For communications professionals in north, west, east & central Africa

NORTHERN AFRICAN WIRELESS COMMUNICATIONS

FEBRUARY/MARCH 2021 Volume 19 Number 6

- Satellite: a thing of the past or technology for the future?
- The growing importance of FWA and Wi-Fi on the move
- Sanjeev Verma of Squire Technologies on mobile fraud

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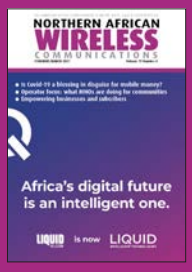

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CONTENTS

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EDITORIAL:
Editor: **Robert Shepherd**
Designer: **Sean McNamara**
Sub editor: **Gerry Moynihan**
Contributors: **Martin Jarrold, Shashank Pawar, Robert Koldys, Sanjeev Verma, Kamal Mokrani, Pieter de Villiers**

Editorial enquiries:
roberts@kadiumpublishing.com
Tel: +44 (0) 1932 481729

ADVERTISEMENT SALES:
Sales: **Kathy Moynihan**
kathym@kadiumpublishing.com
+44 (0) 1932 481731

Production & circulation: **Suzanne Thomas**
suzannet@kadiumpublishing.com
Tel: +44 (0) 1932 481728

Publishing director: **Kathy Moynihan**
kathym@kadiumpublishing.com
+44 (0) 1932 481730

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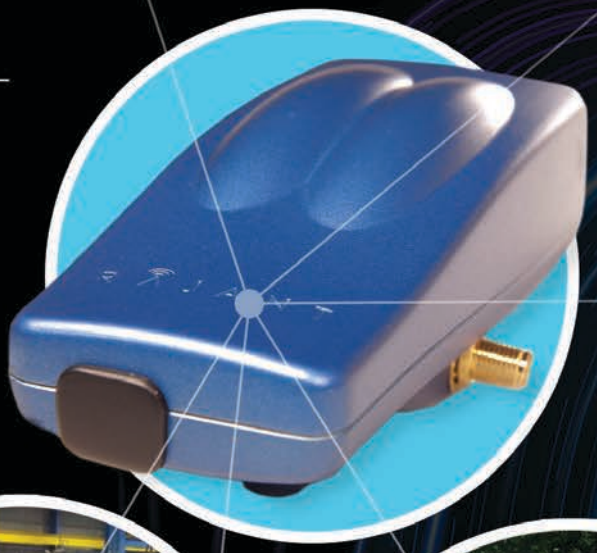

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RAJANT

Connecting Europe with Africa

EllaLink, the firm behind the 6,000km optical submarine cable linking Europe and South America, said it will also connect Portugal and Morocco in a similar fashion.

The company said it has "completed the marine installation of the lowest latency transatlantic cable system between Europe and Latin America." By extension, the established infrastructure will allow for establishing a sub-nautical cable connecting Europe and Morocco.

EllaLink chose Infinera and its ICE6 800G technology to run its network. This technology will provide a transmission capacity of 100 Terabits per second (Tbps) between Portugal and Brazil, reducing latency by 50% to below 60 milliseconds.

"I am proud to announce that we have successfully completed the 6,000 km submarine cable installation, providing EllaLink with the robust system it needs to support the network through its lifetime," said Diego Matas, chief operations officer at EllaLink. "Infinera's ICE6 solution is an ideal fit for us, outperforming other available 800G equipment. Coupled with our differentiated fibre routes, Infinera and ICE6 will provide us the means to offer our customers advanced products and services from day one, in May 2021."

EllaLink chose Infinera and its ICE6 800G technology to run its network. This technology will provide a transmission capacity of 100 Terabits per second (Tbps) between Portugal and Brazil

Nick Walden, senior vice president, worldwide sales, Infinera, added: "Deploying Infinera's 800G solution on EllaLink's new network will provide a superior networking experience to their customers when connecting between Europe and Latin America "Infinera's open optical solution will enable EllaLink to offer new and differentiated services, helping to ensure their customers receive the highest level of service.

Algerian minister says '5G is not a priority'

Algeria's Post and Telecommunications Minister Brahim Boumzar has said fifth generation mobile technology, or 5G, is not among his department's immediate priorities.

In an interview with Alger Channel 3 radio on Sunday (March 14), he said the ministry is currently focused on providing good 4G to Algerians.

"We work pragmatically. Our current facilities are 5G Ready. When the time is right, we will launch 5G," he said. "When did we launch 4G? Between 3G and 4G there hasn't been a long time. Operators should also be able to amortise their investments. For the moment the main thing is to offer a respectable flow to our citizens. First, we have to offer good 4G and when the time is right we can move on to other generations."

Following the launch of 3G in 2013, Algerians started accessing 4G three years later. However, in 2021 national 4G coverage is still disappointing. Consumers have complained about the poor quality of service. Operators Mobilis, Djezzy and Ooredoo were also fined in September 2020 for their part in failing to reach certain standards.

Boumzar refuses to embark on a technological race that will not benefit consumers. He said he fears that a switch to 5G, while 4G coverage remains weak, will accentuate the digital divide in the country and undermine the government's ambitions for transformation 2.0.

TheAngle and ABS extend partnership in MENA region

Satellite operator ABS and specialised network integrator TheAngle have extended their partnership in the MENA region, serving customers across the ABS' MENA coverage at 75 degrees East.

The expanded and upgraded services focus on the provision of secure and reliable communications services for government, military institutions and energy companies - oil and gas. For such industries, satellite remains strategic and the preferred solution to ensure quality communications, notably from/to remote locations and offshore facilities.

In general demand for satellite services in the MENA market remains robust, driven by increased activities in the traditional verticals of corporate data services and governmental applications, key applications carried over ABS satellites and TheAngle networks.

"This renewal and expansion of MENA capacity on ABS-2 confirms the trust that TheAngle has in ABS, as its strong and reliable partner, to support the growth of its business and customer base with the most adapted and bespoke service solutions," said Paolo Pusterla, managing director of EMEA for ABS.

Hassaan Karim, general manager of TheAngle added, "Our extensive knowledge of the region, coupled with ABS' solid service offerings, enable us to provide attractive and flexible offerings to meet with satisfaction even the most challenging communications requirements of our customers."

South Sudan launches first ever 4G internet bandwidth

South Sudan has introduced its first ever 4G internet service that will boost connectivity in a country that previously relied on 3G broadband width since winning independence from Sudan in 2011.

Baba Medan Konyi, deputy minister of information and broadcasting, welcomed the launch of 4G internet services by Zain telecom services and said it resulted from concerted efforts of the government and Zain over the past years.

"It's the right time to have 4G internet since government is implementing the peace agreement, it will make communication easy among the people as we are going to disseminate messages of peace across the country," said Konyi during the launch in the capital, Juba.

He added that the government will provide security to all mobile operators to ensure improved internet service in the country.

Khalid Abdalla, chief executive officer of Zain South Sudan, said the company is committed to delivering the highest standard customer experience. "We are delighted in making the best network in South Sudan even better," he said. "The 4G internet broad bandwidth places South Sudan among countries offering advanced mobile data services." Abdalla disclosed that they will be working closely with government institutions to roll out 4G internet services.

He added that Zain will migrate its customers to the latest digital technology, with 4G also set to bolster the mobile experience of 3G services by adding additional capacity. However, no timeframe was given.

Nexign helps CSPs

Nexign, the business support system (BSS) and Internet of Things (IoT) solutions provider, has completed the large-scale digital transformation project that addresses the challenges of CSPs globally, including the Middle Eastern and African regions.

The company claims that technologies and methodologies introduced in the Unified Billing project help CSPs of any size reduce TTM for new digital services by up to five times, simplify cooperation with partners and optimise costs for support of billing systems.

Having completed the Unified Billing project for MegaFon –provider of digital opportunities that operates in Russia, Tajikistan, the Republic of Abkhazia and South Ossetia – Nexign said it has proven it can bring measurable value to CSPs' business and help them facilitate transformation.

The need to go beyond classical telecom services pushed MegaFon to rebuild the billing core and develop a unified billing system for all its subsidiaries. The joint team of Nexign and MegaFon gradually moved eight operators' subsidiaries to a single BSS.

"Since CSPs in the Middle East and Africa are looking for the way to streamline digital transformation processes, it is clear that unified and centralized product management, as well as technologies like microservices and methodologies like Fast Track are in huge demand in the market," said Hassen Hamza, business development manager of Nexign.

Outages affect WIOCC clients across Africa

The West Indian Ocean Cable Company (WIOCC) said its network operation centre (NOC) reported interruptions to numerous client services between Djibouti and Marseille, on the SEA-ME-WE 5 subsea cable, disrupting voice, data and internet across Africa February 16.

WIOCC's team began carrying out restoration solutions on alternative routes for those customers most in need and WIOCC completed its restoration solutions by Friday 19.

However, by February 21, WIOCC's NOC again witnessed multiple client services go down on the route between Djibouti and Marseille, this time caused by a problem on the Europe India Gateway (EIG) subsea cable. In addition to cutting some of the client services that had been restored from SMW5, the issue also affected a further set of clients across eastern and southern Africa.

WIOCC staff worked through the weekend to agree and deploy restoration of client services.

Kenyan auditor raises concerns over fibre optic network management

Kenya's auditor general has voiced concerns over the country's National Fibre Optic Backbone (NOFBI) project over nebulous tendering processes.

In 2018/2019, the State Department of Information, Communication and Technology (ICT) paid Chinese tech giant Huawei Sh1.7bn for the construction of the second phase of NOFBI. Nancy Gathungu said the taxpayers' resources could have been lost in the project.

However, she added that there are no details in respect to the date the payments were made or who authorised the Exim Bank to release the payments. In the report for the State Department of ICT covering the year ended June 2019, Gathungu said the project lacks crucial documentation over its financing and management.

"Although the financing agreement indicated the government would sell out excess capacity commercially to the public and bill them to finance the loan repayment, there has been no billing done for the last five years it has been in operation," she said in her report.

In 2018/2019, the State Department of Information, Communication and Technology (ICT) paid Chinese tech giant Huawei Sh1.7bn for the construction of the second phase of NOFBI

The service provision framework deal with other internet service providers has not been implemented, with no records provided detailing users and the amount payable by each.

"The government has therefore been funding the operations of commercial entities without recovering the cost, which amounts to lack of prudent use of public resources," added Gathungu.

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Safaricom launches commercial 5G network in Kenya

Safaricom has partnered with gear-makers collaboration with Huawei, Nokia and Samsung to unveil its 5G network in Kenya.

Company chief executive officer Peter Ndegwa said the new technology will allow organisations to venture into areas such as telemedicine, online gaming, virtual tourism and digital education.

"Safaricom is proud to be pioneering this technology in Kenya," he said. "This places Kenya on the global map in leading the way in enabling connectivity through investment in the 5G infrastructure. The next phase on our journey is to become a purpose led technology company and continue driving innovation and we expect to go into ecosystems such as health, education, agriculture, financial services and enabling SME's using technology."

Ndegwa added that the 5G network will allow an era of intelligent connectivity and will be a key driver of this strategy.

Kenya's cabinet secretary of information, communication and technology, Joe Mucheru added that the move has ushered in the 4IR by providing faster connectivity to business and individuals alike.

The 5G network will be available in Nairobi and Kisumu before being rolled out nationally.

TE and Libyans discuss joint cooperation

A high-level delegation from the Libyan International Telecommunication Company (LITC) met with Telecom Egypt (TE) to discuss ways of joint cooperation in the field of international communications and the transfer of communication traffic between the two countries.

Adel Hamed, managing director and CEO of Telecom Egypt (TE) received a team headed by the LITC's chairperson Adel Abu Faris and the two sides discussed ways of joint cooperation in international connectivity, including data and voice services.

According to Egyptian media, Hamed emphasised that raising the efficiency of the trans-boundary terrestrial network is of strategic importance for international connectivity with neighbouring countries.

This Egyptian-Libyan cooperation will be reflected in improving the performance of international telecommunications services. It will also benefit from the TE's submarine cable infrastructure which extends around the world, and the transfer of international traffic to Libya.

Reports said Hamed further stressed that the coming period will witness the provision of more communication services that serve the two peoples in the first place and the African continent in general. This comes after the company's initiative to launch the HARP maritime system, which will link Africa with Europe.

Expresso Senegal finally gets green light from telecom regulator for 4G

Mobile operator Expresso Senegal, a subsidiary of Sudanese Sudatel, has finally received the green light from the telecom regulator to launch 4G.

The agreement, which follows months of drawn-out negotiations, was signed last February 26, 2021, when a delegation of the Sudanese telecom group arrived in the west African nation. Led by Magdi TAHA, CEO of Sudatel, the delegation was granted an audience by president Macky Sall.

"Thanks to a balanced electronic communications sector, the launch of 4G by Expresso Senegal is a great leap in the promotion of digital technology as a growth driver," the regulator said.

Expresso obtained the 4G license a few days after the telecom regulator issued a formal notice to the company, accusing it of insufficient investment in its network. The regulator even threatened to withdraw the company's operating license.

The operator initially announced 4G for March 31, 2020, but the Covid-19 pandemic disrupted plans. It joins Tigo and Orange, which have already launched the technology in Senegal. Expresso wants to rebuild its customer base, which has been declining in recent years.

Expresso obtained the 4G license a few days after the telecom regulator issued a formal notice to the company, accusing it of insufficient investment

Meanwhile, Morocco and Senegal have agreed to cooperate in the ICT and digital economy sectors. An agreement was signed to this effect on Monday, April 5 between the Moroccan Minister of Foreign Affairs and International Cooperation, Nasser Bourita, and Aissata Tall Sall, the Senegalese Foreign Minister. This happened at the inauguration of the consulate general of Senegal in the city of Dakhla.

Tunisia launches first home-made satellite

Tunisia has launched its first satellite, "Challenge 1", from Kazakhstan on board Russian Soyuz rocket 2.

The unmanned rocket took off from Baikonour Cosmodrome, carrying 37 other satellites from 17 other countries including Saudi Arabia, Japan, Germany and South Korea. President Kais Saied attended the launching from Telnet Holding office, the Tunisian company designer of the spacecraft.

Saied congratulated Telnet and indicated that Tunisia lacks nothing except a strong national will and that its objectives are purely national and unwavering. Challenge 1, which was launched Monday, March 22 is the first entirely made in Tunisia satellite. Once in orbit, Challenge 1 will focus on the "Internet of Things".

Tunisia said it hopes to launch 20 more in the next three years.

The African space market is now worth over US$7bn annually, according to the website Space in Africa, which reports that it "is likely to grow over 40% in the next five years".

Libya seeks help from international partners to rebuild telecom sector

Libya wants to regain the dynamism of its telecom sector, destroyed during the 10 years of civil war, by increasing the number of collaboration requests with international partners.

Through the Libyan Post, Telecommunications and Information Technology Company (LPTIC), the country wants to take advantage of British expertise to develop its national telecoms sector.

Faisel Gergab, chairman of LPTIC and Lydie Sheehan, country director for UK trade relations in Libya and Tunisia, discussed options in a meeting. Gergab affirmed that "LPTIC seeks to benefit from the expertise of British companies to develop the telecom sector and expand investments in the country in accordance with the company's 2021-2023 strategic plan".

Libya wants to regain the dynamism of its telecom sector, destroyed during the 10 years of civil war

The exchanges initiated by the LPTIC with the British come a few weeks after similar discussions with the US. On that occasion, Gergab spoke with Daniel Liss, the commercial attaché of the Embassy of the US, Debbie Hirst, the director of the American Chamber of Commerce in Libya (AmCham Libya) and a group of companies US telecom and technology companies interested in investing in Libya.

Developing the national telecom sector will help the LPTIC restore the network; improve people's access to telecom services, especially broadband and reposition the sector as a source of wealth and jobs.

Meanwhile, Swedish gear-maker Ericsson is partnering with LPTIC to deploy the Ericsson Educate learning program in Libya and build digital skills among university students.

MTN Uganda and NITA launch health app

MTN Uganda in partnership with the National Information Technology Authority Uganda (NITA-U) have unveiled an app that will be used for geo-fencing and tracking Covid-19 patients that are under home-based care.

E-pass is intended to help the Ministry of Health track and geo-fence the movement of patients under home based care thus reducing the number of non-critical patients that get admitted in hospitals.

Speaking at the launch of the app, MTN Uganda general manager for MTN Business, Ibrahim Ssenyonga, said the new app will go a long away in helping the government and the country to better manage resources as non-critical patients can now be monitored from their locations of isolation.

"This new app will alert the ministry of health designated officials, in case a patient under surveillance goes outside of the planned location boundaries," Ssenyonga added. "That way, the ministry can minimize further spread, but also be able to locate some of the contacts in the areas where the patient might have veered off to."

E-pass is intended to help the Ministry of Health track and geo-fence the movement of patients under home based care thus reducing the number of non-critical patients that get admitted in hospitals

Development of the app which lasted about four months cost Shs460million with package including 400 smart phone handsets which will have been installed with the app and will be used for monitoring.

NITA-Uganda executive director Hatwib Mugasa said the solution as it will serve as a game-changer in the management of the global pandemic.

"We are very proud because of the local capacity we have to quickly develop an app of this kind that will change the way we manage the Covid-19 pandemic in the country," he said. "This coming at a time when the vaccine is already in the country is a big boost in government efforts to curb and minimise the spread of the pandemic."

MTN Uganda played a huge role in supporting government in the fight against Covid-19, contributing over Shs2bn in various interventions throughout 2020.

Meanwhile, MTN Uganda has updated its youth brand Pulse with a new campaign called Pulse Nation. First launched in 2018, Pulse offers customers discounts on voice and data bundles and deals and discounts with partners like Great Burgers, Jumia, Twambale and Rolex chic.

Safaricom and Nokia

Finnish gear-maker Nokia has collaborated with African operator Safaricom to provide the first 5G commercial services in Kenya. The first such service in east Africa will use 5G Single Radio Access Network (SRAN) technology and 5G FastMile gateways to enable ultra-fast Fixed Wireless Access (FWA) services to subscribers across Kisumu and the western province of the country. Nokia president Pekka Lundmark said the company is committed to working with Safaricom to "transform the communications landscape in the country".

Egypt issues 21 rights

Egypt's National Telecom Regulatory Authority (NTRA) issued a list of the 21 most important consumer rights to which telecommunications companies operating in the Egyptian market must oblige. The list is divided into three categories of receiving communication services, with the aim of educating users on their rights when subscribing to the service, using it and paying for it. Furthermore, the list also includes financial obligations that companies must adhere to, such as shipping, bills and monitoring consumption.

TGS buys K3

Telecel Global Services (TGS) has acquired K3 Liberia, an internet service provider that provides FTTx, SD-WAN and fixed wireless technology services. TGS is a B2B/B2G provider with voice, data, SMS, SMS firewall and integrated cybersecurity services serving network operators, OTT's and wholesale operators globally. K3 Liberia Telecom is the nation's largest licensed ISP specialising in the deployment of fixed wireless technology to deliver voice, data, cloud hosting and content services to the under-served enterprise, SMB, education, healthcare, and public sectors. K3 is headquartered in Monrovia.

Talking satellite

Martin Jarrold, chief of international programme development, GVF

'Zoom'ing in on a Global Digital Ecosystem

In my last column published here I began with the words "The Digital Divide remains despite years of debate about solutions to bridge it." I was reflecting on the opening statement of the pre-event description for a dialogue in the GVF Webinar Series, organised in association with the Satellite Evolution Group (https://www.satellite-evolution.com/).

In this contribution I would like to draw attention to a discussion facilitated by another of GVF's webinars to consider the problem of a variation, or rather an extension, of that divide... A divide with consequences and implications far beyond those encompassed within the usual framework of discussion about inadequate access to the technologies and services of modern digital communications... This is what I describe as the digitisation divide.

What is the digitisation divide? The GVF webinar Global Transitions: Digital Economy, Digital Infrastructure, Connected Communities, Digital Planet set out to explore this with the help of representatives of two GVF members, Isotropic Networks and Telstra, joined by the Coordinator of the Digital Transformation Task Force of the United Nations Environment Programme (UNEP), with moderation by the Chief Technology Officer of the Satellite Applications Catapult in the UK.

Whilst the early train of thought leading to this theme originated out of the social distancing and travel restriction imperatives of pandemic lockdown, over time the initial thoughts, influenced by ideas from the UNEP, evolved into the concept of "Digital Planet".

The importance of the digital communications technologies behind our now having been forced to realise the full potential of virtual business meetings/events has been boldly underscored. Lockdown necessitated digital ways of working to allow people still to do their jobs. Extending digitisation will help recovery from the economic recession engendered by pandemic. Notions about, and gearing-up for, Digital Economy and Digital Infrastructure, are not new but a global socio-economic crisis has elevated debate about the necessity, and advantages, of far greater change than previously conceived. Though a necessary consequence of the (hopefully) limited phenomenon that is the SARS-Cov2 virus, we have undergone a profound change in the human experience, one which gives small illustration of the importance of a much more deeply rooted and strategic phenomenon: our ability to gather, analyse and disseminate that which can be digitised.

We have the potential to increasingly and more accurately understand the complexities of the world around us – natural disaster causes and consequences, manifestations and effects of climate change, monitoring environmental degradation throughout the biosphere, human action and inaction with consequences including conflict and refugee population migrations.

Communities and economies will be more deeply and widely enabled by the growing digital infrastructure. There is a much greater significance now attaching to the integration of 5G and satellite technologies into a single network of networks. Industries, businesses, people and governments worldwide, facing unprecedented challenge, will accelerate in their adoption of digitisation to both adjust to the new normal and to improve preparedness to minimise the impact of the next crisis – an impact that may again be equally as serious for, and equally intertwining of, people's economic well-being and their health.

Digitisation is not itself the end point. Whilst data gathered from a massively expanded – 5G + satellite enabled – communications infrastructure will be the vital raw material of a digitised economy and society, what matters is the mechanism and processes by which it is turned into what is today commonly called "Actionable Intelligence", often represented in the form of dashboards.

Data in the Zettabyte Age will flow in vast volumes from the tap of the Internet of Things (IoT), including devices from our own personal wireless communications (i.e., smartphones with social media, plus increasing biometrics-based data generation) to our Wi-Fi-enabled domestic appliances. All this data will only be of use when it is determined exactly what it is for. Data may be just measurement, quanta, of things, but when data is analysed it becomes information, and information is the building block of the knowledge that facilitates effective decisions and enables positive and productive action.

Data maintains financial liquidity in markets, improves creativity in maintaining and evolving supply chains, makes production of "things" more efficient using latest manufacturing technology advances, takes ideas and develops them, and builds more robust cyber security to sit alongside machine learning and artificial intelligence (AI).

5G Enhanced Mobile Broadband (eMBB), Ultra Reliable Low Latency Communications (URLLC), and Massive Machine Type Communications (mMTC), may be expanded into not just a global digital ecosystem, but a global digital ecosystem. Data will be gathered from all conceivable sources by all available technologies and processed by all available tools: satellites, drones & sensors; artificial & virtual reality; smartphone apps; open source software; blockchain & distributed databases; social media feeds; IoT; AI & machine learning; cloud & edge computing; and, other!

The "product" of this global digital ecosystem will enable more than just the formulation of Actionable Intelligence, but foster a culture of Sustainable Decision-Making that, in the context of trying to meet the Sustainable Development Goals (SDGs) and of trying to stem climate change, will be the indispensable currency of the future Digital Planet.

The webinar panellists were asked what they thought still needs to be done to guarantee a level of digitised connectivity – in developed and developing economies alike – to enable gathering of data for the World Economic Forum Stakeholder Capitalism Metrics which are designed to show how companies are doing on climate change action, biodiversity, etc., and track contributions towards the UN Sustainable Development Goals. If you want to hear their perspectives, this video recording is not to be missed.

If you want to grow your understanding of what the future of the digital Earth may be, how satellites contribute now and might be contributing 10 years from now, and understand the steps needed now to create a pathway to this future visit *https://gvf.org/webinars/.*

Liquid Telecom unveils its new identity – Liquid Intelligent Technologies, as it expands to a consolidated technology group

29 March 2021 – Liquid Intelligent Technologies, a pan-African technology group, today announces the culmination of its extensive business transformation from being a telecommunications and digital services provider to a full one-stop-shop technology group through a group-wide rebrand.

Over the last two decades, Liquid has firmly established itself as the leading pan-African digital infrastructure provider with an extensive network spanning over 73,000 KM. This rebrand to Liquid Intelligent Technologies highlights the organisation's expansion of its Cloud business, Cyber Security services, and other technologies added to its existing telecoms and connectivity capability.

This furthers the Group's aim of accelerating growth by providing tailor-made digital solutions to businesses in the public and private sectors across the continent. This strategic rebrand reflects Liquid's new digital-first product offerings, enabling employees and customers to interact with each other digitally irrespective of the time or location.

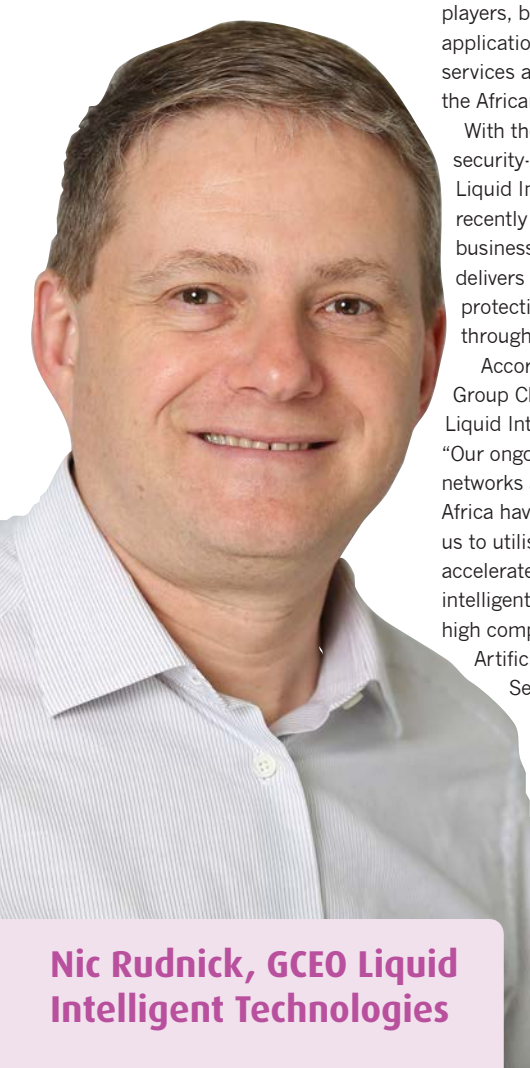
By aggressively expanding into new countries, including Nigeria and the Democratic Republic of Congo, Liquid Intelligent Technologies is bringing its award-winning high-performance network connectivity closer to more people and accelerating the development of the digital workplace.

Liquid Intelligent Technologies will expand its Managed Services offerings to drive and ensure successful adoption of tools to re-imagine their customers' businesses and how they work and connect. Whether they are focused on enabling collaboration or utilising the most advanced cloud applications.

As a Microsoft Gold Partner, Liquid Intelligent Technologies is redefining Network, Cloud and Cyber Security offerings through strategic partnerships with leading global players, bringing innovative business applications, intelligent cloud services and world-class security to the African continent.

With the future of network security-driven from the cloud, Liquid Intelligent Technologies' recently launched its Cyber Security business unit, which uniquely delivers security at its core, protecting your business's data throughout its lifecycle.

According to Nic Rudnick, Group Chief Executive Officer, Liquid Intelligent Technologies, "Our ongoing investment in our networks and data centres across Africa have uniquely positioned us to utilise our infrastructure to accelerate the availability of new intelligent technologies including the high computing power of the Cloud, Artificial Intelligence and Cyber Security to our customers. We are now excited to be executing our vision of bringing new technological opportunities to the market with a highly differentiated product set supported by our existing infrastructure and digital innovation."



Nic Rudnick, GCEO Liquid Intelligent Technologies

LIQUID INTELLIGENT TECHNOLOGIES

Liquid Intelligent Technologies is a pan-African technology group with capabilities across 14 countries, primarily in Sub-Saharan Africa. Established in 2005, Liquid has firmly established itself as the leading pan-African digital infrastructure provider with an extensive network spanning over 73,000 KM. Liquid Intelligent Technologies is re-defining Network, Cloud and Cyber Security offerings through strategic partnerships with leading global players, innovative business applications, intelligent cloud services and world-class security to the African continent. Under its new brand identity, Liquid Intelligent Technologies has eight business units,namely: Liquid Networks, Liquid Business, Liquid Sea, Liquid Cloud, Liquid Cyber Security, Liquid Home, Liquid Innovation and Liquid Satellite. Liquid Intelligent Technologies is now a full one-stop-shop technology group that provides tailor-made digital solutions to businesses in the public and private sectors across the continent. The Group also operates state-of-the-art data centres in Johannesburg, Cape Town, Nairobi, Harare and Kigali, with a combined potential 19,000 square metres of rack space and 78 MW of power.

www.liquid.tech

Somalia hands first mobile money licence to Hormuud Telecom

Somalia's central bank awarded the country's first mobile money licence to Mogadishu-based Hormuud Telecom Somalia, a move aimed at formalising the country's digital payments system and integrating it with the global financial system.

The operator, which began operating in Somalia in 2002, has approximately 3.6 million subscribers in the country. The Horn of Africa nation has a population north of 15 million people, while some three million people use its mobile money platform EVC Plus.

The latter will now be subject to central bank regulation, which should boost confidence in the country's mobile money system, the governor of the monetary authority said in a statement.

"In formalising our existing digital payments infrastructure, we are accelerating the integration of Somalia's financial system into the global economy," Abdirahman Mohamed Abdullahi said.

More than two thirds of all payments made in Somalia are via mobile money platforms, according to Hormuud Telecom. The licence will help the country move towards becoming a cashless economy and tackle widespread counterfeiting.

"The news today cements what we've known for a long time, that Somalia is moving towards being the world's first truly cashless economy," added Ahmed Mohamud Yuusuf, Hormuud Telecom's chief executive.

Approximately 155 million mobile money transactions, worth US$2.7bn, are recorded in Somalia per month, according to a 2018 World Bank report.

Although conflict continues to disrupt the country, the telecom sector, dominated by the competitive mobile sector where seven networks compete for customers, has flourished.

More than two thirds of all payments made in Somalia are via mobile money platforms, not least due to counterfeiting. This licence award could encourage that trend and analysts have predicted that Somalia could soon become a cashless society – maybe even the world's first.

Somtel launches IPO

Somaliland's Somtel has begun its initial public offering (IPO) and interested parties can acquire a minimum of 20 shares for US$100 each.

The operator largely serves the enterprise sector across Somalia as well as the autonomous regions of Puntland and Somaliland, offering fixed and mobile services. Additionally, it holds a stake in the DARE1 (Djibouti Africa Regional Express 1) cable system.

It is understood that in addition to the minimum amount of 20 shares, investors will have their purchases capped at 1000 shares.

"With this injection of capital, Somtel is well-positioned to take advantage of new opportunities in the telecoms sector in the Horn of Africa, enhancing the lives of millions of customers whilst enabling businesses to achieve their full potential in a new digital future," said Abdirashid Duale, chief executive officer of Somtel's UAE-based parent company Dahabshiil Group. "Somtel will also, of course, be generating many more jobs."

However, without regulation requiring a company to reveal financial data as well as the number or percentage of shares being offered to the public, Dahabshiil could potentially offer an infinite number.

MTN Nigeria targets $489m on the local capital market

MTN Nigeria is seeking US$489m on the local capital market and has launched a new commercial paper program to achieve its goal.

Series three and four commercial paper issuance (the issuance or the offer) are being arranged by Chapel Hill Denham Advisory, the operator said.

The repayment period for the series three debt is 180 days while that of the series four debt is 270 days, the telco added.

This new commercial paper issue initiated by MTN Nigeria follows that in May 2020, also arranged by Chapel Hill Denham Advisory.

The proceeds of the offering will be used for MTN Nigeria's working capital and general corporate purposes, MTN Group said. In its 2020 financial report, the telecom group said its Nigerian subsidiary's operating expenses amounted to nearly US$2bn, up 29.02% compared to 2019.

Meanwhile, MTN Nigeria has acquired additional 10MHZ spectrum in the 800MHz band from Intercellular Nigeria. This was disclosed in a press release by the company, where it was also revealed that the transaction had been signed by the Nigerian Communications Commission (NCC), and the frequency had been assigned to the operator.

The 800MHz spectrum is a technology developed to enhance service delivery and also overcome the challenges and costs of digging trenches and right of way issues.

MTN Nigeria has launched a new unified customer engagement platform, EnGauge, designed to enable small-to-medium enterprise business owners to seamlessly administer transactions with customers, potentially increasing their productivity significantly. It was developed in partnership with the fast-growing African start-up, Ajua.

Ethiopia 'could scrap sale' if offers are too low

Ethiopia has a set amount it expects to receive from the part-privatisation of the country's telecom sector and could scrap the process if bidders fail to meet the target.

According to reports, three independent teams have calculated the value of two new licenses that would compete with state monopoly Ethio Telecom, Eyob Tekalign, the state minister responsible for the privatisation process, told reporters. He said that has given the government an amount it is looking to raise from the sale, without giving figures.

"If we get the value we expect from the bidding process, we will go ahead," Tekalign said. "If not, we will have another look."

It is also the first time an Ethiopian politician has publicly cast doubt over the much-anticipated liberalisation of the telecom industry, a move that would jeopardize a broader privatisation plan announced by the country's prime minister Abiy Ahmed in mid-2018.

The strategy had a range of goals: to shore up reserves of much-needed foreign exchange, pay down state debt, improve telecom service and create jobs.

Tanzania joins the OAN project with fellow east African nations

Tanzania has joined the project to reduce the cost of international communications in the region, following pressure from its peers in east Africa.

The republic joins the One Area Network (OAN), adopted by member countries of the Community of East African States (CAE) for the harmonisation of call rates in the sub-region.

Kenya, Uganda, Rwanda and South Sudan already applied the new international mobile roaming tariffs indicated by this initiative officially launched in January 2015.

Tanzania, five years behind its neighbours, had until the first quarter of 2021 to catch up.

In correspondence to the EAC secretariat, Stephen Mbundi, the permanent secretary of the Tanzanian Ministry of Foreign Affairs, told the sub-regional executive body that "the United Republic of Tanzania has concluded the consultations and is now ready to begin the process, implementation of the CAE roaming framework ".

The missive comes as the country was in the sights of EAC's Transport, Communications and Meteorological (TCM) Sector Council. At a meeting held from June 24 to 28, 2019 in Kampala, Uganda, Tanzania was given until March 31 this year to make a decision on the implementation of the "One Area Network". Burundi is also expected to join at a later date.

Investment company to inject US$200m in Airtel Mobile

Airtel Africa, the telecom and mobile money services provider, has signed an agreement under which The Rise Fund, the global impact investing platform of alternative investment firm TPG, will invest US$200m in Airtel Mobile Commerce BV (AMC BV).

The operator has a presence in 14 countries across Africa, while AMC BV is currently the holding company for several of Airtel Africa's mobile money operations and is now intended to own and operate the mobile money businesses across all of Airtel Africa's footprint.

Airtel Africa provides telecom and mobile money services, primarily in east, central and west Africa.

The transaction values Airtel Africa's mobile money business at US$2.65bn and The Rise Fund will hold a minority stake in AMC BV upon completion of the transaction, with Airtel Africa continuing to hold the remaining majority stake.

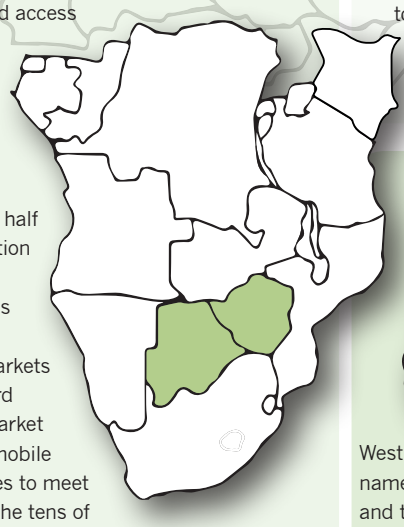
It is also the latest step in the group's pursuit of strategic asset monetisation and investment opportunities and it is the aim of Airtel Africa to explore the potential listing of the mobile money business within four years, the statement says.

The group is in discussions with other potential investors in relation to possible further minority investments into Airtel Money, up to a total of 25% of the issued share capital of AMC BV.

"There can be no certainty that a transaction will be concluded or as to the final terms of any transactions. The proceeds from the transaction will be used to reduce group debt and invest in network and sales infrastructure in the respective operating countries," the statement adds.

The Transaction is expected to reach first close over the next three to four months. From first close The Rise Fund will be entitled to appoint a director to the board of AMC BV and to certain customary information and minority protection rights.

"In line with our vision of enhancing financial inclusion, Airtel Africa offers a unique digital mobile financial services platform under the Airtel Money brand," said Raghunath Mandava, CEO of Airtel Africa. "In most of our markets there is limited access to traditional financial institutions, and little banking infrastructure, with less than half of the population having a bank account across sub-Saharan Africa. Our markets therefore afford substantial market potential for mobile money services to meet the needs of the tens of millions of customers in Africa who have little or no access to banking and financial services, and this demand is driving growth."



This transaction is subject to customary closing conditions including necessary regulatory filings and approvals, as necessary and the inclusion of specified mobile money business assets and contracts into AMC BV.

Airtel Africa is headquarted in London, United Kingdom, and is a subsidiary of Indian telecom services company Bharti Airtel. The former's subsidiaries, include Airtel Kenya, Airtel Uganda and Airtel Malawi.

Orange hires NuRAN for connectivity push

Orange DRC has penned a 10-year deal with Canadian vendor NuRAN Wireless to help expand its rural coverage across the Democratic Republic of Congo (DRC).

Under the terms of the agreement, focused on NuRAN's Network as a Service (NaaS) offering, with the latter constructing and running 2000 new towers across the next 40 months. The towers will allow French giant Orange to provide 2.75G services and meet pent-up demand, with a particular focus for rural communities with populations around 5,000.

The towers fall into one of four categories depending on population density and coverage requirements. Nuran's technology uses a carrier-grade GSM base station powered by solar as part of a small-footprint (3 meters x 3 meters x 15 meters tall) remote tower.

"This contract is in line with our strategy to expand the NAAS business model across Africa," said Francis Letourneau, CEO of NuRAN. "This is our second significant contract in Africa and with Orange after having already previously announced our agreement with Orange Cameroon SA.

The contract will run for a minimum term of 10 years for each site, including networking equipment as well as antennas, cabling, solar power systems, towers and related installation services. This agreement features a revenue sharing structure including a minimum guaranteed monthly fee per site built for the first five years.

WIOCC names new sales manager

International capacity wholesaler West Indian Ocean Cable Company (WIOCC) has named Mwesu Vunda as sales manager, Zambia and the Democratic Republic of the Congo (DRC).

In this newly-created position, Vunda will help service providers take advantage of improvements in international connectivity services – delivered through WIOCC's unique, hyperscale network infrastructure - enabling them to provide enhanced connectivity solutions to their enterprise and consumer customers in Zambia, DRC and other neighbouring countries.

Vunda will work closely with cloud operators, content providers, local and regional Internet Service Providers (ISPs) and fixed and mobile telcos, tailoring the solutions they require to meet their customers' increased bandwidth and uptime expectations.

AFR-IX inks deal with Asteroid Mombasa IXP to boost connectivity

Global broadband connectivity provider AFR-IX telecom has signed a peering deal with Asteroid Mombasa IXP to boost its network in Africa.

This is the company's fourth IXP in the continent, adding to Cape Town, Djibouti and Lagos.

Asteroid Mombasa IXP is a major gateway for submarine fibre optic cables and is on the verge of becoming one of the main hubs for Internet traffic in east Africa.

"Today, we have added Mombasa-based Asteroid IXP to our already growing peering community across the continent as part of our extensive resilient and robust African network coverage [...] we can provide a global ICT offering, focusing on the needs of our local and regional customers," said Louis Carver, AFR-IX telecom's chief commercial officer.

The deal comes against the backdrop of the growing demand for broadband connectivity across the continent. According to Swedish gear-maker Ericsson's Mobility Report June 2020, new uses, driven by the Internet of Things, streaming video, online gaming and others, will contribute to a 28% increase in mobile data traffic in sub-Saharan Africa from 2019 to 2025.

AFR-IX telecom views the addition of Asteroid IXP - through which more than 15 east African telecom operators and Internet service providers share traffic - as a strategic move that will enable it to increase its connectivity offering.

In late 2020, presented the Barcelona Cable Landing Station (CLS), the first landing station for international submarine cables that will be located on the coast of Barcelona (Spain).

It will be the point of entry for high-capacity fibre-optic subsea cables arriving from Asia, Africa and the Mediterranean, providing the fastest connection between Europe and America.

Grover joins Avanti as CTO

Vikas Grover joins Avanti Communications Group as its new chief technology officer. Grover was recently the founding chief information officer (CIO) at OneWeb, where he led global networks, IT platforms and security. Prior to that, he was the CIO and executive vice president technology planning at Vodafone India.

Grover will succeed Scott Richardson, who will be leaving the company.

Avanti chief executive officer Kyle Whitehill, said: "I am delighted to welcome Vikas to Avanti. Vikas is an accomplished Leader in the Telecoms field with a background including Mobile and Satellite organisations. He is also a highly regarded people leader and I have no doubt he will make an excellent addition to Avanti and our executive committee. I would also like to recognise Scott Richardson's contribution to Avanti over his 15 years tenure, we wish him the very best for the future."

Ghana's Telecom and IT Professionals Union in court over strike action

An Accra High Court has granted an interim injunction on the strike action embarked upon by members of the Telecom and IT Professionals Union (TIP), according to local media reports.

Judges gave the order following an application filed by MP Infrastructure (GH) Limited, Linfra Ghana and Remie Ghana, employers of the telecom workers.

TIP began the strike on Monday, March 15 in protest of poor conditions of service.

Although they have subsequently called off the strike, their employers believe the interim injunction will prevent them from declaring another industrial action.

TIP is made up of engineers and technicians contracted by four sub-contractors (SBCs) who have been engaged by Chinese tech giant, to manage and maintain the technical operations of MTN, AirtelTigo and Vodafone.

The plaintiffs in a separate writ of summons say the industrial action declared by their employees is unlawful. They say the strike is a breach of the NLC's directive to addressing the impasse between the two parties and one that will have dire consequences on telecommunication operations in the country.

Airtel Africa sells towers to Helios

Airtel Africa, a subsidiary of Bharti Airtel, has sold 1,424 telecom towers in Madagascar and Malawi to Helios Towers for around $119 million.

The former's subsidiaries will continue to develop, maintain and operate their equipment on the towers under separate lease arrangements, largely made in local currencies, with the purchaser.

"In addition, the Group has agreed to build to suit commitments with the purchaser for an additional 195 sites across Madagascar and Malawi over the three years following completion, for which a further US$11m of consideration is payable," Airtel said. "With these latest tower transactions we continue to demonstrate strong execution of our asset monetisation program."

The transactions will also help to improve the mix of its debt and increase its tenor through long term leases, which are largely payable in local currency by our operating entities, while reducing foreign currency debt of the group, according to Raghunath Mandava, chief executive officer, Airtel Africa.

ATU partners with Ericsson to improve connectivity

The African Telecommunications Union has joined forces with Swedish gear-maker Ericsson to validate a set of recommendations that will help African countries accelerate broadband connectivity, including 5G, across their territories.

These tools, approved by 25 countries and representatives of regional economic blocs in Africa, will guide the beneficiaries in the rational and efficient management of the telecom spectrum, which is the key element for the development of broadband.

"Radio spectrum is a natural, scarce, and valuable resource that is currently being used for a wide range of applications, providing many economic and social benefits in the continent," said John Omo, ATU secretary-general. "As demand for spectrum continues to grow, regulators must work to meet the pressure that comes with managing the use of spectrum resources."

The ATU and Ericsson's recommendations to develop broadband in Africa are the result of the collaboration signed between the two parties in June last year. Their aim was to connect, innovate and transform the continent into a knowledge economy.

ATU said it is confident that strict implementation of its recommendations will contribute to a revival of investment in the telecom sector and accelerate the digital transformation of the continent, bringing multiple socio-economic benefits.

Meanehilw, Ericsson revealed it will be discussing the latest developments of the 5G technology at the 5G Middle East and North Africa 2021 Digital Symposium taking place virtually March 2021.

MasterCard's US$100m

MasterCard penned a deal with Airtel Africa to invest US$100m in Airtel Mobile Commerce, the mobile money arm of the telecom operator. The initiative will position the US payment company on the growing African mobile money market. "We are significantly strengthening our existing strategic relationship with Mastercard to help us both realize the full potential from the substantial opportunity to improve financial inclusion across our countries of operation," said Raghunath Mandava, head of Airtel Africa. The cash injection from MasterCard will benefit more than 100 million customers.

'Airtel in it to win it'

Airtel Africa plans to be the number one service provider across all 14 countries it services on the continent, according to chief technology officer Razvan Ungureanu. The operator made headlines recently after concluding infrastructure acquisition agreements with Helios Towers, as well as Rise Fund investment of US$200m in Airtel Mobile Commerce BV (AMC BV). "Across my 14 operations, more than 50% we are best in class, so basically number one," Ungureanu told ITWeb Africa.

MoMo in Africa

Half of the world's mobile money services are in Africa, according to a report by GSMA. As of 2020, there were 310 live mobile money services and out of these, 55.2% were in the continent. Mobile money is now available in most markets where access to financial services is low, the report adds. Africa continues to be the global leader in mobile money services, a position boosted by the Covid-19 pandemic, which forced people to turn to digital services as a safer transaction method than using cash.

Talking critical

Mladen Vratonjic, chair,
The Critical Communications Association (TCCA)

Introducing the critical comms column

How would you define critical communications? There are many instances where needing to communicate is important. But truly mission critical communications can mean the difference between life or death.

This is the first in a series of articles where we will take a look at the critical communications landscape around the world, how it is evolving to meet the changing needs of the end-users, and the huge amount of work that goes on behind the scenes – largely carried out by volunteers – to ensure that critical communications networks are robust, reliable, resilient and secure. It is those networks that support, amongst others, our first responders - the police, medical and fire and rescue services that we rely on to help us in a crisis and keep us safe.

Until very recently, the networks that supported critical users were specific to that sector, designed from inception to meet the unique needs of mission critical users. The technologies – TETRA, P25, DMR, Tetrapol – have resilience and security built in from the very beginning, both in the infrastructure and the devices, in hardware and in software, in order to deliver trusted, reliable and resilient communications support. However, they are all narrowband technologies and as such are limited in the type of data applications they can support.

As any of us who use a smartphone will know, in the consumer mobile communications market, the focus is firmly on data applications. Although the past year has seen a resurgence in the use of voice calls due to the pandemic, overall the mobile networks are supporting mostly data-centric applications, and the same evolution is coming to the critical communications world.

While voice will always remain an essential – and the most immediate – form of communications between first responders in a crisis, there is a need for broadband networks to have the capability to be mission-critical bearers for mission-critical data – to have a similar level of reliability, resilience and security as the dedicated narrowband critical communications technologies.

This is the challenge that is being addressed around the world, as governments look to ensure their first responders have the best possible communications tools with which to carry out their critical work. The way forward however is very much dependent on the availability of spectrum and of course the level of investment that each country or region is able to commit.

Two examples: In the US, FirstNet is the new nationwide broadband communications platform for data, built for the country's first responders and extended public safety community. It is based on a public-private partnership with telecoms operator AT&T, and uses spectrum set aside by the US government specifically for FirstNet. The existing narrowband networks that carry critical voice services continued to be used for the meantime. In the UK, the Emergency Services Network (ESN) is being created using the network and spectrum owned by commercial mobile network operator EE. An ambitious roll-out schedule needed to be revised more than once to ensure that the ESN will be as trusted as the existing TETRA-based Airwave service before that network is switched off and ESN becomes the first responders' communication platform for both voice and data.

The US and the UK are two of the countries that are the most advanced in terms of delivering critical broadband. Other countries are at various stages from consultation through to procurement.

It is not just the networks that need to be 100% trusted. The services – voice, data, video – and the devices all need to work seamlessly. To achieve seamless services, the Third Generation Partnership Project (3GPP) has been developing a set of standards for mission-critical functions for broadband networks. Currently, these are Mission Critical Push-to-Talk (MCPTT), mission critical data (MC Data) and mission critical video (MC Video). This time these are not specialised, dedicated standards for mission critical systems but rather parts of the mainstream standards of cellular telephony, for 4G and 5G networks, developed and included on the basis of requirements and with the support of the critical communications community. When services are created to those 3GPP standards specifications are they considered to be mission critical.

For devices, work is ongoing with the Global Certification Forum (GCF) to develop a testing and certification process to ensure user devices can also be termed mission critical whilst conforming to the 3GPP standards and being interoperable with networks and other devices built to the same 3GPP standards.

Against the backdrop of all the work going into developing mission critical broadband, the trusted narrowband networks remain in full use, new networks are being implemented and existing networks upgraded and refreshed. TCCA works closely with standards development organisation ETSI to ensure the TETRA standard is enhanced to support users to 2035 and beyond.

It is estimated that the transition from narrowband to broadband mission critical networks will take perhaps more than ten years. It is anticipated that in the meantime, many organisations will use hybrid mission critical networks and that it is necessary to enable interoperability and collaboration of narrowband and broadband networks and devices. Therefore, 3GPP on the one hand and ETSI on the other are working rapidly to develop a standardised interface for their interconnection.

TCCA, on behalf of its members – end users, government and commercial network operators, industry and more – represents all standard mobile critical communications technologies and complementary applications. Our members design, manufacture, build, implement, utilise, analyse, promote, develop and deploy critical communications worldwide. We believe in and promote the principle of open and competitive markets through the use of open standards and harmonised spectrum, working with stakeholders in the critical communications ecosystem to achieve this.

Behind the scenes, there are many, many organisations and individuals committed to ensuring that critical communications networks and services are the best they can be. We will endeavour through this column to showcase some of the initiatives, to discuss the challenges and the expectations, and to hopefully encourage more people to become involved in shaping the future of critical communications.

Telecom Egypt plans launching HARP, a new subsea system circling the African continent

Cairo, 3 March 2021: Telecom Egypt, Egypt's first integrated telecom operator and one of the largest subsea cable operators in the region, announces its plans to launch Hybrid African Ring Path (HARP) by 2023, a new subsea system that will outline the African continent, forming the shape of a harp. It will connect coastal and landlocked African countries to Europe through the company's widespread terrestrial and subsea infrastructure. Through HARP, Telecom Egypt will offer a wide range of capacity solutions, up to dark fiber, based on a layer two and layer three architecture that can connect multiple points on the system to one another.

The system will connect Africa's East and West bounds to Europe, from South Africa to Italy and France along the continent's East Coast, and to Portugal along its West Coast. Highly reliable terrestrial routes will connect the landing points within South Africa, Europe, and Egypt, forming a complete ring around the continent. The HARP system will leverage its diverse and resilient subsea segments to branch out to multiple potential landing points.

HARP's planned routes will cross the Sinai Peninsula in Egypt, with multiple ring protection topologies, and will extend to include premium routes on both banks of the Suez Canal. Sharm Elsheikh, located at the southern tip of Sinai, will serve as a new landing point and will be connected to coastal cities

on the Gulf of Suez, forming a hybrid terrestrial and subsea fiber connectivity solution between landing points in Egypt.

Adel Hamed, TE's Managing Director and Chief Executive Officer, commented: "I am very proud of the upcoming launch of this new system, as it will provide seamless connectivity services to the African continent by integrating Telecom Egypt's current and planned projects to offer end-to-end connectivity solutions. HARP will enable Telecom Egypt's plans to establish open points of presence in various new locations in Africa and Europe to serve its enterprise and wholesale customers. It will also support the digital transformation efforts exerted throughout African nations, and expand the company's international footprint."

About Telecom Egypt

Telecom Egypt is the first total telecom operator in Egypt providing all telecom services to its customers including fixed and mobile voice and data services. Telecom Egypt has a long history serving Egyptian customers for over 160 years maintaining a leadership position in the Egyptian telecom market by offering its enterprise and consumer customers the most advanced technology, reliable infrastructure solutions and the widest network of submarine cables. Aside from its mobile operation "WE", the company owns a 45% stake in Vodafone Egypt. Telecom Egypt's shares and GDRs (Ticker: ETEL.CA; TEEG.LN) are traded on The Egyptian Exchange and the London Stock Exchange. Please refer to Telecom Egypt's full financial disclosure on ir.te.eg

The impact of OTT on the telecom industry

OTT services are growing exponentially around the world. Shashank Pawar, solution consultant at Tecnotree, explores the impact on Africa

The African telecommunication industry, like the region itself, has been changing at an accelerated rate. The continent grew at 8.7% CAGR in real GDP terms between 2000 and 2010 and, despite the ongoing COVID-19 pandemic, forecasts suggest sub-Saharan Africa will continue at 2.7% in 2021.

Changing demographics and improving business environments across the continent are contributing to rising household consumption, which is predicted to reach $2.5 trillion by 2030. With that, there has been an explosion of a continent-wide middle class, which has increased not only mobile adoption, but also the associated digital products and services. Africa is currently the fastest-growing mobile telecom market in the world. Since 2000, an annual increase of approximately 30% in mobile phone connections has led Africa to become the world's second-largest mobile market behind Asia. In response, telcos like MTN Group, Airtel Africa and Orange have had to change their core product and service infrastructures.

One of the main issues they have had to respond to is the growing adoption of over-the-top (OTT) services. As increased broadband penetration and internet sweep key demographics across the region, the popularity of OTT services has exploded. While these largely involve VoD (video on demand) (Netflix, Prime Hotstar, etc), it also covers a broad range of audio and messaging platforms like WhatsApp and Skype.

However, a growing issue is that these services have taken over traditional messaging and calling, which were once the main revenue stream for telcos across Africa. As a result, operators find themselves in increasing danger in this altered business landscape; one that finds OTT players, who survive on telco infrastructure to deliver content and services to end customers, now sucking up those same operators' revenue streams. This has manifested in a number of different ways.

Loss of revenue

Although telcos across Africa are actually generating revenues from data subscriptions, it has not offset the drastic fall in the purchase of traditional telecom services like voice and messaging (SMS). Nowadays, consumers from Kenya to Nigeria not only expect good connectivity, but better services in terms of faster on-demand content and apps, efficient messaging and communication. As a result, the trends show that African telecom operators' voice and SMS revenues have drastically reduced at an accelerated rate and are predicted to continue to do so.

Increased infrastructure cost

In addition to revenue loss, African CSPs are being forced to invest in extra capacity as they continue to face network congestion from a surge in VoD. With an exponential increase in demand for videos, telecom operators across the continent are experiencing an unexpected strain on their networks; CSPs are actually spending more to maintain and upgrade their infrastructure without any increase in their revenue. This has now forced them to adopt new business models and revenue streams based on data.

Lack of regulatory framework

Another critical factor is the lack of regulatory framework for OTT players across the region. Although CSPs deliver the OTT content and services through their network, they have no authority over the content. This may compromise with the privacy of the consumer and also impact the core services of the operator, depending on what country they receive the information and the rules / political infrastructure that exists in that country.

So how can operators across Africa respond?

However, as with all challenging situations, there are solutions to this OTT conundrum. The African multi-channel market is dynamic, reflecting the ongoing rollout of 4G and 5G mobile networks. Also, investments in terrestrial backbones, submarine cables and satellite capacity to fulfil future needs and reduce transmission and backhauling costs are ongoing. Some of the resulting opportunities are outlined below.

Improved customer experience

African CSPs should consider shifting their focus towards emulating the positive customer experience OTT players deliver - which has allowed them to flourish. Traditional telecom services have lacked the "wow" factor, and this has been a pain point for their consumers. Across Africa, CSPs must become more customer centric and leverage their existing infrastructure to provide digital experiences to their customers with cross domain services like OTT, fintech etc. They must drive their business models based on market maturity, customer preferences, economic trends and new technologies to stay relevant.

Collaborations and partnerships

As previously mentioned, it will be difficult for CSPs to survive solely on the revenue from traditional telco services. Therefore, partnership is the key; CSPs can link with OTT services providers on new revenue sharing models. For the OTT, they gain access to the CSPs' huge subscriber base with zero acquisition cost, while the CSP gains healthy returns in terms of new revenue streams, massive boosts in data consumption, content rich services and improved customer experience.

However, the partnering of OTTs and telcos can be challenging in absence of a common service platform. The bundling of services (telco & OTT) with manual integrations may be a tedious task, but this is an opportunity for digital technologies and platforms. Utilising API platforms, cloud services and AI-ML techniques can save a lot of operational costs and can also overcome issues around legacy systems. This will create a win win situation for both parties where OTTs can use the CSPs infrastructure and CSPs will have an attractive and diverse portfolio to offer.

Develop their own OTT platform

As business across Africa changes, business models are also adapting; including the telecom industry where operational efficiency coupled with desirable products and services have become an absolute necessity for providers. As their customers have grown and increased their wealth, their preferences moved to internet, smartphones, high speed networks and digital services – creating the environment for OTT to thrive. So, as part of this new paradigm, CSPs across the region should look into building their own platforms to meet the demands of customers. MTN Group, Airtel Africa combined have 412.9 million mobile subscribers on the continent, more than 53% of total network subscribers on the continent. With such a high level of penetration, there are potentially high opportunities for any CSP than can create such an innovation.

Conclusion

The threat is real to CSPs from OTT players and it must be dealt with. Creating high quality content and services along with hight network capacity infrastructure can suffice to the ever-changing dynamics of market and customer behaviour. While innovation is key, the major drivers of business sustainability will be the digital customer experience. As the main connectivity providers, CSPs enjoy huge subscriber bases and if they can be leveraged by either partnering with OTT players or developing their own OTT platforms to deliver content and experience, then CSPs will be able to sail through this wave of digital change and ride the ongoing wave of African growth. ■

Shaping the future of satcoms

Satellite has played vital role for decades, whether it's for communication or entertainment - but is it in danger of being left behind? Robert Shepherd asks the experts

Satellite has attracted many favourable column inches of late. From Starlink, SpaceX's much-hyped satellite internet service to China's mission to dominate space internet, you'd be forgiven for thinking that the technology is going through a renaissance. Indeed, the opportunities afforded by this method of communication is moving at speed in military and defence applications and broadband IP services, to name a few. However, the challenge has been that these advancements have coincided with performance gains enjoyed by other telecommunications systems.

So, with satellite having long been viewed as a technology belonging to a different era, is it going to be playing catch up for a long time?

"Is it?," asks Robert Koldys, VP marketing, strategy and business development at Telecom26, a Swiss-based cross border mobile operator. "I don't agree at all. Just because it's been around for decades doesn't mean it's not as relevant as

ever. You just have to to look at the enormous investment in LEO satellite constellations to see that market watchers are confident.

I suppose some may view satellite as old as in the past it was circuit switched technology and the capacity was limited. Most of the deployments were for circuit switched voice which provide sub-optimal quality and performance. With advancement in the satellite ecosystem (especially low orbit) and the implementation of packet technology, we are seeing that many of those issues have been resolved."

Sharyn Nerenberg, senior director, corporate marketing communications at Hughes, the broadband satellite networks and services provider, is the first to admit that "unfortunately, satellite has a PR problem", primarily as a result of two misconceptions.

"The first misconception is that satellite is slow – which is a holdover from the early days of the technology and not a reflection of today's satellite capabilities," she says. "Today's satellite technology is much more sophisticated, fast and dependable, able to support speeds of 25 Mbps (the FCC's definition of "broadband") and higher for consumer plans and capable of handling thousands of simultaneous sessions (16,000 in the case of the Hughes Jupiter System)."

Another key player in Asia is Yahsat, a satellite communications company based in Abu Dhabi. Its chief commercial officer Farhan Khan, says satellites "might seem outdated, after all, it's close to 70 years since the first satellite launched into space.

"The Sputnik was a surprising accomplishment for many during the late 1950's and as a result of that success, we have plenty of satellites orbiting the earth's atmosphere enabling humanity to live safer and more connected lives," Khan says. "With rapid development over the past few years in the satellite technology industry, it would be unfair to say that satellites have the same limited functionalities as those launched during the mid-20th century. Like several small and large-scale devices used in the past, scientists and engineers have always found ways to significantly overhaul the functionalities of satellites to make them more efficient, easily deployable as well as maximising their capabilities."

Khan further argues that "with indispensable functions and a growing range of services", satellites will support disruption on ground, furthering movements like the advancement of autonomous vehicles and other interoperable devices as such which will use satellite connectivity to transfer data, communicate and make decisions. "Private enterprise is investing heavily in R&D and the likes of SpaceX are accelerating the volume of satellites to be deployed. We do not expect the trajectory to change anytime soon, as the future is dependent on better connectivity that is not necessarily dependent on terrestrial networks," he says.

Intelsat I was the first commercial communications satellite to be placed in geosynchronous orbit in April 1965. Brian Jakins,

Robert Koldys, VP marketing, strategy and business development, Telecom26

"Is it? I don't agree at all. Just because it's been around for decades doesn't mean it's not as relevant as ever"

the current RVP Africa sales for Intelsat, explains how it "wasn't long afterward", however, that satellite moved beyond sending transmissions covering the Apollo 11 moon landing in 1969 over local news stations, to transmitting news and entertainment from around the world directly into homes (mostly rural) via very large, clunky satellite dishes in the backyards along with complicated tuning hardware. "Eventually the large clunky home satellite systems were made smaller and easier to use, but as time went on and as more people moved from rural areas to urban and suburban areas where cable television was available, people began to view satellite as limited to government and science projects as well as global news feeds by media companies," he continues. "And since the launch of high-speed internet and the various access technologies, including mobile broadband, high quality transmission of news and entertainment is available anytime, anywhere, even on the move. Quickly, satellite became something viewed as outdated, limited largely to home internet and entertainment in places without access to cable networks. This perception of satellite is outdated."

Indeed, satellite technology has clearly come a long way over the decades and Nerenberg cites HughesNet, its flagship satellite internet service, as an example. "When it first launched, HughesNet enabled service at speeds of around 5 Mbps down," she continues. "HughesNet Gen4 offered download speeds of 15 Mbps. HughesNet Gen5, our current service, offers download speeds of 25 Mbps. Our next satellite, JUPITER 3, will enable service plans with speeds of up to 100 Mbps down."

She says that comparing today's satellite with the satellite service of the past "is like comparing dial-up internet access (remember 56 Kbps service?) with fibre-optic cable services", which are now capable of gigabit speeds. Both are wired services to the home or business, but the technology is drastically different.

"The second misconception about satellite is that it's a substitute for wired technologies like cable and fibre. That is simply not the case," adds Nerenberg. "Where terrestrial connectivity is available, it is always going to be the faster form of connectivity. However, where terrestrial services are not available, satellite offers the best solution for high-speed, reliable connectivity."

Now, we're in 2021 and newer technologies are always on the horizon. One of those is 5G, which has been lauded as the step towards a fully interconnected society. Nerenberg argues that satellite is perhaps more relevant than ever in 2021. That's because, she says, the demand for internet access has never been higher and will only continue to grow. "No single transport can meet all of the need for connectivity, and satellite is an essential service in the network mix, enabling access in places where other technologies do not reach," Nerenberg says. "Aeronautical and maritime applications, which wired technology cannot serve, are the most obvious instances. Remote and rural places are also ripe for satellite connectivity. In fact, the GSMA predicts that 5G will cover one-third of the world's population by 2025, leaving two-thirds of the world unserved by 5G."

Khan adds the need for satellite services is not eliminated with the introduction of 5G, "as both can work in a symbiotic relationship", serving the same and different purposes. The next generation of satellites will be equipped to cater to 5G platforms that enhance mobile broadband, better mission critical services, and enable the greater deployment of IoT systems across numerous sectors.

"Our satellites come with the flexibility of catering to 5G platforms and our most recent agreement with Airbus on the Thuraya 4-NGS satellite, will be best suited for a GEO mission, maximising capabilities, cost-effectiveness, security and reliability," he adds. "Reducing costs and increasing benefit to rural communities and non-urban communities which have limited access to 5G connectivity. Working to serve the unserved who might not be able to migrate easily to 5G. This flexibility still exists with satellites. While the industry has anticipated this transition, we have taken action to ensure that 5G was considered seriously with the evolution of our services." He adds that when the Thuraya 4-NGS satellite goes live in 2023, it will be able to cater to enterprise and government clients who have made the transition to 5G networks.

It may also come as a surprise that while 5G is a wireless service, unlike satellite, it doesn't function entirely without wires. That's because the fifth-generation technology depends on cell towers, which connect to the network core.

"In urban and suburban areas, that connection comes through fibre or cable," says Nerenberg. "In rural and hard-to-reach places (e.g., islands, mountains, forests, jungles), cell towers are connected by satellite for backhaul to the network core. According to NSR, more than 70,000 wireless towers are backhauled by geostationary satellite today, and that figure is expected to grow as wireless providers extend their networks to serve more people in hard-to-reach places." She says this is why companies like Hughes are working with standards bodies to ensure that satellite technology fits seamlessly into the multi-transport networks that make up what we call "5G" service.

Another satellite provider with a large Asian

Continuous innovation has kept the JUPITER System at the forefront of the industry, from DVB-S2 and DVB-S2X to more recent innovations like return channel adaptive coding and modulation (ACM) to yield up to 30% bandwidth savings, and support of Layer 2 transport – essential for cellular backhaul implementations

footprint is Singtel Satellite, a unit of Singapore Telecommunications (Singtel). Song Lee Meng, its director of FSS product and marketing, explains what technology the satellite sector introducing in order to improve its performance and make it more affordable to compete with small cells towers. "Satellite communications technologies have achieved remarkable breakthrough efficiencies and increases in performance in nearly a half century," he says. "High Throughput Satellite (HTS) can enable high performance and cost-effective links. In addition, the LEO satellites will offer low latency and higher throughput in future which will introduce new capabilities for satcom services. One key technology that will improve satcom capabilities is flat-panel antennas which will be 'a game changer' for expanding the role satellites play in connecting devices to the internet-of-things, assuming the price is right."

For Nerenberg, "our aim is not to compete with small cell towers", but rather to deliver value as part of the networking ecosystem. "To that end, our equipment is in use around the world back-hauling more than 12,000 cellular sites across Africa, Asia and Latin America, powering satellite internet services for millions of people and enabling more than 40,000 community Wi-Fi hotspots across the same regions," she continues. "In fact, our JUPITER System is the leading satellite ground system in the world, with more than 50% market share. As the de facto standard for satellite implementations, the JUPITER System powers broadband solutions on more than 40 conventional and high-throughput satellites globally."

Nerenberg argues how continuous innovation has kept the JUPITER System "at the forefront of the industry", from DVB-S2 and DVB-S2X to more recent innovations like return channel adaptive coding and modulation (ACM) to yield up to 30% bandwidth savings, and support of Layer 2 transport – essential for cellular backhaul implementations.

"On the horizon, we are innovating enhancements to the system such as software-defined networking, mobile edge computing, and virtualization with a private cloud to support scalability and efficiencies," she continues. "This kind of innovation is essential to support the new class of software-defined and flexible satellites."

It's often said that fibre is cheaper, faster, more reliable and carries far lower latency than satellite. It sounds like a no-brainer when it's put like that, but Lee Meng finds holes in the argument.

"Fibre is subject to terrestrial disruptions and cuts, where satellite has just three potential points of failure: the satellite, the hub and the satellite terminal, each of which has built-in redundancy in case of failure," he says. "It is also difficult to lay the last mile fibre due to challenges on the ground.

Most enterprise applications are not time sensitive. Therefore, satellite can be a good alternative as the main or backup connectivity but when companies are located in remote places, satellite communications can be the only option in providing ubiquitous and instant coverage in these zones."

In fact, there are those who are of the opinion that not only is satellite a viable alternative, to fibre, but it's actually more reliable. Nerenberg says that is most certainly the case when it comes to manmade and natural disasters, to which fibre is vulnerable. "This is why satellite makes the ideal transport for disaster response and recovery as well as critical back-up to enterprise and government fibre networks," she adds. "Then, I would say that we do not intend for our satellite services to compete with fibre. They are different - just the same way that a pick-up truck and a sedan serve different needs. Both forms of transportation have their own specific benefits and trade-offs. You probably wouldn't use the sedan to haul construction debris or landscaping equipment, or to traverse a mountainous dirt road or through a jungle. And the pick-up truck would be unwieldy and uncomfortable (not to mention inelegant!) in a city centre. Satellite-based

internet goes where fibre providers do not.

It's a view shared by Martin Jarrold, chief of international programme development at satellite body, GVF. "Copper or fibre lines are most applicable for urban areas and not economically viable for rural areas due to distance and terrain," he says. "For microwave transmission, line of sight and flat terrain needed to be cost-effective, with limited rural/remote application. Satellite is increasingly the backhaul of choice and only solution for rural/remote deployments."

Looking ahead, data consumption is only going to grow and it's no secret that satellite faces challenges in this space.

"Short range, low satellites provide low latency and high throughput called fibre in the sky which can meet the demand for growing data consumption," argues Amir Cohen, vice president of marketing and business development at Gilat Telecom.

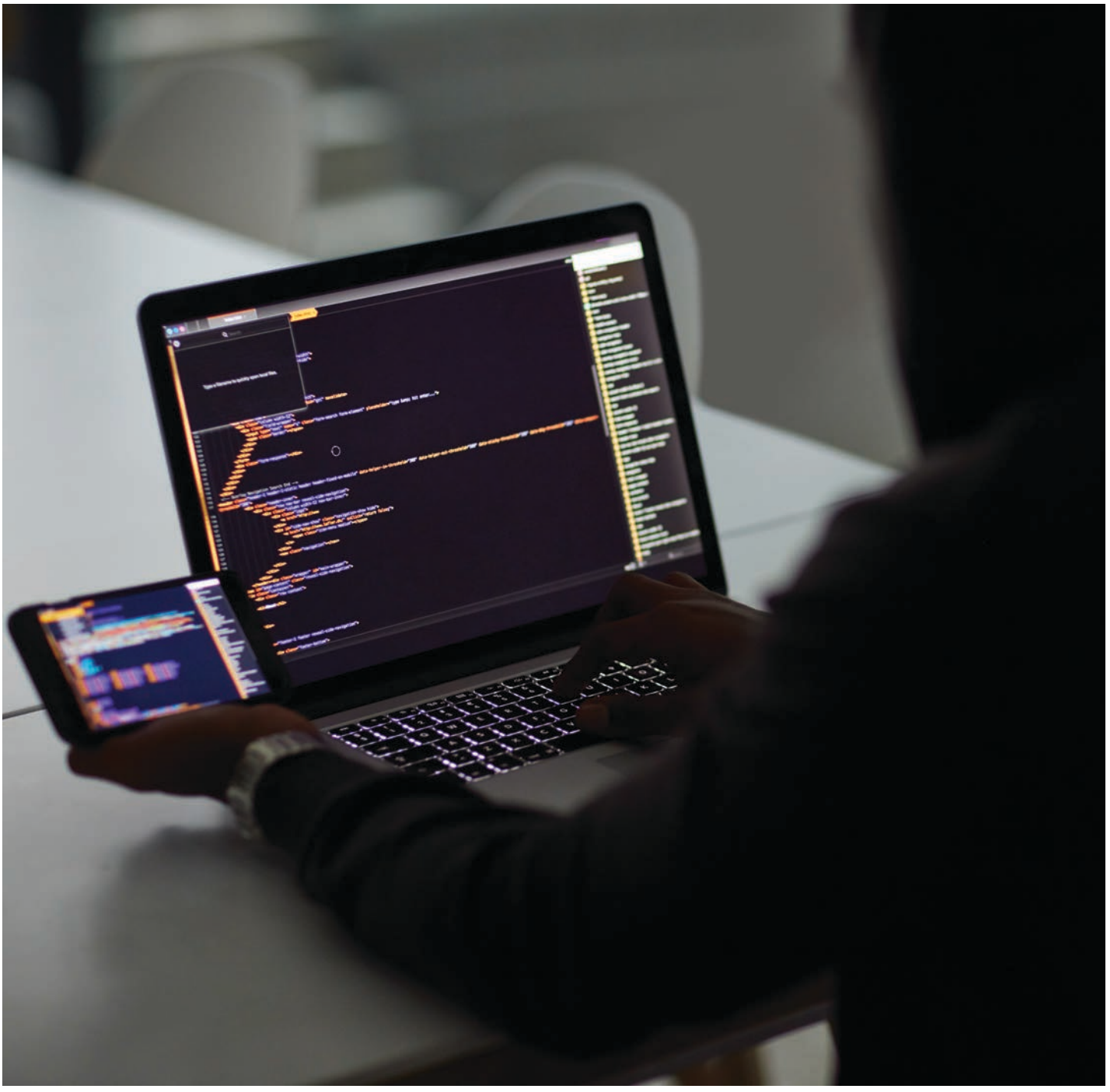
Khan says that while there are limitations, network infrastructure and capabilities continue to mature and develop at such an incredible rate. Yahsat, for example, is developing ways to overcome the obstacles that are posed by satellite data limits. "We remain committed to R&D in the field of satellite communication, and the development of new features and functionalities that meet the requirements of today's users," he adds. "With new emerging data requirements, at Yahsat, we have been developing next generation systems that will have a wide spectrum of data services catering to throughput requirements ranging from low (20 kbps) to high (more than 1 Mbps) for various verticals and applications. To this end, our next generation satellite system has nearly doubled throughput of data products as the MSS/L-Band design offers optimised data rates."

Nerenberg agrees that the challenge "and the opportunity" for satellite providers is to serve the growing demand for bandwidth with a finite resource. She warns that serving more customers is not as easy as running a connection to new customers' homes – it requires building and launching a new satellite. "That said, Hughes has been in the business of supplying satellite internet longer than any other provider, and we have learned a lot along the way," she says. "We are constantly improving and advancing our offerings to better serve our HughesNet customers, who have been largely overlooked by other providers. This is why we continue to innovate and implement network optimizations, such as automatically saving data when streaming video or using artificial intelligence to detect and triage potential network issues."

Yahsat's Thuraya 4 – NGS is an example of how the operator is overcoming data limit challenges, as the satellite is designed to be highly flexible and agile. "This is so that we can integrate new technologies on the ground, which provide considerable edge, given the challenges and dynamics in the industry which includes a wide spectrum of data service," says Khan.

Hughes is equally optimistic about what lies ahead. "Looking to the future, we see many opportunities to continue enhancing our service – from the launch of our JUPITER 3 satellite... to implementing multi-transport solutions combining a low-latency transport such as LEO or wireless as a complement to the high-capacity/low-cost GEO service," concludes Nerenberg.

Koldys adds that, "of course", there are some doubts about the viability of different projects, but there's no reason per se to question whether satellites in general can't play a significant role in delivering connectivity. "And, one only has to look at the work of ESOA and 3GPP, for example, to see how satellites are integral to future 5G rollout plans," he says. ■



Necessity is the mother of invention

Sanjeev Verma, CEO of Squire Technologies looks at how African telecoms operators are meeting the challenge of network fraud in a challenging threat landscape

In recent years sub-Saharan Africa has been home to several of the world's fastest-growing economies, and the telecoms industry continues to play a significant role in the region's economic growth, with it set to contribute $185bn by 2024.

While the environment is challenging, with lower margins, greater regulation and fragmented infrastructure, Africa's operators and the wider telecoms industry have proven themselves to be incredibly agile in the face of telecoms and cyber fraud. The telco landscape in the region challenging one, at a time where operators are faced with shrinking margins, increased competition from OTT providers and demands to invest in 5G and new technologies, the ever-present threat of fraud and its impact is a problem that looms large over operators. Understanding fraud for operators in the region is about understanding the challenges they face with providing services to an incredibly diverse part of world at a time of rapid growth and development on many fronts, both technologically and socially.

Africa is the world leader in non-contracted telecommunications with 95% of mobile subscribers on prepaid services, by far the largest ratio in the world. Prepaying for mobile and data sparingly, charges are relative, and much smaller, perhaps less than US10 cents for customers to use their phone. What this means for operators is that vast amounts of data is being generated, take MTN Nigeria for example who might face up to 8 trillion CDRs being generated which needs to be orchestrated by other systems. When you consider their 70 million strong subscribers this amounts to a huge environment where you process every individual transaction. In contrast an operator like AT&T in the US depend largely on their 75 million subscribers being on neatly defined monthly contracts. As far as billing and reconciliation is concerned, in Africa, it is a much more complex process. With margins being significantly slimmer it's crucial that operators get things right to make money.

These BSS/OSS challenges that operators face inevitably filter through to other areas, and this includes risk and fraud. As with the rest of the world Africa suffers from the ever-increasing threat of telecoms network fraud, which for some developed nations has reached epidemic levels.

Innovate to prosper

Mobile money is the biggest tech invention to come out of Africa and has become a catalyst for change on the continent. An attractive diversification for mobile operators, mobile money provides almost 20% of annual revenues. Succeeding where the UN and traditional financial institutions floundered in providing financial services to an unbanked population, mobile money inevitably caught the attention of opportunistic fraudsters. Providing connectivity and SIM cards to far flung markets required mechanisms that made it easier for people to do SIM swaps, which inadvertently led to SIM Swap frauds. Hence operators had to come up with remedies to tackle the emerging fraud.

Africa's approach to combatting fraud has always been a collaborative one, and this has seen them work closely with other industries and verticals to find solutions. The high costs from vendors delivering products and services into the region has encouraged an innovate to prosper mindset.

At a major bank in Mozambique, suffering from increasing cases of SIM Swap fraud, (where fraudsters trick or bribe a phone companies call centre staff into switching a legitimate customers SIM card to one they control), Vodacom Mozambique offered a straightforward cost-effective solution; They would setup a system that would allow the bank to query phone records for any recent SIM swaps associated with a bank account before they could carry out a money transfer. This would mean that if a SIM swap had occurred in the last two-three days, the transfer could be blocked. With victims of SIM swapping likely to be aware of it quickly due to the phone being disabled, the solution proved to be an enormous success and other banks and operators in Africa and abroad have put similar carrier-checking remedies in place.

As African operators have played a greater role to their subscribers, as financial service providers, the necessity to secure their networks and protect subscriber's money has driven innovation in telecoms and verticals. This has been especially so for brands selling connected and IoT enabled electronics into the continent. Faced with a consumer base almost entirely on prepaid mobile plans there was no way to load devices such as iPads with prepaid airtime or data bundles. Apple like many wrongly assumed everyone was on some sort of contract. Here a growing API industry offered a neat solution in airtime API's that could be used to add credit to devices.

As well as ensuring that international businesses can more easily access Africa, APIs developed to carry out security checks, account validation and KYC (Know Your Customer) APIs are adding an extra layer of security to mobile money and assurances to telecoms.

Fraud as a top priority

With telecoms being such a large part of Africa's economy, fraud is seen as serious threat at a government level. Authorities and regulators are proactive in doing everything that it takes to reduce tax losses, combat network fraud and reduce corruption.

Most recently Lesotho and Zimbabwe have implemented new telecom oversight technology to monitor national and international telecoms traffic. The technology promises to increase revenue assurance, combat fraud and enforce billing integrity across telco networks.

The system enables regulators to see, in real-time, what's happening in the telecom sector, so that they can improve upon governance. It

is seen as another example of the collaborative and proactive approach that the industry in region takes towards reducing network fraud.

Many of those working as regulators in Africa have come from the industry itself, and there's a common goal to protect the whole ecosystem as opposed to simply focussing on competition, like regulators are in Europe and the US.

Many of the leading telco's in Africa are listed on the South African stock exchange, corporate governance is tough and audits from external investors who do not have sight of what is happening on the ground are comprehensive and specific in terms of gauging what is happening with the operation. It is also commonplace for operators to have dedicated risk and fraud teams and the role of a Chief Risk Officer with overall responsibility of fraud prevention.

What can operators do?

Fraud attacks are becoming increasingly more sophisticated especially on the borders of networks where international connection with services such as IOT platforms and cloud communications is taking place. Being aware of what the threat landscape is and the ways that fraudsters and criminals are attacking networks is the first step for operators. Deploying a multi-layered strategy and going on the offensive is crucial for them as waiting for attacks to happen and then working to block them only proves costly. Automation technologies are increasingly adding value to the fight against fraud, leveraging active and passive detection that deploys both test calls and messages to seek out sources of fraudulent traffic, as well as testing live traffic for anomalies and threats. Combined with big data and machine learning automation solutions disrupt criminal activity, and they are proving to be a cost-effective solution to fraud on the wholesale industry, specifically international wholesale fraud, and effective for detecting SIM Boxes and combatting various forms of illegal bypass fraud.

The loss from network fraud in Africa and beyond still remains staggeringly high, costing the industry and customers billions of dollars a year. But Africa is proving to be resourceful and agile in the face of a challenging threat landscape. The innovative and collaborative approach the continent takes to fraud prevention, and the determination to make it a top priority should be seen as an example to be set to operators and regulators in more developed nations. ■

Fixed wireless access and Wi-Fi on the move

FWA, an invaluable tool for internet connectivity in remote and built-up areas? Robert Shepherd connects with the industry to find out if this is so and how

Wherever you live, the average broadband speed requirement continues to rise and fibre access is arguably still the go-to option. It makes complete sense, when one considers its high bandwidth performance, low latency and maintenance, as well as durability.

Of course, copper and fibre deployment for better broadband service is not always an upgrade option. Reasons include the fact that municipal regulations can make fibre trenching prohibitive, lower population densities in rural markets often harm the fibre business case return on investment (ROI), while buildings or things of natural beauty may prevent the installation of fibre regardless of how much money has been made available.

That said, fibre is not always available, either, which means other technologies and methods of communication have to fill the void. Enter fixed wireless access (FWA), which is known to offer high-capacity solutions for parts of Africa, indeed the world, in need of enhanced quality and speeds. Now, in early 2021, as the dust begins to settle following the worst pandemic any of us will (hopefully) ever have to endure, the demands for speedy internet access on the move is becoming more important than ever before. Does FWA really offer the best way to meet the last mile challenge that wired networks have been unable to solve? If so, how?

"FWA has several major benefits when compared to fixed line/fibre deployments," says

David Sumi, VP of marketing at wireless gigabit solution provider Siklu. "Especially in a large area such as Africa where many communities are spread out. Fixed line deployments are almost always more expensive than FWA and take months to install versus FWA which can be up and running in weeks. It used to be that FWA was at a speed disadvantage to wireline, but with mmWave systems delivering up to 10Gbps full duplex, this is no longer the case. For regions that lack existing wireline infrastructure FWA is cheaper and faster."

Large swathes of Africa certainly lack the infrastructure Sumi mentions, which is unsurprising when one considers the topography across the bottom half of the world's largest continent by land mass.

WiFiontheMove is a South African firm run by Justin Farnell, the company CEO and founder. He says that because Africa "is so huge", the cost of running fixed fibre into most towns and villages just isn't financially viable. "Poynting's FIBREPOYNT have developed a FWA solution that saves 50% of the OPEX costs of a traditional fibre deployment, whilst delivering equivalent speeds and QOS, through patented beamforming RF technology."

The good news is "FWA is generally lower cost to deploy than wired networks such as fibre optic cable", especially outside of rural areas where the distances between buildings increase, making the cost of laying fibre higher, says William Webb, chief technology officer (CTO) at Cambridge Broadband Networks Group (CBNG). "Where broadband is not available due to cost then FWA can provide an excellent solution," he continues. "However, even with FWA there will be some regions so remote that only with government funding will it be economically viable to connect them."

For Simon Fletcher, CTO at independent advisory Real Wireless, FWA "has to be a part of the solution" along with options such as satellite that must also be considered. "However if tower infrastructure along with power and backhaul (which could be shared) are well placed, then FWA would give a good, scalable and robust capability for delivering the high per-user data rates that will inevitably be required and demanded by consumers and enterprises alike," he adds.

Eugina Jordan, VP, marketing at OpenRAN software firm Parallel Wireless, also explains how the cost of legacy high-speed broadband service through cable or fibre-to-the-x (FTTx) deployment, is a significant part of initial network deployment. "The average cost of laying fibre is US$15,000 per mile," she says. "Also, in many areas the permits for related construction work will take months. This will be a huge burden for service providers because of initial costs that will not necessarily convert into revenue." However, Jordan says, a fixed wireless solution deployment "is simply based on a base station deployment" and no last mile delivery investment. "In this scenario, service providers will cover specific geographical areas and target customers without any specific investment for last mile delivery for that specific customer. "For rural area deployment; with lower population density, a cable or fibre solution will be even more costly and their ROI will not justify the initial investment or on-going investment due to low ARPU."

> "There is, unfortunately, no single blanket solution that will meet the exact requirements in all scenarios"

Of course, the availability, indeed quality of connectivity depends heavily on where one is located. When it comes to the last point of contact within a shopping centre, on a campus, on a train or bus, or even workers risking their lives in a mine, different technological options are needed, according to Kamal Mokrani, global vice president at broadband wireless development business Infinet Wireless. "There is, unfortunately, no single blanket solution that will meet the exact requirements in all scenarios," he says. Our experience has shown that the challenges we would need to overcome in a shopping centre, as an example, are totally different from those we encounter in a mining environment where signal propagation can be affected by many geological structures and man-made obstacles."

Mokrani says that when hundreds, if not thousands of retail customers, decide to go shopping at the same time, Infinet's solutions tend to focus more on relieving the well-known bottleneck related to backhauling capacity, thus offering sufficient capacity to ensure both "high quality" voice calls and Internet access.

"High-speed connectivity for passengers on a train, bus or metro present us with completely different challenges, but ones which we have already been resolved in many of our deployments around the world," he continues. All our wireless solutions are adaptable to the specific environment we are faced with, thanks to our approach in developing Software Defined Radio (SDR) platforms with all the flexibility they offer us and our customers. For example, when roaming between base stations deployed along the tracks for a train or a pre-defined route for other moving vehicles, seamless handover from one access point to another, whilst keeping latency of the data transmitted at its lowest level possible, is the biggest challenge for such high-speed mobility applications."

These contexts all have subtly different principle drivers of the demand, argues Fletcher. "A shopping centre will be primarily focussed on B2C, while a mine would be more B2B as the driving force," he says. "The nature of the data being transmitted wirelessly – B2B or B2C – will determine and push the economic principles that shape the network deployment principles. While FWA can provide a good group / shared connection on which to bolt a Wi-Fi access solution and would work for a shopping centre, mines are a well-understood scenario, often choosing to deploy a mobile micro BTS in lower spectrum bands to maximise coverage


Kamal Mokrani, global vice president, Infinet Wireless

over wide expanses of land, and even into the tunnel system itself. Trains and buses are a different scenario altogether and don't really lend themselves to FWA solutions."

Webb says that the last point of connectivity must use a technology widely available in handsets, tablets, laptops and other devices. However, there are only two options - cellular and Wi-Fi. "Both are used in places like shopping centres where mobile operators are often keen to deploy cellular solutions alongside the shopping centre owner providing Wi-Fi," he adds. "In locations where mobile operators are less interested in deployment then only Wi-Fi is used. Many trains and buses now have Wi-Fi deployed within them."

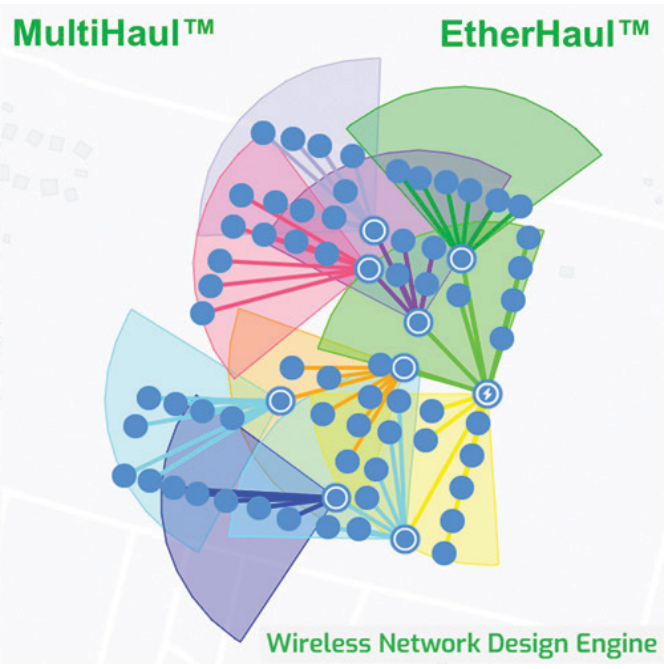
Historically, there was no ultra-high bandwidth alternative to fibre, but high performance FWA has emerged to fill the gigabit broadband desire when fibre is not an option. What's more, technically, there are no limitations to bands that can be used to deploy FWA. In the case of LTE network deployments, operators often favour 800MHz, 1.8GHz and 2.1GHz bands for rural and suburban areas while using 2.3 GHz and 2.6 GHz for urban areas. The same strategy could be applied for FWA, however, due to the possibility of mitigating the adverse effects of higher propagation loss, it is feasible to also consider high carrier frequencies such as those in the 3.5GHz range where large bandwidths are more readily available.

Clearly a good solution for connectivity in even the most unforgiving of environments, but will opportunities for FWA continue to open up as operators and service providers in the region realise the benefits of LTE-based FWA?

"Most definitely," argues Farnell. "The current auction in South Africa of much needed spectrum in the 700, 800, 2600 and 3500MHz bands will drive down LTE data and voice costs and improve service quality. So the growth prospects for the FWA sector look strong."

As far as Jordan is concerned, it's just another, more cost-effective way to deliver coverage. "The coverage it delivers will enable not only many more opportunities, but also creates services like eLearning, eHealth and eCommerce that will help to move the region forward," she adds. However, she says that legacy LTE-based fixed wireless solution deployment relies on a complicated deployment and configuration process during site installation. "This requires a complicated preparation phase and expert technician presence at the time of any new site installation," Jordan says.

Webb says opportunities for FWA already exist, citing every home and building without a



broadband connection. Nevertheless, he says LTE is not the solution, because it is designed for mobile use and is too expensive and too low capacity for FWA. "To put it into perspective, a mobile user tends to have a monthly data consumption of about 5GByte/month, a home about 350GByte/month - 70 times more," says Webb. "Using LTE or even 5G mobile to provide home broadband is like trying to use a car to transport 50 people - a coach is far better suited."

In fact, Webb is rather blunt about LTE and 5G being used for FWA, calling it a waste of more costly infrastructure and due to densification and the transitory nature of mobile users coming in and out of the coverage area, the user's bandwidth experience is not predictable or guaranteed. "FWA is static and so can be designed to provide predictable service which can be backed by service level agreements," he argues. "There is a great deal of fibre deployed in African countries, making FWA more of a niche solution for urban residential/enterprise connectivity. However, FWA will always have a strong foothold in rural and suburban communities where the costs to lay fibre over dispersed dwellings remains largely prohibitive."

The changes that have occurred in recent years with the introduction of LTE, 5G and more advanced FWA technologies have clearly been monumental across a plethora of industry sectors. Mokrani says "the heightened consumer adoption of mobile devices is due to the lack of adequate fixed infrastructures" in many countries.

"This has leveraged broadband wireless technology providers to play a much bigger role than traditional fixed operators by relieving the pressure for backhauling data and voice traffic from the mobile operators' base stations to the rest of their network," Mokrani continues. "Network operators of all types naturally want to spread the cost of installation and maintenance of any new technology across as many services and applications as possible."

He argues that the largest opportunity Infinet predicts for FWA, whether LTE-based or others, will be in emerging countries where fixed broadband via legacy fibre, cable or DSL is simply not available today. "In developed countries, we are seeing strong signs that FWA technologies are giving service providers a more competitive edge over more expensive and sometimes unreliable wired alternatives," Mokrani adds. "The biggest opportunity we see for LTE-based FWA specifically will be for the residential market, especially fuelled by the current Covid-19 pandemic where more and more people are having to work from home and demanding broadband speeds so as to stay fully operational and productive."

Let's look to the future. While microwave links have long been the cheap and effective solution, some believe there is now a real danger of usurpation by mobile tech such as 5G, whilst others see this in bigger towns and cities only.

Jordan says the approach adopted by fixed wireless service providers to network deployment is based on coverage limited or capacity limited scenarios. "In a coverage limited scenario, service providers main objective is providing acceptable coverage for a specific area considering targeted SLA for subscribers," she explains. "In a capacity limited scenario, service provider addresses limited capacity in a geographical area by adding extra base stations in the specific geographical area already has coverage."

Jordan says that although "the classical deployment will start with a 'search ring' identification", following site acquisition and deployment; in many rural deployments, ease of deployment is the main objective for providers.

Mokrani argues that "there is no doubt that all types of wireless technologies have a significant role to play in improving broadband access in all parts of Africa. "Some of these technologies may still have a long way to go before they become universally accepted, with political and regulatory policies being the biggest obstacles to ubiquitous connectivity, but their acceptance and deployment are certainly crucial for bridging the digital divide between urban and rural areas," he continues. "There is noticeably more demand for broadband connectivity in cities and bigger towns than rural areas simply because that's where most companies and businesses are physically located. Mobile technologies such as 4G or 5G are not necessarily the most trusted platforms for a bank, as just one example, to establish connectivity between its branches and its headquarters as their managers value data security much more than anything else. They would most certainly deploy their own private networks, such as one based on FWA, and not want to share best-efforts network capacity from mobile networks with other users, ultimately exposing themselves to potential cyber threats and attacks. The same principle is also applicable to mission critical applications such as the fire brigade, the ambulance service and law enforcement agencies, all favouring a dedicated and private network for their own use only."

As far as Webb is concerned, mobile technology is great....for mobiles. The problem, he says, is that "it is not designed" for providing broadband connection to buildings. "It is both very expensive as a solution to fixed broadband and lacks sufficient capacity, especially after providing service to mobile users," Webb adds. "There are few examples of widespread FWA solutions using mobile technology and those that exist tend to require massive investment in a denser network of base stations. Better to use FWA - a technology designed for the purpose, with much more capacity and reliability."

Lest we take it for granted, remember that incredible things happen when people connect to the internet or with each other. Whether the location is rural or urban, domestic, international, telco or cable, enterprise or residential, it sounds like optimised gigabit broadband solutions deliver the vision of global networking. FWA is addressing last mile deployment challenges timely, cost effectively and with increased speed and resilience. That can only be a good thing. ■

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antenna solutions

Mobile Mark is a leading supplier of innovative, high performance antennas to wireless companies across the globe. We've been in the wireless industry for over 30 years and have our roots in the early Cellular trials. Today, we benefit from enhanced design capabilities and expanded production capacity – along with a greater understanding of new and emerging markets such as mining and exploration.

Modern mining operations rely on a battalion of vehicles, ranging from massive extraction vehicles to modest-sized material transport trucks. These vehicles operate in tough environments where high vibration is a frequent wear and tear challenge. Mining companies throughout Africa have relied on our rugged, foam-filled mobile antennas for consistent connections. Mobile Mark's infrastructure antennas have been used for rapid deployment and redundancy coverage for effective wireless coverage in isolated settings.

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Sepura SC21

Small and light, the SC21 is the next-generation, smart TETRA hand-portable radio. With a wide range of functionality inherited from the SC20 hand-portable - yet 25% smaller - it offers all the benefits of a compact radio.

Reliable performance: With a best-in-class TETRA engine, the SC21 allows you to keep communicating where other small handsets fail. Class 3 high-power RF transmission, coupled with exceptional receive sensitivity, gives the SC21 extended operational range.

Powerful Audio: The SC21's best-in-class audio capability allows for rich, clear voice communication, however noisy the environment. The powerful, directional speaker projects audio to the user's ear, providing extra clarity, and unique Water Porting technology ensures that clarity is maintained, even in continuous, heavy rain.

Advanced Safety Features: The SC21's advanced worker safety features offer peace of mind for lone and remote workers at all times of the day or night, including automated Man-Down and Lone Worker protection, biometric user health monitoring and location tracking.

User Friendly: The SC21 has a 2.4" high resolution QVGA screen – the largest on any TETRA hand-portable – allowing for quick and easy viewing in all light conditions, including direct sunlight. *sepura.com*

Doodle Labs' Mesh Rider OS for the Smart Radio Platform

Doodle Labs is "pleased" to release Mesh Rider OS firmware version 2021-03 for the Smart Radio. This firmware update delivers significant new features and performance improvements, including improved link reliability, improved management tools and the customisation of smart radios. Starting with the former, a new link monitor constantly checks the status of the wireless link and triggers a rapid recovery in the event of a link loss. There is also a pre-flight link check tool that runs through a series of checks to test the integrity of RF link quality for each antenna. In addition, the automatic channel selection (ACS) for interference mitigation means the Smart Radio will periodically monitor the medium and may switch over to a better operating channel. Elsewhere, the web GUI, Doodle Labs says, has been revamped to provide a simple and clean interface for an enhanced user experience. By default, it provides commonly used settings, and click the "Advanced Settings" button reveals all of the original settings. Meanwhile, the Mesh Rider SDK will allow customers to write and compile their own software to run on the Smart Radio. "We enhanced the Mesh Rider OS based on direct feedback from our customers to meet their operational requirements," says Aaron Do, manager of application engineering and customer support at Doodle Labs. *doodlelabs.com*

Ericsson launches 5G RAN slicing

Swedish gear-maker Ericsson's new 5G network slicing solution for radio access networks (RAN) enables communications service providers to deliver customised 5G services with guaranteed performance, the company says.

Now commercially available, Ericsson 5G RAN Slicing allocates radio resources at one millisecond scheduling and supports multi-dimensional service differentiation handling across slices. This, the company reckons, strengthens end-to-end slicing capabilities for dynamic resource management and orchestration that ensure the high-quality end-user experience required by diverse use cases.

Network slicing supports multiple logical networks for different service types over one common infrastructure. It is a key enabler for unlocking 5G revenue opportunities such as enhanced video, and in-car connectivity, and extended reality.

"Ericsson 5G RAN Slicing dynamically optimizes radio resources to deliver significantly more spectrum-efficient radio access network slicing," says Per Narvinger, head of product area networks, Ericsson. "What makes our solution distinct is that it boosts end-to-end management and orchestration support for fast and efficient service delivery. This gives service providers the differentiation and guaranteed performance needed to monetize 5G investments with diverse use cases. With 5G as innovation platform, we continue to drive value for our customers." *ericsson.com*

ThinKom antenna design 'offers flexible installation'

ThinKom Solutions has developed a new product variant of its VICTS aero satellite communication antennas, which, it claims, enables more flexible installation choices and allows for smaller distributed and embedded phased-array applications.

The new product variant, which targets government and military beyond-line-of-sight (BLOS) satellite communication markets, integrates the VICTS antenna, antenna control unit (ACU) and power-supply (PS) electronics into a single low-profile small-footprint package. This eliminates the need for a separate line-replaceable unit (LRU) for the ACU/PS. Further, the unique high-efficiency and low-power characteristics of the VICTS phased array fully eliminate the need for other bulky and power-consuming LRUs, such as power-conditioning units, heat-exchanger units and external RF/power/cooling manifolds.

"This new design is part of our strategy to become the preferred satellite antenna choice for smaller volume-limited and power-limited platforms," says Bill Milroy, chairman and CTO of ThinKom Solutions.

Another apparent plus is the incorporation of the ACU into the base of the antenna does not result in any increase in mounting footprint and maintains the antenna's highly favoured low-profile characteristics. The antenna measures less than 9cm in total height, while retaining the flight-proven, high-reliability design and product features for which the VICTS antennas have become known.

ThinKom says an added benefit of the new product variant is enabling the transmit and receive antennas to be co-located or alternatively mounted in remotely separated platform locations. This maximises application flexibility in terms of packaging, weight balance and other airframe and operational considerations. *thinkom.com*

Introducing Siklu's new Terragraph-compliant series

With the Terragraph-compliant MultiHaul TG series, Siklu says it's lowering the cost of delivering services to homes, businesses and within smart city broadband IoT applications. The TG series consists of distribution nodes (DNs) and client nodes (TUs). Siklu's N366 is an integrated Terragraph compliant DN that provides 360-degree coverage, is able to self-organise into a neighbourhood L2 SDN mesh and provides just under 16Gbps of total capacity. The MultiHaul TU265 acts as a client node with dynamic beam steering connecting to DNs and offers multiple ports for interface to on premise networks via copper or fibre. With Siklu's N366 connecting to other N366 nodes, or to the TU series the MultiHaul TG product line offers, the company says, the greatest flexibility in delivering gigabit connections in dense environments. *siklu.com*

Teltronic presents the new MCBS

Teltronic presents the new MCBS, an outdoor TETRA base station which, through the use of SDR (Software defined radio) techniques, provides up to four carriers in a single compact unit, offering, it reckons, the highest level of performance in a single, lightweight and compact device.

The multi-carrier technology, the MCBS, with its 40W of RF Power, is apparently able to offer the features of an indoor fixed base station in a single compact device that is prepared to operate outdoors without requiring civil works for its installation, which means a significant reduction in costs and deployment time in railway environments. In addition, it allows different configurations to adapt flexibly to any number of subscribers and system traffic load.

Furthermore, operation and maintenance tasks are apparently simplified as the MCBS is configured and monitored completely remotely from the NEBULA infrastructure Network Management System, which incorporates a set of tools that allow supervising its status in real time, monitoring the activity of the network users, having access to statistics and alarm troubleshooting. All this, added to its low consumption, means significant savings in OPEX.

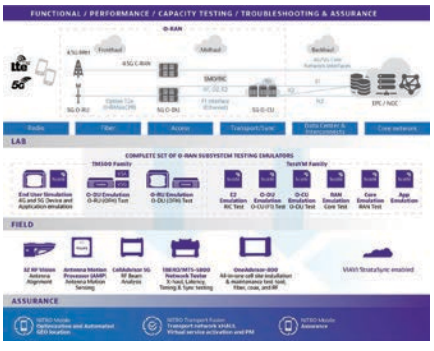
Similarly, the increase in the number of radio resources available in a TETRA zone is greatly simplified, as it does not require any hardware upgrade or a visit to the site, but only the incorporation of licenses to activate new carriers.

"With this development, Teltronic shows that we keep our commitment to TETRA technology and our NEBULA infrastructure, incorporating into our portfolio a new product that is the result of hours of intense work by our R&D engineers and offers unique performance and capabilities in the radio communications market," explains the company's CEO, Juan Ferro. *teltronic.es*

Viavi releases 2021 updates to the Test Suite for O-RAN Specifications

Viavi Solutions introduces updates to its industry-first Test Suite for O-RAN Specifications. The O-RAN ALLIANCE's specifications for open radio access networks are being adopted by operators and equipment manufacturers worldwide, to reduce infrastructure costs and lower the barrier to entry for new product innovation.

Viavi says the test suite has been augmented to include use cases of critical importance as O-RAN becomes adopted at scale, as well as learnings from customer engagements around the globe. Based on its position validating network products for operators and manufacturers worldwide – including all Tier-1 network equipment manufacturers – Viavi boasts to have the most comprehensive O-RAN test platform on the market, with CUSM-plane parameters used by more vendors than any other solution.



The company is also active in specifications development, as the editor of interoperability test specifications in the open fronthaul (WG4) and open interfaces (WG5) working groups, and the co-chair of multiple working groups at the O-RAN ALLIANCE. "Viavi's active contributions have enabled it to develop partnerships with complementary solutions from best-of-breed vendors," the company argues. *viavisolutions.com*

Look out for...

China launches 'world's first 6G' test satellite

China launched what it claimed to be the first ever 6G experimental satellite to test communications from space using high-frequency terahertz spectrum.

The Chinese embassy in the US capital Washington, DC tweeted that the country's "6G" satellite was one of 13 aboard the Long March-6 rocket, which launched November 6 at the Taiyuan Satellite Launch Centre in Shanxi province.

The 70kg 6G test satellite aims to verify the performance of data transmission using terahertz spectrum and will test a number of smart city, environmental protection and disaster prevention applications, such as crop and forest fire monitoring, according to local media reports.

This sixth-generation mobile access technology has already started to gain momentum as major industry players back a launch as early as 2030.

South Korean giant Samsung expects the ITU-R to begin work on 6G in 2021, with the standard to be completed as early as 2028. This would open the door to the earliest deployments in 10 years.

The challenges to 6G are many, including requiring 100-times the data throughput of 5G and sub-millisecond latency, AT&T executive Mazin Gilbert said at the 6G Symposium last month.

Last year, US operators Verizon, AT&T, T-Mobile US and US Cellular joined other operators under the guise of the Next G Alliance, aiming to steer development of 6G and establish North America as a global leader in the technology.

Japanese mobile phone operator NTT Docomo made early moves to develop 6G technology in January with a goal of a commercial launch by 2030 and in May, China Unicom and ZTE signed a strategic agreement to develop 6G technologies.

Studies have also contributed to a lot of progress in the 6G arena. The University of California that claimed significant progress by building a device that can speed up the process of development and save substantial amounts of time during the design phase.

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Caribbean Express: next stop Jamaica

The Caribbean Express, a new multi-billion-dollar submarine cable system being rolled out by American telecom development firm, Ocean Networks, is making its way to Jamaica.

An 18-fibre pair subsea cable system linking the state of Florida to Panama, which is just being built out, is also being extended to the Caribbean island's capital, Kingston.

In the initial phase the Caribbean Express network will not only run between Palm Beach, Florida and Balboa, Panama, but with additional landing points in Cancún, Mexico and Cartagena, Colombia.

Ocean Networks disclosed plans to build more than a dozen landing points along the route in the coming years in cities such Kingston (Jamaica), Havana (Cuba), George Town (Grand Cayman), Puerto Barrios (Guatemala), Puerto Lempira (Honduras), Bluefields (Nicaragua), and Limón (Costa Rica).

The firm also said that once launched, the submarine cable system will be the only system that can offer dedicated dark fibre pair indefeasible right of use (IRU) in the Caribbean market. An IRU permits customer to have exclusive use of fibres throughout the term of a contract.

Brazil regulator approves 5G spectrum auction rules

Brazilian telecom regulator Anatel approved rules for a spectrum auction for 5G networks this year and rejected calls to curb China's Huawei Technologies an equipment supplier.

The South American country's president Jair Bolsonaro last year criticised the Chinese company and considered banning the world's largest telecom equipment-maker from the country's fifth-generation technology market on security concerns.

Brazil's telecom companies insisted on a free market and complained that excluding Huawei would cost billions of dollars to replace the equipment of the tech giant, which currently supplies 50% of the existing 3G and 4G networks.

Rules for the auction expected in a few months have costly conditions such as requiring telecom companies to migrate by next year to more advanced technology with stand-alone networks not based on their current technology. They will also have to cover the big northern Amazon region with broadband connectivity, largely using optic fibre cables laid in rivers, as well as build a separate secure network for the federal government.

Industry representatives said Huawei could not be excluded from Brazil's 5G market because, cost aside, it would set the country back three to four years in technology.

Two of Brazil's main telecom companies, Telefônica Brasil and Claro are pressing for a five-year transition to the more advanced stand-alone networks.

"The stand-alone condition requires changing the core of today's networks and will set us back years," said Vivien Suruagy, head of Feninfra, a lobby representing 137,000 companies that build and maintain telecommunications networks.

The rules must be approved by Brazil's Federal Audit Court, the TCU, where the telecoms hope the government's onerous conditions can be changed, Suruagy added.

Russia's MTS launches pilot 5G network

Russian telecom MTS launched the country's first user pilot 5G network in the 4.9GHz band across 14 locations in Moscow, using Chinese Huawei's telecom equipment.

Subscribers using 5G-compatible smartphones will be able to connect to 5G Internet at speeds up to 1.5 Gbps, the firm said in a press release. However, users will not be able to independently connect to pilot zones, the company said and added that the selection of participants in the pilot project using smartphones with support for the n79 range will be carried out on basis analysis of data in their movement, proximity to pilot locations, internet traffic, among others.

MTS also said the number of 5G zones and consequently, the coverage will increase over time. However, no further information was provided.

At the first stage, MTS and Huawei will enable round-the-clock video surveillance over the 5G network while at the second stage, they will provide indoor 5G coverage.

In late Februrary, MTS together with Skoltech, expanded the 5G coverage in Skolkovo, deploying a pilot network for the International Medical Cluster (MMK).

Russia adopted a roadmap last year intending to roll out 5G networks across 10 cities by 2024.

SES supplies broadband to Indonesian villages

Luxembourg's SES Networks has signed a new broadband deal with Dwi Tunggal Putra (DTP), to enable residents of 158 villages in remote parts of Indonesia's West Java Province.

The move will offer access to crucial online resources such as educational content, as well as unlocking the potential of the region's digital economy.

DTP will be using high-throughput capacity on the SES-12 satellite to support the Ministry of Communication and Information Technology's Smart Village project and fulfil the government's universal service obligation (USO).

SES is already serving Indonesia's telecommunication and information accessibility agency Badan Aksesibilitas Telekomunikasi dan Informasi's (BAKTI) Leased Capacity Project using the SES-12 ground station in Indonesia. The Smart Village project, spearheaded by BAKTI, aims to bridge the digital divide and bring much-needed e-government and other essential services to underserved rural communities of Indonesia.

The move will offer access to crucial online resources such as educational content, as well as unlocking the potential of the region's digital economy

"Satellite connectivity plays a critical role in providing internet access to many of Indonesia's villages and small towns located in remote areas," said Edi Sugianto, chief commercial officer of DTP. "At DTP, we strive to bridge the digital divide by providing high-quality internet to these far-flung, remote communities and thereby allowing access to essential e-government, e-health and e-learning services, among others."

Wireless Logic expands global footprint LPWAN Asia coverage

Wireless Logic, the IoT connectivity platform provider, has further strengthened its global presence and market position with the expansion of low power wide area network (LPWAN) services across Asia, Europe and North America.

The enlargement comes as a direct result of new mobile operator partnerships and the recent acquisition of international businesses, including Arkessa, Com4, New Line IoT and Datamobile AG.

"When it comes to IoT connectivity, NB IoT and LTE-M services represent low cost, low power solutions that are highly reliable and can stay in the field for multiple years," said Matthew Tate, CCO at Wireless Logic. "As a result of recent expansion, we are in a strong position to offer customers the local LPWAN services that they are asking for with direct access to 75 cellular LPWAN networks in 45 countries across three continents through SIMPro, our operator and technology agnostic platform."

The enlargement comes as a direct result of new mobile operator partnerships and the recent acquisition of international businesses, including Arkessa, Com4, New Line IoT and Datamobile AG

As part of its LPWAN offering, Wireless Logic will provide both LTE-M and NB IoT services for IoT applications across the globe. LTE-M is optimised for higher bandwidth and mobile applications, delivering latency and speeds broadly equivalent to 3G, therefore making it suitable for telematics. NB IoT is instead more suitable for static, lower-data, high-density and passive sensor applications, making it ideal for use cases such as smart metering.

Phoenix Tower and Monaco Telecom partner up

Phoenix Tower International (PTI) and Monaco Telecom have joined forces to operate new towers sites across Mediterranean island nations Cyprus and Malta.

The two companies will purchase over 815 existing wireless towers as well as acquiring newly built wireless towers over six years via a build-to-suit programme.

"With this latest transaction, PTI continues to expand its presence across Europe and will demonstrate the neutral host independent tower model in two new markets to facilitate increased coverage expansion for all of the wireless operators and ultimately increased connectivity for the population of Malta and Cyprus," said Dagan Kasavana, chief executive officer of Phoenix Tower International. "As the economies of the world continue to recover from the impacts of Covid-19, Phoenix is proud to be working with the mobile network operators across the world to deploy more coverage solutions and is pleased to partner with Monaco Telecom on this transaction."

PTI and Monaco Telecom have also established a long-term tenancy agreement where the latter will occupy the sites for a minimum of 20 years. On completion, this transaction will position PTI as the largest tower infrastructure provider in both markets, as well as significantly expanding its footprint in Europe.

"This transaction allows us to create a strategic partnership in Cyprus and Malta with a leading international firm, which allows us to accelerate our investment plans on 5G and fibre where we are present," added Martin Péronnet, CEO of Monaco Telecom.

The deal, for an undisclosed sum, is subject to standard closing conditions.

Service provider Thaicom searches for LEO partner

Satellite service provider Thaicom is looking to serve as a partner for any operators offering low Earth orbit (LEO) satellite broadband services as the firm specialises in the regional market.

The move comes after the LEO satellite Starlink project under billionaire entrepreneur Elon Musk's SpaceX has allowed interested people to pre-order the service through its website with a refundable US$99 deposit, putting them on a priority list to purchase the Starlink kit when it becomes available.

The latter is targeting service coverage for Bangkok in 2022, according to its website. Interested customers in Thailand can pre-order the service, which will be allotted on a first-come first-serve basis.

"For a close satellite service society, we have been in the industry for long and we know all the operators, including Starlink," said Patompob Suwansiri, deputy chief executive and chief commercial officer of Thaicom. "We are looking to open for partnership with any LEO satellite providers. We have more knowledge about the regional market than global players do so we can support their businesses."

LEO satellites operate 500-2,000km from Earth's surface, versus traditional communication satellites, also known as geostationary satellites, that orbit at around 36,000km. The lower orbit means lower latency in signal transmission.

Furthermore, LEO satellites are projected by some to have strong business potential because they can beam the internet all over the globe.

Nokia to supply Cibicom with mission-critical LTE network

Nokia has partnered with Danish operator and internet service provider (ISP) Cibicom to implement a new 450MHz LTE (4G) network.

The project will ensure that key mission-critical services throughout the Nordic nation have access to highly reliable and secure connectivity as well as building preparedness for mass volume IoT adoption.

This deal means replacing the existing Cibicom radio networks and migrating them to a new framework that will enable full 4G data coverage across Denmark, as well as mass-volume IoT connectivity. Building on the company's 450mHz license acquisition in June, the project will allow Cibicom to improve its offering to utility companies and ensures that the service provider is in a strong position to adapt to changing customer requirements and offer new opportunities and application support around 5G 3.5Ghz.

"Radio networks supplying waste, water, energy, and transportation services must not only be foundationally sound and built to last but also prioritise security, quality, and reliability," said Lise Karstensen, head of Nordics at Nokia. "In addition, these sectors are also witnessing a growing need for IoT-powered remote monitoring and management solutions, increasing the focus on network and service quality, as well as uptime. This technology upgrade will make Cibicom's network ready for current and future demand."

Furthermore, this deployment will enhance Cibicom's credentials as the supplier of critical and business-critical infrastructure, such as waste, water, energy, and transportation. Smart grids and remote managed petrol stations are just some of the areas where these systems will be needed, as well as "blue light" emergency services,.

Currently, Cibicom covers 98% of Denmark and the deal will maintain that level of coverage, as well as provide improved connectivity for private households in neighbouring Greenland.

Greece's OTE Telecom targets growth

OTE Telecom, Greece's biggest telecoms operator said that revenue would start growing from the second half of the year as coronavirus vaccinations gather pace and transport restrictions are lifted.

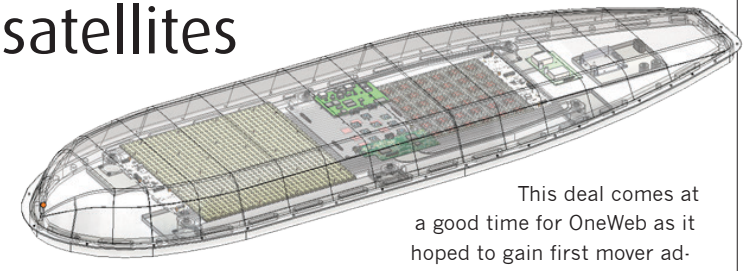
The firm, which is 46% owned and managed by Deutsche Telecom, said core earnings (EBITDA) were almost flat at €1.22bn (US$1.48bn) last year.

Revenues came in at €3.26bn, down 1.3% year-on-year, as global restrictions to slow down the spread of Covid-19 and a weak summer tourist season hit both roaming and its mobile business.

With vaccinations accelerating and tourism, a key growth driver for the Mediterranean country, seen reopening later this year, OTE said it expected a "progressive but measured" return to better operating conditions and revenue growth from the second half.

The operator, which has launched 5G services, said it would continue to focus on growing data usage.

IFC terminal to deliver Wi-Fi on aircraft via LEO/GEO satellites



OneWeb, the global communications network powered from Space and SatixFy UK, a multibeam antenna and terminal design specialist, are currently developing a new In-Flight Connectivity (IFC) terminal that will work over the OneWeb network as well as on Geostationary (GEO) satellite networks.

SatixFy UK has formed a Joint Venture with Singapore Technology Engineering Ltd (ST Engineering), called JetTalk, to exclusively commercialise the IFC terminal for the commercial aviation market.

OneWeb said it is confident of its suitability for all aviation applications - commercial, regional, business and government aviation use-cases. "OneWeb is creating IFC solutions which offer a significant increase in the whole passenger travelling experience," said Ben Griffin, VP mobility at OneWeb. "This agreement with SatixFy represents a major milestone for OneWeb Aviation, as we plot our path to facilitating onboard connectivity, globally, on commercial airliner and corporate jets, large and small."

Yoel Gat, CEO at SatixFy, added: "The ability to deploy multi-beam, multi-satellite, multi-orbit in-flight connectivity terminals is key in SatixFy's offerings. Aggregating capacity from multiple satellites will give customers the grade of service they expect to get on flights. This great leap forward is made possible thanks to the continuous support by ESA and the UK Space Agency."

This deal comes at a good time for OneWeb as it hoped to gain first mover advantage in the satellite broadband space, believing the combination of its harmonised spectrum and LEO constellation design would give it technological supremacy. It secured more than US$1bn in funding before filing bankruptcy protection last year. However, the business was rescued through a takeover by Indian telco Bharti Airtel and the Department for Business, Energy, and Industrial Strategy. The UK government now owns a third of the company after investing £400m in the satellite system. It allowed OneWeb to resume satellite launches and increase its constellation to 110.

MasMovil to buy out telecom rival Euskaltel

MasMovil has made a "friendly" takeover bid for rival Spanish telecom firm Euskaltel worth nearly €2bn, in a move destined to shake up the country's competitive sector.

The former said it had already secured the agreement of shareholders who hold 52.32% of Euskaltel's share capital. It is offering €11.17 per share in cash.

"MasMovil and Euskaltel together form a solid and complementary industrial project," MasMovil said in a statement, adding that the takeover would allow it to "reinforce and boost its growth and continue transforming the telecommunications sector in Spain."

In addition, MasMovil said its offer was conditional on achieving the acceptance of at least 75% of the share capital and obtaining all appropriate competition and regulatory authorisations. The buyer added that it would maintain the Euskaltel, R, Telecable and Virgin brands and maintain employment at those companies. MasMovil said acquiring Euskaltel would reinforce its position as Spain's fourth-largest telecoms company. Euskaltel declined to comment.

Nepal Gautam Buddha airport deploys Sepura SC20 TETRA radios

Gautam Buddha International Airport has become the second airport in Nepal to deploy a TETRA communication solution, following on from Tribhuvan International Airport.

The solution will be led by Sepura SC20 hand-held radios, providing the airport's security and operations team with the standard of secure, robust, reliable communications devices required to safely manage operations.

This mission critical communications solution, built on Teltronic's TETRA infrastructure, is part of the airport's wider infrastructure upgrade. When complete the airport should ease the burden on Tribhuvan.

The TETRA network will allow the airport to respond to the pressure of moving passengers, luggage and cargo at the airport site, improving both efficiency and safety. It will also enable co-ordination between the airport's security and operational teams for everyday operations and, where necessary, emergency response.

Sepura's regional partner in Nepal, Mahavir Shree International Pvt, delivered the solution to the airport's operational and security teams.

This mission critical communications solution, built on Teltronic's TETRA infrastructure, is part of the airport's wider infrastructure upgrade. When complete the airport should ease the burden on Tribhuvan

"By adopting Sepura's SC20 radios, airport staff will benefit from the robust design, crystal clear audio and class-leading coverage capability, making the radio suitable for those working across the airport in security roles and those working in noisy airside locations," said Shiv Prakash Khemka, director of Mahavir Shree International Pvt.

Sepura said that having seen the performance of Sepura's solutions around the world, the purchasing team at Gautam Buddha were convinced of the need to deploy a TETRA network to ensure that coverage was achieved throughout the entire airport site, including runways, covered walkways, passenger areas, cargo areas, hangars, underground areas and parking.

STC to list shares of internet services unit in IPO

Saudi Telecom Company (STC) will list the shares of its internet services unit in an initial public offering (IPO), it confirmed.

The move follows the completion of a feasibility study into the listing of the Arabian Internet and Communications Services Co.

STC said it was now in the process of submitting an application for the registration and offering of its shares to the Capital Market Authority and of an application for the listing of its shares to the Saudi Stock Exchange.

In February this year, STC topped the list of the most valuable telecoms brands in the Middle East and Africa, weeks after it reported its highest-ever annual revenue for eight years. STC's brand value increased 14% to US$9.2bn, jumping five places to 13th on the annual Brand Finance Telecoms 150 2021 report.

This improved ranking comes as it reported its highest annual revenue for eight years. Last year, total revenues reached SR58.94bn (US$15.72bn), an increase of 8.43%.

The Communications and Information Technology Commission also announced that STC has the highest mobile download speed in Saudi.

SpaceX's Starlink arriving in Lebanon in 2022

SpaceX satellite internet constellation, Starlink, is expected to have active coverage in Lebanon next year. According to its website, pre-orders are available with a fully-refundable deposit of US$99.

However, the deposit payment does not guarantee that the Starlink service and relevant kit will be available, but does establish priority for the payer in his or her region for purchasing the it when available in the future.

Starlink has already launched its beta service and made it available to a limited number of users in parts of Canada and the USA.

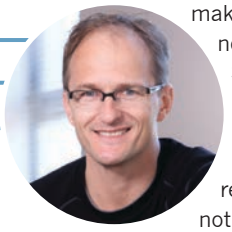
SpaceX has launched more than 1,000 satellites into space in over 24 missions. The company, owned by South African-born American business magnate Elon Musk, aims to deploy thousands more.

The full Starlink Kit, which includes a small mountable dish antenna, a Wi-Fi router, and power supply, currently retails at US$499. This service also requires a monthly $99 subscription.

Although Starlink is more expensive than most traditional internet services today, its ease of installation, high accessibility for remote areas, low latency, and impressive speeds (300 Mbps download speed), can make the high fees more bearable for some.

Q&A

Pieter de Villiers
co-founder and CEO
Clickatell



What was your big career break?

There were several little breaks as opposed to one big break. For example, I did not follow the career I originally set out to do as a qualified optometrist. So, I guess the first break was when I made a break from the path I had chosen originally and did something entrepreneurial by starting a technology business. What made this possible was that I was lucky enough to receive a good education, to have grown up in a home where I had access to a computer from a young age (technology did not scare me), and to have had an entrepreneur, my father, as a role model. Other breaks came in the form of timing when we launched our business. It was during the height of the internet era when digital proved to be a more scalable platform and, as a result, we had a lot of traction and therefore, access to capital. In many ways, there were a thousand little things versus the big bang theory of how we got to where we did.

Who was your hero growing up?

When we grow up, we go through various stages of awareness and amazement. While you may think Superman is someone you want to be one day for the sheer thrill of flying, you actually secretly look up to your older brother whom you may fight with often. As you get older, you realize that the strongest person you know is your mother or father or the person that raised you, as they make several sacrifices in order for you to reach your potential. If we are truly honest, our heroes are typically not some fictitious character we see on a screen but rather people that are in our lives and who give of themselves and their time to coach and mentor us. That said it is perfectly ok to be inspired by a Nelson Mandela, Steve Jobs, Elon Musk, Kamala Harris or someone you look up to.

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

A tale I share with many of our new starters is the one where I had been working 18-hour days for nearly 2 months writing Clickatell's business plan (in those days founders still required a business plan) only to have my Sony Vaio laptop crash. I lost weeks and weeks of work that I could not retrieve. It was really a moment of despair and disappointment as we did not have the luxury of time to re-do the plan. After falling asleep on my laptop one evening, I woke up and noticed a post it note (remember those) that read "If you can dream it, you can do it." It is a Walt Disney quote my mom wrote, and while that was not strictly advice, it was exactly what I needed at the time. It still motivates me years later despite new challenges arising as the business scales globally.

If you could live anywhere, where would it be?

Covid-19 has made this possible, hasn't it? I truly believe that if you could live anywhere in the world and you have been to Cape Town or Stellenbosch in South Africa it would probably be on your top 10 list of places to consider. Now, add cultural diversity, access to international flight routes, food and wine, mountain biking and trail running (not a golfer but that too is spectacular), the ability to have local impact and allocate a bonus point for proximity to family and friends, those two places reach the #1 spot in my case quite easily. This is why we moved from the San Francisco Bay Area to Stellenbosch in 2015, and we are loving it.

What would you do with $1m?

We are very blessed in that through hard work and growing up in a relatively privileged home in South Africa we have what we need, and aside from securing education for our kids and reducing debt, we would probably put the money into something that will make a difference in the community and country we live in such as SiMODiSA's efforts to make it easier for businesses to get started in South Africa. Money was never Maria (my wife) or my primary motivator, as we both realized that it does not lead to fulfillment or long-term enduring happiness. SiMODiSA and its partners are working on a 10 year digital skills intervention program that hopes to see the establishment of 100+ digital skill apprenticeship centers around South Africa. This would be a good place to invest the money into.

What's the strangest question you've ever been asked?

Why are you still doing Clickatell? It is a strange question, and I think it comes from a place of ignorance. I am sure founders who have a purpose and are on a mission to punch a hole in the universe will agree with me that it takes time and perseverance to do big things and understand that there are no overnight successes. So, unless you are a serial entrepreneur who probably builds and sells businesses for financial reasons rather than changing the world, which is not the same as we are doing, the question is quite frankly a silly one. I do not think people ask Jeff Bezos (not that I am in that league at all, but by way of example) why he is still at Amazon 26 years later.

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

I already made that choice when I moved from being a qualified optometrist to technology. Optometry is a great study direction, as it represents the intersection among physics and math (think lenses and the breaking of light and biology, think the eyes and the brain) and chemistry. As a student, I was challenged and fulfilled in so far, my interest and curiosity within the sciences. In practice, however, the world is very different and more retail than science, and therefore I decided to move into a different industry: technology. Now, I am closer to the sciences and technology innovation with an amazing team who leads the efforts, and I am loving it. If you can dream it, you can do it.

What's the best piece of advice you could give someone wanting to enter this industry?

This is a simple one. Technology is a great enabler to change the world, and it can truly be transformative, as we have learned at Clickatell. When we released 'four lines of code' that could make the internet communicate to a mobile phone we had no idea how it would change many, many sectors and lead to mobile and digital transformation that ultimately became chat banking and chat commerce. That said, the technology sector is one of the most competitive and fast-moving sectors out there, and you will need to be 100% sure you are solving a real-world problem as that would be table stakes. The rest requires hard work, great people around you, and a sprinkle of luck in terms of timing.

What's the best technological advancement of your lifetime?

Electric cars, it is about time we have alternatives to fossil fuel-based transport and I suspect our children will either own an electric vehicle one day or no vehicle at all as the landscape of self-driving cars and uber like service evolve. Certainly, if you live in the city having a car, plus insurance plus the cost and inconvenience of parking makes no sense. Imagine what we can convert parking spaces into.

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

I have been blessed and privileged to have done many things in my life that have been 'on the list' so to speak including seeing the Gorillas in Rwanda last month; thanks to an adventurous wife and having the means to do so. I would however like to do an adventure motorcycle ride across parts of Africa with some close friends.

What was the best thing about lockdown?

I think it is important to acknowledge that while lockdown is absolutely necessary to keep people safe and curb the spread of this devastating virus, it has also hurt many, many businesses including some of our customers. In response to the question; the best part of lockdown is certainly the time you get to spend together as a family. ■

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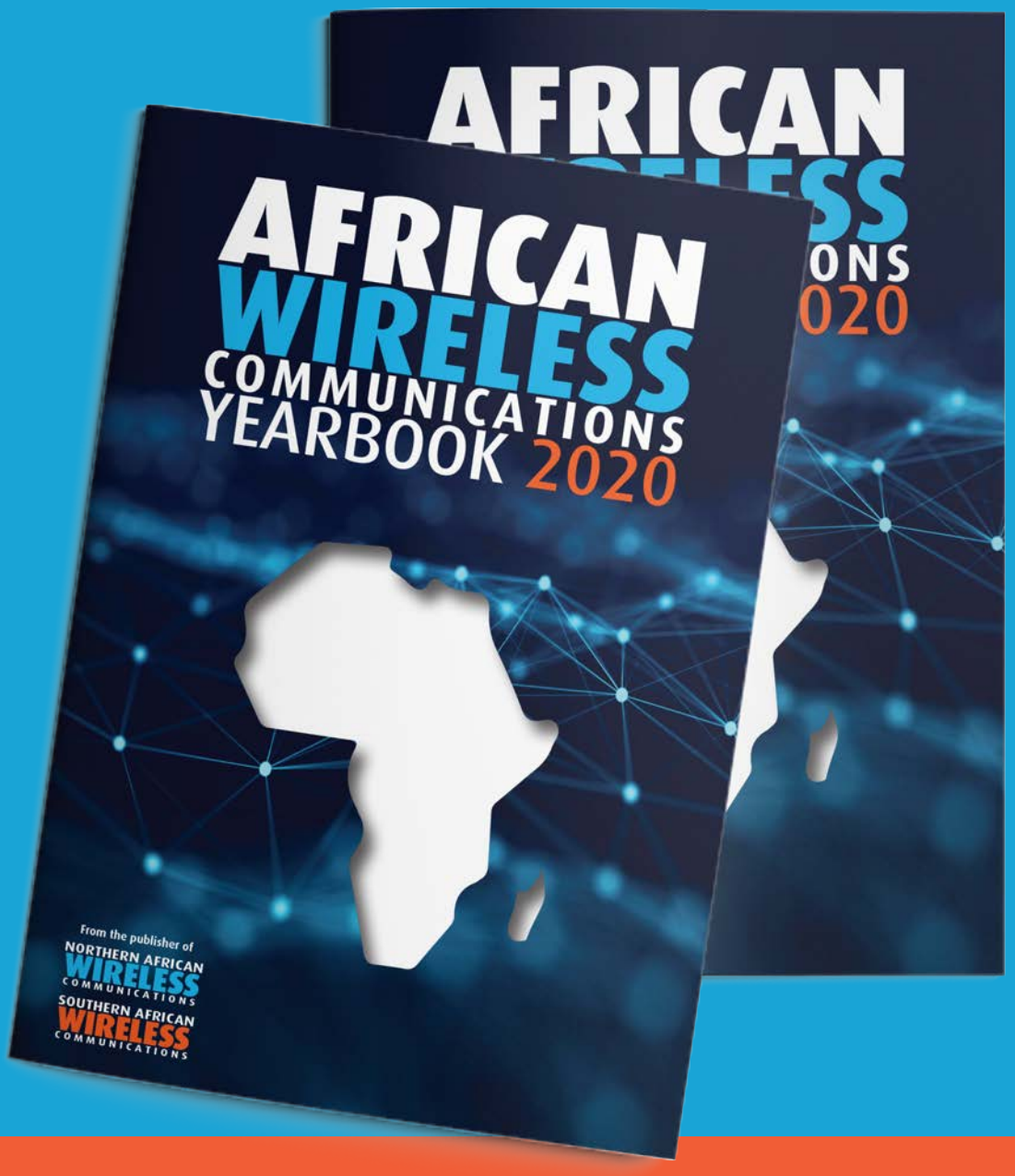

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