lives of over 1.3 billion people. With this agreement, we will expand our service portfolio to include Ka-band services for the first time," said Scott Mumford, CEO of Liquid Satellite Services. "We have always been early innovators and investors towards initiatives and technology that will help us realise our vision of creating a digitally connected future that leaves no African behind."

Liquid will also play host to the first EUTELSAT KONNECT ground gateway in sub-Saharan Africa in Krugersdorp, South Africa. The gateway will help Eutelsat enhance local coverage and create new business opportunities by offering enhanced broadband service performance.

"This new agreement testifies to the strong appeal of our EUTELSAT KONNECT satellite in sub-Saharan Africa and its pertinence in supporting telecom operators in bridging the digital divide," said Michel Azibert, Eutelsat's deputy CEO. "By reinforcing our relationship with Liquid Intelligent Technologies, we will be able to leverage the Eutelsat fleet's extensive coverage of sub-Saharan Africa combined with Liquid Intelligent Technologies' unique expertise and local know-how to deliver best-in-class services to businesses across the continent."

Uganda gains 600 free WiFi hotspots

The government of Uganda has confirmed the installation of 600 WiFi hotspots as part of the US$75 million World Bank funded Regional Communications Infrastructure Programme (RCIP), and part of the Uganda Digital Acceleration Programme.

"The government would like to provide free internet to selected areas. The internet that we are providing will be utilised by the government during working hours and by citizens after working hours and weekends. The internet will also be used during emergencies and by people applying for government services such as the national identification registration," said National Information and Technology Authority executive director Hatwib Mugasa.

The hotspots will be located in places with pre-existing national infrastructure, but also extend to remote parts of the country. Some 300 are situated in Kampala, the capital, while the other 300 are spread across regional cities.

The Gambia starts EMF monitoring

The Gambia Utilities Regulatory Authority (PURA) has acquired an electromagnetic field (EMF) radiation monitor with financial support from the World Bank. The acquisition comes in response to growing public concern about potential negative health effects of using mobile phones and base radio stations.

The EMF monitor will be used to check frequencies of 100Hz to 60GHz, which encompasses almost all frequencies used by telecommunications and ICT service providers nationwide. The initiative is part of PURA's remit to protect consumers under the Gambia Utilities Regulatory Authority Act 2001. The regulator is also responsible for ensuring and providing information on electromagnetic radiation from mobile phones and radio base stations to address issues that may cause alarm and panic to the general public.

"The assessment of possible health risks from exposure to electromagnetic fields is based on evidence from scientific studies and research," said Mamud Jobe, managing director of PURA.

PURA has already developed guidelines for electromagnetic radiation from electricity and telecommunications service providers in the country, which are consistent with those of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) regarding safe health exposure limits.

Kenya urged to accelerate IPv6 adoption

The Communications Authority of Kenya (CA) has urged technology industries to begin migration from IPv4 to IPv6 to ensure the continued progress of internet development in the country.

"As internet availability increases, so does the need to uniquely identify each of the devices like laptops, phones and IoT devices coming online on the continent - something which IPv6 guarantees with extended numbering capacity. IPv6 will help ensure that the next billion users and devices from Africa will have end-to-end access to the internet," said Kevin Chege, director of internet development for the Internet Society.
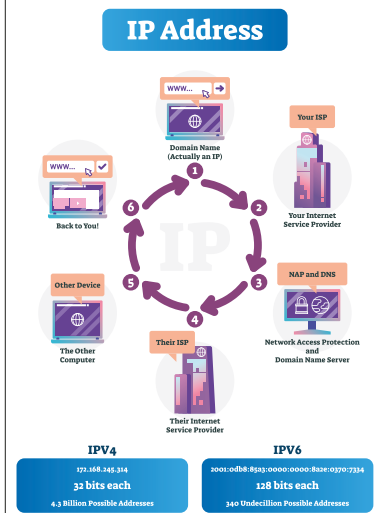
The entire continent has so far been slow to adopt the change. Google's statistics show that adoption is at less than 8% for Kenya, 6.34% for Rwanda, 0.3% for Uganda, 0.11% for Tanzania and 0% for Burundi and South Sudan. Kenya has, however, stipulated a complete migration to IPv6 by July 2023.

Companies have been advised to access training offered by AFRINIC, ICANN and Internet Society to assist in the move to IPv6.

IPv4 is running low in Africa and has already run out in other parts of the world. The move to IPv6 will ensure that services remain accessible.

Telecom Egypt and Orange Egypt sign roaming deal

Telecom Egypt and Orange Egypt have signed a five-year local roaming agreement to augment mobile coverage, particularly for voice and data.

"Signing this agreement confirms the depth of strategic relationship between Telecom Egypt and Orange Egypt and the two companies' keenness to develop the system of services provided in the Egyptian telecom market,"

said Telecom Egypt Managing Director and CEO Adel Hamed. "The new agreement contributes to strengthening the capacity of the company's competitiveness with its technical, commercial and financial advantages most notably the realisation of financial servings in the provision of mobile phone services starting in 2023 and the consequent improvement in the profit margins

for those services. At the same time, Telecom Egypt continues to implement its plan to expand in building its own mobile stations throughout the republic (Egypt) in order to eventually ensure that its customers receive the best level of communication services."

Orange Egypt plans to continue its network development and modernisation in order to meet customer demand.

South Sudan-Djibouti cable announced

A memorandum of understanding (MoU) for a fibre optic interconnection between South Sudan and Djibouti has been
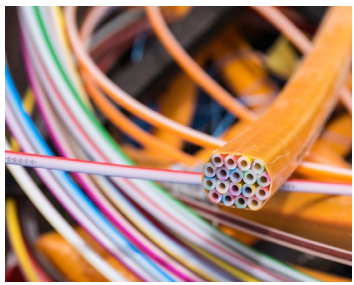
announced. The ultra-high-speed connection will run from Djibouti to Juba, passing through Ethiopia, connecting South Sudan's capital to the rest of the world, and reducing the high cost of internet connectivity.

After the MoU, a technical team comprising nationals of South Sudan and Djibouti will be trained to complete the project. The additional data capacity acquired by South Sudan will enable it to successfully implement its digital

transformation strategy, by making broadband internet affordable for its population.

South Sudan is already home to several high-speed connections, including a 200km fibre backbone connecting the Ugandan border to Juba via Nimule, courtesy of Liquid Intelligent Technologies, as well as a 630km fibre optic cable linking South Sudan to Kenya as a result of the Eastern Africa Regional Transport, Trade, and Development Facilitation Project.

UBTS International to enter Cameroon

Universal Broadband and Technology Services (UBTS) International is investigating opportunities in Cameroon via its UBTS Cameroon S.A. subsidiary. The entity obtained a licence to establish and operate terrestrial radio networks in 2021.

UBTS executives have met with Cameroon's Prime Minister Joseph Dion Ngute to present the

company's vision. Ngueti Armand Gaetan, UBTS International CEO, said that UBTS is committed to offer urban and rural communities cost-effective and affordable broadband internet as well as next-generation digital solutions.

"The Prime Minister was very supportive and smiling in terms of the vision UBTS International and UBTS Cameroon has for

Cameroon," said Gaetan.

UBTS plans to install and maintain telephone/data transmission terminals and radio installations, fixed Wi-Fi broadband B2B and B2C services, as well as the construction and maintenance of switching systems, cable, radio and satellite transport and distribution networks, transmission and video communication equipment.

Telecom Egypt completes eSIM tests

Telecom Egypt has successfully completed basic tests to operate integrated electronic communications chips, eSIM, on its network. The tests were performed in cooperation with major companies specialising in this field in order to provide the best technical solutions that guarantee the provision of new services.

Telecom Egypt states that its eSIM service is ready for customer use once

it has been licenced; the company is waiting for the regulatory parameters that will be approved by the National Telecom Regulatory Authority to launch the service in Egypt.

The eSIM service enables users to keep the line without having to put the traditional chip in mobile devices, which contributes to saving the user's cost of obtaining services and enables the use of more than one line on the same mobile device.

Safaricom Ethiopia expands pilot

Safaricom has expanded its pilot in Ethiopia to the cities of Bahir Dar and Adama, following a successful pilot in Dire Dawa, Haramaya and Harar.

The next two cities come under Safaricom's city-by-city rollout, as Safaricom plans to reach 25 cities in Ethiopia by April 2023, and the entire nation by October 2023. Working with government, businesses and local communities, Safaricom is committed to the digital transformation under the Digital Ethiopia Objectives.

"Our phased city-by-city customer trials are now growing to Central and Northern Ethiopia with more cities to follow, after the network rollout in Eastern Ethiopia over the past couple of weeks," said Anwar Soussa, Chief Executive Officer (CEO) Safaricom Ethiopia. The pilots in Bahir Dar and Adama allow us to continue rigorous service tests in Amhara and Oromia regions, looking forward to our national launch in October 2022 and servicing all of Ethiopia."

The test network in Bahir and Adama will enable subscribers to make calls, use data services and send SMS to Safaricom Ethiopia and Ethio Telecom customers and international calls worldwide. The two cities will have six branded shops between them that will be open to serve customers, four in Bahir Dar and two in Adama.
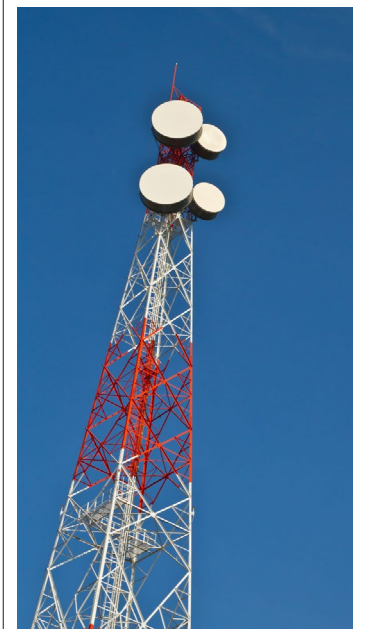
Uganda: MTN and Airtel pay UGX 9.1 billion interest to MoMo users in Q2 2022

MTN Uganda and Airtel Uganda paid 9.1 billion Ugandan shillings in interest to users of their mobile money services for the second quarter of 2022.

Subscribers with balances greater than UGX 1 between 1 April and 30 June were paid interest starting from 14 September. MTN Uganda paid UGX 5.7 billion to 19.8 million MoMo users, while Airtel Uganda paid UGX 3.4 billion to 20 million Airtel Money accounts.

The interest payments are in line with Uganda's regulatory provisions for mobile financial service providers. Back in June 2021, MTN Uganda and Airtel Uganda had to separate their mobile phone businesses to comply with the Ugandan National Payments Systems (NPS) Act 2020. According to the law, companies providing payment services must pay interest earned on a fiduciary account to their clients.

"As MTN Mobile Money Uganda, we strongly believe that this quarterly interest paid to customers will encourage a culture of savings and create wealth and investment opportunities, especially in medium and small businesses that are heavy users of mobile money platform," said Richard Yego, managing director, MTN MoMo Uganda Ltd.

The Bank of Uganda has reported that mobile money transactions grew on volume from 3.9 billion in the second quarter of 2021 to 4.8 billion in the same period of 2022. In terms of transaction value, year on year growth between the second quarter of 2021 and the second quarter of 2022 stood at 37.6%, from UGX 113.3 billion to UGX 156 billion.

Nigeria to reduce deficit with 5G spectrum sales

Nigeria's federal government expects to earn 500 billion naira from telecom frequency spectrum for 5G in 2023, according to Umar Danbatta, executive vice chairman of the Nigerian Communications Commission (NCC), during an interactive meeting hosted by the Senate Finance Committee on the 2023-2025 Medium Term Expenditure Framework and Fiscal Strategy Papers.

The funds will be generated from the auction of two 5G spectrums, with the bidding process for the auction starting in 2023. The NCC made 318 billion naira in the second quarter of 2022, up from 257 billion in the first quarter. The growth has been attributed to payments from MTN and Mafab Communications, for financial obligations relating to 5G spectrum that they won back in December 2021.

According to recent reports, falling revenues from oil are being replaced by the telecommunications sector. The ICT contributed 18.44% of Nigeria's real GDP in the second quarter of 2022. The 500 billion naira expected from 5G spectrum in 2023 should allow the government to significantly reduce the projected 2023 budget deficit. The overall expenditure planned by the government for the 2023 financial year stands at 19.7 trillion naira, for a budget deficit between 11.3 trillion and 12.41 trillion naira.

Ericsson celebrates 125 years in Egypt

Ericsson has celebrated its operational presence in Egypt of more than 125 years with key industry players and H. E. Amr Talaat, minister of information and communications technology.

Ericsson reaffirmed its commitment to the country as part of its mission to support technology innovation and advancement. Under this commitment, Ericsson has established an Artificial Intelligence (AI) Innovation Lab at Sultan Hussein Kamel Palace in collaboration with Information Technology Industry Development Agency (ITIDA). The company also plans to expand its operations in the AI domain and enhance its activities related to stimulating technological innovation, robotics, and the development of interaction between robots and humans using AI technologies. In addition, Ericsson has emphasised increasing its efforts in developing young talents while supporting innovative thinking in the emerging technologies.

"Egypt's Telecoms and Information Technology sector has a combination of both modernity and rootedness," said His Excellency Amr Talaat, minister of information and communications technology. "Ericsson's celebration of the 125th anniversary of its presence in Egypt is a proof of how solid and stable the Egyptian market is, which contributed in enabling the company to implement its strategy and projects throughout this long period of time and to successfully continue as a partner in this promising sector, which carries with it more promising opportunities for all partners willing to invest and expand in Egypt to participate in building a digital Egypt."

Talaat highlighted Egypt's interest in developing the ICT sector under the umbrella of its vision for the sector as a traction engine for development and an essential element to achieve a real renaissance in all sectors. He also noted that the sector's budget increased in the current fiscal year by more than 22.6% year on year.

"We are proud to have achieved this milestone, along with our partners, as we push forward our unwavering commitment to Egyptian youth and talent. We have been present in Egypt since 1897 when we first connected Cairo to Alexandria and our journey continued over the years offering Egypt the latest technological innovations of the telecom industry," said Eva Andren, country manager Ericsson Egypt and vice president Ericsson Middle East and Africa. "Today, as we announce our plans to expand our AI Innovation lab, we aim to inspire the next generation of innovators as we maintain our commitment to the transformation of Egypt into a digital society in line with Egypt Vision 2030, working with entrepreneurs, professionals, academics, and university students from across Egypt to identify innovative and commercially viable solutions."

Better QoS expected for Côte d'Ivoire's telecommunications sector

The Côte d'Ivoire's telecommunications sector is about to see a boost in quality of services thanks to an agreement from the government and stakeholders made during a working session organized by Amadou Coulibaly, Minister of Communication and the Digital Economy in September.

The working session was arranged following numerous subscriber complaints about poor quality mobile phone services in the country. During the session, participants were asked to establish a diagnosis which made it possible to identify the causes of the poor quality of telecom services in the country.

"These are, among other things, endogenous causes which are the responsibility of the operators, and exogenous ones, which impose themselves in a certain way on the operators," said Coulibaly. Exogenous causes include road works, climatic hazards, real estate operations, as well as the energy crisis.

Solutions identified by the working group include the reactivation of a working group set up in May 2019, as well as the strengthening of the action of the Telecommunications/ICT Regulatory Authority of Côte d'Ivoire (ARTCI).

"Instructions have been given so that by the end of the year, ARTCI will take steps with the involvement of the various operators to improve quality of service," said Namahoua Touré, general manager of ARTCI.

Nigeria's telco sector tackles vandalism

The Nigerian Communications Commission (NCC) has signed a memorandum of understanding (MoU) with the Nigerian Security and Civil Defence Corps (NSCDC) to tackle criminal activities targeting Nigeria's telecom sector.

"Through despicable activities that are criminal and totally at variance with national security concerns of government, the deviant elements in our midst have been acting to undermine efforts put in place to consolidate the gains of the sector," said Umar Danbatta, NCC executive vice chairman. "These criminal activities include theft and vandalism of telecommunications infrastructure, the illegal use of fraudulently-registered SIM cards, operating without a license, illegal call masking, and so on."

The NCC reported that more than 50,000 cases of major destruction to telecom infrastructure and facilities had taken place in the past five years.

Ghana cracks down on unregistered SIMS

Punitive actions have been brought in for Ghanaians who have not registered their SIM cards as of 5 September.

Ghana's National Communications Authority (NCA) has stated that outgoing calls will be re-routed with a special message played before the call is connected, for subscribers who have not begun the registration process. Meanwhile, subscribers with an incompletely registered SIM have received a similar message from 7 September.

The actions come ahead of 30 September, when all SIM cards in Ghana must be linked with a national identity number as part of a year-long SIM registration campaign.

Punitive measures for data services came into play on 12 September, with non-registered subscribers facing a 48-hour block on their SIM cards once a week. From 30 September, SIM cards began to be fully blocked.

"Subscribers who have neither begun stage 1 nor stage 2 of SIM registration process will be allowed to reconnect their SIMs after duly completing the two stages of the registration process," said the NCA. "After September 30, 2022, these SIMs as described above will not have access to any service as their SIMs will be deactivated. Subscribers will have a period of six months to register to redeem their SIMs failing which their numbers will be churned – that is reassigned to the pool to be sold to potential new subscribers."

The SIM registration projects began in October 2021 and was originally planned for completion by March 2022, however, the deadline has since been extended. In August, an app was launched to make registration easier and more convenient. Stage one of the registration process sees citizens link their Ghana Card to their SIM cards, while stage two requires citizens to scan their biometrics at a physical store or by using their cameras via the SIM registration app.
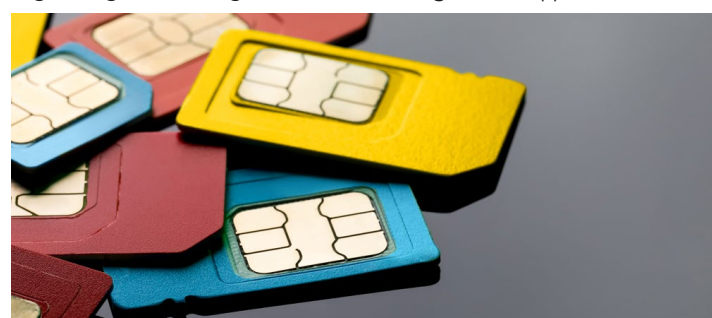
North Africa leads on mobile data affordability

A new report from Cable.co.uk - Worldwide Mobile Data 2022 Report shows that North African countries are almost all in the cheapest half of global connectivity costs. The report compared the average cost of a 1Gb mobile data bundle in 233 countries in the world.

In Northern Africa, Algeria boasts the cheapest for data at US$0.48 for 1Gb, while Mauritania is the most expensive at US$2.74. In contrast, five of the ten most expensive countries reside in sub-Saharan Africa, with Saint Helena and São Tomé and Príncipe established as the first and third most expensive countries for data use in the world, with 1Gb of data costing US$41.06 and US$29.49, respectively. The three other African nations in the top ten include Botswana (US$15.55), Togo (US$12.94) and Seychelles (US$12.66).

Although sub-Saharan Africa is the second-most expensive region in the world in which to buy mobile data (coming in behind Northern America), this is an improvement over 2021, when it was the most expensive region. Ghana is the cheapest country in the region (US$0.61), with Somalia close behind (US$0.63).

Across the African continent, the top ten cheapest countries are: Algeria (US$0.48); Libya (US$0.61); Ghana (US$0.61); Somalia (US$0.63); Morocco (US$0.69); Réunion (US$0.70); Nigeria (US$0.71); Tanzania (US$0.71); Western Sahara (US$0.72); and Sudan (US$0.75).

"Some have excellent mobile and fixed broadband infrastructure and so providers are able to offer large amounts of data, which brings down the price per gigabyte. Others with less advanced broadband networks are heavily reliant on mobile data and the economy dictates that prices must be low, as that's what people can afford," said Dan Howdle, consumer telecoms analyst at Cable.co.uk. "At the more expensive end of the list, we have countries where often the infrastructure isn't great but also where consumption is very small. People are often buying data packages of just a tens of megabytes at a time, making a gigabyte a relatively large and therefore expensive amount of data to buy."

Talking critical

The mission critical comms revolution

Private 4G/5G communications offers an exciting opportunity for mission critical users – the move towards high-speed broadband services will enable new, advanced applications and offer significant operational improvements for users. However, there will still be a demand for traditional PMR technologies….so can the industry gain more than just the improvement in data services?

TETRA is still the most advanced digital trunked communications system for mission critical users today and sets the standard for voice and group communications but will never be able to offer the high-speed data services that are essential for today's critical workers. As organisations look towards the next generation mobile communications, there is an opportunity to reflect on how different technologies can continue to be viable for users.

Traditional narrowband PMR technologies will be required well into the future….issues of affordability, spectrum availability, cell coverage and re-use of existing subscriber equipment are all likely to be factors. We believe that a hybrid approach to technologies is the ideal solution to allow users the best choice; and a fully integrated, single network solution will always be a better solution than gateways to separate networks.

The TETRA standard was developed over 20 years ago, and one of the major benefits was the interoperability between subscribers from different manufacturers, however the lack of interoperability at the infrastructure level was (and still is) a frustration for clients. This was not an issue in the consumer 4G market as 3GPP standards allow all LTE eNodeBs to co-exist on the standard LTE Core. As a TETRA vendor, users regularly ask if our base stations can be used to extend an existing system (from a different manufacturer) – sadly the lack of an open networking standard adopted by all manufacturers, meant that full interconnectivity was not possible (apart from using a basic gateway interface)… this proprietary issue created difficulties for users, particularly where security is at stake. The ability to seamlessly select from a range of different vendors, and different technologies on the same core network is an ideal approach.

Recent global emergencies should focus mission critical users on the importance of fast, secure communications and the ability to rapidly deploy the most appropriate technology for any situation and in any geographic area is essential. A perfect example is where ETELM working with B-LIFE deployed a system combining both TETRA and 4G for COVID emergencies in Italy.

The B-LIFE project required a rapidly deployable health laboratory to effectively respond to emergency public health issues – this is particularly pertinent to COVID but also for co-ordinating vaccination programmes, and for outbreaks of other viruses such as ebola, where dealing with any isolated outbreak is critical to avoid the spread and save lives. A similar solution is also adapted for emergency services and military applications whereby the user can benefit from secure TETRA voice communications deployed instantly in the field, with advanced mobile applications linked to command centres obtaining important data and making assessments in real-time. This solution is often based on single cell systems, where 4G (and 5G) has limited coverage, so having TETRA for voice communication and a '4G Bubble' for broadband data services, connected to the central monitoring systems gives the benefit of both technologies.

As an industry supplying highly secure, national infrastructure we must collectively work towards a future where our customers are given the option to select the most suitable technology (or combination of technologies) and not left in a position where they are locked-in to a supplier or service, and we have a responsibility to ensure migration paths are more seamless and less complex than they currently are today. The 3GPP model is perfect in this respect.

If one assumes that the demand for PMR technologies will continue (even in the 'next-G' world!), it is essential that vendors look at offering an equivalent fully integrated, single network solution for users. There is no technical reason why several different technologies cannot inter-operate on the same core network, this will reduce the costs and increase the options for users, and simplify the architecture by avoiding gateways and separate interfaces. ETELM's 4GLinked is a trailblazer in this regard as its TETRA base station can co-exist with eNodeB's on the LTE core network…. so how can we take this opportunity to revolutionise how vendors of different technologies co-operate in the future?

The technical solution is possible, and lessons can be learnt from the network standards established by 3GPP for the mobile consumer market – the 4G and 5G Core network is internationally standardised and all base stations from different vendors inter-operate on the same network. This gives operators the ability to select suppliers based on a competitive market, and the ability to switch suppliers quickly should the need arise. This competitive approach has been a major factor in the rapid rate of deployment and technology advances in the consumer communications market.

An opportunity now exists for manufacturers of all standard PMR technologies to adopt the same approach and develop their technology into the 3GPP standards for core networking – LTE Core, 5G NR…. this could create a single eco-system for all mobile communications and allow users to select and mix technologies based on cost, service and user requirements. 4GLinked TETRA base stations adopt this approach as they can connect directly to any LTE Core network in the same way as any LTE eNodeB, by utilising the LTE-S1 connectivity standard. This allows our TETRA system to be deployed over the same, single network core solution alongside 4G and future 5G base stations. The solution has been tested at 3GPP Plug tests and already deployed in many different scenarios for emergency services.

As the 3GPP networking standards for 4G and 5G are open, any vendor can develop the same solution into their base stations meaning that we can all benefit from the advances in core networking and allow inter-system and inter-technology solutions over a single core. The technology is available but commercial issues need to be overcome – this is where users can influence vendors and ensure that they never find themselves locked-in to proprietary networks.

Once technology becomes interoperable the next challenge for large national networks is how to deploy their service – privately owned or operator managed? The choices are available, and certainly operators will have a large part to play since they already have much of the national infrastructure established. However, once again users must ensure that there is a competitive environment – there is no point in having open standards in technology, if users are forced into single sourced managed services….so it is important to ensure that options exist with other operators so that services remain competitive – again a challenge for highly secure networks and one that needs to be carefully managed.

Telecoms 'will be the fastest growing African business sector'

UK private equity group Epiris has purchased Sepura, the critical-communications supplier purchased by China-based Hytera Communications five-years-ago.

Although the financial terms of the deal were not disclosed, a Sepura press release says Steve Barber will continue as Sepura's CEO, whilst Malcolm Miller— who previously worked with Epiris while serving as chairman of Audiotonix—will become Sepura's non-executive chairman.

Sepura was acquired by Hytera Communication in a US$92m deal that closed in 2017.

The sale to Epiris comes as Sepura marks its 20th anniversary, having become market leader in more than 20 countries with more than two million devices deployed worldwide. Its portfolio of TETRA radios and accessories is used globally by public safety users in the police, fire and ambulance services. It has also successfully expanded into the commercial space, supplying transport, mining, oil & gas, and utility companies.

"Sepura is in a unique position," said Epiris partner Ian Wood. "It combines extensive public safety knowledge with strong intellectual property and an extensive UK-based R&D capability that consistently delivers best-in-class innovative products. The company's ability to develop new applications and devices that embrace emerging technologies and meet customer needs positions it to continue to succeed as a pioneer for many years to come."

This new acquisition does not include former Sepura-owned assets Teltronic and PowerTrunk.
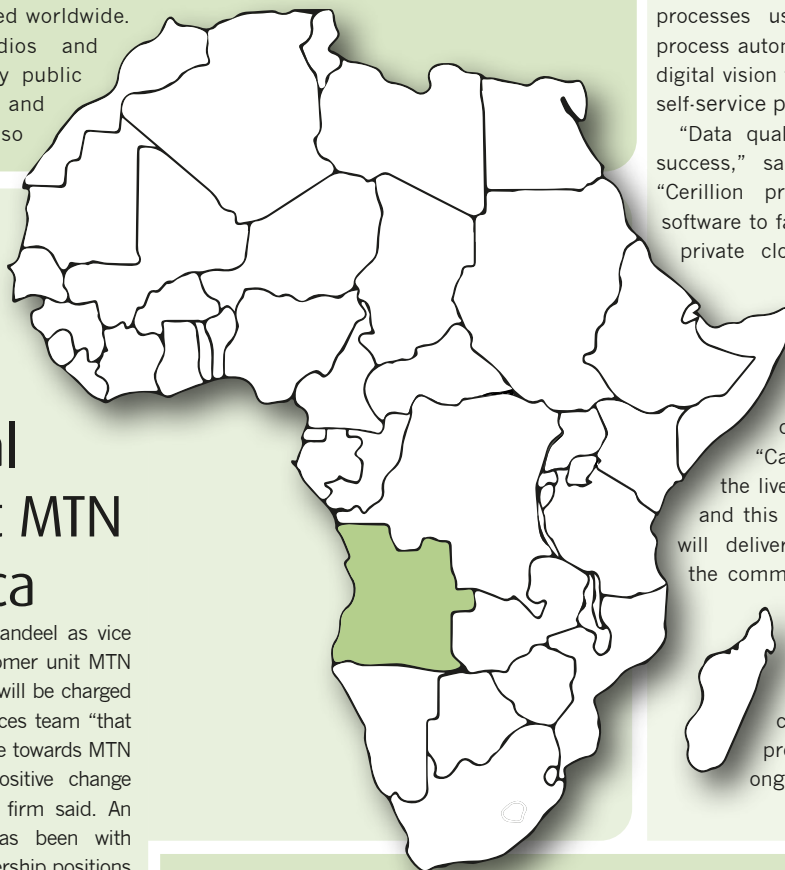
Ericsson names Kandeel head of global customer unit MTN and MTN Africa

Ericsson has appointed Hossam Kandeel as vice president and head of global customer unit MTN and customer unit MTN Africa. He will be charged with leading technologies and services team "that promises to deliver exceptional value towards MTN Ambition 2025 while enabling positive change across society", the Swedish tech firm said. An internal appointment, Kandeel has been with Ericsson for nearly 20 years in leadership positions across various practices including government and industry relations, strategy and marketing, business solutions, sales and operational excellence.

He served as the key account manager and country manager of Ericsson Angola under customer unit west Africa and Morocco, prior to his new role.

"I am committed to finding new ways that add value to the services and solutions we provide our partners and innovate our client offerings to support the ongoing digital transformation momentum in the region," Kandeel said. He took up his new position July 21.

C&W Seychelles selects Cerillion Unify for quad-play BSS/OSS transformation

Cable & Wireless Seychelles (CWS) has commissioned Cerillion to implement a complete digital BSS/OSS solution, the companies said.

The latter is providing a full turnkey delivery of Cerillion Unify, within a private cloud deployment, in a bid to maximise the benefits of data security, control, and cost of operation.

This product is a packaged SaaS solution for quad-play CSPs who need to manage the full range of service types, payment methods and business models in a single convergent system.

CWS will be able to streamline its business processes using Cerillion Unify's end-to-end process automation, as well as delivering on its digital vision through Cerillion's mobile app and self-service portal.

"Data quality is the key to transformation success," said Shoaib Khan, CTO of CWS. "Cerillion provides not only the BSS/OSS software to facilitate our digital vision, but also private cloud deployment and the proven track record of integration and data migration that will ensure we can deliver on our wider digital roadmap."

George Doffay, chief executive officer (CEO) of CWS, added: "Cable & Wireless plays a big part in the lives of the people of the Seychelles, and this digital transformation programme will deliver significant benefits throughout the communities we serve. We have chosen Cerillion because they provide a SaaS solution with the certainty of outcome we need for this mission-critical project, and we're confident that this investment will provide the BSS/OSS platform for our ongoing success."

Orange reports solid Africa results

Orange said second-quarter core operating profit rose 0.5% year-on-year, with strong growth from its Africa and Middle East division offsetting falls in sales in its native France and neighbouring Spain.

Earnings before interest, taxes, depreciation and amortisation after leases (EBITDAaL) rose to €3.31bn over the period.

Second-quarter sales fell 0.4% on a comparable basis to €10.7bn. Orange also confirmed its full-year targets, including an increase in core operating profit between 2.5% and 3.0%.

Orange chief financial officer (CFO) Ramon Fernandez told reporters that the group had asked French telecom regulator Arcep the permission to extend its profitable roaming contract with its rival Iliad over 2G and 3G mobile networks. However, he declined to disclose the proceeds from this contract. Christel Heydemann, who took over as chief executive officer (CEO) in early April, will present the group's next mid-term targets and strategy in February 2023, Fernandez added.

Nokia and Safaricom deploy FWA 5G slicing trial

Nokia successfully piloted 4G and 5G fixed wireless access (FWA) network slicing in Kenya's Western Region with the help of the country's biggest telco, Safaricom.

The Finnish tech firm said this pilot program is the first time that 4G and 5G network slicing has been successfully tested anywhere in Africa.

"The trial utilised a multivendor network environment and included RAN, transport and core as well as software upgrades to a range of Nokia's products and services," said Nokia in a release.

The pilot tested equipment from multiple vendors and took place on Safaricom's live commercial network. Nokia said that it provided base stations, network management software tools and customer-premises equipment (CPE).

Network slicing enables operators to divide their networks into multiple logical slices, each capable of maintaining independent end-to-end levels of service quality, network performance, and security. It is generally seen as the unique province of 5G networks, but Nokia claims primacy as the first company to offer 4G/5G end-to-end slicing.

"Safaricom is now poised to support new types of enterprise network services, including fast lane internet access and application slicing," said Nokia.

James Maitai, Safaricom network director, said that Safaricom was "looking forward to tailoring our service offerings to individual customers and industries, to meet their needs for high-speed connectivity precisely and without unnecessary cost."
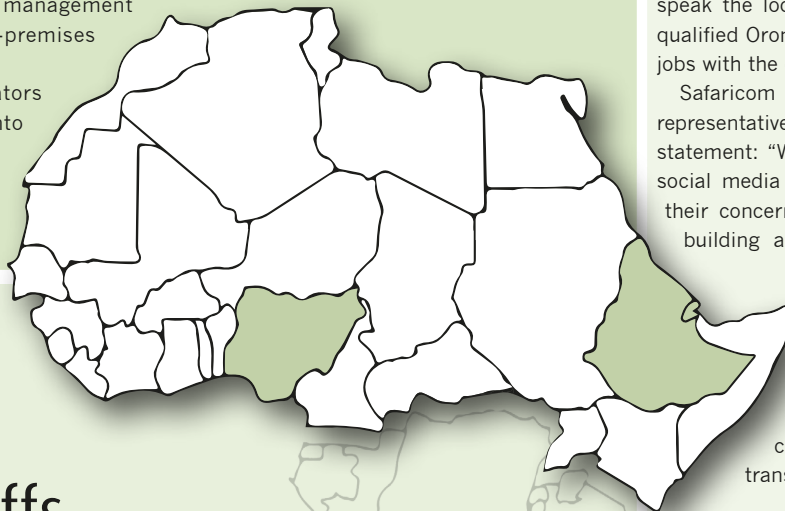
Uganda to reduce internet tariffs by more than 50% by year end

Ugandan government plans to reduce the cost of Internet in the country by the end of the year, in a bid to promote the use of digital financial services and increase financial inclusion of vulnerable groups.

Chris Baryomunsi, the country's minister of ICT and national orientation said the country will more than halve the cost of data it provides through the national backbone fibre from US$70 per Mbps to US$30.

"We're talking about a purely governmental internet," he said. "Once we reduce the cost at which the government sells to the service providers, they will automatically reduce the cost that the end user will have to pay and we believe that this will contribute to our efforts to digitize our economy."

The reduction of internet costs will support the growth of innovations in ICT, digital financial services, communication and e-government services, among others. Several projects to this effect are underway and the most important of them has been completed, according to reports. This is the project on the national backbone infrastructure for data transmission and e-government infrastructure, the cost of which is estimated at US$75m. It will connect all major cities in the country to a network based on fibre optic cable and connect government ministries and departments to the e-government network.

These projects are part of Uganda's Digital Acceleration Program, which aims to fill gaps in the current infrastructure and accelerate Internet penetration in the country.

Safaricom Ethiopia responds to alleged discrimination claim

Safaricom Ethiopia has been hit by a campaign via Facebook and Twitter over alleged discriminatory recruitment practices, wherein individuals from diverse backgrounds, specifically Afaan Oromoo speakers, are being denied opportunities for work. Protestors have also highlighted the absence of the Oromoo language, one of the most used languages in the country, from Safaricom Ethiopia's organisation.

One of the campaign's organisers, Abdissa Bacha, has said that one of the campaign's objectives is to push Safaricom Ethiopia to employ qualified local people from areas where the services are provided, and, moreover, who can speak the local language. According to Bacha, qualified Oromoo speakers who have applied for jobs with the operator have been turned down.

Safaricom have met with campaign representatives and issued the following statement: "We met with representatives of the social media campaign and listened closely to their concerns. We assured them that we are building a company that represents all of Ethiopia without any biases or prejudice and we are available for discussions anytime. We are committed to serving all Ethiopians in a way that respects all languages and cultures as part of our vision of transforming lives for a digital future."

Ethio Telecom upgrades fraud management system

Ethio Telecom has awarded an upgrade of its fraud management system to Subex an Indian enterprise software company.

The capabilities of the new system will enable the operator to take a proactive approach to detecting and combating cyberattack threats. These include SIM Box, spoofing, SMS fraud, roaming fraud, subscription fraud, device fraud, mobile money risks and credit risk management.

"Subex's AI-driven fraud management system will be critical to protecting our business and our customers," said Tsegaye Emmanuel, IT security manager at Ethio Telecom. "We see this as a forward-looking investment that aligns with our digital services initiatives."

NCA denies blocking Ghana Telecommunications Company sale

The National Communications Authority (NCA) of Ghana has denied blocking the planned sale of Voafone Ghana's 70% stake in Ghana Telecommunications Company to Telecel Group. The government of Ghana holds the remaining 30% share.

According to the NCA, the application for the transfer of 70% majority share in Ghana Telecommunications Company to Telecel Group that it received back in January did not meet the regulatory requirements.

However, Telecel has released a statement confirming that it has signed a sales and purchase agreement with Vodafone for its Ghana operations, and had contacted the NCA, Ministry for Communications and Bank of Ghana to finalise the regulatory requirements.

"We have received their responses which have not granted the approvals yet and Telecel is willing to re-engage soon and putting together the necessary clarifications. The acquisition is fully financed by Telecel Group and its partners. Telecel hopes to successfully conclude this transaction and looks forward to engaging with staff and customers who are important to the business," said Telecel in a statement.

If the sale goes ahead, Telecel intends to invest US$500 million in the first three years to expand and refinance Vodafone's network across the country.

"The law requires that they get approval from the NCA and we have had a series of discussions with them," said Ghana's Communications and Digitalisation minister Ursula Owusu-Ekuful. "We are concerned that Telecel were a very small operator and did not have the technical and financial muscle to be able to take on the challenging environment that we have in the telecom sector herein Ghana."

MTN Group in talks to buy rival Telkom

MTN Group has entered negotiations to acquire Telkom, in a bid to become the dominant operator in the South African telecommunications market.

The former said the deal will be in shares or a combination of cash and shares, but "discussions are at an early stage and there is no certainty that the transaction will be consummated".

Both companies made the announcement in statements issued via the Johannesburg Stock Exchange (JSE).

The move comes four months after the release of Telkom's 2021 annual financial report, in which the company revealed a 1.1% decline in revenue to R42,756m (US$2.5m). This decrease in the company's turnover was slowed down by the growth of the mobile business, which compensated for the decline of the fixed and IT activities.

The company also said that following the acquisition of new frequencies, it is considering launching 5G.

SA broadband connectivity firm secures R5bn loan

South African fibre broadband connectivity provider MetroFibre Networx has secured a R5bn (US$299.8m) loan from Standard Bank Group, which will enable the company to finance the expansion of its fibre network across the rainbow nation.

Competition has increased in the fibre segment since 2020, so the company is ramping up actions and investments to strengthen its position.

The funds will be used to extend MetroFibre's fibre connectivity offering to homes and businesses in underserved communities across South Africa. It is also expected to help significantly increase MetroFibre's reach.

MetroFibre Networx had already raised R1.5bn from private equity fund manager African Infrastructure Investment Managers (AIIM) by November 2020. In March 2021, South African banking group Investec had invested R2.5bn in the company. This latest investment enabled the company to acquire Link Africa's FTTH network and infrastructure in Gauteng and KwaZulu-Natal.

"Internet access is fundamental to bridging the digital divide and empowering people to participate in the globally connected economy," said Nishela Ramgoolam, head of structured capital at Standard Bank Corporate and Investment Banking.

Vodacom to invest R1bn in KwaZulu-Natal network, keeping 100% of new SA tower subsidiary

Vodacom will invest R1bn in its mobile network in the South African province of KwaZulu-Natal this year, deploying additional sites and upgrading the network to improve access to reliable connectivity and high-speed telecom services.

As part of this investment program, R444m will be invested in radio access network (RAN) projects, while R135m will be invested in regional network capacity and upgrades. R85m will be spent on improving network resiliency, optimisation and operations, while R17.5m will be forked out on core network infrastructure upgrades and related projects. Vodacom is investing heavily in backup power projects to overcome grid disruptions related to load shedding, battery theft and vandalism.

Furthermore, the telco plans to expand 4G capacity to 704 base station sites in the province this fiscal year and plans to add 61 new 5G sites to add to the 200 sites that already exist. Imran Khan, managing director, Vodacom KwaZulu-Natal, said the operator's goal is "to expand the reach of coverage and capacity, so that all sectors of the economy, from agriculture to small businesses, can make extensive use of new technologies, such as the internet of things, to drive sustainable productivity".

Meanwhile, Vodacom Group will keep full ownership of a new subsidiary that will take over its South African tower business, the telco said, whilst announcing a 5.2% rise in first-quarter revenue.

Shameel Joosub, chief executive officer (CEO) of the group, said formation of the telecommunications-tower company, is not yet complete.

The move follows that of several competitors in the country, with some having either formed tower businesses or sold them to specialist tower companies. It has helped raise cash for fast-growing services, such as fintech. Other operators have also retained equity in the tower companies.

According to the company's latest annual report, Vodacom's tower company will own more than 9,500 sites, including towers and rooftop.

Vodacom chief financial officer (CFO) Raisibe Morathi said this year the operator would be open to many options once the tower company had been separated, but "we don't have any need to monetise."

Inmarsat, Viasat satellite merger faces probes

Viasat's proposed takeover of British rival satellite firm Inmarsat is on ice after UK and EU regulators launched separate investigations into the US$7.3bn deal.

Both the European Commission (EC) and Competition and Markets Authority (CMA) have initiated probes to see what impact the combination would have on the market.

The parties, which serve large swathes of the African continent, had hoped to complete the takeover by the middle of 2022, but that target was missed.

"Inmarsat notes the statement issued by the UK Competition and Markets Authority (CMA) relating to the company's planned combination with Viasat," said an Inmarsat spokesperson. "The CMA review, with which we will cooperate fully, is taking place against a backdrop of satellite industry consolidation as Inmarsat and Viasat seek to create a global innovator that will safeguard UK space industry jobs and technology, while making significant investments to meet customer needs. The regulatory process on the Viasat-Inmarsat transaction remains on track and has secured approval in several key markets, including from the important Committee on Foreign Investment in the United States (CFIUS)."

The two companies announced the "transformative" deal in November 2021, promising to combine expertise across the two companies to boost global connectivity, from the space satellites offered by Inmarsat to home broadband provided by Viasat, as well as everything in-between.

Inmarsat currently offers a wide range of connectivity services via its 14-strong satellite fleet, including broadband, IoT connectivity and in-flight Wi-Fi.

The CMA has said it will report back on its initial findings by October this year.

Fellow UK-based satellite firm, OneWeb, is also in the process of merging with France's Eutelsat.

The two companies hope that by combining their Low Earth Orbit (LEO) and Geostationary Orbit (GEO) assets, they will be able to offer converged connectivity to some of the most remote parts of the world, transforming consumer services, in-flight Wi-Fi, and industrial applications.

Talking satellite

Martin Jarrold, vice president international programme development, GVF

Preventing "Kessler", preserving LEO

In my previous column I included some perspectives on the imperatives of bringing environmental law to space. In recent contributions elsewhere I have considered the importance of various issues pertaining to the sustainability of human activity in space, issues that are part of a wider core dialogue concerning preserving the entirety of the terrestrial and non-terrestrial environment surrounding us. As well as better-managing Earth's finite natural resources, preventing yet more environmental degradation, and behaving to preserve the planet's current climate equilibrium, we must protect Earth's vital orbital resources. In brief, space must remain sustainable.

In this connection I recently attended the 4th Summit for Space Sustainability hosted by the Secure World Foundation (SWF) and the United Kingdom Space Agency (UKSA) which took place in London on 22-23 June. The Summit was focused on developing solutions for space sustainability and encompassed a comprehensive cross-section of space sustainability issues: orbital capacity, space debris, space law and policy, lunar governance, national and international space security, and space stations.

Launched at the Summit was the Space Sustainability Rating (SSR). This is an innovative and practical tool to support space actors in designing their missions and managing their operations more sustainably and responsibly. The SSR "aims to recognise, reward, and encourage space actors to design and implement sustainable and responsible space missions to ensure the long-term sustainability of the space environment. It provides a unique rating system enabling space actors to comprehensively and transparently assess their missions' impact on the space environment and other operators, as well as practical guidance on how to improve sustainability performance & practices." (Quoted from a press release issued by the EPFL Space Centre – eSpace Consortium). More information about EPFL and the SSR is available here. It is very important reading for our times and affords us the opportunity not to repeat our Earthly mistakes in space.

Timed for publication during the Summit were important industry and government analyses of sustainability including, from the satellite operator Inmarsat, the Space Sustainability Report: Making the Case for ESG Regulation, International Standards and Safe Practices in Earth Orbit.

Donald J. Kessler's eponymous cascading satellite collisions syndrome goes all the way back to 1978. At that time the occupation of geostationary (GEO) orbital positions by commercial communications satellites was still in its infancy. In the following decades the GEO orbital arc became progressively busier, but was (and is) characterised by our ongoing good husbandry. The principle issue now is that non-GEO orbital space is becoming congested, with a potential 100,000-plus satellites by the end of this decade adding to the debris already orbiting. The space sustainability imperative requires that we tackle the various new critical space management challenges by bringing our historical good husbandry of GEO to Low Earth Orbit (LEO).

LEO congestion does not only relate to, and potentially negatively impact, the future of satellite communications. The LEO environment is where many new Earth Observation satellites operate, the platforms on which we are increasingly coming to rely to monitor the physical evidence of planetary climate change and environmental degradation. It is this data that will help us better manage our Earth's limited resources, monitor the changing environment, and stave off existential disaster. Therefore, space sustainability management cannot be placed in a silo as a separate challenge. Space management challenges are also an Earth management challenges. Forgive the pun, but watch this space.

On a separate note, the five finalists for GVF Quarter Century of Excellence Award – which celebrates GVF's 25th anniversary year – have been chosen, and on 6 July executives representing Eutelsat, Hughes Network Systems, Inmarsat, Kratos, and SES, all recognised as industry leaders, featured in an online discussion and Q&A with co-hosts David Meltzer from GVF and Pacôme Révillon from Euroconsult to present their company's case for being judged the "Best of the Best". Watched by a group of independent jurors who will decide the winner, the result will be announced and the Award presented on 14 September 2022 at Euroconsult's World Satellite Business Week Gala event in Paris which, like GVF, is celebrating its 25th year.

The LEO environment is where many new Earth Observation satellites operate, the platforms on which we are increasingly coming to rely to monitor the physical evidence of planetary climate change and environmental degradation.

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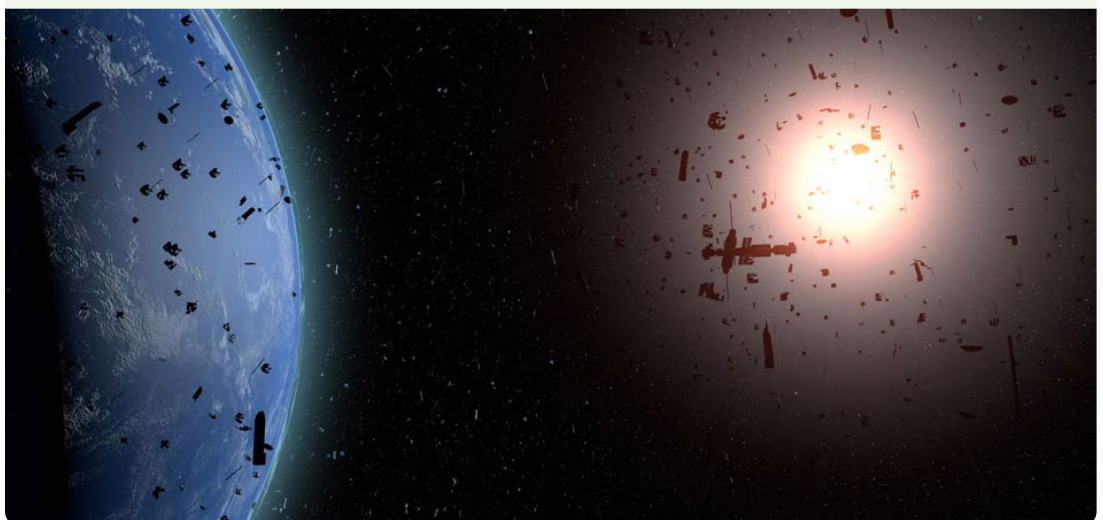
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Making money with the right partner

MNOs can successfully monetise their A2P SMS routes by partnering with the right messaging solutions provider, writes Sizo Nkosi, regional operator partnership manager at Infobip

Optimal monetisation of business SMS traffic across their ecosystems has traditionally been a complex issue for many Mobile Network Operators (MNOs), yet, boosting revenue across this platform is becoming increasingly important.

With earnings from person-to-person (P2P) SMS messaging steadily declining due to it now generally being commoditised and with chat apps as preferred messaging channels, application-to-person (A2P) traffic has become the major revenue spinner across the SMS channel.

Yet, network operators often struggle to fully monetise their A2P pathways, as messaging providers often exploit network vulnerabilities to send business messaging via grey routes, which are essentially low-paying or unbilled pathways. The result is that little or no revenue is generated by this traffic and the scale of this leakage poses a real financial risk to operators.

A report published by Mobile squared found that between 2018-2023 grey routes are expected to cost the mobile network operators almost US$50bn. Additionally, market education is required with 60% of mobile network operators having not yet sufficiently protected their network from grey-routes and other A2P fraud by investing in fraud prevention solutions such as firewalls.

SMS firewalls are monitoring and filtering solutions that are specifically designed to detect and block unauthorised A2P SMS traffic on a network. They do this by monitoring incoming messages and – based on aspects such as the originating network, number, hashing and message content – block and filter the ones not sent through a properly billed route.

Monetise legitimate traffic

In the case of improperly billed legitimate A2P messages, once these have been blocked by the firewall, attempts can be made to monetise this traffic. After detecting that an aggregator is sending business messaging via an improper route, the firewall administrator or solution providers should contact them to reroute this traffic to a properly billed pathway at the applicable pricing.

However, an SMS firewall is a complex system that is expensive to develop, and which incorporates Machine Learning (ML) to automate the discovery of fraudulent or unauthorised messages based on keywords, text patterns and even spelling. ML has been found to be more efficient than a human-operated monitoring system and can continuously learn and develop new algorithms and build up a database of elements to look out for.

Most network operators simply lack the skills and resources to develop their own SMS firewalls, as it requires a lot of development and advanced engineering. It also requires the human factor in the form of experts who have in-depth knowledge of global markets and pricing, as well as the ability to identify and calculate the proper pricing for specific routes, countries and messages.

Some large network operators do have their own firewall solutions but are discovering that it is a better value proposition to outsource SMS firewall provision to a specialised vendor due to its complexity and the need to reduce costs. A messaging solutions provider can not only develop but also maintain the firewall, which needs to evolve and keep pace with the ever-changing threat landscape.

Greater complexity

The complexity of SMS firewall development and implementation is greater for big operators and especially for those that operate in countries with huge subscriber bases, such as in the African region. These MNOs typically handle massive volumes of SMS traffic and need to address a lot of unauthorised messaging on their networks. As a result, they typically receive large amounts of complaints from unhappy customers who are regularly exposed to spam and other potentially harmfully SMSes.

An effective firewall solution will cover all the termination points on an operator's network and the solution provider will implement rules that govern how unauthorised traffic is blocked. Once advanced pricing strategies are implemented, the technology partner should guide the MNO as to how best to monetise traffic on the network.

A specialised vendor can bring broad expertise, agility and global knowledge and coverage to the table, as well as the ability to constantly look for new approaches for better monetisation of A2P SMS routes. MNOs should look for a partner that will understand their needs, which is key for successful technology implementation. However, this partnership should stretch beyond technology, enabling the partners to share business insights and develop new services much faster. ∎

FWA: bridging the digital divide and monetisation

Fixed-wireless-access is a critical service that allows millions of Africans to get and stay online as well as bridge the digital divide. So, why is deployment slow and how is it being monetised? Robert Shepherd asks the experts

To be a part of the world's digital economy, we all need reliable, high-speed internet access. Businesses, individuals, schools and hospitals all need to be online to best serve the people who rely on them.

One of the regions with the lowest access to high-speed internet is sub-Saharan Africa. According to data published by The World Bank, a mere 29% of the entire population uses the internet, never mind gigabit broadband.

Compare that to 57% of the world's people and 86% of those in Europe and central Asia and you'll see the stark reality.

It's a catch-22 situation: the lack of internet access has a negative economic impact on Africa, yet it makes sense for the most underdeveloped part of the world to not have the widespread, reliable, high-speed connectivity it desperately needs to support economic growth and development. Add a global pandemic to the

mix and it's fair to say the last few years have created challenges.

Nevertheless, FWA is becoming more important than ever as a growing African population looks to stay online whenever they go from one place to another.

Paul Colmer, exco member of Wireless Access Provider's Association (WAPA) extols the virtues of FWA. "Two of the major disadvantages of non-fixed wireless services are the cost of data

and the outdated per-gig billing model," he says. "People don't use connectivity per gig, nor are the networks built based on serving X-gigs per subscriber. Networks are built based on available throughput and the number of nodes or connected devices they can sustain. But the world is largely uncapped today, certainly for most people with fixed connectivity."

He says that is increasingly reflected in the emerging billing models that charge for uncapped per day, week, month or whatever period the user chooses. "We trialled a number of these models in our TV White Space project conducted in less affluent rural areas and this emerged as the clear winner," he says.

Colmer says another significant advantage of fixed wireless networks is the speed and relative ease with which they can be upgraded." Since these tend not to be national networks with integrated cores that require forklift renewals whenever there is a transition to a new technology, they can provide all the benefits of new technologies, much faster," he adds.

Justin Farnell, chief executive officer (CEO) at Johannesburg-based WiFiontheMove says that "correctly architected", FWA allows the service provider to prioritise traffic and guarantee QOS across the network. "In terms of Wi-Fi provision, given its unlicensed band, this is more challenging, but we have developed at FibrePoynt our own patented beam forming solution which optimises the throughput to fixed router and mobile subscribers," he says. "The cell size is smaller and can support far more users than a traditional GSM base station."

So, if FWA really does offer more than its non-fixed relations, why is it not more widely available?

As far as Farnell is concerned, the biggest obstacle to FWA deployment remains the cost of backhaul, because "by virtue of the sheer size of the continent", outside of the metros, fibre backhaul isn't usually available, so the only other alternatives are expensive microwave or satellite links. "However, speaking of the latter, I do anticipate that Elon Musk's Starlink will be a game changer, particularly in the peri urban and rural villages," he adds. "I see Nigeria has already granted the company a licence to start delivering services, albeit I think Elon will have to wait much longer before he's granted access by his home country South Africa."

Satellite has always been a complementary technology that, although traditionally comparatively expensive, is reliable, according to Paul Colmer, exco member of Wireless Access Provider's Association (WAPA). "It's actually so dependable that it is the connectivity of choice for banks to connect ATMs in remote areas," he says. "Its reliability makes it the perfect backup for sensitive applications and where dependability is non-negotiable."

However, Colmer argues that burgeoning medium- (MEO) and low-Earth orbit (LEO) networks such as Starlink, Kuiper, O3B and more recently 1Web are taking the reins from the established geostationary (GEO) stalwarts, such as Intelsat. "They promise less expensive usage costs even if they are still quite costly to set up," he adds. "Nonetheless, they continue satellite's differentiator: providing connectivity where there is otherwise none. As LEO satellites, they also improve latency and, being based on newer technologies, speeds and throughput, too."

That said, Colmer says "there are several hurdles to fixed wireless access deployments in Africa" and that the service providers are constrained in many cases by spectrum limitations. With limited spectrum service providers must deal with a lot more interference,

FEATURE: FIXED WIRELESS ACCESS

Justin Farnell, WiFiontheMove

"I see Nigeria has already granted the company a licence to start delivering services, albeit I think Elon will have to wait much longer before he's granted access by his home country South Africa"

which harms the quality of services they can provide.

"Battery theft and equipment damage are two more major challenges," Colmer continues. "They increase the cost to do business, which ends up impacting consumer prices – and they degrade qualities of service." Nonetheless, Colmer cites a recent landmark ruling in which a South African judge gave three men 30-year sentences each for stealing cell tower batteries.

"It sends a clear message from South Africa's judiciary, the intent of which WAPA supports. Telecommunications infrastructure is now essential infrastructure, which means damaging it is an aggravating factor when considering sentencing," he continues. The change is clearly to dissuade theft and vandalism. It isn't limited to cellular towers, but all telecommunications infrastructure, including wireless internet service providers (WISPs), who provide critical and sometimes the sole communications for many communities."

Of course, a number of different ingredients go into the creation and deployment of FWA. So, just how does the combination of other/different technologies help with the deployment and impact of FWA?

Mpho Sefalafala, CEO at FibrePoynt, explains how his company is deploying its entire network architecture based on solar power.

"The micro base stations don't suffer from downtime, which is a constant challenge with all the load shedding we're experiencing in South Africa," he says. "Furthermore, we are monitoring the equipment's power consumption through our own custom designed IoT controller. With regard to optimising the QoS across the network, FibrePoynt is utilising the Android mobile subscriber app to relay signal strength back to its cloud management platform from the customer's phone."

So, let's just imagine FWA is as fully-deployed as it can be and Africans are reaping the benefits of being connected. It still has to be monetised, otherwise there's barely incentive for companies to invest in the service.

Farnell says "there is no doubt" that newer 5G entrants like Rain in South Africa, have been very successful in winning market share from the established GSM operators, with competitively priced and well packaged service offerings. "However, what about the many millions of consumers who can't afford to spend US$30 to US$50 a month?" he adds. "FibrePoynt has identified at least 5 million households across South Africa where the monthly comms budget is between US$5 and US$20 and it this underserviced market where we are monetising fixed Wi-Fi access through (Flash) token payments – and Wi-Fi data products that are priced for people's pockets on a daily and weekly basis."

What's more, Farnell says the revenue opportunity is huge because FWA allows operators to reuse their existing mobile networks, improve the quality of services, and provide faster and affordable connectivity.

Colmer adds that in WAPA's census report released in November last year, it found that Wisps play a significant role in South Africa's economy and that their revenues exceed R3bn. "They serve more than 200,000 homes and businesses and employ nearly 3,000 people," he says. "The majority are micro enterprises and 63% have annual revenues in the R2m to R20m brackets. They operate over 5,480 high sites across the country, representing significant critical infrastructure that provides numerous vital services, including the support of emergency and response services."

Now, it's time to explore why FWA is key in bridging the digital divide in Africa.

Farnell says that "from a carrier perspective, it's really a function of the lower cost of deployment" which enables those CAPEX savings to be passed onto the customer. "We're seeing this as we roll out FibrePoynt networks across Gauteng in South Africa," he continues. "Our WiFi mobile data offerings are a fraction of the cost of a typical GSM operator. Likewise the adoption of router based services in underserviced communities is transformative."

Farnell highlights the fact that for many households, it's the younger generation who are showing their elders how to connect and enjoy Wi-Fi (on their smart TV) at home. "Furthermore, by sharing router access on a high speed, uncapped service there is now capacity, besides the huge demand for video streaming and other entertainment services, to do e-learning and remote working," he adds. "It also represents a big financial saving for that household, who have up until now, most probably been individually topping up expensive mobile pre-paid data accounts."

Many WISPs use fibre for their backhaul between towers and into national backbone networks. Colmer believes that's the most advantageous application for fibre at the moment in South Africa because it's far too unreliable for people who need dependable connectivity either from the home or their business. "The challenge is the competitive and relatively unsophisticated nature of the trenching, which results in damaged infrastructure," he says. "That has huge reliability implications that are the biggest threat to fibre's public image."

Colmer says Wisps can run viable businesses charging much lower rates than typical mobile network operators. He shares an example where "we ran a proof of concept as part of our TV White Space project" that investigated the pricing and business model. "It started at R10 per gigabyte and we proved it can work, including different ways to market the service, and a variety of offer packages," he adds. "We honed the model by offering uncapped day, week and month passes. It's profitable and it offers huge benefits to the people who need it most."

What's more, Colmer says Wisps can use a variety of methods, including hotspots, to provide affordable, quality connectivity to high-density populations in less formal settlements and particularly townships. "Thousands of income-earning daily commuters frequent taxi ranks and major arterial routes to and from commercial centres are all potential customers considering their alternative is much more expensive cellular data, particularly when bought in small data chunk," he continues. "That creates unprecedented opportunity for Wisps providing fixed wireless access (FWA). The greater the number of frequent users they have, the more opportunity they have to add services, including advertising."

Colmer also says that with higher quality networks, they can also commercially position themselves to extend a mobile network operator's newer and more advanced services based on emerging technologies, such as 5G.

That brings us to the impact of the next-generation technology. 5G is making slow progress in Africa, with a mere six countries having launched the network so far. But just how important is it to the current use and future of 5G?

"It depends which markets you're addressing," says Farnell. "For the wealthier suburbanites and city dwellers it's really accelerated data consumption and provided a critical communications channel and economic

Paul Colmer, WAPA

"It sends a clear message from South Africa's judiciary, the intent of which WAPA supports"

stimulant during the Covid lockdowns. The key to driving down the cost of that data is still a function of spectrum availability and additional tower capacity, but the initial resistance to the vast number of small cell 5G base stations required, seems to have fallen away."

5G or no 5G, there are also numerous examples of where FWA is making a difference in Africa. WAPA has over 250 members and every one of them uses FWA in one form or another, says Colmer. "They are the backbone of connectivity throughout South Africa's non-major urban centres," he adds. "Without them, hundreds of thousands of South Africans would have little choice but to live in the connectivity wilderness, cut off from the digital economy."

More specifically, Farnell explains how his firm has deployed FWA in different townships across South Africa, from Soschunguve north of Pretoria, to Cosmo City in the west of Johannesburg, to Tongaat on the coast of Kwa Zulu-Natal. "In each case we have licenced and launched a new Wi-Fi Service provider with a local partner from that community, under their own brand," he says. "The uptake and support from those communities has been really encouraging."

Farnell believes that one of the reasons his company's solution is gaining acceptance, besides its affordability, is that the locals can become equipment hosts (where the FibrePoynt antennas and solar panel are mounted) and/or network sales agents on the ground. "So we are seeing a genuine positive feedback loop of bringing connectivity and stimulating economic activity within that community," he says.

Although there are obvious challenges, Farnell is optimistic about the future.

"There are several reasons why FWA has become a viable technology alternative: deployment is relatively easy, whilst the time to market is shorter, and it can also expand wireless broadband coverage and potentially provide more than 90% accessibility to the population," he says. "4G and 5G FWA services also have the capability to offer a fibre-like experience and enable connectivity service in areas where fibre-based service is impractical or takes a long time to deploy."

Moreover, Farnell says return on investment is less than three years, meaning FWA can also be a more profitable proposition for operators.

"With regard to optimising the QoS across the network, FibrePoynt is utilising the Android mobile subscriber app to relay signal strength back to its cloud management platform from the customer's phone"
- Mpho Sefalafala, FibrePoynt

"In turn, addressing the last mile connectivity challenge by using unlicensed Wi-Fi spectrum offers new WISPs a fantastic opportunity to address the mass proliferation of Wi-Fi-enabled devices and the lower cost of deployment."

In late August, Nokia and Safaricom celebrated an African first with their successful trial of 4G/5G FWA network slicing in Kenya's Western Region. It's been lauded as a major step toward launching commercial slicing services as more personalised network experience. Progress indeed. ∎
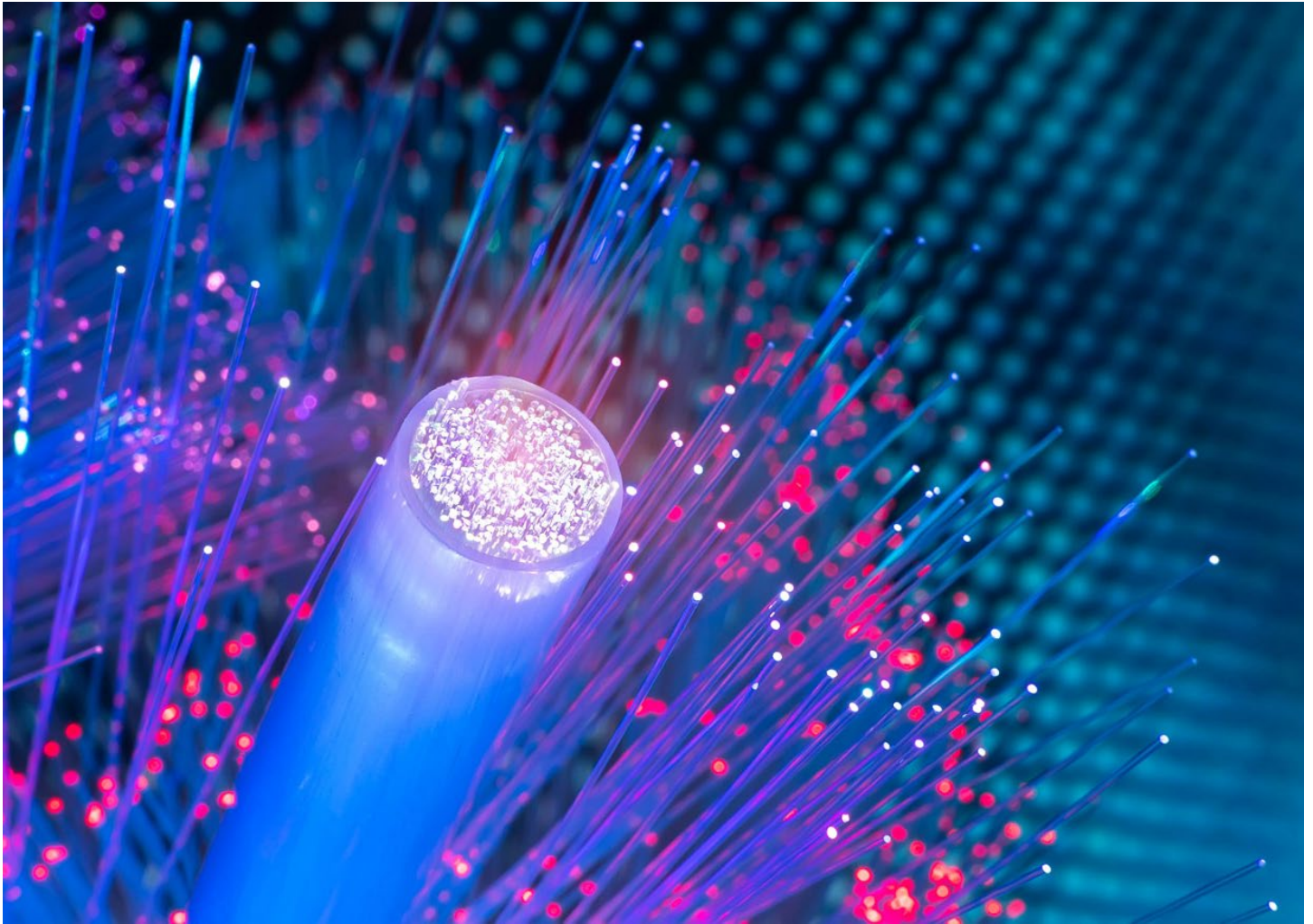
How CPaaS vendors add new capabilities for telecom operators

Telcos should leverage Communications Platform-as-a-Service (CPaaS) to create new revenue streams, protect their key assets, and enhance customer experience and stickiness if they want to stay competitive and relevant, writes Deshbandhu Bansal, chief operating officer, messaging solutions, Comviva

That the future is hyper-digital is passé, the real question now is how soon we can get there. And telecom infrastructure is the road to take. Telecom forms the backbone of the digital economy today, with fibre optic playing a central role in transmitting about 99% of all data, tremendously enhancing day-to-day communication, bridging gaps in business communication, and unlocking massive, new possibilities. Fiber has helped businesses create more productive workplaces, increase output, significantly lowered costly downtimes, reduce latency, and ensure high-quality, disruption-free streaming and conferencing.

It is no surprise that telcos have spent hundreds of billions on bolstering their fibre-rich infrastructure and providing access to networks that power the digital economy. Without the power of fibre, it would have been near-impossible for over-the-top (OTT) service providers and digital natives to embrace and adopt disruptive business models and succeed at the scale they have reached. OTT vendors and their investors owe tremendous gratitude to the telcos. And yet, somewhere along the way, telecom players have fallen behind on the opportunity to monetize their own infrastructure.

CPaaS: a glaring example of telecoms missing out on the revenue pie

The CPaaS industry is booming. Industry research pegs communication-platform-as-a-service (CPaaS) sales to touch US$34bn by 2026. And by 2025, 95% of global enterprises will leverage API-enabled CPaaS offerings to expand their competitive edge. Interestingly, while telecom companies provide the foundational infrastructure for this aggressive growth of CPaaS, they have failed to translate the opportunity into revenues. A Gartner report agrees. "Telecoms only achieve modest wholesale profits in their role in the high-growth CPaaS market, while retail CPaaS vendors accrue enormous success."

Modern, digital-native businesses such as Uber, Zomato, and Airbnb have been using CPaaS services to their benefit for about a decade. OTT players like Netflix and Amazon also have registered significant growth from application and service delivery on the back of telecom infrastructure. Somehow telecoms missed out on the opportunity to monetize their assets while everyone else made a killing. A telecom company's wholesale role in driving CPaaS offers poor margins and little brand visibility. However, this equation is about to change.

Since 2020, several telecom players have been rethinking their CPaaS positioning and looking to increase visibility in retail CPaaS to generate higher margins. By 2023, at least four large telecom companies are set to make significant CPaaS retail commitments, up from zero in 1H21. To sustain and grow, telecoms must invest in developing a retail CPaaS strategy with a keen focus on:

- Improving margins through direct-to-enterprise offerings
- Ensuring C-suite buy-in to drive to corporate urgency
- Developing API and software CPaaS core competencies

The CPaaS monetisation opportunity for telecoms

Telecom operators worldwide are under pressure posed by constantly evolving technologies and fast-moving challengers, placing increased financial stress on networks. However, they are also sitting on a massive gold mine that could unlock billions of dollars—their assets and infrastructure, which is now being made stronger with 5G. When complemented with a valued enterprise brand, strong business relations, deep sales skills, and the right team, this robust infrastructure can be a significant source of revenue. Telecom leaders must look to building competitive, customized CPaaS business by investing in API tools that allow them to engage and sell directly to enterprises and boost their margins.

The COVID-19 pandemic accelerated the need for digital transformations across operations and customer and employee experiences leading to rapid growth in CPaaS innovation and flexible APIs. Many enterprises were quick to harness CPaaS capabilities to improve customer engagement and proactively send messages on purchase and appointment confirmations, transactions, and reminders. Also, increasing security with two-factor authentications, ensuring high availability, and enabling advanced analytics and a flexible deployment were additional capabilities that CPaaS provided rapidly.

Telecom providers can rise to the challenge posed by CPaaS players by monetizing established technologies in new ways, increasing market share and margins, and building an ecosystem of digital technology partners. Telcom companies already possess a mega customer base. By connecting with cloud-based platforms and implementing APIs, CSP can proactively vie with OTT and CPaaS providers and maintain their competitive edge. Additionally, given their advantage of being a trusted player in the telecom tech space, they can build collaborations with top CPaaS suppliers to offer best-in-class solutions.

Take CPaaS Video API, for instance. As more and more companies adopt this new capability for increased customer engagement, telecom companies can tap into this high-growth opportunity by adding videos to their product portfolio. CSPs must "evaluate video API development solutions in education, healthcare, banking, gaming and entertainment, servicing, and contact center solutions." The report adds that this capability will be especially critical as video APIs are expected to emerge as foundational communication offerings among 60% of CPaaS by 2024.

Why telecoms have been slow in harnessing the CPaaS opportunity

According to the Gartner report, 4 Key Pillars to Telco Success in the CPaaS Market, telecom players are not leveraging the CPaaS opportunity to its fullest potential, a market experiencing about 30% revenue CAGR with high growth ahead. This is primarily due to the following:

1. CSPs have been slow to create a developer-friendly infrastructure with no ecosystem supporting APIs and related resources to adopt a CPaaS business model.
2. The current CPaaS market is highly advanced for carriers to build a viable business organically at this stage. CPaaS providers offer cutting-edge functionalities that are easy to consume and have a broad footprint.
3. While the telecommunication provider's communications assets—SMS, SIP trunks, DIDs, fiber, and 4G/5G—offer an unprecedented competitive advantage, they must reposition these assets for today's API economy.

But how can telecoms quickly move into the CPaaS Market?

The easiest way, of course, is to partner with a CPaaS provider and share risks while simultaneously kickstarting CPaaS innovations for customers. Some other ways carriers can look to monetize established tech and create new revenue streams include:

API marketplace: This is the easiest and fastest way to deliver real-time communication capabilities. Telecom players such as KPN and AT&T have already launched an API marketplace to address the challenge posed by CPaaS providers, grow their business, and generate new revenue streams.

OTT with CPaaS: Because CSPs limit access and usage of over-the-top solutions to their own subscribers only, they have generally been unable to deliver a holistic and successful OTT solution. That said, by offering value-added managed services and quality of service, telecoms can still turn the tide. Also, operating and selling in countries with a low credit card and banking penetration provides an edge to carriers as they can leverage their existing pre- or post-paid billing mechanism for subscribers to subscribe to an OTT solution.

Selecting the right CPaaS provider: Partnering with the right provider with the appropriate platform to support enterprise needs is principal to success. A carrier should opt for a CPaaS solution provider who has the flexibility to deploy in their private or hybrid cloud environments. Moreover, as many CPaaS players offer either messaging or voice calls, having a full-stack CPaaS solution will streamline customized voice, video, or messaging solution delivery and build an authentic omnichannel experience.

Telecom white-label CPaaS offerings: With turn-key, responsive and adaptive CPaaS, explicitly built for MNOs to boost the enterprise product offerings and generate new revenue streams. White label CPaaS offerings developed specifically for MNOs can be a sure path to gaining a first-mover advantage and maximizing market share. Utilizing CPaaS to monetize non-core telecom products and SMS traffic will drive innovation and help develop new use cases. Telecom providers can also look to creating omnichannel solutions by ensuring faster time-to-market for new communications offerings and channels in their portfolio.

As the CPaaS market matures, it is pushing demand for innovative digital communication. Having evolved beyond fundamental APIs for messaging and voice services to now offering more sophisticated services that can be customized for specific markets, CPaaS is fast emerging as the way forward, especially for telecoms. Who is able to maximize this opportunity remains to be seen. ∎

Tower ◈ Xchange

Meetup Africa

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TowerXchange Meetup Africa returns!

In the last three years since we last all convened in South Africa the African telecom tower industry has seen significant changes. The four big African publicly listed towercos now control 37% of Africa's 176,751 towers. Three new major private towercos have been formed to challenge the established order. The once nascent rural specialist towerco market are now building 1,000s of towers between them. And Mobile operators like Axian Telecom and Vodacom are looking to launch their own towercos.

CELEBRATING **10** *years* of

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https://meetup.towerxchange.com/africa

Rolling out 5G to Kenya

I n 2021, Nokia and Safaricom launched East Africa's first commercial 5G services in Kenya, taking the country into the next era of digital transformation.

Transforming east Africa with 5G

Safaricom's goal was to support digital transformation in Kenya by rolling out a 5G network to enable new applications in areas such as virtual reality, augmented reality, and artificial intelligence for Safaricom subscribers, while also benefiting enterprises across important energy, healthcare, education, transport, and entertainment applications. Of course, by providing super-fast internet connectivity, laying the foundation for an economy powered by 5G technology, lives would also be transformed.

The goal was to launch the first commercial 5G network in east Africa to power business innovation, create new markets, transform supply chain management, and create smarter, more efficient industries such as manufacturing, health, education, and logistics.

Nokia and Safaricom team up

Safaricom needed a partner with experience in global 5G deployment to achieve this goal. As one of their long-term partners, Nokia was selected to deploy 5G base stations in Kenya.

The company has been working with Safaricom since 2000, helping the telco in launching its first 3G network in 2006 and realising the first Voice over LTE (Long Term Evolution) call in Kenya in 2014.

As part of this deployment in 2021, Nokia leveraged its AirScale SRAN platform to enable ultra-low latency, huge connectivity, and extreme capacity. The 5G network utilises massive Multiple Input Multiple Output (MIMO) radio to improve spectral efficiency and throughput capacity, maximizing the return on Safaricom's RAN investment. In addition, Nokia's FastMile 5G gateway provides fibre like speeds for fixed wireless services to subscribers. The timely rollout of the network was facilitated by the company's network planning, deployment, and integration services.

In addition, Nokia's 5G Cloud Mobility Manager delivers the scalability, flexibility, high availability, and performance needed to support the growth of mobile and enterprise services. Nokia's NetAct network management system helps Safaricom have consolidated network view for improved network monitoring and management.

High speeds enable digital transformation

Nokia's 5G wireless technology delivers higher multi-Gigabits per second peak data speeds, ultra-low latency, more reliability, increased network capacity and availability, and a more uniform user experience to more users.

Through 5G businesses can innovate more, create new markets, and embrace digital transformation to cut costs, build efficiencies and grow their bottom line. It forms the basis of a more sustainable and inclusive society through immersive experiences in education, eHealth, and improved public safety. Furthermore, it transforms industries such as manufacturing through artificial intelligence (AI) and advanced automation and enables the efficient management of complicated logistics and support enhanced logistics management in ports. It allows cities to transform into smart cities incorporating technologies that run on the Internet of Things (IoT) allowing for the delivery of improved services to citizens.

Streamlining tower inspections via drone

A tall order

With more than 39,000 communications towers spread across three regions and 11 countries, IHS Towers has its hands busy with the monumental task of monitoring each and every one.

In Cameroon alone, IHS Towers operates 2,217 communications towers, with the IHS Cameroon team in charge of their maintenance. The towers must be regularly checked in order to evaluate antenna positions, faults and broken equipment.

With the towers in question measuring as high as 300m, this task is a pretty tall order. Traditional methods see qualified specialists climb to the top of each tower to take photos and make observations, which are then compiled into a report outlining the state of the tower. Naturally, the inspector risks serious injury and even death should they fall from such a height. Moreover, the inspections can be time consuming, expensive, and provide only low quality or incomplete data. With as many towers as IHS Cameroon has under its banner, sometimes hand-drawn sketches of the towers are relied upon for antenna installations, engineering and maintenance planning. While this avoids the safety aspects of having to actually climb the actual tower, it's no faster or more cost-effective, and one would certainly question the accuracy.

Naturally, in this increasingly digital era, new solutions for monitoring, maintenance and control are popping up for various industries across the globe, including tower monitoring.

SkyVue proves drones a boon for tower inspection

SkyVue, which uses drones for technical services across a variety of industries, including telecommunications, trialled a project in 2020 to improve the inspection process of the IHS Cameroon towers.

The concept comprised performing a standard tower inspection using drones, and then creating an intelligent digital twin of the tower, in 3D. If the project proved successful, the tower could be made available virtually for IHS Towers teams to use for

their planning, including making measurements, new installations, or to explain engineering work.

By leveraging PIX4Dscan and PIX4Dinspect, SkyVue successfully inspected a tower in Douala, Cameroon, without utilising expensive equipment, and without sending an inspector to climb up it. The inspection took just one hour instead of a whole day.

Using PIX4Dscan, the image capture was automated by the tower flight plan within an iOS app, drastically reducing the time demands of both planning and taking the high-resolution photos. Further, the cloud based PIX4Dinspect

> **"This project was special to us because it made people safer. By performing tower inspections with drones, we cut completely the need for humans to climb on towers for inspections"**
>
> *Raoul Fossi, CEO of SkyVue Solutions*

used automatic machine learning algorithms to process the data rapidly, measuring antennas to help identify them in combination with the pictures taken in an underneath orbit, which show the coaxial port entries underneath the antennas. This new, more time-efficient and accurate workflow means that multiple towers can now be inspected within a single day. The SkyVue team could then add their own notes to different elements of the tower directly from their browser.

"The accurate 3D model of the tower generated was exactly what SkyVue wanted: an intelligent digital twin, which displays automatically the height of the antenna and its angles (azimuth, downtilt and plumb)," said Raoul Fossi, CEO of SkyVue Solutions. "The entire project was seamless - barring a slight delay as a result of the COVID-19 pandemic - and SkyVue published their findings in a detailed PDF report, ideal for easily sharing with IHS Cameroon. For SkyVue, this revolutionized their inspection experience."

Risk-free tower inspection

SkyVue successfully completed the tower inspection in a fraction of the time compared
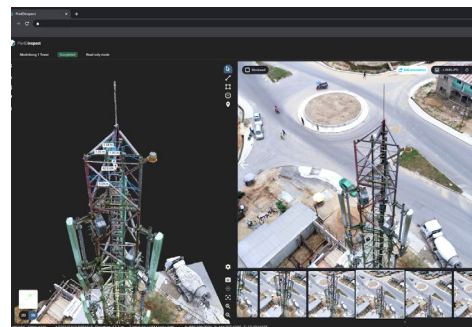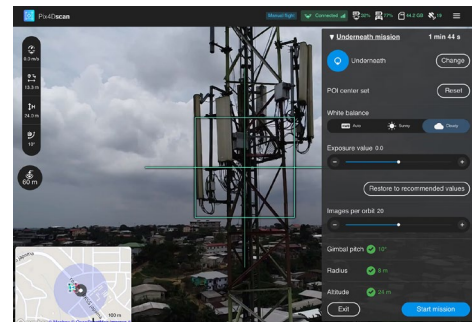
with traditional methods and managed to cut inspection costs by one third.

The combined capture and process workflow of PIX4Dscan and PIX4Dinspect were, according to SkyVue: "a game changer for the inspection world because they are custom designed to address an industry specific pain point."

Indeed, SkyVue highlighted the auto-generated inspection reports, automatic antenna detection, pre-planned tower flight mission in app, and generation of comprehensive reports as key features valuable for the project.

However, the greatest win for SkyVue was the removal of the risk factors traditionally associated with communications tower inspections.

"This project was special to us because it made people safer. By performing tower inspections with drones, we cut completely the need for humans to climb on towers for inspections," said Fossi.

IHS Cameroon is reportedly now in talks to roll the solution out nationwide, in a major technological advancement for the communications tower sector.

"We are excited to see the developments of using drones for telecom inspections. It is an ever-changing industry," said Pablo Santos, business strategy Manager, Pix4D. "Since this project was completed, we have added various AI algorithms such as automatic rust detection that streamline the overall process of drone inspections and result in intelligent digital twins."

The original story was published on pix4d.com
Images courtesy of SkyVue Solutions

The Pharaoh from Antenova

Antenova manufacturer of antennas and RF antenna modules for M2M and the IoT, says it has halved the footprint of its 4G cellular antennas with its latest offering.

Designed for small PCBs, Antenova's Pharaoh antenna (P/N SR4L073) covers all 4G frequencies: 698 – 824 MHz, 824-960 MHz, 1710-2170 MHz, 2300-2400 MHz and 2500-2690 MHz.

The company reckons the Pharaoh's small ground requirement "offers designers a huge advantage in designs on a small circuit board", such as miniature pet trackers, wearables or OBD-II designs.

This antenna was tested with evaluation boards of 50 x 40 mm and 60 x 40 mm and its performance-to-footprint ratio out-ranked competing 4G antennas for small circuit boards. They typically require a minimum 60 x 40 mm of space, utilise large and costly band switching networks and display lower levels of efficiency.

Critically, the Pharaoh's performance on small PCBs is above the level required to pass PTCRB tests for cellular networks.

"The performance of an antenna is directly related to the length of its ground plane," Michael Castle, product marketing manager, Antenova, explains. "At the lowest 4G frequency, 698 MHz, the wavelength λ for electromagnetic radiation is 42.95 cm. Most antennas require a ground plane of a quarter wavelength, which means they need a space of 107 mm to operate effectively. Our Pharaoh antenna smashes this rule and uses about half of this area." *antenova.com*

Siklu expands series with point-to-point and node solutions

Siklu, the millimeter wave (mmWave) solutions specialist, brings to market two new connectivity options to its MultiHaul TG product family – the MultiHaul TG MPL-260 and the MultiHaul TG N265. Siklu has a large selection of Terragraph-certified products for fixed 5G wireless access, Wi-Fi hotspot and small cell backhaul, smart city connectivity and other applications.

The MultiHaul TG MPL-260 is a plug-and-play solution for the rapid deployment of Gigabit-speed point-to-point (PtP) connectivity. A Terragraph-certified first, the MultiHaul TG MPL-260 features two pre-paired radio units, with Auto-Aligned patent-pending scanning antennas. Customers can simply install the units and point them towards each other to deliver 1Gbps over up to 300m (984ft.), across interference free 60GHz licence-exempt spectrum.

According to Siklu, the MultiHaul TG N265 enhances the MultiHaul TG series of nodes with flexibility in radio coverage for those situations calling for a significant down-tilt of the antenna to connect adjacent structures from a large tall roof in a dense urban setting or when one needs 90° coverage or less, for example, to backhaul a few cameras or Wi-Fi APs in a parking lot to a corner pole. This unit is designed for an easy single-person installation and also features the patent-pending scanning antenna capability to align pencil-thin beams with other nodes or terminal units automatically. *siklu.com*

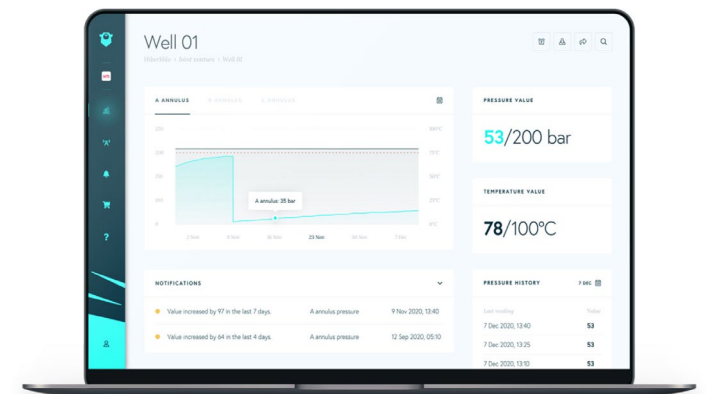Siklu MultiHaul™ TG 260   Siklu MultiHaul™ TG N265

Hiber expands data-gathering capabilities of remote well-monitoring solution

Hiber, the IoT-as-a-Service provider, has added new capabilities to its HiberHilo satellite-powered remote well-monitoring solution for the oil and gas sector, enabling connection over LoRaWAN to a wide range of specialised in-field sensors. By integrating ATEX-certified, wired-to-wireless (W2W) connectivity into the HiberHilo sensor portfolio, Hiber now provides over-the-air access to a broad array of in-field data parameters and metrics, equipping oil and gas operators with new ways to monitor and optimise production.

The latest HiberHilo sensors, equipped with W2W hardware, can, the company says, convert the analogue signal from any wired sensor (4-20mA or 0-5V output) into a LoRaWAN signal. This significantly expands the range of operating parameters that can now be monitored remotely, adding flow, methane detection, variable speed drive (VSD) readings, torque, voltage (for example, to ensure cathodic protection is intact), and more. The new HiberHilo W2W hardware can be connected to any existing or new sensor installed in the field, negating the need to purchase additional devices.

"Monitoring remote wells or keeping track of and optimising production of wells scattered across a wide area is difficult, expensive and complex without satellite-enabled IoT monitoring," says Hiber chief executive officer (CEO) Roel Jensen. "The combination of the enhanced sensor options, and our expertise in IoT and connectivity, means we can now support a wider range of use cases for the oil and gas industry by providing a solution that is affordable, effective, and easy to install." *hiber.com*

Samsung and Airbus partner to launch new critical comms kit

Samsung just released a new XCover6 Pro smartphone that helps users of critical communications with new and improved features – the new smartphone, together with the Airbus Tactilon Agnet MCX solution, "enables mission and business critical communication to be successful even in demanding conditions".
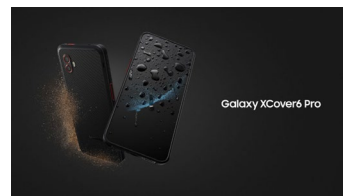
Airbus has developed and tested Tactilon Agnet solution together with Samsung, and the just released XCover6 Pro smartphone brings new solutions for service deployment and MCX services for demanding users. Samsung Knox products complete Tactilon Agnet deployment easily with firmware management, license server for offline activation, out of the box enrollment and many other features that are valuable for critical communications users. With Samsung Knox Security, security

management and quality can be implemented even more efficiently. "This announcement shows that a global and leading technology enterprise is ready to meet mission critical user requirements for terminals," says Samuel Gustafsson, head of European sales, Airbus. "The Tactilon Agnet service on the new XCover6 Pro will be able to serve the users with new features without compromising on efficiency and security, which are increasingly important aspects of critical communications."

Neil Barclay, head of B2G, Samsung Europe, adds: "Security and usability are top priorities for government organizations when choosing mobile technology. Leveraging our enterprise grade security and staging tools, we've collaborated with Airbus to create a unique and easy-to-

deploy platform that manages and protects the most sensitive and confidential information on a best-in-class PTT device."

The new Samsung XCover6 Pro itself has numerous features that makes it functional for field use such as protection for demanding conditions, programmable hardware keys, high capacity battery with fast charging, and loud mono speaker for clear voice communication. Also, the Samsung XCover6 Pro has a chipset with support for LTE and 5G, which will enhance the quality of video streaming and video conferencing by end-users. *samsung.com*

Pure glass from Nippon

Nippon Electric Glass has developed a transparent antenna, which is made of a glass substrate and a repeater, using radio wave lenses and does not require power supply, for 5G millimeter-wave wireless communication technology.

The newly developed transparent antenna, the company says, has a special antenna pattern on a glass substrate, whose dielectric constant (4.0) and loss tangent (0.002) are the smallest in the world. This is a highly efficient transparent antenna. The size of glass substrates can be increased, making it possible to manufacture multiple products from a single substrate. This contributes to improving the antenna

productivity and enables formation of antennas for multiple bands on a single substrate. By making the antenna transparent, the antenna functionality can be added without spoiling the design and landscape of an installation location. The antenna can be installed in various locations, such as windows, walls, displays, and vehicles.

The repeater, which is the other newly developed product, consists of two radio wave lenses and a waveguide. It receives and retransmits radio waves and changes the direction of radio waves without power supply even under circumstances where radio waves are blocked by walls and window glass. By changing the
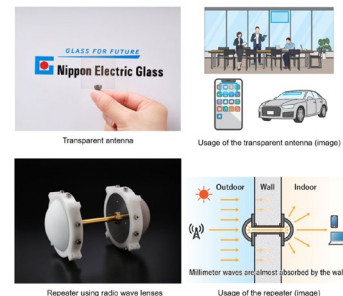
shape of the lens, radio waves can be transmitted in a certain direction or over a wide range. The lens is not subject to deterioration caused by ultraviolet rays because it is made of glass. It can be used stably over a long period in various places, both indoors and outdoors. *neg.co.jp*

The Huawei WiFi Mesh 7

Huawei introduces the WiFi Mesh 7, further expanding its mesh router product portfolio. Available in two packs, the new Huawei smart mesh routers – the company boasts – "provide blazing fast Wi-Fi 6 Plus connection speeds for up to 250 devices within 6,000 square feet".

Supporting AX6600 Tri-Band, the solution features eight streams for extreme speeds up to 6,600Mbps, which makes smooth streaming of 8K media a possibility. The new smart mesh router also supports HarmonyOS Mesh+, which includes a wide range of networking solutions

to ensure top Wi-Fi 6 Plus mesh performance for all users. Setup is simple, requiring only a few easy steps to establish the home network, and with One-Touch Connect, users can connect their smartphones to the mesh network securely with a single tap. *huawei.com*

Look out for...

Ericsson, Qualcomm and Thales to take 5G out of this world

Ericsson, French aerospace company Thales and wireless technology specialist Qualcomm Technologies are planning to take 5G into space across a network of Earth-orbiting satellites.

After having each conducted detailed research, which included multiple studies and simulations, the parties plan to enter smartphone-use-case-focused testing and validation of 5G non-terrestrial networks (5G NTN).

The result could effectively mean that a future 5G smartphone could use 5G connectivity anywhere on Earth and provide complete global coverage for wideband data services, including places normally only covered by legacy satellite phone systems with limited data connectivity capabilities.

The benefits of 5G connectivity via low Earth Orbit (LEO) satellites are expected to include coverage in extreme geographies or remote areas across seas, oceans and other locations where terrestrial coverage is absent.

Such widespread connectivity would boost 5G smartphone subscriber roaming service capabilities, as well as enabling global connectivity for transportation, energy and health sector 5G use cases.

The space-based network could also be used as back-up support to terrestrial networks in the event of major network outages or disasters.

Erik Ekudden, senior vice president and chief technology officer, Ericsson, reckons this testing and validation cooperation between Ericsson, Thales and Qualcomm Technologies will be a major milestone in the history of communications. "The ultimate result could effectively mean that no matter where you are on Earth – in the middle of an ocean or the remotest forest – high-end, secure and cost-effective connectivity will be available through collaborative 5G satellite and terrestrial connectivity," he says.

Australia's TPG Telecom selling tower assets to cut debt

Australian broadband services provider TPG Telecom is selling its mobile tower and rooftop infrastructure assets to Canada's OMERS Infrastructure Management for A$950m (US$670m) to cut growing debts.

The sale of the passive infrastructure assets will include more than 1,200 sites and form nearly a fifth of TPG's mobile network footprint.

Passive infrastructure includes sites, buildings, towers, masts and poles, and excludes digital capabilities in active telecoms networks.

"The transaction represents competitive long-term financing, which will reduce our total financial leverage and deliver lower borrowing costs," said TPG chief executive Iñaki Berroeta.

The sale is the latest in a raft of telecom sector deals in Australia, where firms are increasingly reviewing options for their aging infrastructure to reduce debt and try to capitalise on growth in 5G.

Telstra, the country's largest operator, last year agreed to sell a 49% stake in its mobile tower business for A$2.8bn. Uniti Group also recently agreed to a A$3.6bn takeover.

Toronto-based OMERS had C$32bn US($24.8b) in assets under management and investments in 12 countries at the end of last year.

Meanwhile, billionaire Elon Musk has reportedly played a significant role in driving up the prices across Australia's NBN phone and internet network.

According to reports, the South African entrepreneur has been blamed for a price hike planned by the National Broadband Network's parent company, which claimed the billionaire's Starlink technology had reduced the company's viability.

Digital Edge commences work on 23MW data centre in Jakarta

Digital Edge (Singapore) Holdings Pte. Lts. has commenced construction of a 23MW data centre in Jakarta, Indonesia. The data centre, dubbed EDGE2, will be operated by PT. Ekagrata Data Gemilang (EDGE DC).

"The growth opportunities in southeast Asia are vast and our presence in Indonesia plays an important role in our mission to bridge the digital divide in these high growth markets," said Samuel Lee, Chief Executive Officer at Digital Edge.

EDGE2, Digital Edge's third data centre in the region, will feature 3,430 cabinets and is designed to meet the growing demand for high power density applications from local and international network providers, cloud-driven hyperscale deployments, and financial service providers. The data centre is due for completion in the fourth quarter of 2023.

EDGE2 will become a part of the virtual campus with EDGE1, which sits less than 3km away, and customers will be able to take advantage of the network density and internet exchanges already present in EDGE1 from the outset. The new data centre incorporates green design principles to reduce its carbon footprint, in line with Digital Edge's Environmental, Social & Governance (ESG) strategy. The facility has a design annualized PUE of 1.27 and will leverage Nortek's StatePoint® liquid cooling technology, making it the most energy efficient data centre in the Jakarta metro. It will also utilize renewable energy solutions similar to the Renewable Energy Certificate which the EDGE1 facility recently received.

FWA device shipments to grow by 111% in 2022

Shipments of 5G FWA devices are expected to grow year on year by 111% to 7.6 million units in 2022, due to the growth in 5G coverage and growing market demand for fixed wireless access (FWA) services, according to TrendForce.

5G FWA supports both business and home applications, enabling wide bandwidth, low latency connections, and is fast becoming a viable alternative to fixed broadband connections. With faster deployment that requires less manpower and less equipment than fibre installations, governments the world over are investing heavily in 5G FWA. For slower economic developing regions like Indonesian Borneo, central/southern India, Sumatra and the western plateau of Vietnam, 5G FWA deployment is expected to lower the threshold for the future construction and maintenance of high-speed networks.

Marlink to use Starlink capacity for enterprise and maritime customers

Marlink and OmniAccess will leverage SpaceX's Starlink service to augment connectivity for their portfolio of smart network solutions and services globally. Together, they will act as global "authorized Starlink integrators" for enterprise and maritime customers.

Marlink's integration of Starlink with existing highly reliable VSAT, LTE (4G/5G) and terrestrial connectivity solutions will result in a seamless user experience. Marlink and OmniAccess will orchestrate the different connectivity paths to provide their global customers with enhanced network solutions, improving business-critical applications, passenger communications, and crew and remote workers' welfare.

"This ability to utilise Starlink is a giant step in our strategy to provide our customers with the best-in-class user experience, combining our industry-leading GEO satellite connectivity solutions with the next generation LEO high-speed, low-latency services," said Erik Ceuppens, CEO, Marlink Group. "We are looking forward to working with SpaceX to integrate Starlink as part of our smart network solutions, creating a superior global connectivity service for our extensive maritime and enterprise customer base across the world."
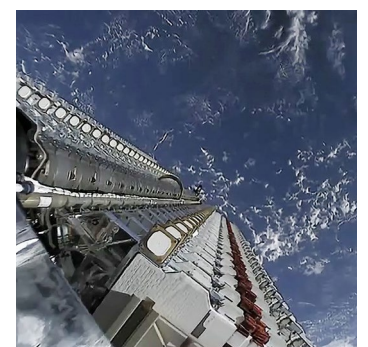
# Lynk Global and BICS to expand mobile coverage to the global underserved

Lynk Global and BICS have signed an agreement to enable MNOs to expand mobile coverage to people in remote areas across the world. Coverage areas will include southeast Asia, rural areas in Africa, North America, the Caribbean, and Latin America.

Lynk's 'cell tower in space' technology provides a satellite-direct-to-mobile-phone service, which when partnered with BICS' network, will extend coverage to areas lacking cell towers. Lynk's technology allows standard roaming partner integration without any hardware or software changes to the mobile operators' networks, bringing coverage to remote areas, islands, and even offshore.

"Mobile service is taken for granted by so many people who live in cities and suburbs, but we need to remember that billions of people still experience extended periods of disconnectivity, and hundreds of millions live without any connectivity," said Charles Miller, Lynk CEO and co-founder. "Being left out of the digital world creates barriers to economic growth and social improvement — trapping hundreds of millions in the deepest poverty. It also eliminates access to basic emergency services, making life more dangerous. Our partnership with BICS will allow MNOs to affordably expand their coverage and connect more people, saving lives and accelerating economic development for those living in the remotest parts of the world."
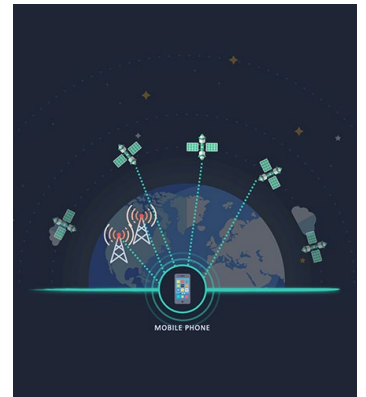
PLDT begins work on Asia Direct Cable system

PLDT Group is set to inaugurate the construction of its fourth cable landing station and the initial construction phase of the Asia Direct Cable (ADC) system by the end of 2022. These two new projects follow the completion of the Philippines largest hyperscale data centre and the activation of Jupiter, the fastest international cable direct to the US and Japan.

"After the successful launch and activation of Jupiter, PLDT hopes to lead the country to become the best transpacific cable hub in Asia, as we work on delivering additional subsea cables and new cable landing stations in 2024," said former PLDT VP and technology advisor for enterprise, Victor Aliwalas.

The ADC cable is expected to be completed by the end of next year, while the cable landing station in Baler, Aurora, will be completed by 2024, and will supplement PLDT's international gateway on the northern and eastern borders.

"Apart from the DC and the International connectivity, PLDT is also leading the charge on 5G rollouts and domestic fibre rollouts on top of all the other platforms to significantly increase the country's take up of digitalisation," Aliwalas. "We are not focusing on just one or two pillars, we are building out the entire ecosystem to work as a whole. We need a full working and energized system to support this hyperscale initiative and PLDT is determined to put together everything to be the strongest hyperscale player in the country, to establish and promote the Philippines as a hyperscale destination."

Tanzania gains first 5G mobile network

Vodacom Tanzania has launched the country's first 5G mobile network, offering users faster speeds, low latency and supporting the development of emerging technologies, including IoT.

The network will be available for smartphone users with 5G capable devices and for fixed network customers via 5G router. Initial speeds of 400Mbps are planned, with an increase to 800Mbps in the months to come, and ultimately, up to 1Gbps once the 5G spectrum is made fully available.

Sites will be deployed in Dar es Salaam, and Vodafone Tanzania aims to expand 5G connectivity to approximately 230 locations in the country, including Arusha, Dodoma, Mwanza, Iringa, Kagera, Zanzibar, and Mbeya, among others.
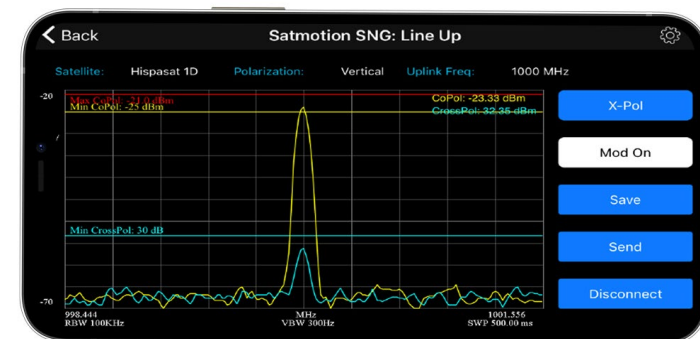
"Having been first to launch 5G in Africa, this is an exciting milestone in Vodacom's history as we continue to densify 5G services across our Africa markets, bringing the continent closer to the global digital economy through the latest generation of mobile technology," said Shameel Joosub, CEO, Vodacom Group. "Congratulations to the Tanzanian team for bringing us one step closer to an inclusive, fully digitised future for all Africans."

SKY Perfect JSAT utilises Satmotion from INTEGRASYS for Indonesian VSAT client

SKY Perfect JSAT has opted to use INTEGRASYS' Satmotion auto commissioning tool to complete cross polarisation isolation (CPI) tests for a VSAT network customer of JSAT in Indonesia. The customer, Lintasarta, focuses on connectivity for banking and financial institutions.

The Satmotion tool will ensure that the customer can use its satellite network in the most optimised way, while also complying with the service level agreement (SLA). For JSAT, Satmotion reduces workload for the company and its customer.

Satmotion works by simplifying the Lineup process as much as possible, ensuring that each transmission is free of interference, by measuring Copol and Xpol, and feeding back to the customer via a simple interface. INTEGRASYS has worked with the technical team to adapt the Satmotion tool for its specific requirements.

"By using Satmotion, it is possible to perform CPI test by our customer alone. Usually, CPI test is conducted through direct communication with operators by phone or chat," said Tomoaki Fujihara, network operations division, SKY Perfect JSAT. "For customers who own many VSAT, CPI test is performed frequently. And if operators are busy, they may keep customers waiting. Therefore, by using Satmotion, the customer conducts CPI test themselves, which allows the customer to test at any time they want and reduces our operator's workload.''

Three UK and Freshwave to combat poor mobile 4G indoor connectivity

Three UK has partnered with Freshwave on the operator's first deployments of the Neutral Host In-Building mobile specification. Following two successful pilot tests at offices in London, the approach has been selected by Three UK to augment its 4G indoor connectivity.

Some 80% of mobile phone calls originate from indoors, but modern building materials make it more difficult for the outdoor macro signal to penetrate inside. As a result, many buildings harbour mobile signal dead zones which can reduce productivity and increase frustration. Accordingly, in-building small cell systems bring network indoors with guaranteed quality of service, without placing extra pressure on the outdoor macro.

A standard for in-building radio solutions, the Joint Operator Technical Specifications (JOTS) Neutral Host In-Building, has recently been established in collaboration between all four of

the UK's mobile network operators. It specifies the technical standard use of 4G small cell technologies to simplify the provision of indoor mobile coverage for businesses. By adhering to the JOTS NHIB specification, a third party, or 'neutral host' can provide mobile services to businesses on behalf of one or more of the operators. The neutral host can enable this connectivity using their own choice of vendors and equipment.

"Indoor focus has been a major priority of ours with the acquisition of additional low frequency spectrum in 2020 and our agreement with Freshwave will further enhance indoor coverage, particularly for business customers," said Iain Milligan, chief network officer at Three UK.

"This is another step forward in making assured indoor mobile connectivity easier for businesses to access around the UK and we're pleased to have worked with

Three UK on this world-leading approach," said Tom Bennett, CTO at Freshwave. "We're excited that Three UK is now also using the specification and that Freshwave is the first company to be the neutral host for multiple operators on the NHIB specification."

Taiwan Mobile picks Nokia for 5G coverage upgrade

Taiwan Mobile chose Nokia to improve 5G coverage by expanding its existing standalone core, the companies said.

In a statement, the latter noted it will deliver base stations and massive MIMO antennas from its AirScale portfolio, along with 4G and 5G dynamic spectrum sharing equipment to maximise the former's spectrum assets.

The gear-maker also said it will modernise LTE infrastructure and consolidate network management and optimisation into a centralised platform.

Taiwan Mobile president Jamie Lin said the operator aims to "upgrade and expand our 5G network to deliver resilient connectivity and expanded coverage to our subscribers and enterprises".

Lin further noted the move also contributes to Taiwan Mobile's "sustainability agenda".

In March, Taiwan Mobile committed to running all its operations on renewable
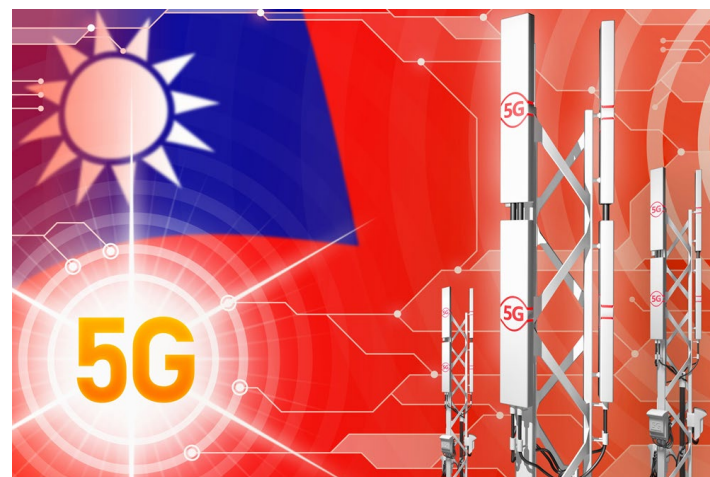
electricity by 2040 and recently set the goal of achieving net-zero emissions by 2050.

Meanwhile, the operator registered its fourth consecutive quarter of growth in service revenue, which improved in the opening quarter of 2022 due to continued ARPU gains driven by uptake of higher-priced 5G plans.

Mobile service revenue

was up 1% year-on-year to US$399.4m. Blended ARPU also rose 1% to TWD545.

Taiwan Mobile noted pressure on 4G pricing diminished and said device sales dropped 4% to TWD4.6 billion.

It added just over 100,000 post-paid subscribers to end March with 5.9 million. Its overall user base was steady at 7.3 million.
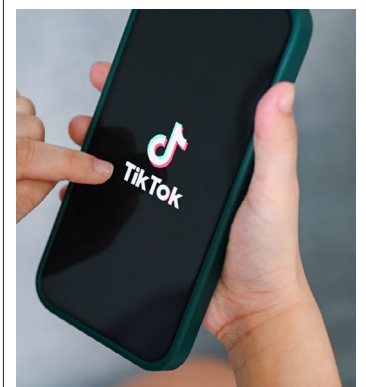
TikTok to provide free WiFi in South Africa

TikTok has announced a pilot partnership with ThinkWiFi for the deployment of 50 free WiFi hotspots in South Africa in order to promote internet access and reduce digital inequalities.

The 'TikTok Wi-Fi' programme's pilot phase is expected to last six months, and will be located in Soweto, Gugulethu, Khayelitsha and Bushbuckridge. According to digital marketing agency CSA Sha-Izwe, TikTok currently has 6.44 million active users over the age of 18 in South Africa, and interest across the entire continent is growing.

Lack of internet access and/ or its high cost is thought to be currently preventing consumers from using the TikTok platform. According to DataReportal, South Africa had 41.19 million internet users in January 2022, a penetration rate of 68.2%. Thus, 19.21 million or 31.8% of South Africans were not connected to the internet at the start of the year.

"We understand that as an entertainment platform accessible on mobile devices, TikTok plays an important role in the digital world," said Fortune Mgwili-Sibanda, director of government relations and public policy for sub-Saharan Africa at TikTok. "Through this pilot, we hope to encourage more people to join digital spaces such as ours, not only to create content, but also to learn new skills and educate other members of the community about their passion and interests."

Teltronic to equip Delhi-Meerut RRTS with Mission Critical Services MCX

Alstom has selected Teltronic to supply and integrate the on-board equipment, radio terminals and control centre solution that will deliver Mission Critical Services MCX (MCPTT & MCData) for the Delhi to Meerut Regional Rapid Transit System (RRTS), a high-speed commuter rail that will, once construction is completed, link these two Indian cities via an 82km rail corridor.

This project demonstrates the validity of Teltronic's communication solutions over MCX (critical broadband communications applications and the infrastructure that supports them) defined by the 3GPP standard; a technology that will allow the line operator a smooth transition to FRMCS (Future Rail Mobile Communication System) in the future.

"This project is a clear demonstration that our solutions for railway environments comply with the 3GPP standard for MCX services," said Felipe Sanjuán, transport business development director. "Teltronic reaffirms its commitment to standards as a reference framework and after a clear target to R&D to evolve our solutions to the technologies of the future, we are proud that Alstom has selected us and that we can demonstrate that Teltronic will continue to play a key role in private communications."

Teltronic will provide its control centre solution, CeCoCo, with ten operator stations. The onboard communications management platform is based on 3GPP MCX and connected to third party MCX server. It incorporates a Geographic Information System (GIS) which enables real-time visualisation of the location of terminals and trains and will be integrated with the Train Management System. It will also allow communications with the public address and intercom systems.

Teltronic will also equip the trains with its on-board solution, which consists of an RTP-800 on-board unit in each cabin, RCC-3000 touchscreen control console and audio accessories that will be integrated with the public address and intercom systems on the train, and with the TCMS (Train Control & Management System). The Teltronic onboard units will be connected to the Alstom NetBox mobile router managing the train-to-ground connectivity for all services.

Teltronic will supply more than 600 LTE terminals, both desktops and rugged portable terminals that will be used by the line's operations and maintenance staff.

Inmarsat delivers connectivity for Tonga mission USV

Inmarsat has provided SEA-KIT International's uncrewed surface vessel (USV) Maxlimer with connectivity services to transmit data and video from the site of the recent underwater volcanic eruption in Tonga.

The USV mapped the volcano's submerged caldera and measured local marine conditions as part of an international project to assess the environmental damage caused by the eruption.

Maxlimer was equipped with a Global Xpress antenna and Fleet LTE hardware back in 2021, adding to its pre-existing FleetBroadband antenna, enabling it to access full Fleet Xpress capabilities and seamlessly switch between networks. Following the eruption, SEA-KIT signed up for a high-upload plan with 99.9% uptime service level agreement via Inmarsat's Global Xpress Ka-band satellites to support the vessel's survey activities in Tonga. It also acquired the services of Videosoft Global; Maxlimer used Videosoft's streaming service to transmit live video from the site, as well as high-definition, low-latency CCTV enabling SEA-KIT to monitor the vessel's operations remotely.

"This project represented a natural evolution of Inmarsat's relationship with SEA-KIT and offered us an exciting opportunity to support an important initiative," said Scott Middleton, sales director EMEA, Inmarsat Maritime.

"This is our most remote mission to date, taking place in the Pacific Ocean 16,000 kilometres from our base in Tollesbury, Essex. In these circumstances, reliability is critical from our connectivity partner," said Ashley Skett, director of operations, SEA-KIT International. "Inmarsat provides us with world-class connectivity, allowing us to control and monitor Maxlimer's operations and access live-streamed video via a dedicated network. We will work together with Inmarsat as we continue to demonstrate the ground-breaking capabilities of our uncrewed surface vessels as a solution for safer and more sustainable maritime operations around the world."

Vodacom to invest in Limpopo

Vodacom is investing R300 million into its Limpopo network this financial year, with the aim of enhancing broadband coverage in remote areas.

Most of the investment will be used to modernise the existing radio network, construct new deep rural towers, and enhance transmission by improving backup power and increasing fibre rollout. The funds will also help provide extra capacity to support the region's traffic growth, which rose by 17.4% year on year. Limpopo has more than 1,557 network sites, 97% of which support 3G, and 92% support 4G. Vodacom was the first to roll out 5G to Limpopo last year and plans to double 5G coverage there by the end of the next financial year.

"We are very excited about our network investment for the Limpopo region this financial year, as we aim to ensure that all our customers will benefit from a quality network experience, particularly in rural areas," said Ridwaan Soomra, managing executive of Vodacom Limpopo Region. Expanding access to connectivity forms part of our commitment to building an inclusive digital future while assisting with stimulating socio-economic growth in the province."

Site vandalism and load-shedding have been significant challenges for Vodacom, so the company has strengthened security and upgraded backup power solutions across sites to ensure that customers stay connected. More than R100 million has been invested in overcoming power outages, the generator fleet has been increased by 35%, and generator repair spend now sits at 170% more than allocated. A further R8 million has been spent on fuel for the generators in case of outages.

Q&A

Alastair Williamson
CEO
Wyld Networks

Who was your hero when you were growing up?

If it is OK, I would like to have two heroes. The first is the England all-round cricketer and legend, Lord Botham (Ian Botham). My family was a cricketing family and we all played, even my mum and siblings, so we spent a lot of time watching county and international cricket. In Test cricket, he scored 14 centuries, took five wickets in an innings 27 times, and 10 wickets in a match four times.

Ian Botham was and still is an inspiration with his energy, enthusiasm and commitment. But these qualities were not only displayed on the cricket pitch but were also reflected in Ian's charity work – having undertaken 12 long distance charity walks and raised £12million.

My second hero is Nelson Mandela. I grew up in Uganda and Kenya and my father was a great champion of anti-apartheid, which was instilled in us as children. As I grew up and became more politically aware, I realised the enormous influence Nelson Mandela had in leading the transition from apartheid to a multiracial democracy in South Africa. While he has sadly passed away, he will always remain a major influence in my life.

What was your big career break?

When I was 18 and living in Kenya, I met Klaus Krone, a young German entrepreneur and industrialist who was running the family electrical switchgear business set up by his father. It was Klaus who gave me my first job at Krone but also paid for me to go to university back in the UK. In those days in Kenya, students would do O and A levels, but few would go to university. I worked for Krone for some 15 years and Klaus dispatched me to countries across the world to set up sales organisations and set up offices, including Nigeria, Hong Kong and Singapore as well as working in Germany and the UK. That opportunity changed the direction of my life.

If you had to work in a different industry, which one would you choose?

Twenty years ago I would not have an answer but today it would definitely be agriculture. I grew up on a coffee plantation and it transpires that farming is in my blood. But that's not all. More recently I have become more aware of the growing challenges the world faces in feeding itself. According to Action Against Hunger, globally, one in nine people are hungry or undernourished. This is an appalling statistic and I genuinely believe that our work at Wyld – providing IoT sensor-to-satellite connectivity across the globe – will play a small part in how technology can help famers to increase yields, reduce waste grow more sustainably. With an incredible 30% of global water wastage due to agriculture – mainly due to over irrigation - using soil moisture sensors to manage irrigation, for example, can drastically reduce this figure.

What would you do with US$1m?

It is a question I have never had to consider but aside from supporting my family, I would love to help nurture and invest in innovative aggrotech start-ups looking to help find solutions to food poverty and increase sustainability. Technology has saved us more than once and by harnessing the vision and skills of young entrepreneurs, scientists and engineers, we can hopefully find a way through feeding the world.

Where would you live if money was no object?

I have lived all over the world in Africa, SE Asia, South America, mainland Europe, but my home now is in Wiltshire in the UK, 'God's own county'. While it has been a privilege to experience the people, culture and geography of so many places, for me now, home is where the family is, so I have no plans to go elsewhere, even if money was no object.

What's the best piece of advice you've been given?

I have been given so much good and valuable advice by so many great people over the years, some of which I have accepted but other advice that I have ignored to my detriment. It is difficult to pick one piece, but I would have to go back to my father who told me when I was 18, I should leave Kenya and head back to the UK to further my education. As I've said, in Kenya we did O and A levels but few students went on to university. He gave me a passport and packed me off. It was daunting but with that encouragement and the help of my mentor Klaus Krone, it was the start of an exciting and rewarding career – and I am still reaping the benefits.

What's the best technological advancement in your lifetime?

There are so many technological breakthroughs that have shaped our lives that it is difficult to pick just one but if pushed I would have to say mobile communications and the Internet. The idea that you can speak to someone in rural Uganda from Wiltshire on Facebook or WhatsApp is simply phenomenal and life changing. When I was studying in the UK, the only way to contact my parents was through an arranged call from a phone box or by writing. The only downside from mobile communications and social media is that the art of writing a letter is disappearing.

If you could dine with any famous person, past or present, who would you choose?

It has to again be Lord Ian Botham or Nelson Mandela, depending on the sort of evening I wanted. But having them both would make for fascinating dinner conversation. While both very different, they also have a lot in common, not least the single-minded commitment to getting the job done. Ian's epic eight-day charity walk across South Africa passed through Soweto, where Nelson Mandela grew up and Mandela was a great fan of cricket, from watching visiting sides from enclosures in the ground reserved for the non-Europeans in his youth to greeting visiting international cricket teams as president of South Africa.

Which law would you most like to change?

While not strictly speaking a law in itself, I would have no hesitation in changing the rules on income tax. I strongly believe that taxing people on their earnings is immoral. A better and more just approach is to shift the burden of raising necessary income to taxing expenditure. While you can't do away with income tax completely, it's time to change the balance. If you look at countries such as Singapore that adopt this approach with low-income tax, they have successful economies and arguably a fairer society.

What's the one product you couldn't live without?

My first thought was my smartphone, but then I lived quite happily without one for the first 30 years of my life. But I'm still drawn back to communication devices, whether it is a landline phone, mobile or smartphone. So, I guess it comes back today to a smartphone as the product I would struggle most to live without. I suspect that this applies to most people. But there is another product I would struggle to live without – a very British cup of tea!

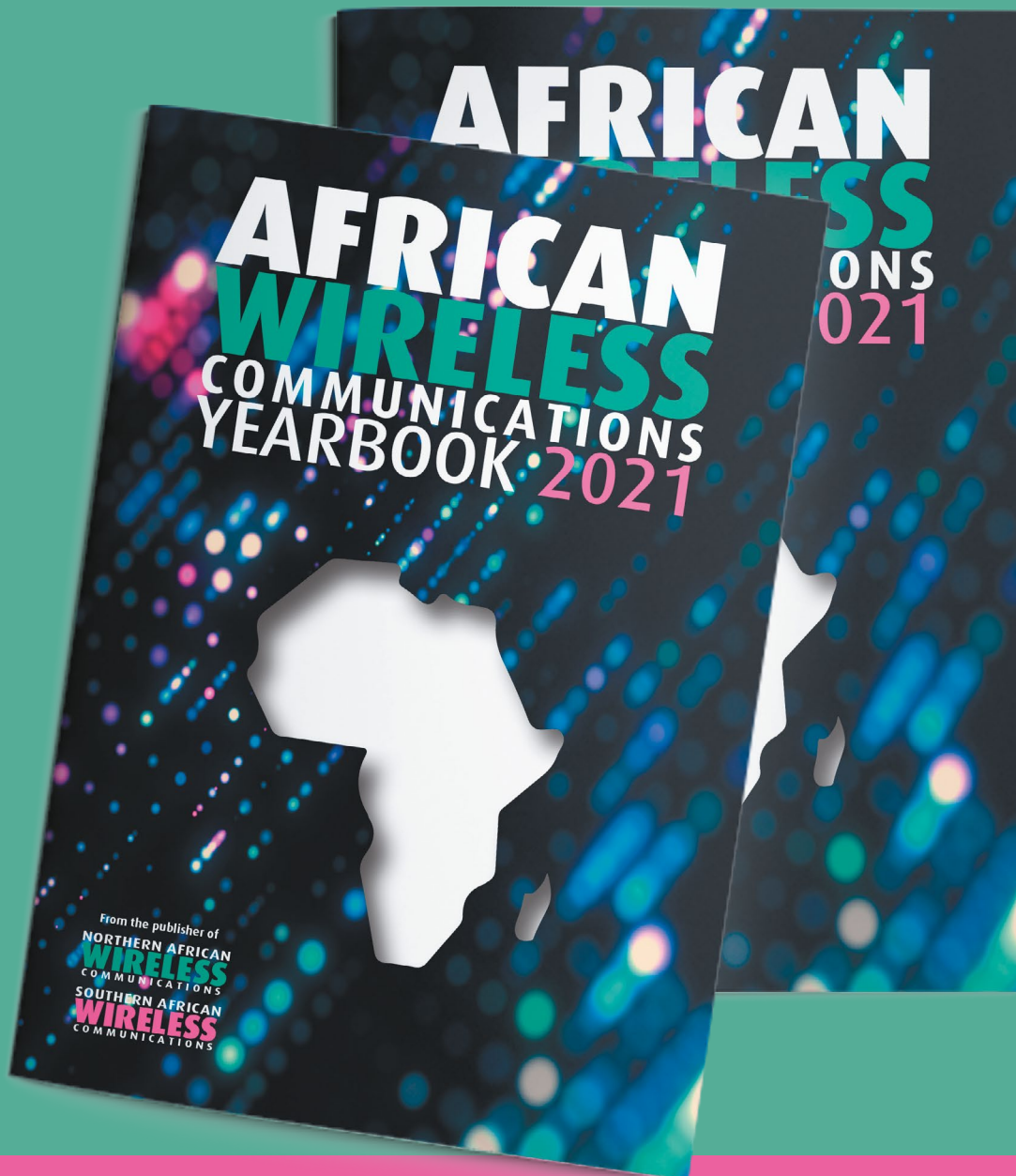### Which historical event do you wish you had experienced in the flesh?

I was in Berlin when the wall came down in 1989, which marked the end of the Soviet Union, the end of the Cold War. Sadly, with the current backdrop of the Russian invasion of Ukraine, the world has gone back to a very dark time. I was also in Hong Kong when the sovereignty of Hong Kong was transferred from the UK to China - that's also not worked out in the way it was envisioned. But my thoughts on a historical event I wish I had seen in the flesh in my lifetime would have been the release of Nelson Mandela from 27 years in prison, marking the end of apartheid in South Africa - no one can deny that event was a positive move for mankind.

What's the one thing you would want to do before it's too late?

I read a book when I was a child about a father and son who travelled from Cairo to Cape Town on motorbikes. The adventure has stayed with me for years and I still think about it. A friend of mine did the trip from UK to Cape Town on a bike a few years ago. My father is no longer with us - but maybe I could convince one or all of my children to take up the challenge with me and explore the continent, experience the different cultures and escape the daily rat race for a few months. ∎