- Data centres - buy or build?
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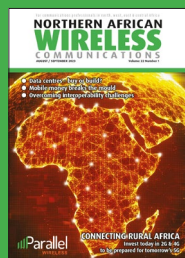
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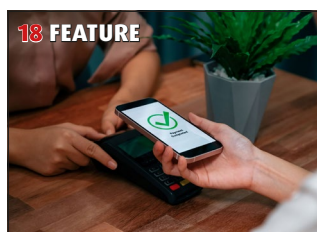
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CONTENTS

4 NEWS

18 FEATURE

24 INDUSTRY VIEW

26 WIRELESS SOLUTIONS

31 WORLD NEWS

New subsea cable coming to Liberia

Liberia will soon be connected to a second submarine fibre optic cable to boost its broadband capabilities.

The initiative is expected to be supported by the World Bank under the West Africa Regional Digital Integration Project – Project Series 2 (WARDIP-SOP2). The installation of a second submarine fibre optic cable would strengthen Liberia's digital infrastructure by providing redundancy to the unique ACE (Africa Coast to Europe) to which the country connected in 2011. This Infrastructure is often subject to outages which cause disruptions to Internet services throughout the country. Thus, a cable break, which occurred at the beginning of August, caused cuts and slowdowns of the internet in around ten African countries, including Liberia, for several weeks.

If the project is successful, the new cable is expected to not only improve the quality of internet services, but also extend the reach of these services to millions more people and reduce costs. According to DataReportal, Liberia had 1.8 million internet users in January 2023 for a penetration of 33.6%.

The number of subscriptions to mobile telephone services was 4.2 million, representing a penetration rate of 78.4%.

GUPCO adopts fixed wireless broadband for onshore and offshore ops

The Gulf of Suez Petroleum Company (GUPCO), which carries out oil and gas exploration, development and production operations in Egypt, has deployed a fixed wireless broadband network from Cambium Networks to connect onshore and offshore operations and thus improve efficiency and safety.

By replacing its legacy system with a network designed by wireless telecommunications services provider Systel Telecom, GUPCO says it can achieve higher capacity and improved network stability with a unified communication system that is easier to provision, operate and manage.

Energy companies depend increasingly upon high-speed connectivity to run efficient operations – from remote monitoring and control over assets to the collection and analysis of large amounts of data.

GUPCO's solution connects three remote processing areas, nine production platforms and offshore rigs and 80 remote unmanned production platforms. The network supports data services, SCADA connectivity, weather stations, vessel tracking systems, voice and video conferencing and CCTV video surveillance.

Smile and ATC ordered to settle disconnection dispute via arbitration

The Ugandan High Court's commercial division has ruled that Smile Communications and American Tower Corp must settle their dispute via arbitration.

An arbitrator will be appointed to the case within 30 days. The case relates to ATC's disconnecting of Smile's services in January 2022, following which Smile has been unable to provide services.

Smile requested that the court determine whether ATC's action constituted an illegal breach of contract and is seeking UGX7.86 billion in compensation along with an additional settlement for economic distress and damage to goodwill.

ATC has argued that the case should be settled by arbitration as per the terms of its contract with Smile. While the tower firm was initially backed by a previous arbitration hearing, this was later overruled in court.

Africa Connective collaboration to change the face of connectivity

WASP Digital has announced its Africa Connective collaboration with SDWAN & SASE Solutions, an alliance that aims to not only reshape the networking landscape across Africa, propelling it into an era of advanced connectivity and fortifying the continent's digital transformation journey, but to deliver on many of the Sustainable Development Goals, as specified by the African Union, the UN, and the World Bank.

"This partnership adds weight to WASP Digital's long-held connectivity expansion plans for all of Africa, which will bring greater prosperity and opportunity to lives, as well as businesses," said Grant Webber, CEO at WASP Digital. "Many NGOs and organisations are working right now on re-shaping the future of every African nation, and therefore the entire continent, via Sustainable Development Goals – building pan-African secure digital connectivity is a large part of that reshaping and underpins many other SDGs. SDG objectives are built into everything we do at WASP Digital. Having SDWAN & SASE Solutions as a key strategic partner in the Africa Connective and their unique OMNIA solution solves many of the specific issues faced by individuals and businesses in Africa, both existing businesses and those that are up and coming. Their expert technology credentials and proven innovation history of bringing breakthrough technology to the market, will help deliver these SDGs and bring betterment for all. There is further big news on the growth of the Africa Connective partnership, which we will be able to release to the public soon."

Over the past decade, WASP Digital has been committed to driving digital transformation and empowering businesses with cutting-edge solutions. Their mission is to bridge the digital divide and provide comprehensive digital solutions catering to the unique needs and challenges of each market they operate in. As a forward-thinking organisation, they leverage industry trends and innovative solutions to help their clients gain a competitive edge. WASP Digital is currently active in 12 countries.

"Ensuring that all businesses across Africa have immediate yet affordable access to the latest advanced network technologies and security frameworks, will help deliver these opportunities. SDWAN and SASE Solutions and WASP Digital's partnership is delivering advanced technologies across the entire continent and to every nation within it, and we are delighted to work with WASP Digital as their team has a clearly articulated connect Africa strategy," said Anthony Senter, CEO at SDWAN & SASE Solutions.

WeConnect enables agile access to Egypt's subsea cables, offers mix and match connectivity

Telecom Egypt has launched its new WeConnect ecosystem, providing agile access to Egypt's extensive subsea cable infrastructure. WeConnect enables users to mix and match connectivity between subsea cable systems in the Mediterranean Sea and the Red Sea using an open and neutral model.

WeConnect's digital platform enables users to click-to-order cross-connectivity between the 14 subsea cable systems landing in Egypt's 10 cable stations, linked via the 10 terrestrial routes spanning the country. WeConnect users will easily manage their commercial agreements through the online platform to enjoy accelerated access to the growing number of subsea cable systems with greater agility, adaptability, diversity, and resiliency.

"We have a profound understanding of people's connectivity needs, and throughout our journey have been keen to design solutions and develop our well-established infrastructure to cater to those needs," said Mohamed Nasr, managing director and chief executive officer at Telecom Egypt. "We have a clear vision that WeConnect will accelerate and support the deployment of our customers' digital infrastructure. It will further enhance how our global partners choose to cross-connect their capacity over various subsea systems. WeConnect is our way of adding value to our partners by enabling them to make the best use of their assets, which will ultimately echo into the end user experience globally."

Through WeConnect's cross-connection ecosystem, Telecom Egypt's partners can easily log into the platform and route their traffic over different systems, enabling them to scale-up wherever they see an opportunity, while having full control over their subsea cable connectivity. WeConnect provides efficient scalability, with the potential to promote the reach of all applications and services to billions of potential end users.

"All our investments focus on accelerating how our partners connect and grow their global network reach. We take pride in having served the global connectivity market for over 165 years. We firmly believe in exploring new ways to optimize how our partners maximise their investment returns and expand their footprint around the world. WeConnect is a great step forward in enhancing our operational excellence, demonstrating our commitment to providing an open and transparent global digital infrastructure hub for the international community," said Seif Mounib, vice president for international and wholesale at Telecom Egypt.

Telecom Egypt has made strategic investments in 15 subsea cable systems globally, with more than 5 cable systems coming into service in the near future. Egypt's coastlines, spanning 1,951km on the Red Sea and another 995km on the Mediterranean Sea, enable Telecom Egypt to offer diversity and resiliency in cable landing locations. As the world witnesses increasing demand for connectivity, Telecom Egypt sees a huge opportunity to satisfy those needs and take global connectivity to the next level through innovative initiatives and state-of-the-art projects.

Africa's smartphone sales up 7.6% quarter on quarter

Phone sellers shipped 19.6 million smartphones in Africa in the second quarter of 2023, according to the latest Worldwide Mobile Phone Tracker report from the International Data Corporation (IDC).

This figure represents an increase of 7.6% compared to the second quarter of 2022 when 18.1 million smartphones were shipped to the continent. South Africa, Nigeria and Egypt were the main destinations for smartphones in the second quarter of 2023.

The increase in smartphone shipments in Africa in the second quarter of 2023 ends seven quarters of continuous decline, which was attributed to COVID-19, rising inflation, economic instability, the depreciation of local currencies compared to the US dollar, and weak consumer demand.

"The difficulties and challenges posed by the global economic outlook continue to affect the region, preventing a faster recovery. In the long term, the influx of affordable models across brands and accelerating shift from feature phones to smartphones will drive market growth," said Ramazan Yavuz, senior research director at IDC.

YahClick partners with NIGCOMSAT to extend broadband in SSA, supporting e-governance

YahClick, the data solutions subsidiary of Al Yah Satellite Communications Company PJSC has partnered with Nigerian Communications Satellite (NIGCOMSAT) Ltd. to expand broadband penetration in sub-Saharan Africa and boost access to critical electronic services across the region.

The project is expected to begin in Q4 of 2023 and will see YahClick work closely with NIGCOMSAT to provide faster and more reliable broadband internet connectivity. The improvements will result in speed increases to 25Mbps for standard profiles and up to 100Mbps for dedicated corporate users, hence empowering the delivery of essential education, health, and a wide range of other public and corporate services.

"We are delighted to add NIGCOMSAT to YahClick's growing list of partners in Africa," said

Sulaiman Al Ali, Yahsat's chief commercial officer. "Our partnership will play an important role in helping the Nigerian government as well as private organizations roll out critical electronic services to underserved and unserved communities across the country. For Nigeria's digitization drive to be successful, it is imperative that in-country infrastructure is reliable enough to deliver uninterrupted services. YahClick has extensive experience in providing advanced and affordable technologies that are easily accessible in remote regions."

YahClick's expertise and cutting-edge technology will enable the rollout of e-government applications and help accelerate Nigeria's digitization plans, providing unserved and underserved communities with uninterrupted internet.

"Nigeria is undergoing a rapid process of digitization and therefore it is critical to develop

the infrastructure that can support the wide range of services we have planned for communities across the country. YahClick comes with a highly respected reputation, and we look forward to collaborative efforts in implementing satellite connectivity in Africa," said Eng. Tukur Mohammed Lawal,

NIGCOMSAT's managing director and chief executive officer.

A steering committee compromising executives from both companies has been formed to ensure the implementation of the project is aligned to the national requirement and essential service institutions in Nigeria.

MTN Nigeria names ATC Nigeria as preferred tower company

ATC Nigeria has been revealed as the MTN Nigeria's preferred tower company, which will lease around 2,500 network sites to MTN.

MTN Nigeria notified the Nigerian Exchange of the plan, stating that the lease for about 2, 500 network sites, for which IHS Nigeria currently provides tower services, is set to expire in 2024 and 2025.

"This will further diversify our site portfolio and align with our proactive initiatives to renegotiate tower agreements, focusing on ensuring terms that will help cushion the business from the volatility in our trading environment. ATC will take over the provision of tower services for the affected sites from 2025," said MTN Nigeria.

Ayoba enters Kenya and Tanzania

Ayoba, MTN Group's super app, has successfully expanded its user base into additional markets; Kenya and Tanzania.

The African super app also reached a new milestone, topping 30 million monthly active users. This accomplishment, according to MTN Group, demonstrates the app's growing adoption,

particularly in key markets, such as Nigeria, Ghana, and Côte d'Ivoire.

"Ayoba's growth reflects our commitment to delivering valuable, user-focused services. This achievement is a significant step in our ongoing journey to deepen connectivity and digital inclusion across Africa," said Jens Schulte-

Bockum, COO, MTN Group.

"Our plan for the year is rolling out strongly," said Ayoba CEO Burak Akinci. "As we look ahead, our immediate focus is on an enhanced gaming experience, set to pilot in South Africa. This is part of our broader vision to make Ayoba an integral part of daily life across the continent."

Gilat to upgrade Ethio Telecom's network

Gilat Satellite Networks Ltd. has received a contract for satellite network modernization at Ethio Telecom of Ethiopia.

Gilat's SkyEdge II-c with hundreds of Capricorn and Gemini VSATs will be used to enable enhanced satellite-based 4G cellular backhaul capabilities and enterprise communications for remote regions of the country.

"As part of our modernization process, we carefully evaluated our options," said Tesfaye Tadesse Woldesemayat, chief network infrastructure officer, Ethio Telecom. "Gilat's technology, with its long history of proven satellite-based cellular backhaul experience, proved to be the right choice

to enable reliable and efficient mobile connectivity and enterprise communications to enable a bright future for the people of Ethiopia."

"We're proud to be working with Ethio Telecom, one of Africa's most innovative pioneering telecom companies. We value our long partnership with Ethio Telecom and are happy to be working with them, with the latest in satellite communications technology, to enable the highest levels of connectivity all across the nation," said Yossi Gal, vice president of regional sales, Gilat.

Paratus to distribute Starlink services across Africa

Paratus Group has entered an agreement as a distributor for Starlink's high-speed services across the African continent.

This agreement will allow Paratus to provide Starlink to its customers across Africa, as operating licenses are awarded to Starlink in those countries. Initially, and with immediate effect, Starlink will be available from Paratus in Mozambique, Kenya, Rwanda & Nigeria before being rolled out to more countries.

Starlink currently provides services to tens of thousands of business locations and serves customers in a multitude of capacities, including primary enterprise connectivity, replacement of 4G and VSAT, backup, interim setup, and emergency services. Across its network, Starlink maintains greater than 99.5% up-time across all customers – and higher for unobstructed installations. Up-time is measured without mitigating factors, such as weather and wire-cut outages.

Paratus will be able to provide its customers with both fixed, mobility and maritime services with immediate effect. Paratus will be able to provide its customers 24/7/365 enterprise support.

"This agreement aligns perfectly with our vision of transforming Africa through exceptional digital infrastructure and customer service. It means we can offer industry sectors – such as land and offshore energy, mining, hospitality, education, healthcare, agriculture and more – the reliable and constant connectivity they need to flourish, no matter how remote they are," said group chief commercial officer of Paratus, Martin Cox. "The Starlink agreement further strengthens our LEO (low earth orbit) satellite services offering across Africa and affirms our considerable capability and reach on the continent. It reinforces our goal to collaborate with entities that share our vision of transforming both African businesses and communities."

Liquid announces two new fibre routes

Liquid Intelligent Technologies has announced the construction of two new fibre optic routes. One connects Kenya and Ethiopia while the other connects Zambia and Malawi. These infrastructures should make it possible to improve high-speed connectivity in the countries concerned.

The road connecting Nairobi in Kenya to the town of Mega in Ethiopia is approximately 1,000km long and provides a capacity of 4Tbps. It is carried out in partnership with the Kenya Electricity Transmission Company (KETRACO) and Ethiopia Electric Power (EEP). The link between Zambia and Malawi, for its part, is 711km long.

The construction of this infrastructure is part of Liquid Intelligent Technologies' One Africa Digital Network initiative, which aims to establish a vast network of fibre optic routes across Africa to meet growing demand in broadband connectivity and digital services on the continent. Last June, the company launched a new route between Angola and South Africa. Another 3,800km route had been launched between Kenya and the DRC two weeks earlier.

"All initiatives taken by companies under Cassava Technologies aim to realize our vision of a digitally connected future that leaves no African behind. The completion of these fibre optic links is another milestone for Liquid as it continues to lay the foundation for economic growth through greater access to high-speed connectivity," said Hardy Pemhiwa, chairman and CEO of Cassava Technologies.

Vodafone to utilise Project Kuiper to extend services across Africa

Vodafone has signed a partnership agreement with Amazon to use the network of Project Kuiper, Amazon's low Earth orbit (LEO) satellite communications initiative, to extend the reach of their 4G and 5G telecoms services in Africa.

"Amazon is building Project Kuiper to deliver fast, affordable broadband to tens of millions of customers in unserved or underserved communities, and our flexible network means we can connect places that have traditionally been hard to reach," said Dave Limp, Amazon's senior vice president for devices and services.

Project Kuiper's high-speed, low-latency satellite network will connect geographically dispersed cellular antennas to major Vodafone and Vodacom telecommunications networks. Both parties are also exploring the possibility of offering additional business-specific offers.

Nigeria's 5G subscriptions surpass 500,000

The number of subscriptions to 5G services has crossed the 500,000 mark in Nigeria, a year after the commercial launch of the technology in the country, reports Umar Danbatta, executive vice chairman of the Nigerian Communications Commission (NCC).

In September 2022, MTN Nigeria became the first operator to launch commercial 5G in the country with Ericsson technical support. The company was joined this year by Mafab Communications in January and Airtel in June.

5G is expected to help accelerate the government's broadband adoption targets. The country is targeting a broadband penetration rate of around 70% by 2025 and 50% before the end of 2023. According to the latest data from the NCC, Nigeria had 89.73 million broadband subscriptions as of July 2023, representing a penetration rate of 47.01%.

WATT to deliver 32MW of solar power and storage capacity for Airtel

Independent hybrid solar solutions provider, WATT Renewable Corporation (WATT), has been selected by Airtel, to deliver over 32MW of installed solar and storage capacity across Nigeria.

The installation of solar power and lithium-ion battery storage will be carried out at 600 sites, under an energy supply-as-a-service model.

The facilities will provide Airtel with greater certainty and availability of its power supply, which will be vital for expanding its network coverage and introducing 4G and 5G technologies in the region.

"Working with Airtel provides a great opportunity to deliver renewable energy to the Nigerian telecommunications space, which will be critical to the continued sustainable growth of the sector," said Oluwole Eweje, managing director of WATT.

Somalia prepares for 5G rollout

The Somali National Communications Authority (NCA) is preparing to launch 5G in the country.

The regulator launched the consultation process for the National 5G Strategy that it is currently developing. Industry players have until 2 November to give their opinion on the subject.

The new strategy designs a specialized roadmap for the allocation of 5G spectrum and the development of the resulting infrastructure. The document emphasizes harmonized spectrum integrations in different bands and highlights the paramount importance of ecosystem preparedness. This includes the maturity of user devices and network equipment.

Minister of state for communications and technology (MOCT) Ahmed Dirie said that the development of the 5G Strategy reflects the government's ambition to accelerate the development of information and communication technologies in Somalia, in line with the ICT Policy and Strategy 2019-2024.

SENELEC to launch 100/200G network with Huawei

The National Electricity Company of Senegal (SENELEC) will be able to provide network capacity to telecom operators, governments, public and private companies from December 2023. The company is currently in the process of setting up a national 100/200G network in partnership with Huawei.

The network is based on SENELEC's fibre optic infrastructure which covers the entire territory of Senegal over more than 2,000km. Mostly aerial architecture, SENELEC's fibre optic network is made up of 53 backbone sites with a capacity of 100Gb per wavelength.

In December 2022, SENELEC signed a memorandum of understanding with Huawei to accelerate its digital transformation. The company wanted to ensure better cost control and an increase in revenues by focusing on innovation through digitalization and the development of telecommunications infrastructures.

The SENELEC network should allow telecom operators to extend the coverage of their services to remote areas which are not yet covered by their networks. This will accelerate the achievement of the government's ambition to ensure full coverage of the national territory in mobile telephone networks.

NCC approves Centre of Excellence at Ahmadu Bello University

The Nigerian Communications Commission (NCC) has approved the establishment of a Centre of Excellence at Ahmadu Bello University, Zaria.

"The University received NCC approval for the establishment of the centre, which would provide training, upskilling, and reskilling opportunities for students and academic staff," said Prof. Kabiru Bala, vice-chancellor of the University. "Other anticipated activities at the centre include the development of courses that will bridge the knowledge gap in important ICT fields such as artificial intelligence, the internet of things, cybersecurity, connectivity technologies, cloud computing, edge computing, renewable energy, and next-generation networks."

The commission will contribute to the centre's research agenda, approve its work programme, and set key performance indicators and targets to be delivered in collaboration with university authorities and telecom companies in the country.

Nigeria's MNOs and banks resolve disagreement on USSD services

Nigerian telecom companies and Depository Banks (DMBs) have resolved their disagreement over the charging of Unstructured Supplementary Service Data (USSD), according to Umar Danbatta, executive vice chairman of the Nigerian Communications Commission (NCC).

The depository banks have agreed to pay the 120 billion naira they owe the telecom operators and to continue paying for USSD service under the corporate billing model.

The agreement was reached thanks to the interventions of the NCC and the Central Bank of Nigeria (CBN).

The disagreement dates back to 2019. Telecom operators have repeatedly threatened to cut off USSD services to banks. The latter were criticized for not making enough efforts to settle the debt which was accumulating, going from 42 billion naira in March 2021 to 120 billion naira today.

The agreement reached between

telecom operators and deposit banks should allow the latter to continue using USSD services. This should promote digital financial inclusion, which is currently at 70%.

MTN Nigeria gains additional 2.6GHz spectrum

MTN Nigeria has acquired an additional 2.6GHz of spectrum in the country, as it seeks to enhance network efficiency.

The Nigerian Communications Commission approved the transfer and assignment of the 10MHz frequency division duplex (FDD), in the 2.6GHz spectrum band, from OpenSkys Services Limited to MTN Nigeria. The additional spectrum will allow MTN to increase network capacity and improve customer experience.

"The acquisition of an additional 10MHz FDD in the 2.6GHz spectrum band is an important milestone in the execution of our Ambition 2025 strategy," said Karl Toriola, CEO, MTN Nigeria. "This spectrum will enable MTN Nigeria to roll out our network capacity more efficiently and enhance our sustainability priorities. Not only will it help to support the growing demand for data in the country but will improve the overall Internet experience. This also aligns with our ongoing support of the Federal Government's plan to deepen broadband penetration in Nigeria."

Bayobab Group gains long-distance licence

The Nigerian regulatory authorities have granted Bayobab Group a national long-distance operator licence. Its subsidiary in Nigeria is now authorised to enable long-distance traffic, which will help meet the growing need for data.

Bayobab is now positioned to make important contributions to the country's connectivity plans, in accordance with the Nigerian Communications Commission's ambitious Fibre Ambitions Policy.

"This achievement marks a transformative moment for us, as we look forward to contributing to the growth and development of Nigeria's digital economy," said Frédéric Schepens, CEO, Bayobab Group.

Bayobab deployed 3,000km of fibre during the first half of the current fiscal year, bringing its total private fibre inventory to 108,000km. It also signed a $320 million agreement with Africa50 earlier this year to create Project East2West, a terrestrial fibre optic cable network. By 2025, the project is expected to connect ten African countries to the cable network.

Buganda to acquire Airtel Uganda shares

The kingdom of Buganda has agreed to acquire 2 million shares in Airtel Uganda as the latter prepares for its initial public offering. The transaction amounts to 200 million Ugandan shillings, Airtel having set the share price at 100 shillings.

Buganda aims to strengthen its enduring strategic partnership with Airtel Uganda, while seizing the opportunity to participate in Uganda's thriving telecommunications sector. It was on 30 August that Airtel began receiving offers for its IPO scheduled for 31 October.

The company has put eight million existing ordinary shares up for sale in line with the telecommunications regulatory framework introduced by the Ugandan government in 2018. Through this operation, it hopes to raise up to Sh800 billion.

Ethio Telecom launches commercial 5G

Ethio telecom has launched its commercial 5G services at 145 sites in Addis Ababa, following its earlier pre-commercial 5G mobile technology trial service in Addis Ababa and Adama cities.

As part of its commitment to realizing the country's digital transformation agenda, Ethio telecom has been deploying the latest technologies and providing digital solutions to positively impact the day-to-day life and business activities of our society.

5G offers the fastest speeds up to 10Gbps, low latency at less than 1ms, and massive communication capability (up to 1 million connections within 1km2). With such high speeds, superior reliability, and negligible latency, 5G will have a significant impact on industries such as mission-critical services requiring real-time decisions, manufacturing plants, remote healthcare, precision agriculture, self-driving vehicles, IoT, and real-time operations, making them a reality.

The commercialization of 5G service will enable the society to obtain best-in-class digital solutions, improving their experience. It will also play a paramount role for its business customers, enhancing their productivity and efficiency, generating new revenues with next-generation applications, improving operations with real-time analytics, adapting quickly to changes in business dynamics, and delivering secure and fast access to mission-critical data.

The 5G service also has tremendous significance for smart home, health services, hospital management, smart agriculture, education, industry/mining, manufacturing, smart airports and travel services, smart transportation & logistics, digital shopping, broadcasting & entertainment, as well as cloud-based 5G gaming.

Ethio telecom has commercialized its 5G service at 145 different sites in Addis Ababa and is ready to offer unlimited 5G data, 5G to the home, and a variety of 5G mobile packages to its customers.

Talking critical

Tero Pesonen, chair, TCCA Critical Communications Broadband Group

The key elements of a critical communications network

'Critical communications' are exactly that: communications services that are critical for the successful delivery and completion of the missions, tasks and operations of professional users who rely on being in contact when it counts. There are many and varied types of operations which need critical communications. These include public safety and security, emergency services, critical infrastructure, public utilities, transportation, critical industries, and related activities where failures in critical communications would lead to catastrophic degradation of services. This in turn could place critical services and citizen safety and security at immediate risk.

Critical services must be able to cope with high peak demands and provide ubiquitous coverage, as well as extremely high guaranteed availability, reliability, and resilience. Disasters, whether natural or man-made, and other events putting safety of life, property, or public security at risk, can occur anywhere and at any time. They are not limited to areas of dense population. For example, an aircraft or train can crash anywhere along its route and the resultant major incident may be a long way from the closest populated area.

The purpose of critical communications networks is to provide uninterrupted service reliably also under exceptional circumstances meeting the operational requirements. They are often a tool for enabling other processes and functions to perform – profit generation by the network is secondary. In critical networks commonly the life of the user is at stake – the connection is literally the lifeline.

As well as coverage, sufficient capacity to address tasks or incidents that demand drastically more than normal operations is also critical. The service offered needs to be available at all times with foreseen resilience against loss of power or equipment. In terms of performance for instance group call setup – the capability of bringing potentially hundreds of participants to the same call – needs to appear instant without any loss of content. It is vital to deliver a command of 'Don't shoot' immediately and to all.

Integrity is critical among other security related aspects. Critical communications networks may be used to control power grids, water supply, oil and gas pipelines, or may carry very sensitive personal information such as health records. The information needs to be protected against eavesdropping and manipulation.

Technology is advancing, but the fundamental requirements essentially remain the same. However, the possibilities to fulfil the requirements have evolved whilst at the same time new functional requirements have arisen. Furthermore, whilst in the past such requirements were rather specific to blue light organisations, power utilities and for instance railways, today more and more enterprise and general society processes such as payments demand very similar availability, and even consumers expect coverage, access, and capacity at all times.

2G and 3G mobile cellular networks could not meet the requirements thus fit for purpose designed technologies such as TETRA have been developed and rolled out as dedicated networks for critical communication use. For 4G and 5G network technologies a tremendous amount of work has been done in 3GPP standardisation and elsewhere to enable these networks to address the original requirements, but also the needs of today's societies that cannot be met by any narrowband technology simply due to the limited bandwidth.

Probably the most significant change is that everything is data – including voice. The public safety radio communication operational model has been voice-centric for the past hundred years. Talk groups have been established to provide a connection between operatives on the field and control centre for commanding and control. The introduction of messaging has enabled exchange of status information and position, but it is a rather limited media working at its best when the information is pre-structured.

The ability to transfer dynamic on the spot-generated data such as video changes the situation. The paradigm can shift to Information Centric Operation where the concept of Information Value Chain can be applied. The data generated in one format may merge with other data and be presented in different forms and shapes to each receiver according to their need and consumption capabilities. Real-time image and video transmission are paving the way into this direction enabling both the leadership and field operatives more accurate situational awareness and more informed decisions.

This type of evolution naturally impacts the requirements for network capacity as well as coverage. When video feed becomes a standard part of each operation then also the capability to deliver it – be it in an underground garage or at the end of the road in wilderness – becomes mandatory. It should be noted that this is end-user organisation and country specific. For many organisations throughout the world the coverage is already provided.

Going forward, in 3GPP the critical communications community represented by TCCA supports strongly the inclusion of Non-Terrestrial-Network (NTN) access to complement other 4G/5G tools to provide redundant connectivity for the users. Vehicle to Everything (V2X) device-to-device communication belongs to the same category.

On the communication itself we expect the introduction of haptic capabilities to mature to enable humans to interact remotely with a combination of senses. These combined with augmented reality as well as virtual reality create interesting operational and technological avenues to explore. Machine-to-machine communication with ever increasing data flow of internet of things (IoT) sensors will provide better situational awareness, predictive operation and much more. At the same time, it requires very sophisticated and balanced artificial intelligence (AI) to manage the massive information amounts. Up-to-date regulation will certainly be a challenge.

What is certain is that society is dependent on communication networks more than ever before – they are already regarded as critical. Attention needs to be paid to their development and operation today and in the future to ensure they do actually meet the critical requirements to keep societies and their citizens safe.

Trusted, proven TETRA Now in VHF band

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- **Reduce operational costs**
- **Full accessory portfolio**

Africell scores $1 million from USTDA to explore Sierra Leone

Africell Group has obtained a grant of approximately $1 million from the United States Trade and Development Agency (USTDA) to conduct a feasibility study to assess the economic and technical viability of expanding its existing telecoms network in Sierra Leone to 32 towns and villages, with the aim of serving more than 95,000 people.

The study will include an analysis of consumer demand for fixed broadband service taking into account topography, demographics and income, as well as a supply analysis of existing infrastructure. It will also include a legal and regulatory analysis as well as a project implementation plan.

According to the USTDA, the initiative is part of the US government's partnership for global infrastructure and investment, which aims to implement breakthrough projects to close the infrastructure gap in developing countries. It is part of the Digital Transformation with Africa program, which aims to expand access to digital technology on the continent.

"This grant will accelerate the deployment of reliable digital connectivity for thousands of homes in Sierra Leone. When we expand our network, our goal is always to have a social impact and business benefits. The USTDA-funded feasibility study will help us achieve this goal by providing us with critical information on technical and economic requirements," said Ziad Dalloul, chairman and CEO of Africell Group.

The investments which should follow this feasibility study will allow Africell Sierra Leone to increase its market share and to be able to better compete with rivals.

Egypt considers selling further Telecom Egypt stake

The Egyptian Ministry of Finance is considering selling an additional 10-15% of the state-owned Telecom Egypt (TE) to investors by the end of the year.

The government had already sold a 10% stake in the capital of the historic operator. A total of 162.2 million shares were put up for sale via the Egyptian Exchange (EGX) at a unit price of 23.11 Egyptian pounds. The transaction brought in EGP 3.7 billion and reduced the state's stake in the company to 70%.

The sale of stakes in Egypt Telecom is part of a program of progressive disengagement of the state from several productive sectors. The program provides for the sale of state stakes in 32 companies operating in 18 distinct sectors by March 2024. The government hopes to collect nearly US$5 billion through this initiative.

If successful, the new sale of stakes in Telecom Egypt could reduce the state's stake in the company by up to 55%. The proceeds from this sale should help increase the financial resources of the Egyptian state and support the recovery of the national economy.

Part of the funds could also be used to finance investments aimed at improving the coverage and quality of telecoms services across the northern African nation.

EBANX brings epayments to 8 more countries

Brazil's EBANX is expanding into eight new African markets. The firm launched operations in the continent in September 2022 in Kenya, Nigeria and South Africa. It is now adding Egypt, Ghana, Ivory Coast, Morocco, Senegal, Tanzania, Uganda, and Zambia to this footprint.

EBANX said that Africa shows significant potential for digital commerce growth with the number of online consumers in the region expected to increase by 10% each year until 2027.

"At the same time, only 15% of Africans made an online purchase, according to World Bank data, indicating an emerging market poised for acceleration," said Andre Allain, VP, partnerships and market development, EBANX. "According to World Bank data, the high penetration of mobile phones has been the foundation for financial inclusion and digital payments: 83% of the population has a mobile subscription, and 75% of internet traffic in the region is conducted through mobile phones. This reality is driving the adoption of digital payments: 46% of African adults have already made at least one digital payment, representing a significant increase in less than eight years, when penetration was only 23%. The significant mobile phone penetration, low cost of mobile data, and an acceleration of digital services are also positioning countries like Tanzania, Ghana, Uganda, and Zambia among the 'next digital frontiers of Africa', to name just a few, that are expected to become the next growth hubs for digital companies."

"This expansion reinforces our global reach and local depth, our commitment to rising markets and our merchants," said Paula Bellizia, president, worldwide payments, EBANX. "Through technology and local payments, we now connect nearly one billion people, who are digital buyers from 29 countries in Africa, Asia and Latin America; three rapidly growing digital regions."
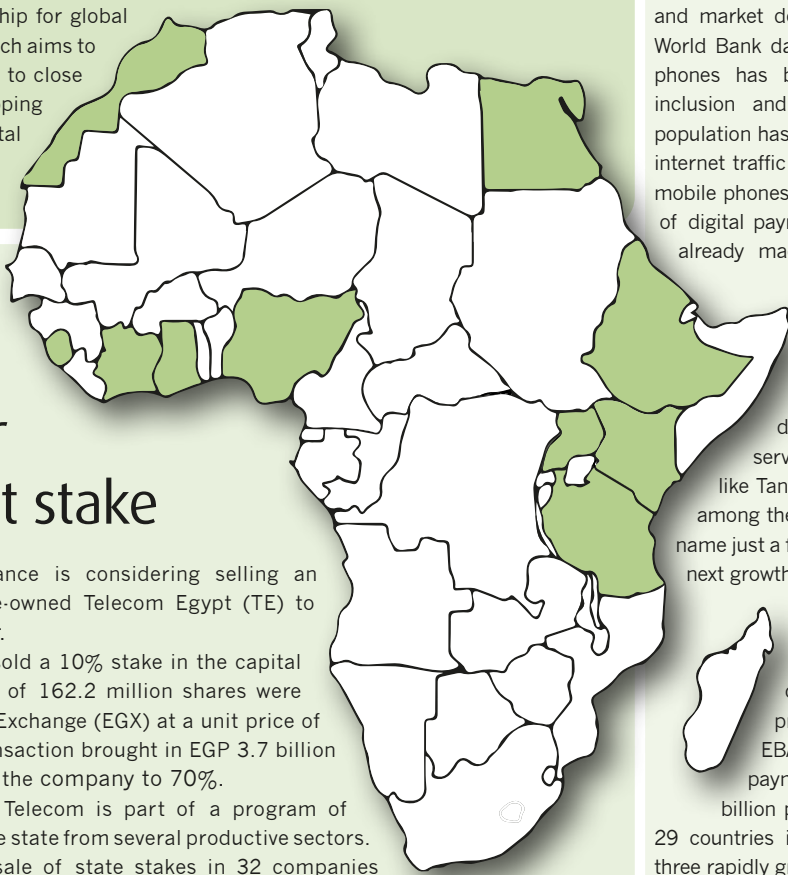
Ethiopia extends telco license deadline

The Ethiopian Communications Authority (ECA) has extended the deadline for submitting qualifications for Ethiopia's second private telecoms license (License B) "at the request of several potential investors." The deadline which was set for 15 September has been extended to 6 October.

The initiative is part of the process of liberalization of the national telecoms market initiated by the Ethiopian government in 2020. The first stage saw the Global Partnership for Ethiopia (Safaricom Ethiopia) consortium acquire the country's first private telecoms license. The second stage is underway and concerns the partial privatization of the historic operator Ethio Telecom up to 45%.

The last two stages of the liberalization of the Ethiopian telecoms market have attracted the interest of telecommunications giants. Orange, VEON, and Etisalat have officially declared their intention to operate in Ethiopia.

# Ghana warned against renting pre-registered SIM cards

The National Communications Authority (NCA) is warning consumers against renting pre-registered SIM cards to another person, especially to foreigners visiting Ghana, as the practice is contrary to existing regulations which stipulate that a person must not deal in pre-registered SIM cards.

"All entities and individuals engaged in this activity must cease and desist with immediate effect. Visiting or resident foreigners, citizens and potential users are also cautioned against using this service, otherwise they may suffer the repercussions provided for in section 73 b (2) of the Electronic Communications (Amendment) Act, 2016," said the NCA.

The phenomenon is gaining momentum as the Authority increases efforts to clean up the database of active SIM cards in Ghana. In October 2021, it launched a telecom subscriber identification campaign, which aims to link each SIM to an individual's verified identity as a means of curbing criminal activities. As of the end of March 2023, millions of unregistered SIM cards were disconnected.

The regulator recommends that people wanting to use SIM cards in Ghana follow the legal procedure to acquire them using a biometric national identity card for citizens and non-citizens residing in the country. Visiting foreigners can use their passports.
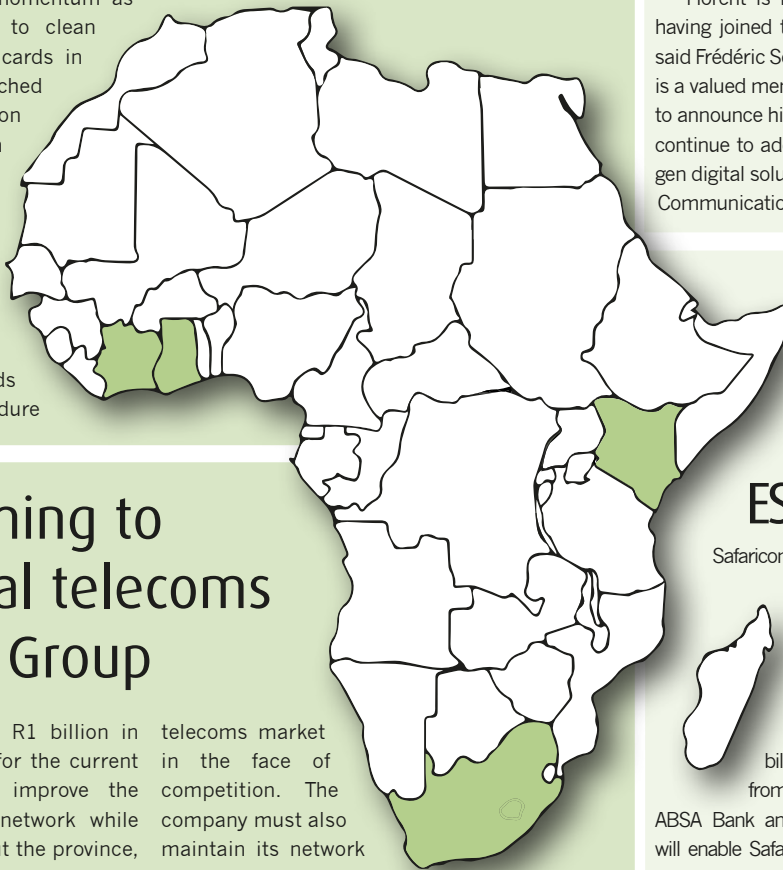
R1 billion coming to KwaZulu-Natal telecoms via Vodacom Group

Vodacom Group plans to invest R1 billion in its operations in KwaZulu-Natal for the current 2023/2024 financial year, to improve the capacity and resilience of its network while expanding its coverage throughout the province, particularly in deep rural areas.

The MNO plans to spend R700 million on radio access network, network capacity and upgrade projects, while R173 million will be allocated to improving core network infrastructure with the upgrade of 429 base station sites and the expansion of LTE capacity to 774 sites. It also plans to invest R235 million in energy projects, including the purchase of 68 generators.

These investments are part of Vodacom's ambition to extend its telecoms network to the entire of South Africa, particularly rural areas that contain thousands of potential telecoms subscribers which will allow the operator to strengthen its leading position in the national telecoms market in the face of competition. The company must also maintain its network in operation and guarantee the continued provision of quality services to subscribers in a context of energy crisis.

"As we pursue our goal of creating an inclusive digital society, we are investing significantly in the region's network. By expanding access to reliable, quality connectivity through the deployment of new sites and network upgrades, we aim to provide our customers with an exceptional network experience. Through this effort, we hope to bring the benefits of digitalization to all the communities we serve," said Imran Khan, managing director of Vodacom KwaZulu-Natal.

Florent Guede named managing director of Bayobab in Cote d'Ivoire

Florent Guede has been appointed managing director of Bayobab Group's business in Cote d'Ivoire. Guede has been tasked with heading Bayobab's Cote d'Ivoire to increase revenue and profitability.

He will spearhead Bayobab's mission to establish a reliable terrestrial fibre footprint capable of enabling high-speed connectivity throughout the West African country. Guede recently deployed the company's service operations centre in Africa to increase customer success centre support.

"Florent is no stranger to the Bayobab Family, having joined the Bayobab Group four years ago," said Frédéric Schepens, CEO of Bayobab Group. "He is a valued member of our team, and we are thrilled to announce his promotion. We are confident he will continue to add value to Bayobab and deliver next-gen digital solutions through our Bayobab Fibre and Communication Platforms across Cote d'Ivoire."

Safaricom secures KES20 billion loan for ESG plans

Safaricom has secured a deal to gain a loan of up to KES20 billion from a consortium of Kenyan banks to fuel its sustainability plan, in what the operator claims is the first ESG-linked loan facility in East Africa.

Safaricom will initially gain KES15 billion which is up-scalable to KES20 billion from Standard Chartered Bank, Stanbic Bank, ABSA Bank and KCB Bank. The financial institutions will enable Safaricom to access the funds based on its progress in setting milestones in key ESG areas.

The MNO will focus on reducing its emissions to reach net zero targets, tracking gender diversity, and monitoring social equality impacts.

It will deepen its focus on strategic sustainable investments to transition into a fully-fledged technology company by 2025. The deal also paves the way for more ESG financing in East Africa as companies seek to be held accountable for their ESG footprint.

"In line with our focus to advance our sustainable business agenda, this funding will unlock our ability to create more diversified investments that will support transformative investments in new technologies, systems and services that allow us to comprehensively manage our ESG footprint," said Safaricom CEO Peter Ndegwa.

Kenya's president questions Starlink pricing and local affordability

Kenya's president William Ruto has asked Starlink to reduce the prices of its services to make them accessible to the entire population.

Starlink launched its commercial services in Kenya in July. According to the company's website, satellite internet provided by Starlink costs 6,500 Kenyan shillings per month with a one-time hardware cost of 89,000 shillings and a delivery fee of 3,100 shillings. Prices that are not within the reach of the average Kenyan, particularly if they live in rural areas.

Ruto wants to accelerate the adoption of high-speed internet in Kenya. His government is increasing investments to make digital technology a basis for the country's socio-economic development with financial support from the World Bank, among others. It is also currently working with the private sector to bring locally manufactured smartphones to the market at a price of $40.

"Starlink presents a promising solution for achieving universal Internet access by overcoming traditional infrastructure limitations. Its investment can significantly improve broadband connectivity in remote villages, schools and various institutions across the country, unlocking the full potential of our digital economy," said Ruto.

MTN Nigeria to adopt API technology

MTN Nigeria plans to adopt Application Programming Interface (API) technology to improve its customer service delivery, Shoyinka Shodunke, the company's information officer said.

This initiative is part of MTN's efforts to transform itself into a fully-fledged technology company in line with its Ambition 2025 strategy. The company aims to become the leading digital services provider in Africa to meet the ever-increasing demand on the continent. The company also wants to provide services that go well beyond connectivity.

"We see ourselves as a technology operator, which is a key factor, because as part of this ambition, we will put in place platforms that will allow us to foster collaboration between ecosystems," said Shodunke.

The adoption of the application programming interface should make it possible to innovate and improve its services for the benefit of subscribers. This will allow the company to strengthen its leading position in the Nigerian telecoms market in which it controls a 38.7% share, according to the latest statistics from the Nigerian Communications Commission.

TOM completes rebranding

TowerCo Of Madagascar (TOM) has completed its brand transition, marking a significant step in the company's strtegic alignment with TowerCo of Africa (TOA), a subsidiary of AXIAN Telecom.

The rebranding underscores the company's commitment to building a cohesive and recognisable brand across all TOA operations while reinforcing its mission to redefine connectivity in Madagascar.

TowerCo Of Africa Madagascar has been a pioneering force in the telecommunications infrastructure sector, playing a pivotal role in advancing digital connectivity in Madagascar. With a vision for sustainable growth and innovation, TowerCo Of Africa Madagascar has continually expanded its reach and services to meet the ever-growing demands of the digital age.

"I am immensely proud of the successful brand transition, embodying our alignment with TowerCo of Africa's consolidation strategy. This milestone signifies our dedication to a cohesive brand identity and reinforces our commitment to redefine connectivity in Madagascar, advancing towards a future of innovation and sustainable growth for the benefit of our customers and the nation," said Stephane Beuvelet, CEO of TowerCo Of Africa.

"Our transition to the TowerCo Of Africa brand is a significant opportunity for us to provide even more value to our clients, partners, and the people of Madagascar," said Gilles Kuntz, CEO of TowerCo Of Africa Madagascar.

MTN South Africa makes executive appointments

MTN South Africa has announced the appointment of Tumi Chamayou, as chief enterprise business officer for South Africa, effective 1 October 2023 and Ernest Galelekile as the new executive: channels in commercial operations, effective as of 1 September 2023.

Chamayou is currently the Group executive for MTN's Enterprise Business Unit (GEBU) having joined that team in 2018 as general manager for large enterprise sales. During her group tenure, she has added immense value, overseeing growth, first in the multinational and large enterprise segments. She later added the SME client segment teams, as well as driving the overall strategy and operational alignment, through various programs that she spearheaded across MTN's markets to drive growth that has seen growth exceed more than 28% year on year between the period of 2020 and 2022.

"Tumi has made a significant contribution to our group enterprise business unit, and in our pursuit of realising our strategic goals of fostering business expansion, revolutionising customer satisfaction, and revitalising employee involvement, it's paramount we enlist individuals with the requisite capabilities, which describes Tumi to a tee. I am confident that her extensive expertise will play a significant role in elevating our commercial and operational facets as we endeavour to provide an enhanced customer experience," said Charles Molapisi, CEO, MTN South Africa.

Galelekile brings a wealth of experience to his new position, having previously held various leadership roles within both the MTN Group and MTN South Africa. As the new executive for channels in commercial operations, Galelekile will be responsible for overseeing the strategic development and management of distribution channels across the organisation.

"Ernest's appointment mark an important milestone for us. His proven track record of leadership and extensive experience within the MTN Group makes him an excellent fit for the role he has been appointed to, and we are confident his strategic insights and proficiency in channel operations and management will contribute significantly to our ongoing growth as we move towards achieving our Ambition 2025 strategy," said Molapisi.

Tanzania's operators commit to infrastructure investments

Tanzanian telecommunications operators Tigo, Vodacom, Airtel, TTCL and Halotel have committed to investing 32.5 billion shillings in the development of the national telecoms infrastructure, signing an agreement late in September.

The announcement comes about four months after the consortium of telecommunications companies and the government signed a partnership agreement for the expansion of the mobile phone network in rural areas of mainland Tanzania. Expected to cost approximately Sh265.3 billion, the project will be implemented under the Universal Communication Services Access Fund (UCSAF). It will be financed 40% by the country's government and 60% by the participating telecom operators.

The initiative is part of the government's efforts to accelerate digital transformation and make it a driver of Tanzania's socio-economic development. Rights of way fees for telecoms operators were recently cut by 80%.

Nape Nnauye, minister of information, communication and information technology, said that strengthening the ICT and communication sectors is key to boosting economic development, fostering business growth and encouraging adoption digital technology for the progress of society.

Talking satellite

Daniel Batty, space and spectrum policy analyst, Access Partnership

The African position – what's at stake for satellite in Africa at WRC-23

With the 8th sub-Saharan Spectrum Management Conference recently ending, and the 4th African Preparatory Meeting now underway, discussions around bridging the digital divide and the role of different communications typologies in providing solutions to the continent are rife. The long saga, which involves international mobile telecommunications (IMT), fixed wireless access (FWA), and satellite communications still goes on, especially as consensus is still being sought on key Agenda Items, such as 1.2 and 1.3.

Setting the scene on the African continent

Over the preceding decade, Africa has seen significant developments in the availability of communications infrastructure and the deployment of next generation mobile communications infrastructure, including 4G and 5G. All the while, satellite networks continue to provide a suite of services, including broadcasting, communications (both direct and backhaul), and internet. Additionally, advances in satellite services, such as direct-to-device (D2D), seem poised to revolutionise rural and last mile connectivity.

While connectivity solutions continue to evolve on the continent, so does the nature of the digital divide. The coverage gap, referring the percentage sub-Saharan Africans who do not have access to network services, has continued to shrink, now down to 19%. However, it should be noted that much of this coverage is comprised of older generation IMT, such as 2G and 3G services, and is focused on urban population centres – highlighting that although the coverage gap in Africa has decreased, there remains a gap between urban and rural areas of the continent.

As the coverage gap has shrunk, the usage gap has grown, increasing to 49% across sub-Saharan Africa. This refers to the number of users actively utilising the networks available to them. Several causes are responsible for the usage gap, with infrastructure constraints as well as the affordability of communications devices and connectivity services, such as data plans, serving as key obstacles.

What's more, when defining connectivity, it is vital to outline its meaning. Closing the coverage gap entirely does not mean sub-Saharan Africa will suddenly benefit from the promises of expanding connectivity. Meaningful connectivity means connection to the internet that is "safe, satisfying, enriching and productive at an affordable cost" (WTDC, 2022), in alignment with the short and mid-term goals of the continent.

Satellite in Africa

Satellite connectivity is a vital component for sub-Saharan Africa connectivity, both present and future. This has been facilitated through enabling satellite broadcasting, communications networks, and more recently, internet and D2D. These are, however, only the communications aspects of satellite services. Satellites over Africa continue to provide invaluable weather monitoring, Earth observation, tracking, and Internet of Things (IoT) services. These provide commercial and institutional advantages to the continent.

Satellite connectivity has seen a marked decrease in cost, following advancements in antennas, satellite services, and capabilities. The existence of geostationary orbit (GSO) and non-geostationary orbit (NGSO) cohabiting satellite systems allows for the expansion of services across their entire orbit path around the globe. The expansion of low Earth orbit (LEO) has translated into reduced user service costs – LEO constellations are significantly lower than their large GSO cousins, which makes them cheaper to build, deploy, and operate, while also decreasing their ping and increasing connection speed. Today, LEO constellations can provide stable internet at about 150Mbps speeds.

Outside the scope of connectivity, Africa has revealed its interest in revitalising national space programmes, amid hopes of attracting investment from foreign launcher companies for whom sub-Saharan Africa's large equatorial region could be utilised to maximise launch efficiency.

To date, 53 satellites have been launched by African states, with Kenya being the most recent launchers. These satellites are mostly Earth observation satellites, which provide valuable data on marine ecosystems, floods, drought and other natural disasters, and agricultural data such as crop and soil erosion monitoring. These services directly contribute to the socio-economic development of the regions they serve.

The challenge at WRC-23

This WRC cycle is poised to be one of the most critical for sub-Saharan Africa – the active development of an African position over the past three preparatory meetings has proven contentious, with member states raising their voices for various solutions to the connectivity problem.

There are several key Agenda Items of note to the satellite industry in Africa, with the two most contentious being 1.2, which aims to allocate more spectrum in the upper 6GHz band to IMT, and Agenda Item 1.3, which seeks a primary allocation for mobile services in the C-Band midband (3600-3800MHz). While there are plenty of other Agenda Items of interest to satellite communications, special focus is being given to these two.

Agenda Item 1.2 presents a challenge to several other services in the C-band, including WiFi and satellite. While 3GPP has completed its standardisation for 5G in the upper 6GHz band, there are other problems which must be addressed. These include harmonisation and interference, and not least of all, acknowledging that at present, large portions of IMT spectrum are not actively being used.

Agenda Item 1.3, which seeks to allocate more midband spectrum to mobile services, has two possible outcomes which African states are deciding upon. These include whether to allocate the entire portion and allow member states to individually opt out of assigning 3800MHz to mobile, or whether to allocate 3600-3700MHz and allow member states to individually opt in to assigning 3800MHz.

These two agenda items will shape how satellite services are provided in Africa in the future and must be mindful of the services satellites provide – both within and out of the communications sector. They must also be cognisant of planning for the future of more satellite launches, African space missions, and satellite services.

The Future is All-G: Efficient Networks will need to utilize the full range of cellular technologies

Mobile networks are becoming a lifeline for consumers, businesses and, in the case of remote, rural areas, communities. Mobile carriers have a commercial and perhaps a social imperative to expand their coverage in order to serve all these constituencies. While the industry is buzzing with discussion about the fantastic capabilities of 5G, for many carriers it still makes much more financial sense to deploy 2G and 4G networks, in other words introducing voice services to new rural areas with 2G/4G and delivering high-speed data in urban/dense areas with 4G. This will allow them to tier their offer in order to target a realistic ARPU while providing services that are truly in current demand.

The only drawback of this approach is forward-compatibility; how does an operator ensure that future upgrade opportunities are not limited because relatively new 2G and 4G equipment is not seamlessly compatible with next generation 5G equipment. This means that the selection of a vendor must take into account the flexibility to eventually deploy 5G in a variety of scenarios while continuing to leverage previous investments. This is where Parallel Wireless comes in.

When it comes to urban areas, Parallel Wireless All-G solutions give you the flexibility to grow while maintaining control over the pace of innovation and equipment costs. Solutions that support 2G, 4G and 5G networks allow carriers to deploy the most advanced solution regardless of the RUs. The result is a smoother path for an eventual 5G upgrade and a homogeneous software stack across a heterogeneous network. Parallel Wireless' solutions help you to expand coverage and control costs while maintaining vendor independence and preparing for the future.

Controlling the power of your transmission

One of the main challenges of mobile networks in the coming years will be power consumption and, as a result, energy costs. As more equipment will be deployed to provide more capacity, combined with the upward trend of energy prices, the bloated line item of energy costs in an operators' budget has risen to account for 20%-40%** of their entire OPEX. This is why adopting a power saving agenda immediately is so critical for operators. On such a massive scale, reducing the power consumption across a mobile network cannot simply be solved by a "turn the light off when you leave the room"

mentality. This requires built-in, power saving features and energy conservation features.

This includes smarter software solutions, such as:

- **Adaptive transmission power**- 4G LTE antennas apply an egalitarian approach to individual users within the cell service area, so each device receives the same "energy attention" from the antenna, regardless of factors such as distance from the cell, current traffic, interference and overlap with adjacent cells. Smarter RAN equipment allows adaptive transmission power, ensuring that the correct energy level is applied to each transmission.

- **Micro-sleep**- Existing network components operate in "Always-on" mode, regardless of the demand or circumstances. This creates massive inefficiencies when it comes to power consumption in 2G and 4G networks. Furthermore, the 5G standard allows gaps in transmission up to 20 ms for 5G Standalone and 160 ms in 5G Non-Standalone mode, which are 100 to 800 times longer than what is allowed in LTE. This means that components can be put in power-suspension, or sleep mode, more often and for longer durations. These micro-improvements, which occur millions of times a day, have the potential to significantly reduce overall energy consumption.

By implementing such features and more, Parallel Wireless expects to achieve dramatic reduction in power consumption within the next 24 months.

"Parallel Wireless expects to achieve dramatic reduction in power consumption within the next 24 months."

Ultimately, maintaining, upgrading and expanding your mobile network involves an increasing degree of flexibility. Starting with site construction, equipment sourcing, installation and all the way to establishing RF equilibrium between the sites, operators are faced with many tasks that require specialized resources that they don't always have. To ensure a fast, efficient project, Parallel Wireless offers end-to-end solutions including RAN equipment, transmission, power, infrastructure, delivery and deployment.

Whether your focus is on rural or urban service areas, whether you are rolling out 2G, 4G or 5G networks, whether you are deploying standalone or non-standalone 5G, Parallel Wireless has the solutions that will help you expand your capacity, control costs and prepare your network for the future. ■

Yisrael Nov, EVP, Head of Sales, Parallel Wireless

The good, the bad and the ugly: enabling communications across Africa

James Gray, director of telecom strategy, PowerX Technology Limited

The magnitude of the task facing the telecommunications industry in Africa is profound. It's the world's fastest growing economic zone, home to 1.2 billion people, yet shackled by an infrastructure gap that presents unique challenges in providing access to regions, resources, communications, and markets.

The World Bank is unequivocable about the economic benefits of communications and connectivity. "Internet access can drive economic development through its impacts on both the supply-side and the demand-side of an economy. When infrastructure expands in developing regions, workers [...] gain higher wages or find employment. Digital connectivity directly affects the productivity of firms, workers, and other inputs in the production process." And unique to Africa, mobile connectivity is the backbone of the pervasive M-Pesa branchless banking system – developed originally in Kenya – that allows users to transfer money, deposit, withdraw, and pay for goods and services with a mobile device, transforming local economies.

All these benefits rely on robust, high bandwidth networks – predicated on the ability of individual sites to reliably serve their subscriber base. In a typical developed market – say Germany – it's not unusual to see an LTE base station to subscriber ratio of about 1:1000. Some markets have even lower ratios – Japan provides almost double the base station density for example, and Finland has an astonishing ratio of around 250 subscribers per base station.

For Africans however, the numbers tell a different story. Take Tanzania, where around 3,500 subscribers fight for the bandwidth of every base station, or the DRC where this ratio climbs to around 6,500 per site. That's over six times as many people being served mobile connectivity from an individual site compared to a median developed economy.

The challenges are familiar. Poor grid infrastructure with low quality power and outage issues, high transportation costs due to low quality roads and difficult terrain, high dependence on diesel (along with high fuel prices and shortages), operational leakages (including theft, vandalism, and diesel pilferage), lack of technical skills, and uncertain policy/regulatory environments.

So how can data science prevent or safeguard against these problems?

Much of the difficulty in maintaining and servicing remote rural sites is in the unpredictability of events that require intervention. Towercos – and the complex ecosystem of vendors, operations and maintenance suppliers, subcontracted electrical and mechanical engineers etc. that support them – are more often than not reacting to unforeseen (but not necessarily unexpected) problems: a malfunctioning battery, an unexplained disconnection from the grid, a missing rectifier module. These are the type of outage-inducing problems that must be fixed now – regardless of whether or not a bridge has been washed out, an armed conflict is underway, or a gang of fuel thieves is operating on the road to the base station.

But most of these emergency maintenance events can now be pre-identified – or flagged as highly probable – by employing the sophisticated data mining and analytical tools found in artificial intelligence (AI). Trawling through unimaginably vast troves of archived and real-time data, collected across networks that span thousands of base stations and towers, AI algorithms can identify anomalies and patterns never before accessible to engineers and operators. This unique insight into potential problems puts the towerco – for the first time – in the driving seat of preventative maintenance and problem-solving.

Now, instead of having a maintenance truck roaming a region stacked full of replacement parts that might be needed in the event of an unforeseen outage, a real-time feed can alert an operations and maintenance teams that a specific battery at a specific site has a high probability of failure within a certain timeframe. A targeted intervention can take place, under conditions and on a schedule controlled by central and regional operations management teams.

In the example of battery replacement – just one of countless components that require maintenance and/or replacing – there is a hard financial benefit. At present, batteries that are still operational are swapped out on a fixed schedule (usually every three years). But as any electrical engineer will tell you, they usually have a good couple of years service left in them, even though they've been removed 'just in case.' By using data science and AI analytics to more accurately predict when a specific one will fail, they can be left in the field longer – extending their lifespan to make significant reductions in maintenance costs.

This predictability has ripple effects through a towerco's OPEX. As well as reducing miles driven to sites, maintenance fuel costs, wear and tear on vehicles, risks to human lives and potential losses due to environmental hazards, CFOs can stabilize and forecast cashflow better than ever before. It extends the window of financial predictability, which in turn benefits the roll-out of new regions and base station in-fill.

The benefits don't end there. A key feature of AI oversight is the ability to reduce diesel fuel costs at individual tower sites, adjusting the switch from solar/diesel/grid/battery depending on the unique conditions at the site and machine-learned efficiency gains across the entire network. A reduction in diesel usage means fewer deliveries – and fewer opportunities for fuel trucks to fall foul of predatory gangs that have increasingly plagued many parts of the subcontinent.

Building out and maintaining the tower networks in Africa is important, essential work. The physical and logistical challenges this presents are formidable. But by turning to the technology of the future, towercos – and the complex ecosystem of suppliers and vendors that support their endeavours – can begin to do this work on their terms and under their chosen conditions. Predicting the unpredictable is within our grasp, giving a much-needed boost to the stability and growth of the African telecommunications industry. ∎

Mobile money breaks the mould for Africa's MNOs

Mobile money is proving a game changer for MNOs struggling with stalling core business revenues; but what are the challenges in further expanding its reach?

Mobile money is one of the biggest telco topics globally right now. As per GSMA data, there are more than 1.6 billion registered mobile money accounts – 400 million of which were added during the COVID-19 pandemic. Daily global transaction values surpassed all expectations, exceeding $3.45 billion by the end of 2022.

The mobile money revolution is spread unevenly, with a huge focus on the African continent.

"Africa has been the leading light in mobile money," says Dario Betti, CEO, Mobile Ecosystem Forum. "Mobile money can fill a real lack of professional infrastructure in some parts of Africa. Some communities do not enjoy a solid financial offer, or availability of services and the cost of services is high. Mobile technology has spread fast and wide, and building on this technology has allowed the development of the 'mobile banking first market.' Compare that with European and American markets where mobile money was competing with existing banking services and emerging near field communications cards."

Making money

The GSMA reports that in sub-Saharan Africa, the number of live accounts grew by 17% year-on-year (yoy) to 763 million in 2022, served by 154 live services; transaction volumes increased by 21% yoy to 45 billion, and transaction values expanded by 22% yoy to $832 billion. In MENA meanwhile, 31 live services accounted for 59 million live accounts (up 7% yoy), transaction volumes boomed by 53% yoy to 357 million, while transaction values exploded by 45% yoy to $21 billion. Regionally, southern Africa experienced the largest yoy growth of live accounts, up 16% yoy to 18 million; western Africa reported the largest growth in transaction volumes, up 29% yoy to 12 billion; and northern Africa saw the largest yoy expansion in transaction value to $4.6 billion.

Mobile money offers financial inclusion, including to those residing in remote or rural regions where physical bank branches are scarce. It has provided millions of unbanked or underbanked consumers with access to basic financial services, allowing them to save money, make payments, and access credit, with significant improvements impacting on economic development and poverty reduction.

Arnold Ponela, senior research analyst, data & analytics - client devices at International Data Corporation for South Africa and sub-Saharan Africa, concurs: "limited access to traditional banking services in many African countries has led to a significant majority of the population being unbanked. For instance, Nigeria, the continent's largest economy by GDP, had about 60% of its sizable population unbanked in 2022. The widespread availability of mobile phones has made mobile money services easily accessible, further advancing financial inclusion among previously marginalized populations. Innovative features like tailored savings accounts, credit facilities, and insurance products contribute to its success. Additionally, the platform's capability to receive remittances from abroad aids adoption, as many in the population rely on these remittances."

The prevalence of smartphone ownership – 78% in MENA and 51% in sub-Saharan Africa in 2022 - throughout the African population makes mobile money an ideal solution for the underbanked.

"Africa has a large and growing population of mobile phone users. In 2022, there were over 600 million mobile phone subscribers in Africa, and this number is expected to grow to over 800 million by

2025," outlines Nael Hailemariam co-founder and CEO at Chapa Financial Technologies S.C. "Mobile money provides a convenient and affordable way for these people to send and receive money, pay bills, and make purchases. Further, mobile money is supported by governments and regulators in many African countries. This has helped to create a safe and secure environment for mobile money transactions."

Recent years have seen many African governments recognise the potential of mobile money to drive financial inclusion and economic growth, resulting in the implementation of supportive regulatory frameworks and policies to encourage the growth of mobile money services while ensuring security and consumer protection.

"In some cases, mobile money came before the legislations. High demand and supporting laws were the main ingredients, but we have to admit that new silicon valleys of Africa have become established. Kigali and Lagos are attracting companies, talent, and capitals for mobile money," says Betti.

Diversification = monetisation

Africa's MNOs are facing stagnating profitability for core business services as increasing competition drives rates down and increasing costs for network maintenance and upgrades, fuel prices, etc., impact the bottom line.

"MNOs globally are seeing challenges in growing their core business," agrees Betti. "Roll out of network technologies is a high-cost business, and consumer average revenue is not growing fast. Monetising existing network is a good solution."

Accordingly, MNOs are seeking new ways to monetise existing network infrastructure with a whole host of value added services (VAS), including mobile money.

"MNOs can diversify their offerings, leveraging their extensive customer base and established brand recognition to attract users to their mobile money platforms," says Ponela. "Mobile money transactions, like remittances and bill payments, boost their overall profitability by complementing traditional telecommunication services. M-Pesa's 85% penetration rate in Kenya as of December 2022 underscores the widespread adoption of mobile money services, supporting MNOs' pursuit of this opportunity to stay ahead in the evolving tech landscape and expand their service portfolio."

Mobile money is proving quite the money maker for early adopter MNOs. Safaricom reported that in its 2023 financial year, M-Pesa revenue expanded 8.8% yoy to KShs 117.19 billion, and customers were up 5.2% yoy to 32.11 million. MTN, meanwhile, reported that in the year ending December 2022, active mobile money users grew by 21.4% yoy to 69.1 million, transaction volumes were up 33.9% to 13.4 billion, transaction values were up by 15.8% to $221.3 billion, and fintech revenue was up 14.3% yoy. Airtel Africa also cites positive results for its mobile money segment in the year ending March 2023, including a 29.6% yoy increase in revenues to $692 million and a 20.4% yoy increase in users to 31.5 million.

"Mobile money is a profitable business. In 2022, the mobile money market in Africa was worth over $1 trillion," reports Hailemariam. Moreover, "mobile money helps to increase the number of active mobile subscribers. This is important for MNOs because they generate revenue from airtime sales and data usage."

Mobile money is also widely considered a positive for boosting customer loyalty, says Hailemariam: "mobile money helps to reduce churn, when customers switch from one mobile network to another. It can help to reduce churn by making it more convenient for customers to stay with their current network," says Hailemariam.

Despite offering a promising new potential revenue stream, challenges remain: "mobile money is a nice way to build new services on top of existing networks. However, this is not free money. Many MNOs have had to recognise that the market is very competitive, and that know-how is required to manage mobile money services," warns Betti.

Securing mobile money

While mobile money has proven widely successful across Africa to date, MNOs continue to face significant hurdles around safety, security, traceability, and transparency.

"In 2021, there were over $1 billion in mobile money fraud cases in Africa," says Hailemariam. "This has led to concerns that security could hinder the uptake of mobile money. However, mobile money operators are taking steps to improve security. For example, they are using encryption and biometric authentication to protect customer data. They are also working with regulators to develop and enforce security standards."

"Previous fraud, security breaches, and unauthorised transactions on certain mobile money platforms caused users to hesitate fully adopting mobile money services," says Ponela. "To counter these issues, mobile money providers and governments have been actively working on enhancing

security measures, implementing regulations, and raising awareness about the safety of mobile money transactions. Moreover, technological advancements and increased experience with mobile money services have likely contributed to improving the security landscape."

Security is always a trade-off, reports Betti. "In many cases mobile money represents an improvement to the previous services, especially when it is the first digital service. However, digital services create new challenges such as cybersecurity fraud, and also and more importantly education. This is a new tool and users have to get familiar with the 'does and don'ts.' Consumer education is potentially the biggest challenge to security right now."

In seeking to further secure mobile money networks and enhancing traceability, blockchain is emerging as a potential solution. Blockchain - a shared, immutable ledger that facilitates the recording transactions and tracking assets in a business network - could enable secure and transparent transfers and transaction recording. It can also be used to build a decentralised financial system in which no single entity, such as a bank or government, has control. This could help combat criminal activity and corruption.

"Blockchain offers promising solutions for the future of mobile money services as it addresses challenges related to efficiency, security, and transparency," says Ponela. "Its decentralised and tamper-proof nature ensures heightened security, reducing the risk of fraud and unauthorised transactions. Through the elimination of intermediaries and decreased transaction fees, blockchain can facilitate cross-border transactions and remittances, particularly benefiting African users amidst high remittance flows."

Hailemariam highlights that blockchain could also be used to reduce the cost of mobile money transactions. Cross-border remittances, of which a huge number occur daily in Africa, cost an average of 6.8% fees due to currency conversion, financial institution fees, and government taxes. Blockchain-based remittance systems cut out the middleman, eliminating the need for intermediary banks or transfer operators, while also accelerating transaction speed.

"However, Africa's potential adoption of blockchain technology faces hurdles related to technology readiness, scalability, and interoperability with existing financial systems," says Ponela. "Furthermore, Africa faces challenges with user literacy, accessibility, and connectivity which will compromise the successful integration of blockchain technology into mobile money services."

According to Betti, while blockchain is a great technology, it is not a solution to all issues. "In mobile money for instance, the African markets have shown how it is possible to create secure and reliable systems without using blockchain. Blockchain has got some disadvantages that might limit its uptake: complexity in usage, storage security, a high computational requirement."

World-leading results

Africa has shown the world that mobile money can be a powerful tool for financial inclusion, and the market is now reaching a level of maturity not seen in other countries.

"Mobile money can help to bring banking services to people who do not have access to traditional banks. It can also help to reduce poverty and improve economic growth. The rest of the world can learn from Africa's experience and adopt mobile money to improve financial inclusion and economic development," says Hailemariam.

Ponela agrees: "The world can learn from Africa's mobile money market by embracing innovation, encouraging collaboration, and prioritizing user experience for increased adoption. Africa's success also showcases the potential for leapfrogging traditional banking and overcoming connectivity challenges with the right strategies. Africa's mobile money success emphasizes the significance of understanding local contexts, embracing innovation, and prioritizing user experience in mobile payment services, providing valuable lessons for global providers to create more inclusive, efficient, and user-friendly payment solutions."

For lessons on mobile money, the world is looking at Africa, opines Betti. "Africa has got the widest implementation of services and a high level of take up. Many other countries have not managed to reproduce the uptake seen in countries such as Kenya. Recently we've seen the diversity and creativity in new ancillary services, financing, cash discounts and loyalty and business to business payments. The creativity of the mobile payment operators in Africa is now becoming a key element of attraction."

It remains unlikely that mobile money will ever reach the impressive heights in developed world regions like western Europe, the UK and the USA, given the preference for digital wallets and near field communications technologies. However, for other emerging economies like much of Asia, there are valuable lessons that can be learned from Africa in the widespread rollout of mobile money. ■
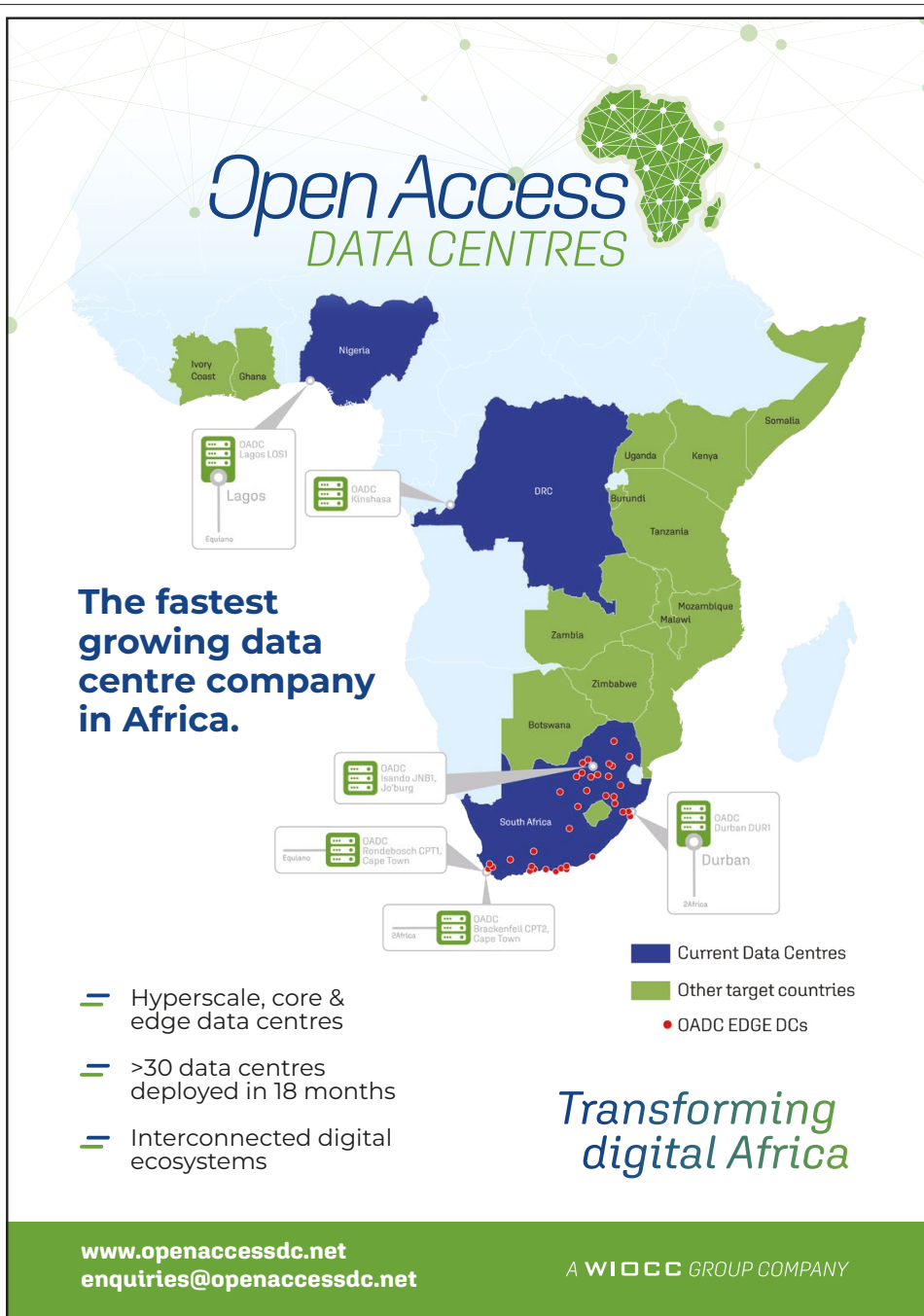
Paul-Francois Cattier

Jocelyn Karakula

Ayotunde Coker

Roundtable: data centres – buy or build?

Data centre capacity demands are booming across the African continent, leading to one all-important question: should MNOs buy or build?

As continent wide-digitalisation ramps up across Africa, in-house data management is becoming an increasingly challenging concern for MNOs. IT professionals are facing numerous issues, and organisations of all sizes and across all sectors are considering outsourcing the hosting of their data and looking at colocation as part of their ongoing IT strategy.

According to Mordor Intelligence, the African data centre market is expected to register a compound annual growth rate of 15.41% over 2023-2029, with growth rates peaking in Nigeria (23.24%) and South Africa (15.68%).

For MNOs amidst the uptick in mobile adoption throughout the African populace, data management is a key priority; many are now facing the choice of building or buying, in-house or colocation. For some of the larger players, building may seem like a no-brainer to manage networks across the entire continent. However, for smaller operators with a presence in a handful of countries or less, the answer is less clear.

What should MNOs consider when deciding whether to collocate or build their own data centre?

Paul-Francois Cattier, managing director, Africa Data Centres Association: The advantages for MNOs in renting space from a colocation provider include reducing capital and operational expenses by leveraging economies of scale and sharing infrastructure costs with other tenants.

Network performance and reliability is also improved by accessing diverse connectivity options and redundant power sources. Security and compliance are enhanced by relying on the provider's expertise and certifications, while scaling up or down is easily achieved by adding or removing equipment as needed without long-term commitments. Interconnectivity, easier connection to partner services that are hosted in the collocated data centre such as financial services or access to other cloud exchanges, brings content closer to their customers. With colocation, MNOs do not have to search for skills, competencies, experience, and critical infrastructure mindset in building a data centres team. Additionally, MNOs are not carrier neutral, so you lock out cloud and CDN.

However, disadvantages include not being able to offer a bundled offer of connectivity and colocation to their customers; and not being able to develop a colocation business strategy - but do they even want it, and do they have access to the capital to do it?

Jocelyn Karakula, CTO, Orange MEA: For MNOs in Middle East and Africa, data centres have been built first to host all strategic technical assets, including network core elements, IT, and platforms. Therefore, in several cases, MNOs such as Orange have already invested in strong, resilient and in some cases, evolutive data centres, targeting Tier 3 or 3+ technical environment levels.

These investments comply with regulatory contexts (data sovereignty), driving to a per-country or per-cluster of countries data centre approach. On top of this, in many cases, these structures benefit from secured and resilient connectivity to international capacities and internet exchange points.

So obviously, the first rationale for an MNO is to take advantage of such structures, as soon as they can host additional capabilities and services (cloud services, data management assets, etc., ...) tailored to the needs of internal and external customers.

But at the same time, the digitalization of the African industry requires more and more infrastructure and data centre capacities that the existing MNO structures cannot handle. As fast time to market is a key driver for the success of digital businesses, an easy way for them to address the necessary needs for quick growth and flexibility can be to rely on external hosts as soon as those are available within the country. This is also a way for MNOs to adapt hosting costs to the business fluctuations, which is more

FEATURE: DATA CENTRES

a challenge when they build their own additional structures (occupation ratio being sometimes below the expected value for years).

Ayotunde Coker, CEO, Open Access Data Centres (OADC): To colo or not to colo, that is the question!

Colocation enables MNOs to realise the following benefits:

- Redundancy and uptime: no need to budget for and implement contingencies (for power, cooling, connectivity, etc.) to ensure continuation of service.
- Opex vs capex: outsourcing to a third-party is more cost-effective and tax-efficient than operating an in-house data management facility. Colocation becomes an opex cost rather than a capital expense. Also, a data centre facility provider continually invests in the latest technology and efficiency solutions, so MNO clients would always have access to the latest technology and expertise to help them manage their data and expand their business.
- Professional expertise 24/7/365: a data centre has the advantage of dedicated, fully trained staff monitoring the network and facility 24/7/365.
- Compliance: MNOs can be confident that the data centre will remain compliant with all current and future standards - such as PCI, HIPAA, SSAE-16 and HIGHTECH.
- Minimising environmental impact: colocation providers design facilities with energy efficiency in mind and are continually investing in the most efficient green energy sources available.
- Scalability: colocation offers MNOs the flexibility to grow without consideration of current in-house IT restrictions, or to easily scale down if necessary.

Do these factors vary across the continent?

Ayotunde Coker: Yes - the importance of each pro and con does vary. If the region where the MNO wants to use a data centre facility does not have one already then self-build is the only option - unless of course they can persuade a data centre operator to build a suitably sized new facility there, for it to be operational when the MNO needs it.

As for the size of the MNO, the key factor here is the size of the rack space the MNO would need and what expertise they have in-house to potentially run their own data centre facility.

Jocelyn Karakula: The context is different according to region and/or countries. First, because the hosting market does not expand at the same pace in all places, this sometimes offers very poor alternatives to MNO-owned capabilities.

There are at least two reasons for this: the position of governments and regulators in boosting digital business and technology within each country – both have a major influence on the hosting industry dynamics. Consequently, it impacts on the attractivity of the hosting offers.

Second, the strategy of major digital players is also a differentiator among countries, as their presence in a country creates a real boost for the digital ecosystem and creates attractive hosting possibilities.

Paul-Francois Cattier: In most African countries - mid and large sized - the colocation offering is sufficient and mature enough to provide a competitive offering from different colocation companies. In smaller countries, however, the offering could be limited to few actors, not enabling a competitive purchase.

In terms of both MNO and country size, the bigger the data centre, the more efficient - and the scaling effect has a huge impact on hiring resources and costs. So, building data centres in small countries is riskier.

How important are the economies of scale offered by colocation data centres to MNOs?

Ayotunde Coker: Not just one factor needs to be considered when deciding whether to colo or not. For each situation there would be a different threshold above which it might be more economically viable for an MNO to build their own DC - but this is just one factor within the overall decision-making matrix.

Paul-Francois Cattier: The advantage of the colocation offering is flexibility and scalability. Without touching capex, you can follow customer demand, increasing your space or scaling down if you lose a customer. It is a pay as you grow model.

It is not a question of economies of scale, buy or build; it is a question of business strategy based on MNO customer demand. Indeed, the data centre design and build and operations are so specific that this will require a strategic vision to enable the full effort of each of the MNOs departure towards this ambitious goal. A colocation company in Africa is building one data centre every two years and operates several data centres, learning constantly with experience and being immersed in the data centre business and tech community.

Is there adequate native talent and expertise for MNOs to man their own data centres 24/7?

Paul-Francois Cattier: The mission critical buildings that are data centres are facing critical resource shortages in every part of the world, not only in Africa.

In Africa, we do have excellent technical expertise, but we are lacking experience, mindset, and attitude in mission critical services.

The choice for MNOs to develop their own data centres should be a strategic choice to become a co-location provider to their customers, supported by a strong business strategy. If this choice is just a procurement choice, this will have little chance to succeed.

Ayotunde Coker: MNOs may have the appropriate expertise in-house, while specialist data centre operators will definitely have the required expertise, experience, and resources. However, expertise is just one factor. Others include management time; human resources; available funding - the capex vs opex argument; and economies of scale.

Jocelyn Karakula: MNOs in Africa can operate their own data centres, sometimes relying on additional external expertise, and sometimes relying on their own experts and technicians. For Orange MEA, one key driver is to anchor all operations and expertise on the African continent, and to manage the up skilling of technical teams accordingly. For large operations – we are present in 18 countries in MEA, for example), 24x7 operations can be mutualized at a regional, or at least multi-country scale, to optimize the operation cost structure and secure the appropriate competencies. ∎

Overcoming interoperability challenges: keeping remote renewable assets connected

Alastair MacLeod, CEO, Ground Control

The ability of different systems and devices to communicate and work together seamlessly – interoperability – has transformed industry. In the renewables sector, interoperability is key to keeping remote renewable assets including wind turbines, solar installations, and energy storage systems connected.

The Internet of Things (IoT) has already enabled unprecedented levels of connectivity, data collection, and analysis across industry, and the renewables sector is no exception. IoT devices can be used to monitor the performance of renewable energy assets such as turbines and generators, utilising real-time data to improve efficiency and reduce downtime.

But these devices rely on interoperability to function effectively. IoT devices must be able to communicate with each other and other systems, such as cloud-based platforms and data integration tools to deliver increased efficiency, cost reduction and improved sustainability.

Why interoperability matters

In the renewables sector, interoperability is essential for ensuring that all hardware and software systems can communicate with each other, regardless of the manufacturer or technology used. As renewable energy assets are often situated in remote locations, where terrestrial coverage is intermittent or unavailable, it can be difficult to maintain connectivity and monitor performance.

Real-time data exchange between different systems allows for more accurate and comprehensive data management. Given the inherent unpredictability of wind, sun, and water patterns, the ability to improve the speed and accuracy of output forecasting can be a game changer.

This data can also be used to inform predictive maintenance ensuring at-risk parts are replaced

before failure, avoiding costly downtime. The early detection of turbine damage, for example, can save wind farm owners millions annually. And the same goes in myriad other examples in solar and other renewable settings and environments where early intervention is crucial.

What's more, interoperability makes it easier to add new systems and devices to existing infrastructure, making it more scalable and adaptable to changing energy needs. This is especially important in the renewables industry, where new sources of energy are constantly being developed and added to existing energy systems – secure, stable connectivity with the grid is essential.

Interoperability challenges faced by the renewables industry

One of the most significant challenges to achieving interoperability is communication and integration issues between different hardware and software systems. Renewable energy systems are often composed of different components and technologies that may not be compatible with each other. For example, solar panels from one manufacturer may not be able to communicate effectively with inverters from another manufacturer. This can result in inefficiencies, data silos and increased costs.

Interoperability can increase the vulnerability of renewable energy systems to cyber-attacks. When different systems and devices are connected and exchanging data, it can create new attack vectors that may not have been considered in the design of the original system.

In addition, currently there is no universally accepted standard for renewable energy systems, which can make it difficult for different systems to communicate and exchange data effectively. This can lead to inefficiencies, reduced data quality, and increased costs.

What's more, often renewable energy assets such as wind turbines or solar farms, are located in remote areas. These areas may experience intermittent or even complete lack of traditional terrestrial coverage, which can make it difficult to establish reliable connection for data exchange and remote monitoring.

The importance of resilient and ubiquitous connectivity

At present, a mere 15% of the Earth's surface is supported by conventional terrestrial communications infrastructure, some of which is complex, vulnerable, and expensive to maintain. Satellites in contrast, can provide global coverage and are comparatively resilient – unaffected by, for instance, natural disasters.

As assets such as reservoirs and wind turbines are in remote, rugged environments, often it's not financially viable to build or maintain the infrastructure required to support these assets via terrestrial or fibre connectivity. In fact, a recent survey by Inmarsat found that 91% of business

leaders felt satellite connectivity was key to improving the effectiveness of IoT solutions.

Perhaps unsurprisingly then, satellite has become an increasingly popular solution for assets outside traditional terrestrial coverage to ensure reliable, blanket network coverage.

Important considerations for satellite integration

Some integration challenges are regulatory (spectrum allocation and licensing, for example), while others are capital, not least the cost of deploying satellite-enabled devices. But in short, hardware compatibility and power management are important considerations for anyone looking to introduce satellite IoT modules into their network.

Satellite IoT modules typically use different

communication protocols and hardware interfaces than traditional IoT devices, so it is important to ensure that the modules you select are compatible with your existing hardware and software infrastructure. Selecting modules which support the communication protocols and physical interfaces required by your network is key.

In addition, satellite IoT modules may require different power management strategies due to their reliance on satellite connectivity and potentially long battery life requirements. So it is important to select modules that are designed to operate efficiently in low-power environments, and to implement power management strategies that minimise power consumption and maximise battery life.

Finally – cost. Due to the added complexity and technology required to support satellite networks, satellite modules and indeed satellite airtime, can be more expensive. However, there are several ways this can be integrated within your network to ensure you get the right balance of performance and cost. Just one such example, in the case of one of our customers managing a water treatment works; sensors utilised LoRaWAN to transmit data to a hub, the hub then optimised the data payload to reduce transmission costs, and transmitted this via satellite only when cellular connectivity was unavailable. This solution has proved very successful and stands as a great showcase of the possibilities available with integrated networks.

Seamless network integration

Thinking about interoperability and integration more generally, it's key renewables organisations evaluating hardware and software solutions, consider systems and components that are designed to work together. Though not always

possible, it's important to consider factors such as compatibility, data exchange standards, and communication protocols. By choosing solutions that are designed to work together, companies can streamline communication and improve efficiency.

APIs provide a standardised way for different systems to communicate and exchange data, while data integration tools enable companies to consolidate and manage data from multiple sources. By leveraging these tools, companies can improve data quality, reduce data silos, and streamline communication between different systems. Simply, APIs and data integration tools are powerful tools for achieving interoperability.

Moreover, cloud-based solutions can play a critical role in enabling remote connectivity for renewable energy systems. By storing data in the

"Cloud-based solutions can play a critical role in enabling remote connectivity for renewable energy systems. By storing data in the cloud, companies can access data from anywhere with an internet connection, enabling remote monitoring and management of renewable energy systems."

cloud, companies can access data from anywhere with an internet connection, enabling remote monitoring and management of renewable energy systems. Cloud-based solutions also provide a scalable and cost-effective way to store and manage data, enabling companies to optimise energy resources more effectively.

Managing growth, and costs

In Europe, solar and wind power generated 22% of all electricity in 2022 according to European Electricity Review 2023 – outstripping fossil fuel (20%) for the first time. However, according to Wood Mackenzie Power, $8.5 billion was being spent on unplanned repairs and corrections caused by component failures in wind operations.

Though the substantial growth in renewables demonstrates a clear appetite for the global commitment to hit eco targets, this must be balanced with managing economic investment. Given that many of these costs can be mitigated with reliable monitoring and control, preventative maintenance, especially for devices in hard-to-reach areas; it's no great surprise that satellite IoT is becoming increasingly popular within the renewables sector.

Ultimately, the renewables industry has had to cope with managing remote and harsh environments for many years and has done so adeptly, evolving with the technology to support remote management. There will always be challenges of course, but with satellite, issues associated with operation visibility and control could be a thing of the past. With the availability of reliable connectivity anywhere on the planet, renewables operators have the chance to turn what was once a major challenge, into a cost saving, and efficiency bearing advantage. ■

Building a smarter campus

The Central University of Technology (CUT), a leading higher education institution based in South Africa's Free State province, has successfully rolled out phase one of its three-year network and WiFi infrastructure upgrade, an important step in the university's digital transformation journey.

"The driving force behind this infrastructure upgrade is our digital transformation strategy, with the aim of improving our connectivity efficiencies and speed, and our use of 4IR technologies," said Busi Matube, CUT's ICT director and chief digital officer. "This will allow us to better leverage the Internet of Things (IoT) for other projects we have in place, such as smart buildings, smart bins, a virtual reality environment for our engineering students, and more, located in different areas."

Missing the grade

Prior to the project, CUT's infrastructure was failing to meet the needs of both students and staff, with connectivity issues becoming a sore point for the university.

According to Lucky Matjelo, deputy director: ICT infrastructure services at CUT, the university's WiFi, which was set up in 2009 as its secondary mode of connectivity after the LAN, had become the primary connection point for these users.

"Over this time, technology has changed and advanced, and the existing solution, which was not scaled for high volume connectivity, was under increasing pressure," said Matjelo. "With around 22,000 staff and students on campus, each with a minimum of two devices apiece and expectations of being able to connect wirelessly around the campus, connection speed had increasingly become an issue for us, and end-of-life infrastructure needed to be replaced."

Challenges for CUT included low through-put, resulting in poor connectivity; poor coverage (both inside and outside); and a lack of visibility on the network. This was particularly challenging in the event of users reporting connectivity challenges, as the CUT team was unable to ascertain what was happening on the network at the time.

"The COVID-19 pandemic also played a role in these increasing needs, as the reliance on virtual meetings increased, further overloading the WiFi infrastructure," added Matube.

Digitally transforming to meet targets

CUT decided that a network and WiFi infrastructure upgrade was critical for the university to meet its digital transformation objective of building a smart campus, where both students and staff are always connected through improved network infrastructure and reliable, responsive connectivity.

The new wireless network infrastructure would ensure the connectedness of students and staff to digital resources both internal and external to the network, as well as providing the medium through which CUT could relay data from smart buildings' backend systems for analysis and reporting, and to provide a connected access control system for a more secure campus.

CUT went out on tender through its partner PURCO to appoint a service provider that could implement a WiFi solution that would be able to seamlessly integrate with the university's existing network infrastructure and improve its WiFi services.

"An additional requirement was that the supplier should have done a similar project in the higher education sector," said Matjelo.

"Datacentrix's strong footprint in education, which extends to the support of several local universities, and our excellent vendor certification levels, as Aruba Platinum Partner with ClearPass Policy Management competencies and the 2022 winner of the Aruba Partner Deal of the year award, were critical in our appointment to provide the procurement, configuration and installation of WiFi equipment for a period of three years at

(l-r): Busi Matube, CUT ICT director and chief digital officer; Henry Denner, Datacentrix account manager: commercial; and Lucky Matjelo, deputy director: ICT infrastructure services at CUT.

both the Welkom and Bloemfontein campuses of the university, as were our Level One Broad-based Black Economic Empowerment certification and competitive pricing," said Henry Denner, Datacentrix account manager: commercial.

Greater network visibility

Benefits experienced by CUT from the rollout include the improvement of WiFi connectivity issues in high-traffic areas, like the library and labs, where previously students had experienced serious connectivity challenges due to low WiFi signal. These signal dropouts have stopped completely since Datacentrix began the project, explained Matube.

"There has also been greater visibility on the network, as well as more opportunity to engage with users to understand and solve challenges. Now, when a student or staff member logs a query, these can be tracked according to what the individual was doing on the network at the time, and where any problems lie," said Matube. "I have personally worked with Datacentrix for a number of years now, and there is no doubt as to the organisation's strong technical capabilities. For this project, Datacentrix has delivered far beyond the set-up of our equipment, and has provided excellent after-sales support to CUT's small IT team, augmenting the skills we have available internally. Our Datacentrix contacts are always available and the experience with them has been excellent."

"The trusted partnership built over recent years between Datacentrix and CUT has been integral to the success of this project. Magical outcomes like these require constructive input from the client, our technology partners, in this case Aruba, as well as from the experts at Datacentrix. We look forward to many more successful engagements with CUT," said Francois Jacobs, sales manager: commercial at Datacentrix. ∎

Deloitte targets smart sustainability with new HQ

Professional services company Deloitte opened the doors in Waterfall City, Johannesburg, during the pandemic. According to Deloitte, smart cities combine optimised building and operational automation with intelligent space management to enhance the user experience, increase productivity, reduce costs, and mitigate physical and cybersecurity risks.

The new smart building was, accordingly, designed and constructed with an emphasis on creating a sustainable, safe, and productive environment, and complies with a Silver Leadership in Energy and Environmental Design Green Rating. As a single-tenant facility of 42,500sqm, this fully digital and sustainable smart building facilitates a dramatic cultural shift for this progressive organisation.

The green building, a first of its kind in South Africa, is ergonomically designed to enhance the wellbeing of its occupants, delivering a workplace that supports a rapidly evolving talent pool and offers a huge range of different work activities and styles.

A truly smart building

As the sole distributor of PointGrab smart sensing technology for smart buildings, Cataly5t was appointed to work with Deloitte to enhance the user experience while maximising real-estate value with workspace analytics.

The PointGrab platform, together with more than 1,000 smart IoT ceiling-mounted sensors across the building, has allowed Deloitte to analyse and optimise the utilisation of all floor space, including desks, meeting rooms, open plan workspaces, focus workspaces and booths. As an organisation that has embraced activity-based work, the sensors also cover casual seating areas, couches, lounges, coffee, and restaurant areas, etc.

The sensors provide Deloitte with accurate information about the space utilisation and the number of people in each space whilst preserving the building occupants' privacy. Deloitte has taken this a step further by integrating the sensors into their booking system, enabling users to see which workspaces are available, based on bookings made, as well as real-time occupancy data.

The PointGrab system sends live and historic data via its API to other smart building systems to enable a truly smart building ecosystem. The data includes:

- Average and peak space utilisation data
- Desk occupancy
- Meeting room occupancy
- Occupancy of activity-based working
- Foot traffic counting
- Visitor management and usage of public areas such as receptions

"Deloitte is a pioneering firm in advanced working environments, and as such, sets very high standards of quality, service and accuracy. We are proud that our innovative sensing platform has been deployed in the largest hot-desking environment in the industry," said Doron Shachar, CEO, PointGrab. "We are sure that PointGrab's solution, with the assistance of our partners at Cataly5t, will make it more efficient for Deloitte to manage their real-estate costs effectively while optimising this innovative space for their talent's wellbeing and productivity."

"In 2022, the approach to buildings and offices will become more flexible and dynamic, with the growing need to be able to adapt quickly to unexpected changes and new requirements," said Johan van Niekerk, managing director of Cataly5t. "Adding smart workspace technologies, like PointGrab's sensing platform, to an organisations workspace, facilities and real-estate management strategy, will be vital to business cost-effectiveness, workspace-to-workforce relevance, adaptability and sustainability. Cataly5t has experienced first-hand with Deloitte, the value that comes with smart building technologies like these." ■

5G PUSCH Channel Equalizer module doubles network spectral efficiency, enhancing O-RAN network performance

AccelerComm has released the 5G PUSCH Channel Equalizer module, which doubles network spectral efficiency, enabling significant improvements in O-RAN network performance and reducing network power and cost per bit.

The 5G PUSCH Channel Equaliser module is the latest in a series of hardware channel-based acceleration engines which leverage AccelerComm's broad portfolio of optimised 5G Layer 1 IP modules for ASIC and FPGA, to deliver an integrated solution. The Equaliser uses innovative equalisation algorithms to cancel interference from neighbouring sources to double the throughput per Hertz (spectral efficiency) of an operator's network.

The integration of the PUSCH channel components up to and including the Equaliser module

realises further efficiencies in network performance, which translate into power savings through the reduction of the number of sites required to provide high-quality network coverage. The complete 5G PUSCH Channel Equaliser, and its component IP modules, including the Equaliser itself, and the LDPC and Polar encoder/decoder are available as configurable low gate-count IP cores optimised for ASIC or FPGA.

The LDPC module improves network performance through lower error rates, at the same time delivering power savings and over 30% processor resource saving in the 5G physical layer by offloading the LDPC algorithm into hardware.

AccelerComm has also released a 5G PUSCH Channel Equalizer evaluation tool, which customers can download and use to assess the benefits in their own network, by setting up specific deployment use case parameters and comparing performance with the standard Matlab 5G model.

"Network efficiency lies at the centre of the success of 5G, both in terms of power consumption and the use of valuable spectrum assets," said Eric Dowek, segment marketing director. "Our innovations in modular 5G Layer 1 IP solutions, implemented efficiently on ASIC and FPGA, help deliver 5G network performance at a price point that makes good business sense."
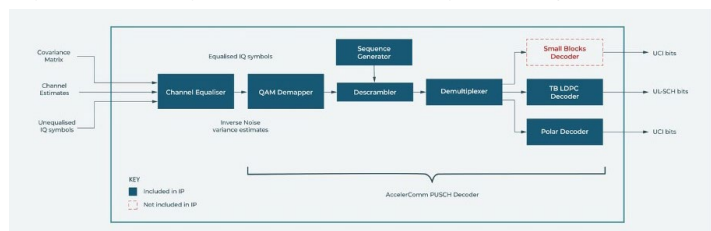
Es'hailSat launches Playout Services for MENA

Es'hailSat has launched a state-of-the-art Playout Services tailored for television broadcasters. This comes as a collaborative effort between Es'hailSat and leading technology innovators and experts, aimed at bringing the very best of broadcast management and delivery to Qatar and the MENA region.

With a commitment to providing television broadcasters an unparalleled edge, Es'hailSat's Playout Services offer a comprehensive solution encompassing scheduling, content preparation, graphics integration, and seamless transmission. Broadcasting professionals across Qatar and the MENA region can now optimize their operations, ensuring an uninterrupted and engaging viewer experience. Leveraging cutting-edge automation, real-time

monitoring, and 24x7 multi-lingual professional support, broadcasters can focus on crafting exceptional content while entrusting the intricate aspects of scheduling and delivery to our robust and reliable platform. As a result, audiences can look forward to enriched programming, while broadcasters maximize their efficiency and impact.

Es'hailSat brings together the combination of playout and distribution in one package, together with enhanced flexibility that delivers peace of mind and forms the key value proposition for our playout services. The state-of-the-art playout service is built on a scalable model that allows for the inclusion of features catering to multi-channel broadcasters while at the same time it is able to adapt and support the needs of single channel broadcasters. This also does

away with extensive upfront capital investment and offers long-term flexibility in both operational and commercial models. The system can be easily configured to accommodate changes in requirements related to programming or transmission such as live editing. Coupled with long-standing and reliable satellite broadcast network covering the entire Middle East and North Africa region, Es'hailSat's playout services broadcasters can not only create their TV channel but also reach millions of viewers in one step.

"The launch of Es'hailSat's Playout Services signifies a pivotal moment in the media landscape in Qatar, reflecting our dedication to embracing innovation and enhancing the quality of content delivered to households across Qatar and the MENA region," said

Ali Ahmed Al-Kuwari, president and CEO, Es'hailSat. "This culmination of effort and collaboration between Es'hailSat and playout technology providers marks a significant leap forward in transforming the broadcast industry, setting new benchmarks for excellence, efficiency, and content delivery."

5G FR1 Omnidirectional antenna provides continuous connectivity in harsh environments

PCTEL, Inc. has introduced its new 5G FR1 Omnidirectional antenna optimized for industrial IoT applications.

The demand for reliable, secure wireless connectivity and extensive coverage is increasing. PCTEL's new 5G FR1 omnidirectional antenna has been designed to meet the requirements of today's

wireless networks and to provide continuous connectivity in the harshest environments.

Suitable for a wide variety of mission critical communication applications such as utilities, smart cities, factory automation, retail/security failover, and overall Industrial IoT applications, PCTEL's new 5G

FR1 omnidirectional antenna offers a mechanically robust design, flexible installation, superior bandwidth, and superior coverage within the full 5G FR1 frequency range.

"At PCTEL we are always offering innovative solutions that address the connectivity challenges in mission critical

communications. The new 5G FR1 Omnidirectional antenna is a reliable, cost-effective solution that has been tested in the harshest environments and offers high performance across the whole 5G FR1 frequency band," said Denis Dmitruk, PCTEL's technical product manager.

Anritsu picks Comprion SIMplifier for fully automated mobile device testing

Anritsu has seamlessly integrated the new Comprion SIMplifier hardware in its test setup to offer customers a fully automated test solution for speeding up and easing GCF/PTCRB conformance and carrier acceptance testing.

The Comprion SIMplifier, a compact and portable hardware device, aims to improve the efficiency of mobile device testing by eliminating the manual process of removing and reinserting the SIM card for profile updates. This is achieved by integrating a PC/SC card reader and a device connector.

"The device is specifically designed to optimise productivity and streamline various test procedures such as GCF/PTCRB protocol conformance testing, regression

testing and development testing. In addition, it can be seamlessly integrated into existing test systems, offering versatility for a wide range of use cases. We are pleased that the Comprion SIMplifier meets Anritsu's requirements for full test automation," said Udo Willenbrink, product manager at Comprion.

Anritsu has integrated the SIMplifier hardware in its ME7834NR 5G NR Mobile Device Test Platform which is used by MNOs, chipset, and mobile device manufacturers to perform network operator carrier acceptance and GCF/PTCRB conformance tests. For these type of tests, physical SIM cards had to be exchanged in order to make profile updates.

"By integrating the SIMplifier

in our test setup, we save time, simplify configuration changes and unlock total automation to enable our customers to run tests overnight without the need for a test engineer present. In order to contribute to the expansion of the 5G mobile market, we would like to future strengthen our collaborative relationship with Comprion," said Keiji Kameda, general manager of mobile solutions division at Anritsu Corporation.

Look out for...

Regenerative LEO 5G RAN solution to meet eMBB and IoT demand from space

AccelerComm, Radisys Corporation, RFDSP, and TTP are jointly formulating a high-performance Regenerative 5G RAN reference solution and architecture based on 3GPP for deployment on low Earth orbit (LEO) satellites.

The partnership proposes a 5G regenerative gNodeB solution that will support high-performance 5G services in the challenging environment of a non-terrestrial network (NTN).

In a typical LEO deployment, a constellation of fast-moving satellites covers a wide geographical area using many beams per satellite to cover subscribers. The 5G Regenerative NTN solution includes Option-2 split gNB with a distributed unit (DU) on the satellite payload with a ground-based centralized unit (CU) and 5GC. The solution handles unique regenerative NTN-specific requirements of extremely high mobility with frequency re-association between the DU, GW and CU serving a region and large-sized cells spanning multiple countries requiring country-specific CN routing.

The joint LEO Regenerative reference solution will meet the growing demand for satellite-based eMBB (enhanced mobile broadband) and IoT services. This makes it an ideal solution for businesses and organizations that need to connect people and devices in remote locations, or for governments looking to provide internet access to all citizens. The solution will support many beams and high subscriber density and will be delivered on a space-hardened platform optimised for low power and size. It includes a range of advanced developments in the areas of beam-to-cell mapping, beam forming, NTN beam management and well-defined interfaces to satcom infrastructure.

RedCap device emulation enhances 5G testing for private networks and IoT

Viavi Solutions Inc. has launched the industry's first Reduced Capability (RedCap) device emulation for 5G network testing, enabling true performance validation for Internet of Things (IoT) and private networks based on a new class of simpler, lower-cost devices including wearables, industrial wireless sensors, and video surveillance.

This solution is based on the TM500 network test platform, used by most network equipment manufacturers for base station performance testing.

3GPP introduced RedCap devices, also known as Broadband IoT or NR-Light, in 5G NR Release 17. These mid-tier IoT devices have average speed and latency requirements, in between high-end use cases like Ultra Reliable Low Latency Communications (URLLC) and lower-end Low-Power Wide-Area (LPWA) applications. In so

doing, 3GPP formalized support for devices being deployed at the network edge for IoT and Industry 4.0 applications.

With early validation efforts focused on conformance and network emulation, VIAVI has filled a significant gap with the availability of RedCap device emulation. Based on the widely accepted User Equipment (UE) emulation capabilities of the TM500, RedCap device emulation enables equipment manufacturers to create realistic scenarios of thousands of such devices carrying traffic.

With the upgraded TM500, RedCap device testing can be seamlessly integrated into the existing test environment. The platform provides the capability to simulate RedCap-like traffic patterns, generate RedCap-specific signaling, and evaluate the network's performance for RedCap use cases.

One of the key advantages of using existing integrated solutions like TM500 for RedCap testing is the ability to reuse the well-established, embedded, per-device fading channel models. Fading channels emulate real-world wireless propagation conditions, including multipath propagation and signal fading, which are crucial for testing the performance and reliability of a live network environment. The TM500, combined with fading channel models, allows for accurate simulation of different scenarios and helps assess the performance of RedCap devices in challenging propagation conditions.

"5G deployment may be stabilizing globally, but industrial and private networks are just getting started," said Ian Langley, senior vice president, wireless business unit, VIAVI. "RedCap specifications provide the missing link for the class of devices used in such applications, so equipment manufacturers and operators can pursue development and deployment with confidence. The TM500 adds essential validation capabilities with device emulation, further accelerating RedCap adoption."

Telefónica de Argentina picks Kyndryl for modernisation

Telefónica de Argentina has selected Kyndryl to accelerate the modernisation of its technology environment.

With a three-year extended agreement, Kyndryl will manage improving the operator's services along with the application experience of its customers in Argentina. In addition to managing Telefónica de Argentina's mission-critical infrastructure, Kyndryl's consulting arm, Kyndryl

Consult, will advise on and implement IT automation to improve business application management.

This project will be led by Kyndryl Consult experts who will integrate and assess data obtained from different business processes to identify automation opportunities that could improve IT systems and provide insights to enhance application performance. With the modernisation of its IT infrastructure, Telefónica

de Argentina will be able to provide better service and a differentiated experience to customers using its applications.

Kyndryl Consult experts will assess industry shifts and challenges to shape and establish a digital transformation roadmap, including the automation of IT processes to simplify, modernise and streamline the management of Telefónica de Argentina's IT infrastructure.

Beeline Uzbekistan completes phase one of network upgrade, enhances coverage

Veon's Beeline Uzbekistan unit has completed the first phase of its network upgrade as part of wider plans to improve 4G coverage from 78-85% and overall service.

Veon detailed the project stretches across 14 regions of Uzbekistan, upgrading connectivity in 54 cities. The company expects to hit its 85% target by the end of this year. Beeline recorded 6 million 4G customers as of July after gaining 1.1 million 4G users year-on-year. Connections

on 4G account for 69.3% of its customer base.

The first phase of its network upgrade was completed in August in more remote locations including Fergana Valley and Karakalpakstan. In its second phase, Beeline will bolster its 4G network in major urban locations including Tashkent, Samarkand and other densely populated regions.

"We are determined to provide superior digital experiences

throughout Uzbekistan with our '4G for All' focus and digital operator strategy. With high quality mobile internet and the digital services, we can better serve the country's young and ambitious population. We are investing in this vision not only with our network enhancement projects, but also by educating and developing the local talent who will create the locally relevant digital products and services in Uzbekistan," said Beeline Uzbekistan CEO Andrzej Malinowski.

Blue Planet helps Virgin Media Ireland expand high-speed fibre

Virgin Media Ireland is working with Blue Planet to support the company's three-year move to a full fibre network, and transition from traditional cable services to fully automated high-speed fibre broadband services.

With the Blue Planet platform as the foundation of its network and service automation strategy, Virgin Media can deliver a better end-user experience and ultra-fast broadband connectivity for its customers.

As part of its commitment to revolutionize the way their residential and business customers connect and experience the digital world, Virgin Media selected Blue Planet's intelligent automation platform to modernize its Operational Support Systems (OSS) stack.

"Blue Planet's zero-touch model-driven service fulfilment and strong DevOps ecosystem enable us to speed up the order to service process. From creation and update to completion or cancellation, we can easily launch superfast and reliable fibre broadband services. This strategically positions Virgin Media as a leading innovator in Ireland and improves our ability to offer the best experience to our customers," said John Walsh, director of technology transformation, Virgin Media Ireland.

Integrated and deployed by telco focused Prodapt, a Blue Orbit and Virgin Media network OSS implementation partner, the Blue Planet platform is enabling Virgin Media to quickly launch 2Gb Full Fibre Broadband to homes

and businesses across Ireland. Blue Planet also provides Virgin Media a single 'source of truth' for network and IT users that reflects the current state of the network. Additionally, Blue Planet Orchestration accelerates service velocity, improves service agility and supports dynamic service delivery.

"Blue Planet is supporting Virgin Media Ireland with an adaptable, automated end-to-end order to service lifecycle, reducing delays and human errors often associated with legacy manual operations. By embracing intelligent automation, Virgin Media is in a better position to meet its goal of bringing faster connectivity across Ireland," said Joe Cumello, senior vice president and general manager, Blue Planet.

MEASAT close to connecting 600 schools

MEASAT Global Berhad is now connecting close to 600 school sites in remote locations nationwide through its CONNECTme NOW high-speed wireless satellite broadband services, in line with its commitment to provide greater access to connectivity for education, especially in underserved rural communities.

"The CONNECTme NOW model is ideal for locations with little or no terrestrial connectivity and provides equitable access and lower costs per school. MEASAT is pleased to collaborate with Maxis to expand high-speed satellite broadband coverage to more schools through our CONNECTme NOW service. In this era when internet connectivity is a basic utility like water and electricity, satellite broadband can bridge the digital divide for the remaining 3 percent of Malaysians in remote areas without telecommunications infrastructure," said Ganendra Selvaraj, MEASAT's chief commercial officer.

The CONNECTme NOW service can dynamically allocate bandwidth on demand. As the quota allocation is provided on a per user basis, schools with populations of any size – small or large, can easily scale up using this architecture, addressing potential bandwidth congestion.

The internet connectivity services will benefit teachers and students by offering download speeds of up to 100Mbps per location. Beyond the allocated quota for the school, additional quota can be purchased on a per user basis to meet personal consumption demands.

The service is supported by MEASAT's 24x7 network management centre as well as an established local distributor network. Satellite broadband capacity is ideal for providing rapid, ubiquitous communications networks that are independent of geographical barriers or terrestrial infrastructure. It is suitable for very remote locations that are difficult to access, or in terrains that are less feasible for normal terrestrial services or mobile towers.

Anatel investigates very high taxes on telcos

Brazilian regulator Anatel's board of directors has approved a survey that addresses the very high payments made to the public purse by the telecommunications sector.

The study addresses three themes: the current tax system, the redesign of the tax system, and the redefinition of the tax burden. It will be forwarded to the ministries of finance and communications, bodies responsible for studying and proposing legal changes related to the taxation of the sector.

It proposes a broad tax review which recognises the positive potential of a lower tax burden on service prices, quality and access to services, given the current high tax burden applied to telecommunications service providers in Brazil – one of the largest such burdens in the world. Additionally, it's not only the taxes that are an issue but the complexity of calculating and policing them, creating an additional cost for the sector and for Anatel.

Anatel's board has proposed a significant simplification of the tax system and a reduction of the tax burden.

IoT market heats up amidst competing technologies

Wide-area Internet of Things (IoT) connectivity vendors are fighting for space in an increasingly crowded market.

According to ABI Research, Low-Power Wide Area Networks (LPWAN) will reach 5.3 billion connections in 2030. LPWAN companies are competing in integral IoT applications such as smart metering, asset tracking, and condition-based monitoring, with a vendor's competitive advantage often hinging on factors beyond a network's technical capabilities.

"The business environment surrounding a networking technology can be as influential to its success as its data rate, bandwidth, and power requirements," said Lizzie Stokes, IoT hardware and devices and IoT networks and services analyst at ABI Research. "As new connectivity technologies enter the market and others pivot or leave entirely, it is important to understand how various market dynamics – such as regional availability and stages of development - impact a technology's successes and failures."

When competing against newer technologies and other wide-area networks, cellular LPWANs struggle with fractured regional deployments and higher device and connectivity costs than other LPWA technologies. LPWA solutions are increasingly confronted with complexity concerns as IoT users demand user-friendly, end-to-end IoT systems. To maintain market share, vendors must dynamically respond to these obstacles while navigating new, potentially disruptive standards and protocols such as DECT-2020 NR, MIOTY, and ZETA.

Short-Range Wireless (SRW) technologies face a different competitive landscape than LPWANs in the IoT domain. WiFi and Bluetooth are primarily used in home automation use cases but are also finding greater use in commercial IoT applications. Bluetooth Low Energy (BLE) and WiFi HaLow expand the technologies' place in industrial and wide-area IoT deployments. Hybrid use cases, where customers deploy SRW and LPWA technologies simultaneously to optimize an IoT deployment, have further increased Bluetooth's and WiFi's presence in long-range applications. Though the wireless IoT networking market has a history of intense competition, trends in hybrid use cases suggest some IoT vendors are leaning toward collaboration.

"Competition in the wireless connectivity market continues to be fierce," said Stokes. "Vendors should attempt to carve out a unique place in the market by thoroughly understanding their client's coverage and power requirements. Vendors should cater to specific use cases and regional needs while acknowledging that customers will respond to technologies that can work well with others."

WhatsApp launches in-chat payments in India

WhatsApp has expanded its fast-growing payment offering in its biggest market by launching an in-chat payments service for businesses in India.

The WhatsApp service already boasts hundreds of millions of users in India. Now they will be able to pay for products and services through the app.

Shoppers can buy products and services from businesses using credit and debit cards, WhatsApp Pay and India's public digital payments network UPI. This new service also allows the platform to gather more data to help it target and personalise existing advertising. The recent passing of India's data protection bill, which excludes rules on data sharing by companies, may support that objective.

This could massively boost WhatsApp's chances of becoming one of the top digital payments apps in the country – but it's also important to Meta as a way to further monetise its platforms. Companies are charged for delivering marketing or customer service messages to their customers via WhatsApp, and to run ads on Facebook or Instagram that take a potential customer directly into a WhatsApp chat with the company.

Lebanon to gain solar-powered internet

Lebanon has received a multimillion-dollar donation from China to install solar energy for the country's internet provider, according to Lebanon's ministry of telecommunications.

According to local media, state-owned Ogero will receive more than US$8 million to supply more than 830 of its sites with solar energy panels. The solar energy project is expected to be operating by summer 2024.

The national grid Électricité du Liban (EDL) barely produces three or four hours of power a day and outages are common for landline, mobile and internet users. Ogero has in the past resorted to backup generators.

Singtel to sell 20% stake in data centre business

Singapore Telecommunications (Singtel) is set to sell a 20% stake in its regional data centre business to private investment firm KKR for S$1.1 billion. The deal values Singtel's total regional data centre business at S$5.5 billion.

Singtel's data business is part of their Digital InfraCo unit, which was formed in June, and has operations in Singapore, India, and Thailand. Singtel will reportedly use the money from the sale to fund the further expansion of its this data centre business in Southeast Asia.

"The data centre industry is growing at an accelerated pace given the unprecedented industry trends we are witnessing. KKR is a highly credible partner in the data centre space and we look forward to our strategic partnership in scaling up the platform to become a meaningful growth engine for Singtel," said Singtel's chief financial officer Arthur Lang.

"The investment by KKR crystallises the latent value of our data centre assets and we hope this illuminates value for our shareholders in the coming months."

EOLO picks Intracom Telecom for network expansion

EOLO SpA has selected Intracom Telecom's WiBAS G5 dual-BS base station device for the expansion of the 28GHz ultra-fast wireless network across Italy.

EOLO awarded the multimillion expansion contract to Intracom Telecom following a lengthy testing of the device at the laboratory and the field. The deployment of the WiBAS G5 dual-BS is part of EOLO's extensive investment in its fast expanding network across Italy, aiming at staying at the top of Italian FWA service providers, with a portfolio of ultra-broadband services to residential and SME subscribers.

The WiBAS™ G5 dual-BS interoperate with Intracom Telecom's terminal stations already installed and operated by EOLO. Thanks to its innovative hardware and software unique features it has twice the capacity in terms of subscribers and three times the throughput compared to the previous generation device.

Intracom Telecom's WiBAS G5 dual-BS platform can be leveraged by operators to build gigabit services through software upgrades and achieve download speeds equivalent to 5G. The device includes novel technologies for this category of devices, such as MU-MIMO. The provisioning process of the device is performed via uniMS SON Gateway, a software platform accelerating the service activation by automatically discovering terminals and instantly provisioning the subscription profile.

"Building a reliable and future-proof network requires determination and a careful planning that EOLO and Intracom Telecom have carried-out together over the past 6 years of collaboration," said Guido Garrone, co-CEO of Network Division, EOLO. "With its mmWave FWA network, EOLO serves residentials, businesses and wholesale customers. EOLO's mission has always been to guarantee access to an ultra-fast, high-performance and resilient network to all Italian families and businesses, reaching the most remote areas of the country, creating value for the territory in which it operates. Intracom Telecom showed flexibility and commitment in supporting us in our journey. Thanks to its technological expertise, Intracom Telecom engineers have enhanced their product with new features allowing for a continuous improvement of our offers."

"We are proud to be trusted once again by EOLO and support them in becoming the top fixed access provider in Italy as well as a global reference for their connectivity offers to residential and business customers. Since 2017, we have been working with EOLO to address their future network needs by developing innovative solutions that accelerate their network expansion and growth. We look forward to implement this new expansion and connect our brand name, as the key technology partner, with EOLO's success," said Kartlos Edilashvili, acting CEO of Intracom Telecom.

Kcell to deploy single 5G RAN network

Kcell has selected Ericsson as a 5G radio access network partner in a seven-year partnership aimed at accelerating Kazakhstan's digital transformation and widespread adoption of 5G technology.

The partnership envisions a roadmap spanning 2023-2030, during which both companies will work in tandem to foster innovation, drive economic growth, and strengthen the country's technology infrastructure.

Kcell will deploy Ericsson's state-of-the-art 5G technology over at least 50% of Kazakhstan's territory including Almaty, Shymkent, and several others, contributing to the growth of both urban and rural connectivity.

The 5G deployment of a single RAN approach involves the seamless integration of 5G into the existing 2G, 3G and 4G infrastructure, maximising the efficient use of network resources and simplifying the transition to the new technology.

"We are building a network of the future that will not only offer superior connectivity for Kcell customers but also deliver an innovation platform that can help to transform industries and pave the way to a more connected digital society, fostering economic growth and societal advancement," said Andrea Missori, head of South East Mediterranean and Eurasia, Ericsson.

PLDT progresses on digital transformation

Amdocs has been selected by PLDT Inc. and its wireless subsidiary Smart Communications, Inc. to accelerate their cloud modernization on Amazon Web Services (AWS).

PLDT is modernizing its IT infrastructure to improve business agility and respond faster to market dynamics, driving innovations and delivering an enhanced connected customer experience. In this multi-year collaboration, Amdocs will seamlessly migrate select business-critical systems and applications to AWS.

Amdocs will provide cloud strategy, planning consultancy, and cloud security and operations services, using its new artificial intelligence (AI)-driven cloud operations platform. Hosted on AWS, the platform will help PLDT and Smart optimize and scale infrastructure performance and resources as needed. This holistic approach to cloud adoption and management is designed to bring PLDT and Smart increased operational resilience, leading to business agility and innovation, and continuity of services.

In addition to benefitting from the elasticity, agility, automation, and performance of the AWS cloud, the agreement between Amdocs and PLDT will also use AWS's breadth and depth of cloud services to build PLDT's and Smart's applications and manage their infrastructure. This will allow PLDT and Smart to focus their IT resources on innovating applications that differentiate their business and transform customer experiences.

Royal Fleet Auxiliary ship Argus utilises LEO satellite for critical communications
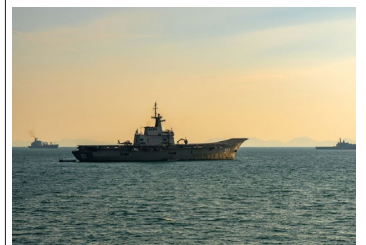
The crew of the Royal Fleet Auxiliary ship Argus is using internet with coverage provided by low Earth orbit (LEO) satellite from OneWeb in collaboration with distribution partner Airbus.

The connectivity is being provided by the company's Kymeta Peregrine u8 terminal, which was fitted while Argus was docked in Falmouth this summer. It is the first military vessel to be using the technology.

"The maritime terminal will provide reliable, low latency, high-speed broadband connectivity anywhere in the world, even during challenging sea conditions and high-speed motions," said a spokesperson.

"Crew welfare and morale is a key tenet of a platform's fighting capability. Enhanced connectivity, such as that delivered by low Earth orbit satellite networks is an area that the Royal Navy are looking to exploit," said Lieutenant commander Ben Slater from the Royal Navy's digital unit. "Through close collaboration with industry partners, we have been able to fit a capability onboard RFA Argus that will enable her crew to keep in touch with family and friends. We are looking forward to seeing how it performs at sea for the first time on a naval vessel."

RFA Argus performs several important roles for the UK armed forces, including being their primary casualty-receiving ship, equipped with a 100-bed hospital in times of conflict. It is also a training vessel for military helicopters operating at sea.

Polish rail to gain advanced communications standard

The Future Railway Mobile Communication System (FRMCS), an advanced communications standard meant to replace the currently used GSM-R system, may soon be on its way to Poland.

Transportation solutions company Alstom, Ericsson, NetWorkS!, the largest provider of radio access network solutions in Poland, and the Polish Railway Institute, have signed a letter of intent regarding the implementation and testing of FRMCS in Poland.

The main goal of FRMCS is to increase the capacity of existing railway networks and optimise their costs of operation. It has been designed by the International Union of Railways, in cooperation with key representatives of the railway sector, and, it is claimed, represents an important step towards the full digitalisation of rail transport.

The partners will engage in joint research and development projects, verify requirements and solutions in actual railway conditions, and create and develop training models and certifications for the FRMCS system. Alstom will provide a modern control subsystem for vehicles; Ericsson will provide a radio telecommunications network for the FRMCS pilot implementation; and NetWorkS! will provide competences in telecommunications solutions for the railway sector, as well as the construction and maintenance of the FRMCS test network. The Polish Railway Institute will provide the necessary research infrastructure where the FRMCS system will be tested.

DSIT awarded £7.8 million to boost open and intelligent RAN systems

The Department of Science, Innovation and Transport (DSIT) has awarded a £7.8 million research grant to a University of Surrey-led project to boost the development of open and intelligent Radio Access Network (RAN) systems in the UK.

The project, 'Highly Intelligent, Highly Performing RAN (HiPer-RAN),' will address crucial challenges in software automation and efficiency to help the UK innovate its mobile telecommunications infrastructure and experience measurable performance gains.

HiPer-RAN focuses on DSIT's 'Radio Intelligent Controller (RIC) and other Radio Access Network Software Automation' challenge of the Open Networks Ecosystem Competition. The project will develop an open platform which will host diverse software-based intelligence accounting for the HiPer-RAN innovations across the whole RAN architecture (from the higher layers of the architecture down to the physical layer) and will deliver measurable benefits at a system level.

The HiPer-RAN consortium consists of 5G/6G Innovation Centre, University of Surrey; AWTG Ltd; British Telecommunications plc; Juniper Networks; Keysight Technologies UK Ltd; Lime Microsystems; VIAVI Solutions UK Ltd; and Virgin Media O2 Ltd.

"HiPer-RAN is an ambitious project that will strongly contribute to the diversification of the UK's RAN technology marketplace and will deliver significant, measurable and diverse performance gains across a wide range of requirements and use cases by accommodating innovation across all aspects of the RAN design," said Regius Professor Rahim Tafazolli, founding director of the 6G and 5G Innovation Centre at the University of Surrey. "The HiPer-RAN consortium consists of organisations with a strong and complementary expertise in the field that brings together their prior product development and research outcomes with the ambition to play a leading role in the development and adoption of Open-RAN technologies, supporting the UK's leading role in the field."

The project will create an efficient, secure, and scalable Open RIC for mobile networks, compatible with various software providers. It will undergo thorough interoperability testing and be designed to handle growing data, user numbers, and network components.

Managing a mobile network's energy use involves multiple factors across the RAN architecture – from the energy efficiency of the RIC itself down to the flexibility, implementation properties (e.g., software/hardware), and capabilities (e.g., number of antennas, algorithms) of the physical layer. To address these issues, HiPer–RAN aims to develop a RIC-aware physical layer framework capable of using intelligence to explore related interplays. This will offer high performance, energy efficiency, and low-latency operation. The project will use the University of Surrey's software-based physical layer processing architecture, connecting it to the flexible radio units (O-RUs, the hardware that sends and receives radio signals) that Lime Microsystems will be developing. This will enable the team to identify power consumption and performance trade-offs and quantify the energy savings the developed RIC can offer.

HiPer–RAN will develop a cybersecurity framework and demonstrate that the developed RIC can withstand common external malicious attacks. The team will develop a hybrid intrusion prevention/detection system that will monitor the signals of RIC and related components such as xApps and rApps, flagging or preventing malicious signals based on known patterns or signatures.

To provide comprehensive RIC solutions, HiPer-RAN adopts a holistic approach. Unlike traditional methods that isolate RIC from the overall Open-RAN architecture, HiPer-RAN considers the entire system, from high-level architecture to physical layers, aiming for practical improvements.

Single Digits launches OpenWiFi network for Ronald McDonald House Charities

Single Digits has announced the successful deployment of an OpenWiFi network at the Ronald McDonald House Charities (RMHC) of Greater Charlotte.

"The Single Digits Wi-Fi network deployment process was exceptional. We're grateful to collaborate with forward-thinking organizations like them to significantly enhance our ability to provide comfort and convenience for the families we serve," said Vicky Seksinsky, representative office administrator at RMHC of Greater Charlotte. "Staying connected with loved ones is paramount during a stay, and our new OpenWiFi network enables children and their families to do just that."

The open source-based WiFi network supports RMHC's mission to embrace families of sick or injured children by providing the comfort and support of home during their greatest time of need. RMHC of Greater Charlotte's mission aligns with Single Digits' commitment to creating connected experiences that enhance the quality of life. This WiFi deployment will offer families seamless internet connectivity, ensuring they can stay in touch with loved ones and access vital information during their stay.

Leveraging community-driven OpenWiFi architecture to enable part multivendor, managed WiFi networks, Single Digits integrates its managed services through The Connected Life Platform. The program facilitates the easy installation and zero-touch provisioning of access points from Edgecore and NetExperience's cloud controller, resulting in an efficient and effective setup process for RMHC of Greater Charlotte.

Q&A

**Kelvin Chaffer,
CEO,
Lifecycle Software**

Who was your hero when you were growing up?

I am - and have always been - a huge sports fan. Growing up, my hero was Bryan Robson - a phenomenal English football player. Bryan was an absolute powerhouse who embodied leadership and resilience. His will to win, perseverance, and his dedication to his team certainly shaped my approach and commitment to the teams I've had the pleasure to lead over the years.

What was your big career break?

22 years ago, I entered a work placement opportunity with Lifecycle Software as part of my university course - and I have never looked back. As I Initially wanted to be an accountant, I walked the path of a software developer. I fell in love with making the products and that processes to create solutions that made the user's life easier. Following on from this I then joined Lifecycle Software. Starting in 2001 as a software developer, I worked hard and climbed the ranks, embracing various roles within the company including development director, chief operating officer and

> "The joy of creating, the satisfaction derived from bringing something tangible to life, and the sense of accomplishment that comes with it align with my passion for creating things. The satisfaction of creating something is key"

today, I'm humbled and proud to say that I've become the CEO of this amazing company that has been my professional home for so long.

What did you want to be when you were growing up?

I was extremely sport-focused growing up and at school, and played football and boxing at a high level. I always had an ambition of pursuing boxing and dreamed of being in the Olympics, but due to some injuries and challenges I had to pull back and go focus on my education and look for other career paths. I fostered a love of statistics and R&D and decided to explore this path. Life takes unexpected turns, and I'm grateful for the opportunities and experiences that have brought me to where I am today.

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

The decision to dine with any famous person would undoubtedly be difficult as there are so many remarkable individuals to choose from. However, three figures that stand out prominently in my mind are Elon Musk, Nelson Mandela, and Mohammed Ali. Elon Musk, a visionary entrepreneur and innovator, has made groundbreaking contributions to various industries always looking to be on the edge of innovation he inspires me to take this mindset within my own business. Nelson Mandela, a symbol of resilience and peace, played a pivotal role in the fight against apartheid and promoting reconciliation in South Africa. As for Mohammed Ali, I love boxing and his determination inside and outside the ring was inspiring.

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

Be curious, and don't be afraid to ask questions. I want to learn and enable others to learn. There are no stupid questions, and not being afraid to ask opens up the conversation to both yourself and others in the room. Encouraging open discussions through questioning contributes to a collaborative and supportive environment, where individuals feel empowered to share their knowledge and perspectives. In order to be on the edge of innovation you need to be open minded and explore all ideas no matter how small or how out there they seem at first. All ideas are good ideas as they speak conversion, debate and in the end support innovation.

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

If I were to transition to a different industry, I would probably gravitate towards manufacturing. The joy of creating, the satisfaction derived from bringing something tangible to life, and the sense of accomplishment that comes with it align with my passion for creating things. The satisfaction of creating something is key.

The Rolling Stones or the Beatles?

The Beatles! The Beatles hold a special place in music history. They were pioneers of various musical styles, constantly pushing boundaries and experimenting with new sounds. Their message of love, peace, and social change resonated with millions around the world. Even today, their music is like a time machine that takes us back to the good old days. It's incredible how their songs still resonate with people of all ages.

What would you do with £1 million?

I'd share it with those closest to me, and we'd enjoy it all together! Together, we'd make the most

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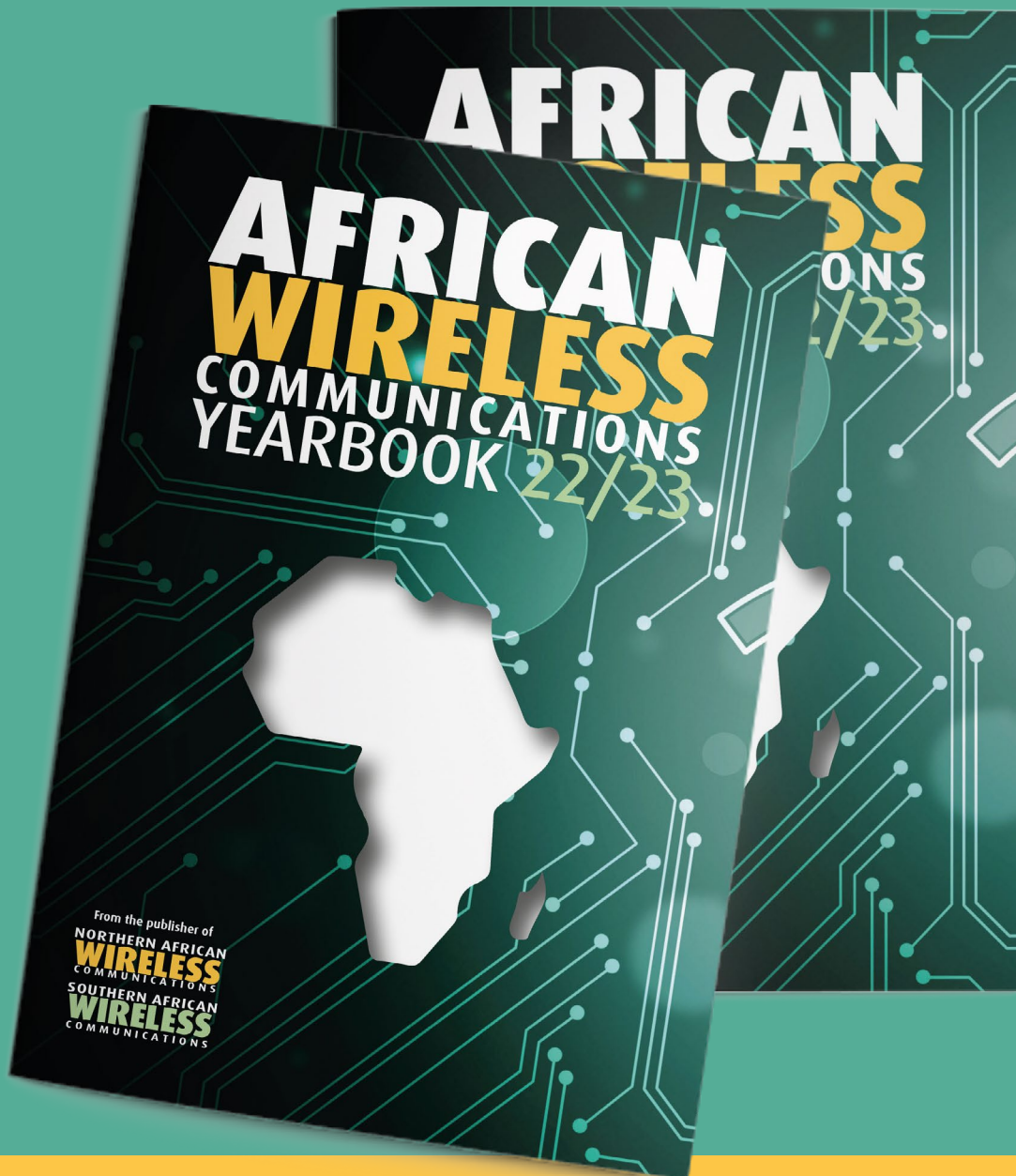
of the unexpected windfall, cherishing the experiences and moments money can never buy. I'd also allocate a portion to support meaningful charitable causes.

What's the greatest technological advancement in your lifetime?

The mobile phone is the greatest technological advancement in my lifetime. Witnessing the evolution from basic cell phones to our powerful smartphones demonstrates how far we've come. The shift from bulky personal computers to handheld devices with more processing power than the technology that once took humans to the moon is a remarkable testament to progress. I think I speak for a lot of people when I say I don't know what I would do without my phone. ■