- **5G: the towers and the technology that aid its delivery**
- **Is industry inertia keeping SIM-swap fraud alive?**
- **Country focus: an in-depth look at Algeria**

Sanjeev Verma, CEO, of

squire technologies

Embracing hybrid networks to serve Africa's digital economy, p16

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Telecom26 to provide connectivity to SystemOne's new digital healthcare programmes in Angola and Nigeria

Telecom26 has been appointed by its long-term customer, SystemOne, to provide connectivity to new healthcare clinics across Angola and Nigeria.

The two companies are already working together in Ghana, Mozambique and Zimbabwe where SystemOne has tested more than 1.3 million blood samples for TB, HIV and Covid using the Telecom26 network.

These tests provide speedy diagnosis enabling patients to start treatment earlier which improves outcomes - and for measures to be taken to prevent the uncontrolled transmission of these deadly infectious diseases.

Key to the success of SystemOne's digital health and real-time diagnostic programs across Africa is reliable connectivity; speed of diagnosis and treatment is often the difference between life and death with many infectious diseases.

Unreliable bandwidth and patchy connectivity are problems encountered by ehealth programmes across the world. The traditional route is to buy local SIMs to provide device connectivity. Unfortunately, this limits users to one mobile network operator - and adds juggling multiple SIMs across devices to find the strongest local network to a long list of headaches for healthcare providers.

Telecom26's Global SIM cards and routers were developed with the specific goal of improving connectivity in remote and rural areas. They enable devices to automatically access and switch between multiple cellular networks - and any Wi-Fi or LANs - both in-country and across borders to ensure that they are using the best

performing service at any one time.

SystemOne's new digital healthcare initiative in Nigeria uses a custom-built app to track the result delivery, treatment initiation and recovery of patients with infectious diseases. Telecom26 has provided 1000 of its Global SIM cards which automatically switch between networks to find the fastest and most reliable connectivity.

In Angola SystemOne's medical devices are connected to a router via Wi-Fi cables with mobile broadband provided to the router by Telecom26 using the best available networks.

"Reliable connectivity is an essential component of our digital health offering," said Brad Cunningham, chief operating officer at SystemOne. "Once again, Telecom26's global connectivity service has proved to be the best,
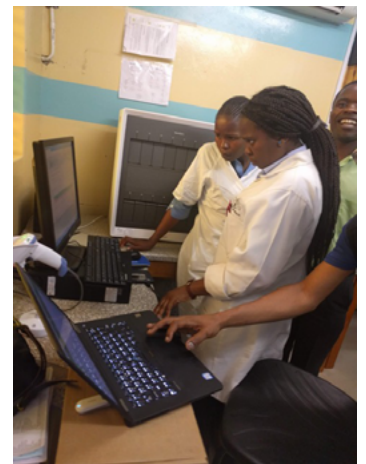
and most reliable, in Africa and there is no need for me to worry about the coverage of a single MNO, or the existence of roaming alliances. Together we are improving the healthcare provided to millions of people across Africa".

Egyptian regulator approves usage of new frequencies for mobile networks to improve services by 2022

Egypt's National Telecom Regulatory Authority (NTRA) green-lit the usage of new network frequencies for Vodafone, Etisalat, and WE and is expecting an improvement in network services by early 2022, it said.

The three network providers will run their services at 40 MHz of 2.6 GHz on the Time Division Duplex Spectrum, a new frequency band that is expected to expand the capacity of networks and improve services.

Minister of communications and information technology Amr Talaat explained that the step aims to improve the quality of telecommunications services. It

is also designed to help keep pace with the heightened demand for network services in the Egyptian market and support Egypt's digital transformation.

Talaat added that the new frequencies will help significantly improve the quality of voice and data services over the coming period.

The NTRA signed investment agreements estimated at US$1.170 billion in 2020 allowing Vodafone Egypt to start operating at a frequency of 40 MHz and Etisalat and WE at 20 MHz.

All three mobile network operators (MNOs) have been directed to take

the necessary measures to leverage the new frequencies as well as follow the technical procedures that will prepare the networks for the new frequencies and overcome the hurdles that may negatively affect the quality of services.

The NTRA is aiming to see remarkable improvement in the quality of voice and data services by early 2022 to catch up with the increased rate of cellular tower installations.

This year, several complaints have been made about poor network coverage and data services provided by MNOs nationwide.

In a NTRA report measuring the quality of calls and data services in the third quarter of 2021 in 81 cities and districts countrywide, Vodafone came in first and Orange last.

The authority has enforced several measures to raise the quality of services provided, including fining telecommunication companies E£25bn for violating phone service quality standards in accordance with the licences they have been granted.

Measures also include establishing 641 new mobile stations in the third quarter of 2021 to provide 500 villages with 4G network services, said the report.

InterSAT, Kymeta and Azercosmos to boost connectivity in Africa

Satellite connectivity provider InterSAT has entered an agreement with Kymeta and Azercosmos to deliver mobile satellite communication services using Kymeta's U8 terminals and InterSAT's SkyMOVE services across Africa, and carried by the Azerspace-2 satellite.

Under the terms of the deal, InterSAT to deliver a complete connectivity solution for on-the-go communications with the revolutionary Kymeta u8 terminal.

The u8 terminal was designed with Kymeta's software-defined, electronic beam steering technology and is low profile and mounts easily on vehicles and vessels for seamless communications on the move.

"Kymeta's antenna technology is uniquely positioned to meet the demand for mobile broadband, providing internet access via satellite or hybrid satellite-cellular networks on a user-defined basis to enable connectivity while on the move or on

the pause," the businesses said in a statement. "When combined with InterSAT's SkyMOVE connectivity offerings on Azerspace-2 satellite and back-end support suite of services, customers will have unique access to an experience and product that no other ISP company in Africa offers today."

The internet penetration rate in Africa is only 28% currently, according to the Global System Operators Association (GSMA).

In its report The Mobile Economy Sub-Saharan Africa 2021, it says broadband coverage is still low.

Meanwhile the Swedish gear-maker Ericsson estimates that 3G will still be the most widely used mobile technology by 2026. That is, nearly 40% compared to 28% for 4G.

According to the International Telecommunication Union (ITU), the lack of quality access is one of the main reasons why people still use so little internet in Africa.

'Sub-Saharan mobile financial services use more than triples in six years' – Ericsson report

Nearly half of all consumers in sub-Saharan Africa use mobile financial services in 2021 –more than a three-fold increase in the last six years – according to a new Ericsson Consumer and Market Insight report.

Titled "Mobile Financial Services on the Rise", the report also highlights the impact of the Covid-19 pandemic on mobile financial services uptake, with 54% of consumers surveyed saying that they use mobile financial services transactions more now. Some 70% are more positive towards mobile

financial services as a preferred contactless alternate to cash.

The report research, conducted by Ericsson Consumer & IndustryLab early this year, surveyed 3,200 consumers across six sub-Saharan African countries to assess the growth of mobile financial services in light of technology and infrastructure gains across the region, as well as the Covid-19 pandemic impact on financial behaviour.

Senegal, Angola, Nigeria, Ivory Coast, Ghana and Ethiopia are the countries that feature.

The report further highlights that users list faster transactions as the number one factor that would encourage them to use mobile money services more often in the near future.

"This new research underlines the significant empowering role that mobile financial services play in Sub-Saharan Africa, both in combating the impact of the pandemic and in fuelling economic development across Africa through the transformational potential of expanded and affordable access to financial solutions," said

Lucky La Riccia, vice president and head of digital dervices, Ericsson Middle East and Africa. "Our aim is to support the digitalization of Africa through technologies such as mobile broadband. Ericsson's mobile financial solutions support this aim as we accelerate financial inclusion."

Communications service providers (CSPs) are the most popular mobile financial services supplier, with up to 90% of sub-Saharan African mobile financial services users now using the technology through these companies, according to Ericsson.

Airtel Africa and Unicef in multi-million dollar partnership to scale-up digital learning

Airtel Africa and global children's charity Unicef signed a five-year "multi-million dollar" partnership to scale-up digital learning for children across 13 African countries.

The move is part of the global Reimagine Education initiative launched by Unicef last year to generate public and private sector investment in digital learning and help children catch up amid the pandemic.

Airtel Africa is the first African private sector partner to make a multimillion-dollar commitment to the initiative. It will benefit children in Chad, Congo, Democratic Republic of the Congo, Gabon, Kenya, Madagascar, Malawi, Niger, Nigeria, Rwanda, Tanzania, Uganda and Zambia.

"As a business, we have focused on education as a key area of our corporate social responsibility, and we are delighted that this partnership

with Unicef will enable us to accelerate results," said Olusegun Ogunsanya, chief executive officer of Airtel Africa. It also coincides with the launch of our new sustainability strategy, which lays out our commitment to education."

Airtel's financial and in-kind contribution to the partnership is valued at US$57 million over five years.

The Airtel Africa and Unicef pan-African partnership will benefit learners in Chad, Congo, Democratic Republic of the Congo, Gabon, Kenya, Madagascar, Malawi, Niger, Nigeria, Rwanda, Tanzania, Uganda and Zambia.

Clickatell launches Chat 2 Pay

Mobile communications and chat commerce firm Clickatell has launched Chat 2 Pay, a mobile service that lets businesses accept payments from customers via SMS or WhatsApp.

The service aims to offer a cost-efficient and convenient way for businesses to receive payments.

Furthermore, customers need not disclose bank account or card details to those they do business with and this reduces the chance of fraud.

It also provides an answer to in-person proximity concerns during the Covid-19 pandemic.

"Chat 2 Pay addresses today's boom worldwide in digital payments – a shift in consumer behaviour and response to the impact of the pandemic," said Clickatell CEO, Pieter de Villiers. "By taking the payment capabilities brands have on their websites, apps, and in their call centres, and making them available via chat, simpler payments will further drive adoption of this low-cost, efficient channel for interactions

and transactions."

Using Chat 2 Pay, businesses can send a payment request from an Order Management System (OMS) to a customer in the form of a link.

Customers then receive the link on their mobile device via SMS or WhatsApp. After clicking it, it will direct them to a hosted checkout page.

They can then add their details and submit the payments. After that, they will receive confirmation and a receipt via the same chat channel.

De Villiers co-founded Clickatell in 2000. The company is based in Silicon Valley in the US and has offices in Canada, Nigeria and South Africa.
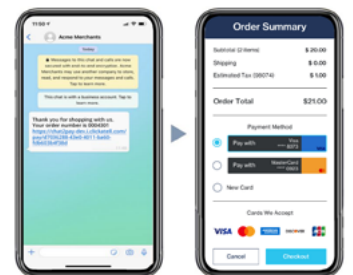
Burkina Faso mobile internet disrupted following anti-government protests

Mobile internet connectivity in Burkina Faso has been down for a week and shows no signs of resuming as protestors call on president Roch Marc Christian Kaboré to resign over the wave of killings by militants.

A report on newswire *Reuters* said the death toll from the latest attack on security forces and civilians this month has climbed to more than 50, sparking protests against the government. On

Saturday, mobile internet connectivity went down as the protests raged.

NetBlocks which monitors disruptions to telecommunications connectivity said on Monday in a statement and on Twitter that "mobile internet remains disrupted in Burkina Faso as of Monday," with surveillance data confirming that "service was cut" from 10:30 pm on Saturday night.

"Metrics corroborate user reports

of mobile data disruptions on providers including Orange," it added. "The data blackout is ongoing as of Monday morning and is likely to limit the free flow of information online and suppress news coverage of events on the ground."

However, fixed-line and Wi-Fi services "appear largely unaffected by the disruption".

Other African countries that have

recently disrupted telecommunications connectivity include eSwatini, Sudan, South Sudan and Ethiopia.

Northern African Wireless Communications contacted the Burkinabè watchdog

Autorité de régulation des communications électroniques et des Postes (ARCEP) for comment but received no response before going to press.

NCC releases final IM for 5G auction as deadline arrives

The Nigerian Communications Commission (NCC) released the final information memorandum (IM) for the planned auction of the 5G spectrum licence auction scheduled for December 13.

It was made available one day before the November 24 deadline for interested telecom licencees and new entrants to submit bids for the auction.

There are plans to auction two lots of 100 MHz TDD slots available in the 3.5 GHz band to support the delivery of ubiquitous broadband services. The two lots are in the 3500-3600 and 3700-3800 MHz frequency and will be offered on a technology neutral basis for provision of communications service.

NCC executive vice chairman Umaru Danbatta urged stakeholders to pay attention particularly to sections 1 (e), VII {(i) (ii), (v) (3) (c)} and XI (e) of the IM. The NCC has already pegged the Generic Reserve Price (GRP) for each lot of the spectrum at ☐ 75bn or its equivalent in naira at the prevailing Central Bank of Nigeria (CBN) rates at the time of the auction.

Each successful bidder will be assigned on a nationwide basis covering all the 36 states of the federation and the Federal Capital Territory (FCT) on a subsisting policy on "use-it or lose-it" with respect to the use of assigned spectrum.

The final IM document states that "where a winner does not hold a Unified Access Service Licence (UASL) which is the operational licence for the frequency spectrum slated for auction, it will be issued at an additional fee of ₦374, 600,000.00 only or at the subsisting licence fee at the time of the auction".

Furthermore, the NCC says the proposed licensing of 3.5 GHz Spectrum has been influenced by the need to open up the space for the delivery of present and future generations of broadband services to subscribers in line with the Nigerian National Broadband Plan (NNBP) 2020-2025.

MTN Uganda, TerraPay boost partnership

MTN Mobile Money Uganda and global payments infrastructure firm TerraPay have formed an association so that the former can facilitate international digital cross-border remittances and speedy money transfers to beneficiaries worldwide.

Last year, TerraPay partnered with the MTN Mobile Money Uganda unit as a digital payments infrastructure company equipped to deliver inbound cross-border payments to mobile wallets in east Africa.

The enhanced partnership will facilitate outbound international remittance payments to countries such as India and China.

TerraPay said beneficiaries, including friends and family of migrants across these countries, will now have access to assured, real-time and convenient, small-value ticket remittance channels connecting the company's global network of more than four billion bank accounts and more than 1.5 billion mobile wallets.

The company also said its interoperability engine and scalable and agile technological prowess will help partners as well as their customers and businesses to send and receive payments on a fully regulated, scalable, secure, transparent and efficient platform.

TerraPay has a footprint in over 94 countries around the world.

Liquid and Orange partner to expand reach across Africa

Liquid Intelligent Technologies (LIT) and Orange have forged a new partnership to leverage each other's existing networks in Africa, allowing them even greater access and opportunity to build their businesses throughout the continent.

The deal will give Liquid access to Orange's extensive services in west Africa, including the new Djoliba network.

In return, Orange access to Liquid's pan-African network. The two organisations will offer end-to-end high-speed connectivity and services across their networks, allowing existing and new customers in over 20 African countries greater access and opportunity to build their businesses.

"We are excited about embarking on this partnership with Orange, becoming a major customer on Djoliba as we continue to grow our existing relationship," said David Eurin, chief executive officer, Liquid Intelligent Technologies international wholesale (Liquid Sea). "We've long

been committed to providing digital services that allow our customers to grow their businesses and the larger African economy. Partnering with a provider like Orange strengthens this offering."

Orange offers extensive submarine, terrestrial and satellite connectivity with 450,000km of submarine cables, 45,000km of fibre across Europe, the US, Africa and Asia and more than 450 points of presence. In west Africa, the French firm has a substantial presence across many countries including Côte d'Ivoire, Senegal, Mali, Burkina Faso, Ghana, Guinea and Liberia.

Djoliba is the first unified superfast broadband network in the region that provides seamless connectivity with better availability thanks to network redundancy, security and high quality of service.

The 'One Africa' network from Liquid has 100,000km of fibre backbone and covers most of sub-Saharan Africa. Network

development plans include extending the firm's reach into the north African countries such as Morocco, Libya, Tunisia, and Algeria.

In addition to providing extensive and reliable connectivity, Liquid customers will also benefit from gaining access to state-of-the-art cybersecurity solutions from Orange.
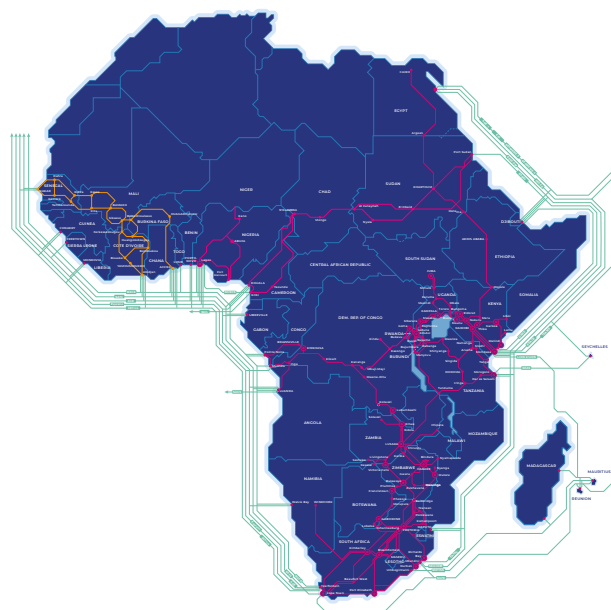
YahClick inks pan-African agreement with iSAT Africa

Yahclick, the satellite broadband service provider, has signed a partnership with iSAT Africa to expand its enterprise business in Nigeria, Zambia, the Democratic Republic of the Congo and east Africa.

The new partnership will support iSAT Africa, a pan-African network operator present in 12 markets, to deliver connectivity services for cellular backhaul, business applications, supervisory control and data acquisition (SCADA) systems,

as well as provide connectivity to remote sites, including mines.

Connectivity solutions will be provided over YahClick's high-throughput satellite (HTS) Ka-band capacity to deliver high-speed broadband solutions, with service plans of up to 100 megabits per second (Mbps), reaching and serving remote locations.

"This partnership with iSAT Africa is another step in our plans for further growth and expansion across Africa,"

said Farhad Khan, CEO of YahClick. "With our existing strong presence in these countries, our partnership with iSAT Africa will enhance our reach into the unserved and underserved markets. We look forward to enabling greater connectivity for people and businesses across Africa during the upcoming months."

Revenues from fixed satellite data services in Africa are expected to grow at an average rate of 15.8% per year between 2020 and 2029.

Farhad Khan

Spacecom provides services to KBC

Israeli satellite services provider Spacecom has signed a deal with Kenya Broadcast Corporation (KBC), which will see the latter 's DTT service broadcast via the AMOS-17 HTS (high throughput satellite) digital satellite.

In addition, Spacecom has also provided KBC with on-the-ground professional services to migrate Signet's DTT service to AMOS-17.

"AMOS-17's strong C-band HTS beams improved signal quality and optimized spectrum utilisation so that Signet could quickly and easily upgrade content quality and service levels," said Oren Tepper, global vice president sales, at Spacecom. "For this project, Spacecom's professional services teams achieved a record migration of Signet's services

with no service interruption. We are thrilled to work with KBC's Signet team and look forward to a strong relationship."

Job Karimi, technical services manager of KBC, added that to further improve its service delivery, the broadcaster migrated its satellite infrastructure to AMOS-17, "thereby realising huge savings in operational

costs". Karimi said: "Thanks to AMOS-17's HTS capabilities, we were able to create optimal link margins to our remote transmission sites. The migration turnaround time was under very short timelines."

KBC's Signet broadcasts over 70 TV stations and a host of radio channels throughout Kenya and into South Africa.

RSCC

Russian Satellite Communications Company

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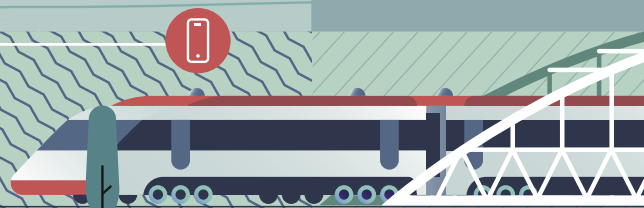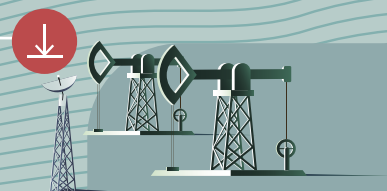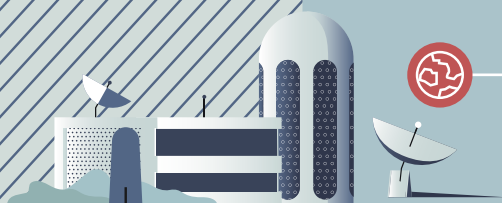
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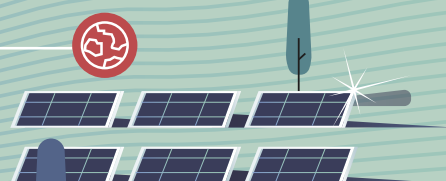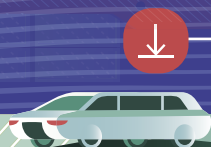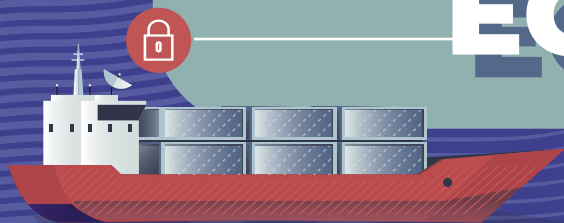
rscc.ru

Cambium Networks tech enables Lnet to serve 60,000 subscribers in Libya

Cambium Networks, a global provider of wireless networking solutions, has deployed ePMP fixed wireless broadband technology to connect more than 60,000 residential, business and enterprise customers in Libya.

The ePMP network is composed of more than 1,500 Access Points (AP) installed on more than 250 tower locations and serves densely populated urban and suburban locations.

"We are proud to be one of the largest ePMP networks in the world, enabling Lnet to provide excellent quality services at an affordable cost" said Ahmed Kalush, CEO, Lnet. "Customers choose Lnet because we deliver what we promise at a reasonable price with a 24/7 tech support team monitoring the network thanks to cnMaestro network management capabilities."

Lnet started its deployment of Cambium Networks' ePMP equipment in 2015 when it replaced a system that could not scale or perform in noisy RF environments. The Lnet deployments are all in relatively densely populated suburban environments.

"Lnet started out with low-cost equipment from another supplier and found that it could not scale when the business grew," said Martin de la Serna, vice president of sales for Cambium Networks. "The ePMP system offers sophisticated GPS synchronization and smart antennas that provide solid communications in dense and noisy environments. In addition, ePMP does so while reducing the total cost of ownership."

Network management is easy with the cloud-based cnMaestro system that provides a unified view of the entire network via the cloud. The solution delivers reliable and secure connectivity for residential users, schools, enterprises, and industrial operations at a low total cost of ownership.

AMN expands coverage with Gilat hubs

Africa Mobile Networks (AMN) has deployed Gilat hubs and placed additional orders of Gilat cellular backhaul terminals to serve multiple Tier-1 Telcos in Africa.

The Israeli firm has worked on several projects in Africa to bridge the digital divide, including Spacecom and ST Engineering iDirect.

"AMN has selected Gilat, due to its superior cellular backhaul over satellite technology, to support the extension of Africa's largest satellite-based network," said Michael Darcy, chief executive officer of AMN. "We are pleased to contribute to closing the digital divide by furthering the reach of our network with Gilat's SkyEdge II-c Capricorn VSATs, reaching more of the population in Africa."

Michal Aharonov, chief commercial officer at Gilat, added: "Gilat highly values its long-lasting partnership with AMN and shares a common goal of enhancing the lives of people in Africa with high-quality connectivity. Gilat is working closely with AMN to further expand cellular backhaul reach in additional sites and regions throughout the coming years, including migration to 4G as the requirement for data communication rises."

Evina secures €20m funding to fight Africa's mobile cybercriminals

Cybersecurity firm Evina, present in 15 African countries, has secured €20m in a funding round to consolidate its fight against mobile fraud.

Led by New York fund Radian Capital, Evina said the investment will help keep the pressure on the mobile cybercriminals that cost the African continent US$4bn in 2020.

"Africa is a priority region for Evina and the historical core of our business,"

said Evina chief executive officer, David Lotfi. "At least half of this €20 million capital injection will be directed towards the fight against the professional cybercriminals targeting Africa's mobile phone users."

Evina said that prior to this funding round, it has already prevented the theft of a €1bn from telecom operators and their clients.

The €20m cash injection will also allow Evina to accelerate its commercial presence outside Europe, including Africa, with the opening of offices abroad and

David Lofti

to strengthen its technical team with new talent.

"Mobile players in Africa contribute to the wealth of payment options available to African mobile users, creating a patchwork of different mobile payment methods that are in need of more accurate types of protection and which call on Evina's expertise to secure against the cyber issues that accompany mobile payments," the company added.

Telecom Egypt deploys Ciena tech for optical and mesh networks

Telecom Egypt (TE) has partnered with US firm Ciena to maximise capacity along the Mediterranean segment of its Middle East North Africa (MENA) submarine cable system and the country's mesh network.

The latter's WaveLogic 5 Extreme gives TE the highest capacity per wavelength, which significantly reduces the cost per bit and provides the best-in-class spectral efficiency, highest bit rate per wavelength, space utilisation efficiency and power efficiency. The operator also utilises Ciena's manage, control and plan (MCP) next-generation domain controller that unifies network and service management - even across third party wet plants - to automate the submarine network's operations.

"Submarine cables are critical infrastructure that underpin and power the connectivity needs of today's global internet user base," said Jamie Jefferies, vice president and general manager, international, Ciena. "In addition, the adoption of MCP also supports a network that is intelligent, automated, and simpler to manage."

The MENA Submarine Cable is an 8,800km system that connects Italy, Egypt, Saudi Arabia, Oman, and India and serves as a vital piece of infrastructure that transmits international traffic. Mena Cable, through the new technology, offers TE's mesh network a new gateway to Europe through Italy, in addition to the current one in Marseille, France. TE's next-generation optical mesh network is a system that spans the Mediterranean Sea, crosses Egypt, and extends to Singapore, integrating terrestrial and subsea cables.

Maryland-headquartered Ciena, which has a long history of working in Africa, has been described in the media as the "worlds' biggest player in optical connectivity".

Talking satellite

Martin Jarrold, chief of international programme development, GVF

Satellite Orbits to 2022… Looks back at 2021

Since the Covid-19 pandemic came to necessitate international travel restrictions and the postponement of satellite industry conference events, GVF has been setting a much-lauded high standard for virtual discussion fora.

On 18th November our programme brought together a panel comprising Dr Vagan Shakhgildian, president, Comtech Satellite Network Technologies Commercial Group; Dr Onur Karabey, founder & CEO, Alcan Systems; Tony Taylor, chairman & CEO, Global Invacom Group; and Dr Leslie Klein, President & CEO, C-COM Satellite Systems, and moderated by Jose Del Rosario, consultant with Northern Sky Research to discuss 'Ground Segment: All Change for a New Satcoms Era'. The dialogue was a continuation of GVF's long-standing webinar series examination of the satellite communications ground segment. The premise upon which the event was founded is that the ground segment has for too long been considered the less interesting, non-identical twin, to the satellites we place into orbit. Launches and the orbiting of spacecraft are major, attention grabbing, spectacles; outdoor and indoor units of equipment down here on Earth do not offer the same visual excitement. The question is, isn't this all this is changing, as reflected in the industry having already coined the name "New Ground" to parallel and complement the now familiar term "New Space"?

As the video recording of this webinar (which you can see on-demand and free-of-charge on the GVF website at https://gvf.org/webinar/ground-segment-change-for-a-new-satcoms-era/) illustrates, anyone with this view of the ground segment will be quickly disabused of any such perception by the bold expressions of bullish enthusiasm from the panellists over a full 75-minutes of analytical insights. The size of the live audience, almost 400, and the wealth of audience generated questions, was clearly indicative of significant industry stakeholder interest in what is happening under the umbrella term of "New Ground". At the end of the 75-minutes the body of audience questions was far from exhausted. As is GVF's regular practice remaining questions and panellists' answers have been posted on the GVF website along with the video recording.

The posted written questions and answers cover such topics as a prognosis on the future market for communications over geostationary satellites in the context of explosive development of low Earth orbit (LEO) communications, specifically if geostationary-based communications will transfer to LEO. From a different angle, other questions asked if the market has the stomach for absorbing the failure of part or all of the great LEO megaconstellation project and, if there should be even only one failure and bankruptcy, what happens to the orbital highway if the bankrupted system's satellites are left in orbit unmanaged.

Additionally, the dialogue brought clarity to any understanding of the nature of the profound changes which the ground segment is undergoing across such topics as satellite's role in 5G, Artificial Intelligence, virtualisation and software-defined networks, standardisation, and the increasing commercial use of higher frequencies than the long-used C, Ku, and Ka bands.

When embracing the imminent prospect of another new year we habitually tend to turn to appraising the previous 12-months. This tendency is understandably strengthened by a year of pandemic circumstances which have exacerbated our reliance on connectivity. Against this general backdrop – and as we move towards the 5G era, acknowledging (as does the 3GPP Release 17 document due for publication in the first quarter of 2022) that the near-future "network of networks" is the highly significant opportunity that the world has to completely leverage the advantages to be derived from additional use cases for satellite communications – the GVF webinar of 1st December investigates the nature of industry stakeholder dialogues on the current state of the satellite communications industry and its user markets in respect of a swath of interconnected trends engendering transformational changes in the industry, changes that are additionally serving to catapult satellite into a more central position in our everyday lives.

'Satellite Industry Trends: A Year to Remember, A Year Ahead' (https://gvf.org/webinar/satellite-industry-trends-a-year-to-remember-a-year-ahead/), moderated by Stéphane Chenard of Euroconsult, assembles a panel of industry experts from across antenna technologies; communications and IT service provision; modem/network management systems/ infrastructure technologies; and NGSO constellation operations. Providing penetrating analysis and insight along with the complementary perspectives of orbital and ground assets are, from Kymeta, David Fotheringham, Director Product Management; from Speedcast, Will Mudge, Vice President, Engineering Operations; from ST Engineering iDirect, Jo De Loor, Vice President, Market Development & Strategy; and from OneWeb, Chris McLaughlin, chief of government, regulatory & engagement.

From a 'big picture' perspective the webinar examines the justification, across both space and ground segments, for describing 2021 as "transformational", defining which trends set it apart from previous years and which are primarily responsible for propelling the satellite industry into a more central position in our everyday lives. The discussion also looks at the impact the industry's transformational changes are having on the business of space, both strategically for the entire sector and at the scale of the individual company, both corporates and start-ups. A big question for the panel asked if the co-habitation of geostationary and non-geostationary satellites will be a happy orbital marriage in all respects, such as successfully providing complimentary services, and avoiding radio frequency interference.

Returning to dialogue on the business aspects of space, it is clear that recent years have witnessed some significant trends in vertical integration in the satellite industry. More recently we have seen innovative investment relationships within and across industry segments such as investments in OneWeb by Hughes and Eutelsat. Very recently, a major acquisition was announced with the Viasat-Inmarsat deal. The panellists reflected on how these industry patterns and the industry's current future investment environment will evolve. In another big picture reflection, the panel considered the ongoing impact of the technology and cloud mega-giants on the space industry as we move into a new year with every prospect of more profound transformation.

Until 2022, stay safe!

Ghanaian government acquires AirtelTigo

Indian-owned Bharti Airtel completed the sale of mobile operator AirtelTigo to the state of Ghana.

News of the deal, completed Wednesday November 3rd, came from the National Stock Exchange of India.

Under the terms of the sale agreement, the Ghanaian government acquired 100% of the shares of the joint venture, along with all of its customers, assets and liabilities.

During a visit to AirtelTigo's premises in April, Ghana's minister of communications and digital economy Ursula Owusu-Ekuful said that by taking over the mobile operator, the Ghanaian government was committed to making appropriate investments for its revival and exploiting it while protecting the interests of customers, employees and other stakeholders. Owusu-Ekuful revealed days later that the acquisition of AirtelTigo would cost the state US$1.
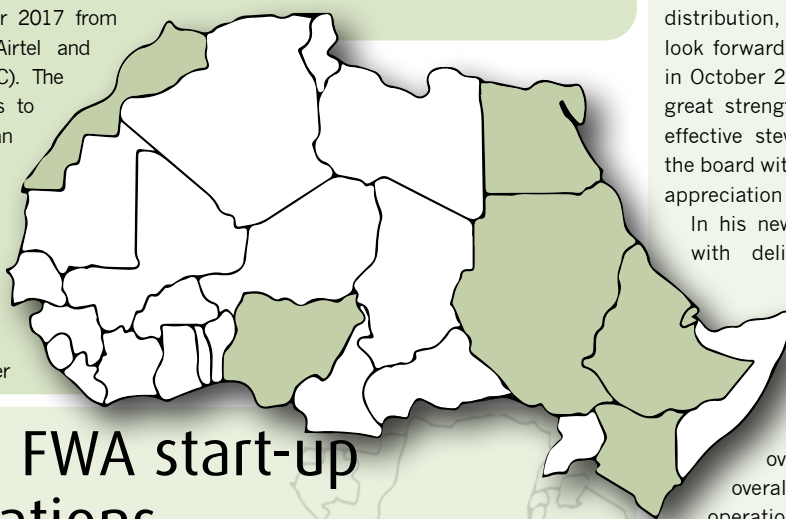
AirtelTigo was formed November 2017 from the agreement between Bharti Airtel and Millicom International Cellular (MIC). The two groups decided to join forces to remain competitive in the Ghanaian telecom market then contested by six companies. The respective subsidiary then occupied 4th and 3rd places in terms of market share. Joining forces helped to secure second place, behind MTN and ahead of Vodafone.

The merger came 10 months after

Sunil Bharti Mittal, CEO of Bharti Airtel, announced at the World Economic Forum in Davos, Switzerland (January 2017) "of mergers or sales of shares in certain of our operations in Africa, as we seek to reduce debt and make our largest acquisitions abroad more profitable ".

The closing of the sale of AirtelTigo to the Ghanaian state allows Bharti Airtel to focus its efforts on its more dynamic African markets. For Millicom, this sale reflects its total exit from the African telecoms market.

AirtelTigo was its last brand of presence on the continent as the Ghanaian government is consolidating its presence in the mobile telephony market with a wholly owned operator. Since 2008, he was only a 30% shareholder in Vodafone which acquired 70% of Ghana Telecom.

Ogunsanya begins new role as Airtel Africa CEO

Segun Ogunsanya has assumed the role of managing director and chief executive officer (CEO) of Airtel Africa. His appointment follows the retirement of Raghu Mandava who has led the telecommunications company since April 2016. The latter stepped down from the Airtel Africa board after five years at the helm of affairs.

"We are delighted to appoint Segun Ogunsanya as the group's next chief executive officer," said Airtel Group chairman, Sunil Bharti Mittal. "He has displayed significant drive and energy in turning around the Nigeria business by focusing on network modernisation, distribution, and operational efficiency. "As we look forward to Segun assuming his new role in October 2021, we do so from a position of great strength as a result of Raghu's highly effective stewardship. Raghu will retire from the board with our very best wishes and sincere appreciation for everything he has achieved."

In his new role, Ogunsanya will be tasked with delivering Airtel Africa's strategic objectives and leading the group in the next stages of its development.

He previously served as managing director and CEO of the Nigeria subsidiary for over eight years, supervising the overall management of the company's operations in its largest market in Africa.

Mauritanian FWA start-up begins operations

Sahel Telecom has started operations as a fixed-wireless broadband operator in the Mauritanian capital, Nouakchott.

The company is taking the unusual step of using Wi-Fi technology rather than cellular radio to reach its intended customers. It says the rationale behind the move is to provide unlimited broadband internet via its fixed wireless access (FWA) service.

However, the new player has come in for some criticism as the prices it charges are considered to be high. Sahel says it offers residential speeds from 7Mbps download/1Mbps upload at UM1,000 (US$27.60) a month, up to 35Mbps download/7Mbps upload – which it calls "fibre fast" – at UM4,500 (US$124.28) a month.

Business packages run up to 55Mbps download/10Mbps upload at a rate of UM6,500 (US$179.52) a month. According to reports, Sahel plans to expand beyond Nouakchott to other cities "in the coming months".

Cellular operators with which Sahel now competes are Mauritel, Tunisie Telecom's Mattel and Sudatel's Chinguitel.

Seacom acquires metro network from Kenya's Hirani Telecom

Pan-African telecommunications services provider Seacom has completed the 100% acquisition of Hirani Telecom's metro fibre network.

The network will be incorporated into the buyer's existing metro network in the capital Nairobi and will be under its full control. Hirani Telecom is one of Kenya's fastest-growing triple play service providers and the largest last-mile provider in the region.

Seacom said the acquisition is part of an ongoing strategy in the region to grow its on-net capabilities, and provide its enterprise customers with world-class connectivity.

"This is a first step towards ensuring we can provide end-to-end solutions for our customers across the region," said Steve Briggs, Seacom CSMO. "We will be able to offer more competitive services, bring new, innovative solutions to market faster, and guarantee the highest quality of connectivity and service delivery."

Hirani Telecom owns two purpose-built, carrier-neutral national metro networks – both of which are being acquired by Seacom. The first is used to service its home users with internet and content, and this will be retained by Hirani, which will continue operations as usual.

The second network will be dedicated solely to Seacom's enterprise customers. There will be no disruption or customer migration, as customers are already running on this network.

Orange CEO Richard to leave following conviction

Orange chief executive officer Stéphane Richard will leave his post by the end of January 2022, after he was convicted over his role in a fraud-tainted state payout to the late tycoon Bernard Tapie and given a one-year suspended sentence.

His departure "will be effective once new leadership is in place and no later than January 31", the company said in a statement.

The 60-year-old Richard is one of several senior officials past and present to be caught up in a decade-old scandal over the US$453m payment made to Tapie in 2008 when the former was working in the French finance ministry.

The scale of the damages won by Tapie in a dispute over the state's sale of his stake in Adidas sports apparel company sent shockwaves through France and created suspicion that the arbitration panel appointed by then finance minister Christine Lagarde to settle the matter was biased in the tycoon's favour.

In 2019, the Paris criminal court acquitted Tapie, who died in October this year, of any wrongdoing, along with Richard and three others.

However, the appeal court overturned that ruling, concluding that the arbitration award, which was annulled in 2015, had been "fraudulent".

Richard, who was Lagarde's chief of staff, was convicted of complicity in misuse of public funds for advising that the row with Tapie be settled out of court.

The presiding judge said he "committed serious offences in putting the interests of Bernard Tapie above those of the state or the public finances he was tasked with defending."

She accused him of penalising the state financially and bringing the state into "disrepute".

Richard, who has been Orange CEO since 2011, said he would appeal the ruling, which included a US$56,000 fine.

"The accusations of complicity in the embezzlement of public funds are without merit and are not based on any evidence," he said in a statement to AFP.

Egypt to regulate free competition

The National Telecom Regulatory Authority (NTRA) has penned a memorandum of understanding (MoU) with the Egyptian Competition Authority (ECA) to create a permanent joint committee to develop the system for regulating free competition in Egypt's telecom market.

The Ministry of Communications & Information Technology (MCIT) said that the cooperation is designed to synergise their efforts at attracting more investment while integrating work mechanisms related to regulation and supervision. In addition, the pair is aiming to 'restrain monopolies that may negatively affect the telecom services rendered to citizens'.

"The MoU reflects NTRA's keenness to cooperate with ECA to support the telecom market and create an enabling environment for competition to attract investments through exchanging experiences," it said.

According to the statement, the joint committee will be responsible for developing frameworks for the cooperation between the two sides. It will also harness ECA capabilities and NTRA expertise to monitor the telecom sector regularly and promote competition in the sector in a way that helps improve the quality of services and facilitate citizens' access to them, especially with the current orientation towards digitisation.

The committee will also work to open new markets in that promising sector, attract more investments, combat any practices that may hinder free competition, while early predicting and preventing economic practices leading to monopolies that may have negative effects on the market.

MTN Ghana to roll out 5G by 2023

MTN Ghana said it will launch and make operational 5G services in the country by 2023.

The operator has yet to fully cover Ghana with its 4G spectrum but expects to gain 98% coverage by the end of 2022. It currently reaches 73% 4G coverage in the country.

Addressing the media, the company revealed that it is modernising its infrastructure and working with regulators towards 5G.

It added that 5G technology will be in operation by 2023.

"Almost every 10 years, there is a new technology," said chief executive officer of MTN Ghana, Selorm Adadevoh. "4G was launched in 2016 so ideally, 5G should be expected somewhere around 2026 but it will have to be rolled out about 2023 as Covid has accelerated digitalisation.

Adadevoh also said that MTN Ghana over its 25 years of existence has invested over US$6bn in infrastructure with 2021 seeing the highest investment in a year of over US$200m. He added that the operator, through its numerous applications, especially AYOBA, provided avenues for all manner of businesses to be hooked onto the digital space.

By clicking on apps such as AYOBA, customers and the public can have access to many shops online or market spaces on the digital platforms as well as data services.
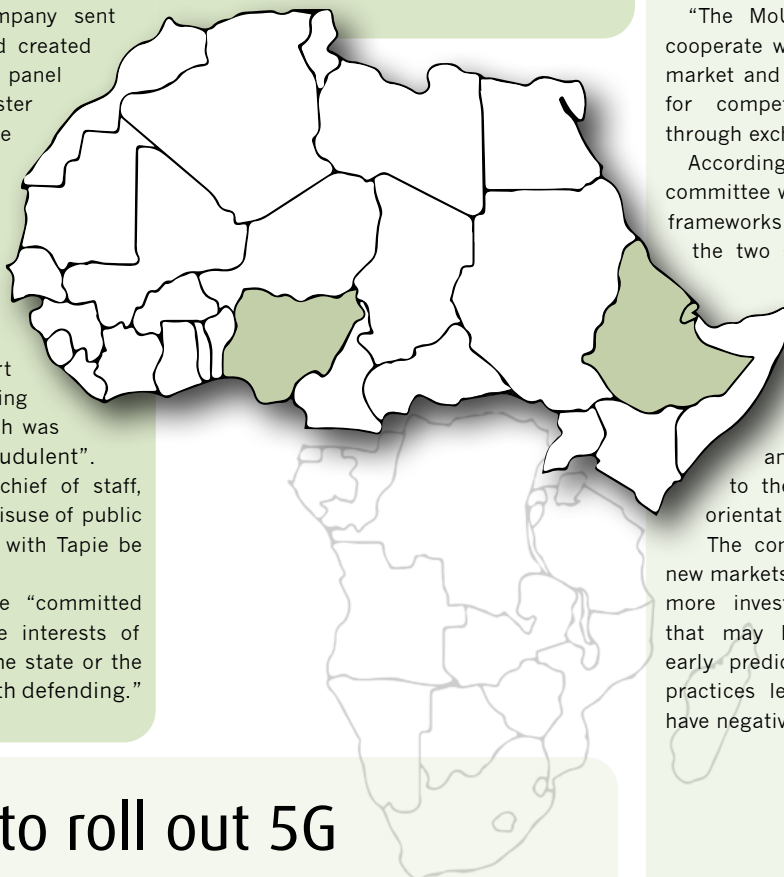
Africell hands local production of its proprietary Afriphone phones to US manufacturer

Cell phone operator Africell and US IT device manufacturer Industry Five launched the pilot phase of the former's proprietary phone assembly project (Afriphone) in Democratic Republic of the Congo (DRC).

The operation will be conducted in the specialised factory built by Industry Five in the capital Kinshasa. If the devices meet the strict performance and quality standards, they will be made available to the population currently representing a market of over 90 million people.

Milad Khairallah, chief executive officer (CEO) of Africell DRC, explained that it aims to "encourage the rooting in the DRC of a critical mass of skills and functions necessary for the production of mobile technologies". He emphasised that "by assembling consumer mobile technology here in the DRC, we hope to boost the local supply chain, mitigate the supply risks inherent in a highly globalized industry, and

further redirect the benefits of the mobile boom to the DRC economy".

Africell DRC's investment in the local production of its proprietary phones is part of the strategy to strengthen its presence and cost management undertaken by the American group since the beginning of the year in its various markets.

It comes a few weeks after the visit of Ijad Dalloul, the founder and CEO of Africell Group, to Jean-Michel Sama Lukonde Kyenge, the prime minister of DRC, to present the company's investment projects in the country.

More than 30,000 Afriphones produced by Industry Five for Africell DRC will be ready by February 2022. Production can be scaled up to half a million Afriphones over the next twelve months. The production process can also be decentralised to sites in Lubumbashi, Goma or Bandundu.
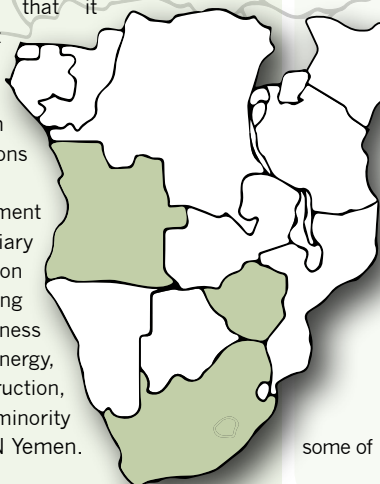
MTN exits Yemen to focus on Africa

South Africa's MTN Group has officially begun its exit from Yemen by transferring its majority stake in its Yemeni arm to Emerald International Investment, a subsidiary of Zubair Investment Center.

Ralph Mupita, MTN Group's chief executive officer, said that "the decision to exit Yemen was driven by a need to simplify the portfolio and focus our limited resources on executing a pan-African strategy". He made a point of "thanking MTN Yemen's 719 employees for their commitment over the years, and MTN Yemen's 4.7 million subscribers for their loyalty and trust in the brand".

MTN announced its intention to exit the Middle East in the medium term in August to simplify its portfolio, reduce risk and focus on its pan-African strategy. In its financial report published for the first half of 2021, the firm said the choice to exit Yemen was linked to the political environment and the risk of sanctions in the country.

In the first half of 2021, MTN Yemen contributed 0.3% to earnings before interest, taxes, depreciation and amortization (EBITDA). MTN Group, which held 82.8% of the shares, explained that it does not expect to recover any of its investment in MTN Yemen through ongoing operations until the exit date.

Zubair Investment Center is a subsidiary of Zubair Corporation a company operating in several business sectors including energy, engineering, construction, logistics and a minority shareholder in MTN Yemen.

Vodacom invests US$877m in JV

Vodacom Group is buying a controlling interest in some assets owned by Community Investment Ventures Holdings, giving it a 30% interest in a new jointly owned company.

The operator said the deal implies a potential R13.2bn investment and will see it subscribe for new shares in the joint venture company InfraCo that will house the assets for R6bn.

These assets include Vumatel and Dark Fibre Africa.

Vodacom will also contribute its fibre-to-the-home and business networks as well as its business-to-business transmission access fibre network infrastructure worth R4.2bn in return for InfraCo shares.

In addition, the operator will also buy more shares in InfraCo via a secondary offering worth an estimated R3bn.

Vodacom said it also has an option to buy an extra 10% in InfraCo within 180 days of the deal completing, taking its interest to 40%.

Shameel Joosub, Vodacom Group's chief executive officer, explained that "the agreement with CIVH aligns with Vodacom Group's strategy to build high quality and resilient fixed and mobile networks with and through selected strategic partnerships across the African continent. It also supports Vodacom's focused plan to help the government rebuild the economy after Covid.

Earlier this year, Vodacom Group launched the Africa.connected campaign across its eight markets on the continent. Its aim is to capitalise on the company's existing investments in bridging the digital divide and ensuring that more people in Africa have the opportunity to enjoy the benefits of a digital society. Vodacom Group's acquisition of a stake in CIVH is part of this objective.

According to Raymond Ndlovu, CIVH's CEO, said the new telecom infrastructure operator will boost the two partners' nationwide fibre optic deployment program and "help bridge the digital divide by providing affordable access to connectivity to some of the most vulnerable parts of society.

MTC raises US$168m of the US$210m expected from the sale of 49% of its capital

Namibia's state-owned Mobile Telecommunications (MTC) has raised N$2.5bn (US$168m) from the sale of 49% of its shares on the Namibian Stock Exchange (NSX).

On September 20, when the company's 367,500,000 ordinary shares were officially put up for sale at N$8.50 each, the government said it wanted to raise N$3,123,750,000 (US$210m).

Local newspaper The Namibian said of the 367.5 million shares offered for sale, more than 299 million

were purchased while 68.5 million did not find buyers. Some 5,611 individuals, companies and institutions took part in the IPO of MTC, which only reached its target by 81%. The majority of the offer was taken up by institutional investors, who raised N$2.4bn, while retail investors only raised N$137.2m.

A number of financial analysts believe that the telecom operator has done well in the current difficult economic environment, which has been hit by Covid-19 pandemic, while others believe that it was a

failure compared to previous IPOs and that more time should have been allowed for the transaction to reach the government's target amount.

Funds obtained from the sale of the 49% of the capital of MTC will help support public finances severely affected last year by Covid-19. In March 2021, finance minister Ipumbu Shiimi indicated that government revenue was expected to decline by 6.1% or N$3.4bn in fiscal 2021/22 compared to the previous fiscal year.

Safaricom focuses on Ethiopia despite political unrest

Kenyan mobile operator Safaricom remains focused on its ambition to enter the Ethiopian market in mid-2022, despite the risk of political instability in the country.

The news was delivered by chief executive officer (CEO) Peter Ndegwa November 9 during the presentation of the telecom company's H1 financial results.

"We are looking forward to launching commercial operations as projected, while cognisant of the current evolving political conflict in Ethiopia, as we proceed with our plans adapting to and assessing the situation as it evolves," he said. Ndegwa added that for now, Safaricom's priority is the safety and security of the small number of employees who have already joined the organisation.

Conflict in the Horn of Africa nario the conflict between the government of prime minister Abiy Ahmed and the Tigrayan people took a new turn November 5 with the formation of a coalition of nine rebel groups against Addis Ababa. On the same day, several international diplomatic missions, including Sweden and the United States, called on their citizens to leave the country as soon as possible.

On July 9, 2021, the global license obtained by Safaricom in May came into effect. The telecom company aims to repeat its Kenyan success in Ethiopia by offering consumers innovative and quality services backed by a strong network.

Meanwhile, businesses will soon be able to advertise on the M-Pesa mobile money app as Safaricom upgrades the platform to offer more capabilities beyond payments and cash transfers. The move will also open up new revenue streams for the operator.

Talking critical

Jason Johur, TCCA board member and chair, TCCA's Broadband Industry Group

What role will 5G play in delivering critical communications?

5G networks promise greater capabilities to critical users but further specification work is needed to ensure their unique requirements are met. A new white paper from TCCA, the global organisation for the advancement of standardised critical communications technologies, says that ultimately, 5G will enable cooperation between critical users to become more efficient and effective. As a result, the safety of first responders and the communities they protect will be enhanced.

The white paper addresses a number of key questions raised by the critical communications community on the role of 5G, including how it compares to 4G LTE, the initial use cases, the expected impacts on user operations and the likely market availability of such solutions.

5G opens up the potential for a range of new services, most notably driven by 5G's ultra-reliable low latency communications and support for massive machine-type device deployments. Use cases that will benefit users include enhanced situational awareness through the use of advanced video recognition capability and artificial intelligence-powered analysis of data. For first responders, this means control rooms will have a far more accurate view of a situation and can better allocate people and resources. Information can be shared between agencies seamlessly, via cloud-based application platforms.

In terms of standardisation, several of the 5G network enablers have been specified in 3GPP Releases 15 and 16. However, some enablers critical for use cases such as broadcast and device-to-device communications are still in development and not expected before 2023. The white paper outlines the expected timescales for this work and warns that although there are some early 5G devices available now, those suitable for critical communications will not be available for at least another year. Similarly, while applications that could benefit critical communications users have been designed for 5G networks, these are not yet mature or proven enough for mission-critical operational use.

While 4G LTE delivered a paradigm shift in critical communications versus previous technology generations, 5G brings evolutionary change in terms of speed, latency, security, breadth of use cases and quality of service. There is a growing global ecosystem committed to driving further standardisation and development of 5G features and services to ensure the networks, applications and devices will fully support the crucial work of critical communications operators and users.

"There is no doubt that 5G has earned the attention of mission critical communications customers with its promises to address their demands for flexibility and higher speeds to help the evolution of their traditional voice-centric communications and adopt disruptive multimedia features like prioritised video sharing, real-time data analysis and location-based services - all under an augmented focus on reliability, capacity, security, and cost efficiency," says Ildefonso de la Cruz, principal analyst - industrial and government critical communications at Omdia. "We have started to see examples of 5G deployments taking business automation to the next level in other industries. However, the ongoing 3GPP standardisation efforts are necessary to overcome gaps such as direct-mode communication and support for MCX services to enable 5G to make significant inroads into the critical communications market. Read the white paper here."

Jason Johur is head of strategy and market development for Ericsson's mission critical networks business.

Embracing hybrid networks to serve Africa's digital economy

Fueled by a young tech savvy population Africa is the fastest growing continent on the planet and the focus of increased attention from foreign investors. As the only place with a birth rate certain to stay above replacement for a generation the continent is set to have a growing amount of young people as consumers and workers, a point not missed by its telecoms sector which has gained a reputation as a 21st century African success story.

While there's a great deal of optimism in the region, infrastructure remains a challenge for telecom operators looking at opportunities for revenue growth. With mobile penetration at 44% the focus is on connecting the remaining 600 million+ people without mobile connections. However, in a region that covers such a vast geographic area, this challenge is no mean feat, and demands that network operators are smart in their technology choices if they're to see a timely return on their investments. Connectivity on the continent is and should be a multi-generation affair where we utilise existing network generations, continue to upgrade to LTE, and focus on creating more agile core networks that provide seamless user experience, switching back and forth between network generations. This will drive revenue while creating a sustainable roadmap towards 5G evolution.

In Africa as anywhere else today you cannot escape the hype surrounding 5G connectivity and all that it's set to bring to our lives. But while all the hype around connected everything, augmented reality and the 4th industrial revolution is all very exciting, the reality on the ground in Africa is that the high cost of deploying 5G technology plus the higher cost of 5G mobile handsets makes it prohibitively expensive for African operators. Of course, 5G will come but currently it accounts for only 1% of all mobile phone connections in the region and it's predicted to reach 7% by 2026. With the average revenue per user (ARPU) at around $5 per subscriber, operators should focus their efforts on maximising coverage before gigabit speed and increasing their numbers of mobile subscribers from a rapidly growing middle class with disposable income, who will in turn drive the demand and pay for 5G network evolution.

While foreign investment continues to flood into Africa and the world's biggest tech giants including Silicon Valley's finest, Google and Facebook Meta pledge huge commitments towards supporting Africa's digital transformation, the past decade has seen vast investments from Chinese technology vendors who have built around 50% of Africa's 3G networks and 70% of its 4G networks. While this has been broadly welcomed, operators in the region and policy makers should consider how mature markets in Europe and the US have come to realise that ensuring diversification in their supply chains is not only good for competition but also an important aspect of national security that should be considered before it becomes a cause for concern.

Global communication networks are a mix of technology generations, and while this mix has often been seen as a hindrance to progress, rip and replace is a costly, inefficient, and unsustainable process. Multi-generation technologies such as Open RAN are helping operators evolve their networks and diversify supply chains, reduce vendor lock-in and add greater agility into their networks. In rural areas of Sub-Saharan Africa where ARPU is particularly low, Open RAN is being adopted by some of the region's largest mobile operators to reduce deployment and operating costs. It promises a cost effect path towards 5G evolution while supporting previous network technology and the subscriber services it delivers. As with Telco's all over the world operators in the region are facing greater competition from OTT players who continue to cut into their margins while sharing zero of the burden of maintaining the networks, so any way they can prolong the life of their existing networks and ultimately increase the return on investment from them is welcomed. Having worked in many 'hard to reach' parts of the world and deployed 4G LTE networks in Africa, Squire Technologies appreciates that connectivity before gigabit speeds remains the top priority in the region. While 5G offers greater speed LTE remains optimal for greater coverage.

Our recently released Sigla Platform is focused on network convergence and embracing the hybrid mix of multi-generation networks. Providing a bridge between network technologies in a unified signalling solution it enables traffic to traverse between new and old network infrastructure. Managing all aspects of signalling from routing and interworking, mediation, security and monitoring Sigla provides a highly flexible forward and backward facing solution that's easily scalable as network demand dictates.

"We have over twenty years of experience deploying our core network solutions into networks all over the world, and Sigla is an evolution of our extensive product range. The platform reflects how our customers continue to demand highly flexible multi-product, multi-discipline solutions that provide greater control of their networks and promote agility in their business. Our most recent deployments have seen us integrate with Satellite operators to provide mobile connectivity to remote regions, deployments with innovative connected car networks and innovative IOT telco-in-box providers." Sanjeev Verma, CEO Squire Technologies.

Sigla ensures that any network investment, whether it's 4G LTE, 5G and beyond, doesn't simply add further complexity and cost but works in harmony with existing network generations so the user experience right from provisioning, charging to billing and self-care remains seamless.

While most 5G deployments are on NSA networks (Non-Stand Alone) where the core remains on existing 4G network infrastructure Sigla provides network operators with a cost-effective roadmap to network evolution while enabling them to maintain products and services that depend upon existing 3G and 2G connectivity in the region. For more information on Sigla visit www.squire-technologies.com

Multi Generation Signalling Platform

Sigla is a smart centralised signalling platform that unifies all mediation, routing and interworking, security and measurement between multi-generation networks, reducing network complexity and operating costs.
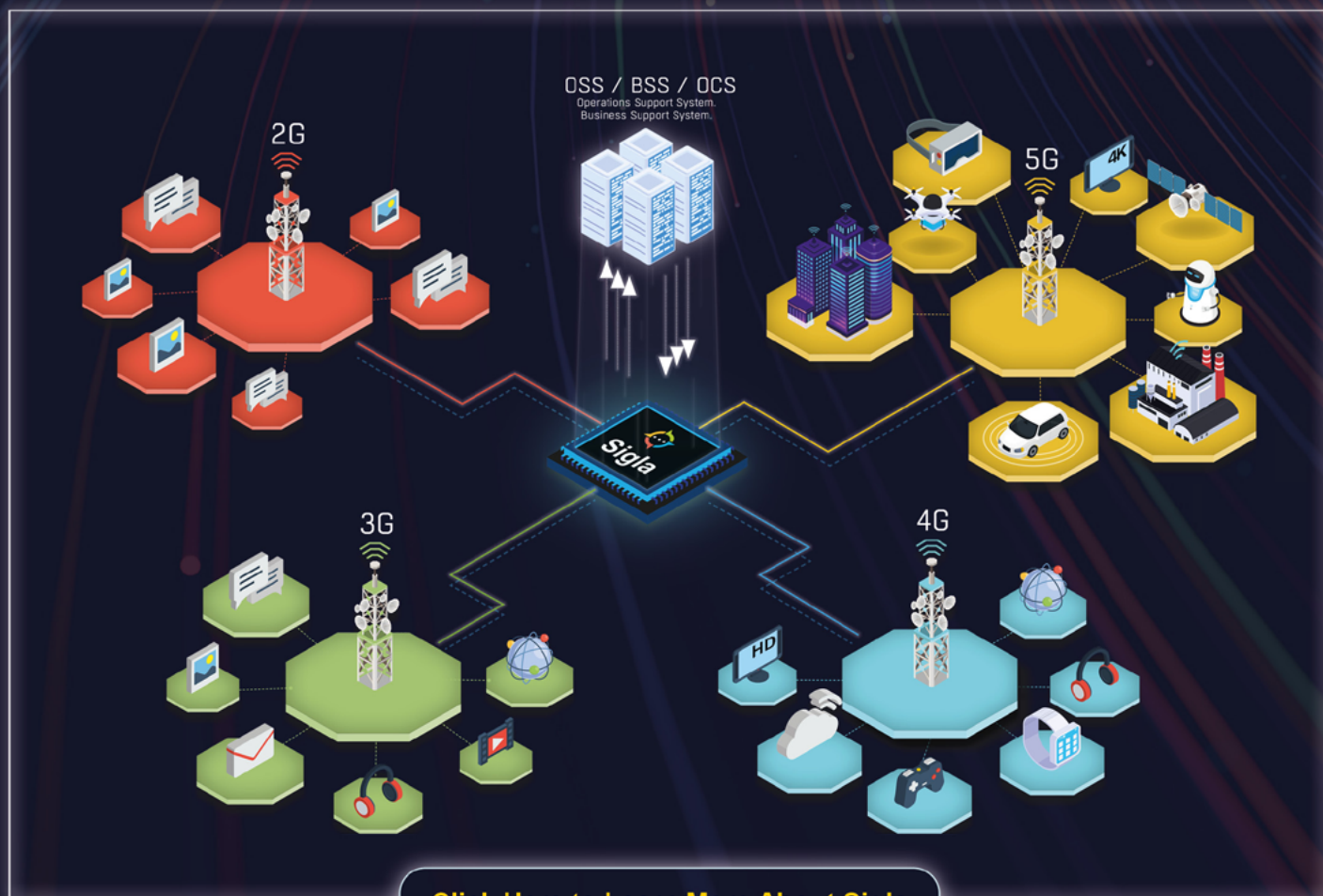
Click Here to Learn More About Sigla

"The Sigla Platform ensures that any network evolution and investment in 5G doesn't simply add further complexity but works in harmony with operators' existing network infrastructure. For example if an operator wants to deploy the very latest 5G Network it is imperative that they are able to integrate with their existing Business Support Systems and IT Infrastructure so the User Experience right from Provisioning, Charging to Billing and Self Care remains seamless as before not only for their 5G customers but also their existing customers and applications."

Sanjeev Verma, CEO of Squire Technologies

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5G: towers and technology

The fifth generation technology for broadband cellular networks, or 5G, is now available in selected cities around the world. But how is Africa preparing for it? Robert Shepherd investigates

According to the GSMA, the 2020s will see wide-spread deployment of 5G worldwide, including sub-Saharan Africa.

That might sound obvious – after all, it's a natural progression from 4G and it's already being used in other, more advanced and affluent parts of the world. However, it's important to caveat that with the fact 5G arrival is unlikely to be imminent in most territories in the region, because the existing technologies are capable of supporting current use cases and overall demand for mobile internet connectivity.

When you think about it, the prospect of running a combined 2G/3G/4G in addition to a brand new 5G network is likely to pose an operational challenge to operators in the region. That's due, in part, to the fact that initial deployment of 5G will face the complexity of managing legacy networks, the need to integrate legacy networks with the new 5G network - and the resources and expertise required to address these challenges.

In fact, some two-thirds of respondents to the GSMA's 2019 report 5G in sub-Saharan Africa: laying the foundations, said they did not envisage commercial 5G services to be available before 2025.

Time to be clear what "5G

Alessandro Ravagnolo, partner at TMT management consulting firm Analysys Mason

services" means in this context.

"5G is one of the series of what are called; 'transformative technologies'," says Bulent Unsal, head of telco, EMEA south, SAP Middle East, the cloud business software company. "The others include 'artificial intelligence', 'the cloud', and 'the internet of things'. These are said to be shaping tomorrow's world, singly or together. In the simplest terms, 5G is a collection of tools that should allow 'higher speed' internet to be

"The only difference with 5G is that energy and backhauling requirements may increase and operators/towercos need to make investments to support this. Apart from that, a mast continues being a mast"

available by 'wireless' rather than by cables and phone lines brought into the home or office."

Nevertheless, 5G will arrive in the next few years and that means the relevant technology needs to be in place. While the focus tends to be more on the speed of 5G, the cost and how it will benefit society as a whole – there has been much less talk on the technology supporting it and what the cellular towers need to make it a successful reality.

First and foremost, there's cost. Introducing 5G in Africa, as well as the first phases of the rollouts - like anywhere else on Earth – will require hefty investment from mobile operators.

French giant Orange has long been a major player in Africa, with a solid presence in key Francophone nations. The company says 5G is very much a priority in terms of its African strategy and it explains why.

"We are starting to integrate 5G in the agenda," says a spokesperson for Orange Middle East and Africa. "We think that in Africa, 5G could help relieve congestion on saturated mobile networks, particularly in densely populated capitals. We want to be able to launch this technology in our African markets by the end of 2022 and we are already trialing the technology. In 2020, we have demonstrated it in Egypt, Morocco and Senegal. And so far in 2021, we have conducted pilot operations in Egypt, Tunisia, Morocco, Côte d'Ivoire, Madagascar and more recently, Mali.

Orange says that while it is under no illusions as to the work involved. "Of course, such a technological change will require upgrades to our network, new investments and training for our people," the spokesperson adds. "Above all, 5G will come very soon after 4G. It will be even more necessary that authorities implement a favourable framework and make frequencies, spectral resources and authorizations available. This is critical to a rapid roll out of 5G."

While Orange did not comment on the cost it will have to swallow to make a success of 5G – perhaps it's too early to say – the GSMA predicts operators continent-wide will need to pump US$60bn to boost their networks between 2018 and 2025 – a fifth of which will be on 5G infrastructure.

It's no secret that the industry landscape to date has generally been shaped by infrastructure-based competition between operators, but the 5G era

will likely see the introduction of new models of network ownership, with private 5G networks likely to proliferate in some regions. Passive infrastructure sharing and the use of tower companies is already a feature in sub-Saharan Africa but will become more widespread, particularly to address some of the specific coverage challenges in the region.

Active network sharing has been shown to deliver much higher levels of both capex and opex savings compared to passive, resulting in the best outcomes for operators and society at large. Beyond the regulatory considerations, vendors and tower companies can

look to facilitate active sharing; for example, ensuring robust operating models are in place to support the relevant operators and network operations, as well as standardising equipment to facilitate interoperability.

However, it may surprise some to learn that "technically, there is no such thing like a 5G tower" – that's according to Ravagnolo. "A tower (either be a rooftop or ground-based mast) is a passive element that can support anything that goes on top of it (e.g. antennas, transmission, FWA antennas, IoT, etc.)," he argues. "The only difference with 5G is that energy and backhauling requirements may increase and operators/towercos need to make investments to support this. Apart from that, a mast continues being a mast."

Helios Towers, which has a presence all over Africa (Congo, Democratic Republic of the Congo, Ghana, Madagascar Malawi, Senegal, South Africa and Tanzania), says its markets "are quite far from 5G" as 3G connections only overtook 2G connections for the first time in 2019. "To-date we have not worked with many vendors on 5G, given its relative infancy in our markets," says a company spokesman. "Even by 2025 <10% connections of our markets are expected to be 5G," says a company spokesperson. However, Helios explains how it is working towards facilitating its arrival.

Bulent Unsal, SAP

"It will play a key role in transforming cities into smart cities, allowing citizens and communities to realise and participate in the socio-economic benefits delivered by an advanced, data- intensive digital economy"

"Operators tend to add additional antenna for 5G, so in some instances, we may need to strengthen the tower," says the spokesperson. "Additionally, there tends to be a higher power requirement, which may alter how we configure our site power infrastructure."

The Covid-19 pandemic has caused logistical and manufacturing delays in most industries, but Helios said it hasn't suffered as a result. "In 2020, we delivered >1,000 new tenancies in our markets, in-line with our guidance provided at the beginning of the year before the Covid impact," adds the spokesperson. "In fact, we've seen a few operators call out they will be investing further in improving infrastructure, given data demand has accelerated significantly due to elevated home working."

Ericsson, the Swedish gear-maker currently has 144 commercial 5G agreements, 82 publicly announced 5G contracts, and 94 live 5G networks, across Africa. Zoran Lazarevic, chief technology officer, Ericsson Middle East and Africa, says that while 2020 was touted as the year 5G deployments would go mainstream, Covid-19 did "upend" this. "However, the pandemic highlighted the importance of 5G as seen with the spike in demand for increased data speeds and network support," he adds. "During the pandemic, we continued to help CSPs all evolve their networks to 5G and meet network deployment challenges through its Intelligent Site Engineering services. The services, which include several capabilities enabled by artificial intelligence (AI) and machine learning (ML) have made the delivery of networks more efficient and shortened the time to market."

What's more, Lazarevic argues that technologies like high-resolution cameras carried by drones and laser-scanning (used at places where drones cannot go, such as in no-fly zones and interiors) have helped make deployment more productive while also lowering the environmental impact of deployment. "They have also enabled the effective creation of digital twins, which provides technicians and engineers with highly accurate site data, allowing them to prepare

and design the site for the new equipment installations," he adds.

"Through our range of intelligent site engineering services and smart solutions, we are on track to help CSPs all around the world roll out 5G extensively in the coming years."

Fellow Nordic giant Nokia of Finland also has a strong presence in the region Jan Liebenberg, customer chief technology officer for southern Africa at Nokia, says telcos must get ready for the future of Radio Access Networks (RAN) to be prepared to take advantage of a surge in demand for new services and more services.

"Our customers will be looking at higher capacity and connectivity, scalability and future-proofness along with wider radio spectrum support, more intelligence with Artificial Intelligence (AI) and Machine Learning (ML), shared infrastructure and lower energy consumption," says Liebenberg.

Alessandro Ravagnolo, partner at TMT management consulting firm Analysys Mason, argues that 5G is not expected to change the role of towercos in the value chain and they are expected to be an important element of it by offering colocation space and power.

"As such, their offering is not really changing," he says. "However, there is a trend towards towercos expanding their asset perimeter and offering to become all-around digital infrastructure service providers. This trend was not kickstarted by 5G, but you can tell that 5G has accelerated in many ways this process. This is true for both developed and emerging economies. Actually, there are elements to suggest that we have seen more innovation in emerging economies where operators faced a challenging environment and capex shortage that led to more innovative solutions like more extensive adoption of coverage and power as

Jan Liebenberg, Nokia

"Our customers will be looking at higher capacity and connectivity, scalability and future-proofness along with wider radio spectrum support, more intelligence with Artificial Intelligence (AI) and Machine Learning (ML), shared infrastructure and lower energy consumption"

service solutions."

Still, there is a common thought or belief that the tower sector will change as a result of 5G, in terms of the number, positioning and technology on the towers themselves.

However, this is not a view shared by Ravagnolo who says "there is a pre-concept" that 5G will implicitly mean more space on the tower, which is not necessarily true.

"The RAN technology has evolved and continues evolving," he continues. "Vendors are making great effort towards reducing the wind-loading of their equipment (i.e. RF antennas and RRUs), which often balances out many additional space requirements from upgrading the site with new carriers / frequencies."

For example, Ravagnolo says multi-band antennas are becoming increasingly available and cost effective, also in emerging markets. What can make the difference is the adoption of 'so called' massive MIMO antennas. "These are active antennas – nowadays most units are passive with the RRU functionalities being delivered through a separate box – and are typically deployed as separate units from the passive antennas delivering 2G-4G services," he adds. "Although they are not large in size – in fact they are smaller than traditional antennas – they are thick and heavy, thus increasing the wind-loading and – depending on the contract - triggering revenue amendment opportunities for towercos. These antennas offer significant gains in terms of capacity and performance to operators."

Nevertheless, Ravagnolo says "they are still expensive and we are seeing operators using them carefully" by deploying them in the most affluent and capacity-constrained areas. This means that not all sites will see this sort of equipment being deployed.

Ericsson delivers 5G RAN portfolio that consists of antennas, radios, baseband (RAN Compute) and RAN software to enable incredible speeds and mobility. It also offers a purpose-built portfolio and a Cloud RAN portfolio for 5G that offers CSPs flexibility when rolling out networks worldwide.

Zoran Lazarevic, chief technology officer, Ericsson Middle East and Africa, explains how the antenna system is in fact one of the most crucial areas in a radio access network. "As 5G sites add complexity with new frequencies (2G-5G) and multiple technologies (FDD-TDD), it increases the need for site optimisation," he says. "Ericsson Antenna System is an integral part of Ericsson Radio System and provides a full range of high-quality products in the following areas: passive antennas, active antennas, filters and combiners, tower mounted amplifiers, feeder system, and accessories."

Lazarevic adds that as the new performance demands on networks require new levels of spectral efficiency and flexibility, Ericsson, through its massive MIMO portfolio, offers a wide range of Antenna Integrated Radios for a maximum 5G experience and capacity. "The portfolio includes lightweight and energy-efficient

Zoran Lazarevic, Ericsson Middle East and Africa

"As 5G sites add complexity with new frequencies (2G-5G) and multiple technologies (FDD-TDD), it increases the need for site optimisation"

options, combined with real-time beamforming capabilities supporting both TDD mid-bands and FDD bands."

As Africa continues to invest in 5G, Unsal says it's important to focus on what the "general impact of 5G on society could be going forward. He says 5G networks will bring three important capabilities which are enhanced mobile broadband (eMBB), massive machine-type communications (mMTC) and ultra-reliable and low-latency communications (URLLC).

"5G is an opportunity to empower citizens and businesses," he says. "It will play a key role in transforming cities into smart cities, allowing citizens and communities to realise and participate in the socio-economic benefits delivered by an advanced, data- intensive digital economy."

He adds that 5G promises to deliver improved end-user experience by offering new applications and services through gigabit speeds, and significantly improved performance and reliability. "5G will build on the successes of 2G, 3G and 4G mobile networks, which have transformed societies, supporting new services and new business models," Unsal adds. "5G provides an opportunity for wireless operators to move beyond providing connectivity services, to developing rich solutions and services for consumers and industry across a range of sectors – and at affordable cost."

Now, we might be jumping the gun a bit, but 6G has entered the modern technology lexicon.

While 5G is the technology of the moment, some parts of the world, namely the US and South Korea are already testing its successor. Although the launch of the technology is still some time off, the relevant technology will need to be in place. Or does it? "6G standard is still being developed, the expectation is that the bodies developing the standards will build 6G on the 5G base so that the investment in 5G is not wasted," says the Helios spokesperson.

For Ravagnolo, RAN equipment typically has a useful lifetime of six-eight years – or a maximum of 10. "As such, it will need to be swapped before 6G comes," he says. ∎

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Five reasons why 5G makes the difference

The fifth-generation of wireless technology is paving the way for the connectivity that digital technologies increasingly require. Peter Linder, head of 5G marketing at Ericsson, shares his views on why 5G makes a difference

5G has rapidly gained mindshare in society as a vital technology. But what makes 5G different from its predecessors? We describe a set of strategic choices made for previous mobile generations of which we made a single choice. 5G makes it possible to embrace both options, unlocking larger opportunities earlier in the deployment cycle.

Over the last 36 months, 5G has rapidly gained mindshare in society as a vital technology. But not all stakeholders in industries adjacent to the telecom industry understand what makes 5G different from its predecessors. In this blog post, we describe a set of strategic choices made for previous mobile generations of which we made a single choice. 5G makes it possible to embrace both options, thereby unlocking larger opportunities earlier in the deployment cycle.

The mobile industry made five strategic choices for 4G and focused on:

- The type of users driving development, i.e., consumers
- The type of service offerings, i.e., mobile broadband
- The nature of connectivity services, i.e., universal internet access

- Infrastructure build-out, i.e., public networks
- Initial network coverage, i.e., urban and sub-urban areas

5G extends the scope and opportunities in each of these five factors, beyond the original choices made for 4G.

Consumer and business users

The introduction of 4G was consumer-led, with infrastructure and device technology development centered around smartphones for consumers. Businesses adopted consumer technology through a more visible, bring-your-own-device (BYOD) movement. Internet of Things realisations using 4G focused on re-using technology designed for smartphones at a later stage of the 4G journey. Where devices such as smart watches came after smartphones.

5G always has been a consumer AND business-led phenomenon. The existing consumer-led market is growing at 0.53 percent CAGR this decade, and the business-led market is growing at 12 percent CAGR. In simple terms, the consumer segment will remain the business foundation, and the business segment represents the growth potential for communications service providers (CSPs).

5G gives enterprises access to a richer value proposition for wireless connectivity. The 5G standards have prioritised whole business use categories, such as massive IoT and critical IoT. Service providers are transforming their marketing and sales teams to engage beyond selling SIM cards and buckets of data traffic, to supporting the digital transformation of enterprises.

Mobile broadband and fixed wireless access

Mobile broadband led with its coverage and capacity capabilities during the rollout of 4G infrastructure. Cellular technology, which provided internet access to mobile devices, was dominated by smartphones, and fixed wireless 4G applications came to market once mobile broadband applications were successful in niche volumes.

5G is enhanced mobile broadband AND fixed wireless access (FWA) led from the start. Mobile broadband to smartphones defines initial coverage plans and device introduction strategies. Half of the 800+ 5G devices launched to date are smartphones. FWA using 5G comes earlier in the deployment cycle and will play a larger role in the market. We expect FWA to grow from 60 million in 2020 to 180 million in 2026. A mix of 4G and 5G will connect the next 100 million households, with 5G serving 70 million connections by 2026.

5G allows fixed wireless to become a powerful alternative to wired broadband where fiber doesn't exist and where existing copper/coax infrastructure delivers subpar performance. 5G can be rolled out faster, at a lower cost, and with a high synergy between fixed and mobile broadband upgrades.

Universal use and Business and mission critical use

4G started as a homogenous business proposition, defined around a universal internet connectivity service. All applications and all users would get equal access to the available network capacity.

Today, support for unique requirements by business and mission-critical applications vary across 4G networks.

Network architecture and design for 5G support all three connectivity types. These connectivity types leverage traffic separation, reliability, availability, and security as the main improvement areas, from standards to implementation, and allow us to raise the bar for what 5G can support. One network supporting all three connectivity types is vital for applications where dedicated spectrum and infrastructure is not an option. The FirstNet deployed by AT&T in the United States is an excellent example of how powerful these combinations are already.

Business-critical connectivity supports business processes where performance, security, availability, and reliability are higher and require service level agreements. Mission-critical applications support users, like first responders, who have even higher requirements and where nationwide coverage is vital.

Network slicing is a mechanism introduced with 5G, where network resources in a public or private network can be dynamically allocated for different connectivity types. This opens the door for mobile infrastructure to play a bigger role as a platform for digital transformation supporting tailored connectivity services. We are at the point where one network slice does not fit all use cases any longer.

Public networks and private networks

Today, public networks use 4G technology, and private networks use WiFi technology for wireless connectivity. 4G uses licensed spectrum, and WiFi uses unlicensed spectrum. These distinct silos with a service provider that are linked to a specific spectrum and technology are changing.

4G and 5G are moving beyond public networks and into the private or hybrid network domain, using licensed, shared or spectrum acquired on commercial terms. Ownership preference for private networks varies by industry. Private networks use a dedicated or shared spectrum.

The private network movement comes from the demand for superior cellular technologies for business-critical applications. 5G offers the performance of inflexible wired infrastructure with the flexibility of insecure and unreliable wireless alternatives.

New business models are emerging for private/hybrid networks with different combinations of spectrum ownership, network asset ownership, service provider, and degree of support for public services – mobile broadband, for example.

Urban and suburban coverage and rural coverage

The roll-out of 4G started with a focus on urban and suburban areas. Ten years into the deployment cycle, there are still areas in developed economies without 4G coverage. Citizens in rural areas are often left one mobile generation behind, accepting less capable infrastructure options. Before the pandemic, this was a bad situation, but still acceptable; from now on, access to adequate infrastructure is a survival strategy for rural communities and their economy.

Access and early access to 5G is necessary for both urban, suburban AND rural communities. Luckily, market forces are currently driving 5G implementation in urban and suburban areas. Early 5G builds in rural communities come from a combination of visionary business and society leaders who see the potential of 5G, and government subsidies. Leaders who don't push early run the risk of always being left a generation behind.

The real value of 5G in rural communities is threefold. First, rural consumers will get digital access for their work and leisure that's on par with their urban and suburban peers. Second, rural businesses will get the opportunity to be an equal partner in the digital economy. For example, many industries such as agriculture, outdoor recreation and green energy production will remain in rural areas and go through a digital transformation. And finally, rural communities will gain anchor institutions like education and healthcare that are on par with cities.

5G has the potential to close two digital divides in mobile and fixed broadband, with one infrastructure. Not in areas where fiber already exists or will reach this decade, but for the large areas beyond the fiber footprint.

Consumers, mobile broadband, universal use, public networks, urban and suburban coverage and Business users, fixed wireless access, business and mission critical use, private networks and rural coverage.

When facing the doubt if 5G is just another G, similar to 4G but faster, I hope you remember the power of AND on the five aspects outlined above. 5G is not defined to be another G but a different G on multiple fronts. ∎

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Algeria connects to more international internet cables

Algeria has a steadily developing telecom infrastructure with growth encouraged by sympathetic regulatory measures and by government policies aimed at delivering serviceable internet connections across the country. Fixed internet speeds remain slow, and the country ranks poorly in international tables. Some efforts are ongoing to address this, with the government having pressed Algérie Télécom in early 2021 to increase the minimum rate available from 4Mb/s to 10Mb/s.

Mobile broadband is largely based on 3G and LTE, and the data rates are also low in global terms. Although LTE is available in all provinces, much investment is required from the MNOs to improve the quality of service. The government is encouraging the MNOs to undertake upgrades to LTE infrastructure before investing in commercial 5G services.

Intensifying price competition between the three MNOs – Mobilis, Djezzy and Ooredoo Algeria – together with increases in taxes on voice and data services, have had a negative effect on operator revenue. The difficult operating climate encouraged VEON to sell its entire share in Djezzy in mid-2021, allowing it to focus on its more profitable markets.

BuddeComm notes that the pandemic continues to have a significant impact on production and supply chains globally. During the coming year the telecoms sector to various degrees is likely to experience a downturn in mobile device production, while it may also be difficult for network operators to manage workflows when maintaining and upgrading existing infrastructure.

Overall progress towards 5G may be postponed or slowed down in some countries.

On the consumer side, spending on telecoms services and devices is under pressure from the financial effect of large-scale job losses and the consequent restriction on disposable incomes. However, the crucial nature of telecom services, both for general communication as well as a tool

Table 1 – Growth in the number of mobile

Year	Subscribers (million)	Penetration
2011	35.616	96.5%
2012	37.528	99.3%
2013	39.630	102.1%
2014	43.298	109.6%
2015	43.391	107.4%
2016	45.818	111.6%
2017	45.846	109.9%
2018	47.154	109.0%
2019	45.426	103.0%
2020	45.556	103.6%
2021 (e)	46.100	104.1%
2022 (f)	46.840	104.9%
2023 (f)	47.730	105.7%
2024 (f)	48.680	106.9%
2025 (f)	49.610	108.7%
2026 (f)	50.500	110.0%

Source: BuddeComm based on regulator data

for home-working, will offset such pressures. In many markets the net effect should be a steady though reduced increased in subscriber growth.

Although it is challenging to predict and interpret the long-term impacts of the crisis as it develops, these have been acknowledged in the industry forecasts contained in this report.

The report also covers the responses of the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education, among other solutions.

Key developments in 2021:

- Regulator again provides MNOs with additional spectrum to address poor services;
- Government approves procedures for implementing MNP, argues for upgrades to LTE networks before MNOs invest in 5G;
- MNO's LTE infrastructure reaches all 48 provinces, though QoS is considered poor;
- Government initiates national infrastructure project to replace copper network with fibre;
- VEON sells its entire 45.57% stake in OTA to the Algerian National Investment Fund.

Chart 1 – Growth in the number of in the number of mobile subscribers and penetration – 2011 – 2026
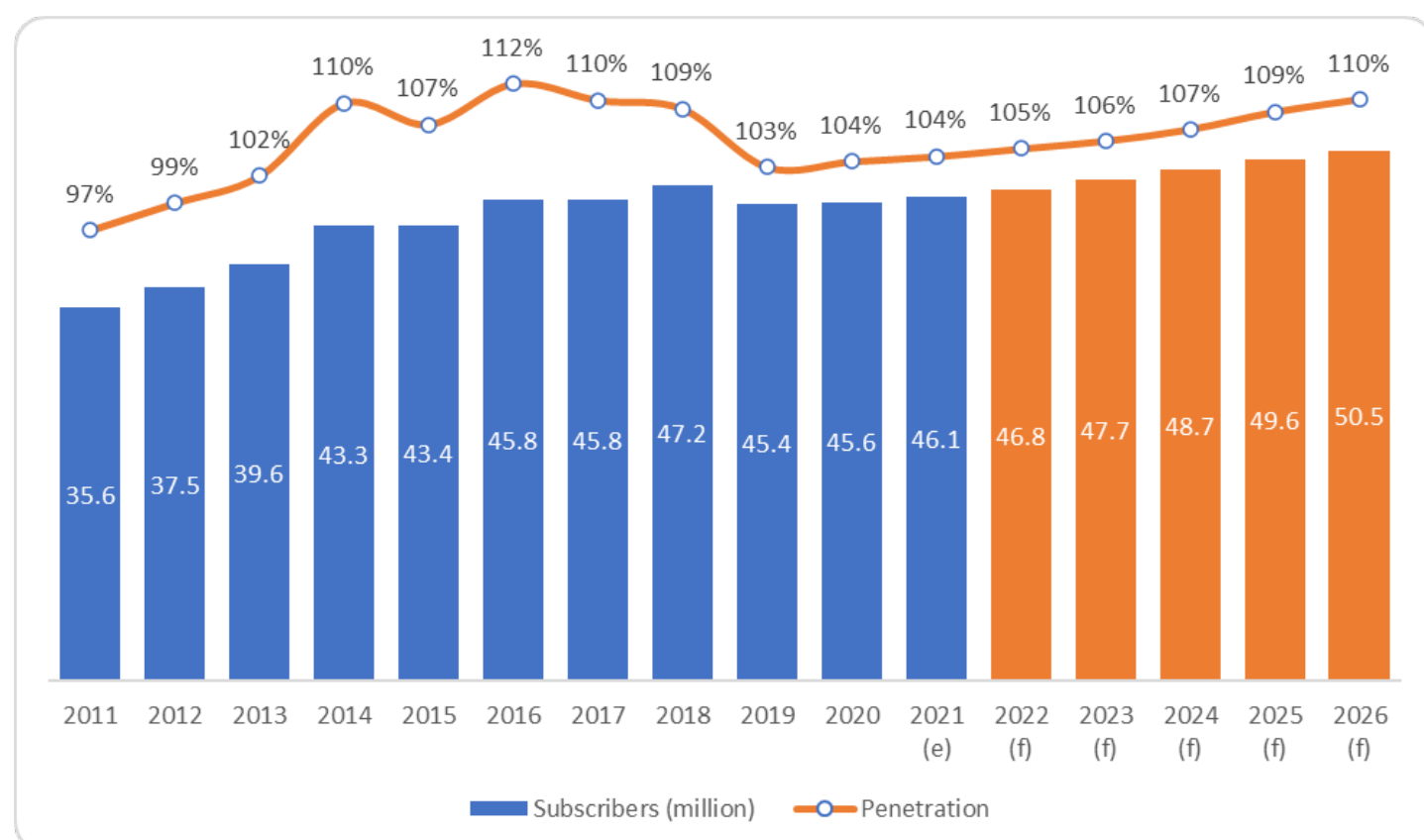
Source: BuddeComm based on regulator data

Is industry inertia keeping SIM-swap fraud alive?

As SIM-swap fraud continues to skyrocket, Lincoln Naicker, product owner at Entersekt looks at how businesses can lower their risk and protect customers

SIM-swap fraud has been around for decades and according to the latest SABRIC figures, SIM-swap incidents increased 91% year-on-year when looking at digital banking fraud across all platforms. But why, with all the advancements in technology, are we still dealing with this relatively unsophisticated, but rampant fraud type? How could we lower our risk to this perennial and costly threat?

SIM-swap fraud continues to grow. Some international reports show close to 100 percent year-on-year growth, and South Africa is seeing the same trend. The most important thing to recognise is that SIM swaps have a very important part to play in the mobile network industry. Mobile Network Operators (MNOs) sit at the centre of an extended ecosystem and impacts many other sectors, not least of all the financial one. And, although there has been a seismic shift in the technology in mobile apps and other digital channels, the SIM has remained fairly unchanged.

SIM-swap fraud remains a largely manual process with social engineering at the heart of most of the criminal efforts. Another big problem is that, at the moment, clients will be asked to challenge a SIM swap after the fact, rather than the MNOs proactively reaching out to the client to verify that the SIM-swap request actually came from them before proceeding.

The US regulator is leading the charge in changing this and is proposing new requirements for phone carriers to authenticate a person's identity before transferring their number to a new phone. This is timeous because Covid-19 has amplified digital and mobile banking and with over 90 percent smartphone penetration, we are all beholden to mobile networks for our digital financial lives.

There may need to be better local regulation to effect change, although the current method is low-friction and offers MNOs a better customer experience.

MNOs want to keep the customer experience as smooth as possible. If you put too many roadblocks in the path of the cellphone owner, they may simply migrate to another provider and so the incentive to add additional security layers is not immediately obvious. However, when it comes to reputation, SIM-swap fraud will eventually impact your bottom line.

A collective solution may be the answer

Minimising SIM-swap fraud requires a multi-layered solution. The first issue that needs addressing is how MNOs onboard customers.

We need greater cooperation between the MNOs when it comes to onboarding. The verification process should be augmented using other technologies such as voice biometrics. If all players could agree on better security at this early stage, we would already have made progress.

The second piece to the puzzle lies with organisations' ongoing reliance on SMS one-time passwords (OTPs). SMS OTPs are not secure and fraudsters know this.

We have seen dramatic results at companies where we have helped them remove SMS OTPs as part of their authentication offering. We should remember that the industry rolled out SMS OTPs when we realised that username and passwords were not sufficient. But now we know that SMS OTP should

> **"The verification process should be augmented using other technologies such as voice biometrics"**

not be used for anything tied to personal or financial information. It's simply not strong enough.

This cannot happen overnight and, in the shorter term, companies can augment the authentication process with SIM-swap detection technologies or use mobile apps that rely on device integrity.

Beyond industry cooperation, our regulators need to look at introducing guidelines and standards that will address SIM-swap fraud at the entry point.

At the end of the day SIM-swap fraud remains a huge part of digital crime committed because there has not been much focus on improving a very archaic process that relies on very old technologies. There are certainly better ways of doing things, but it requires a coordinated effort to make the necessary changes. Most of all we will need to move past the current industry inertia. ■

New from Doodle Labs

The Helix Smart Radio from Doodle Labs features six software selectable frequency bands, M1-M6 (1625 MHz to 2500 MHz) to support global deployments with a single SKU, simplifying a major logistics hurdle. It weighs as little as 25 grams depending on the configuration.


The Helix is a core radio in DIU's Blue sUAS Ecosystem and it's integrated and compatible with a number of UAS components like QGroundControl, Auterion's Skynode and UXV's GCS systems.

"We are very excited about the release of the Helix Smart Radio from Doodle Labs," says David Sharpin, CEO of Auterion Government Solutions. "We are currently integrating the Doodle Labs Embedded Smart Radio into Auterion OS and our Skynav Controller series. Helix is the next step in this journey, offering embedded mesh network radio technology with the six selectable frequency bands used by our US Government and Allied Nation customers."
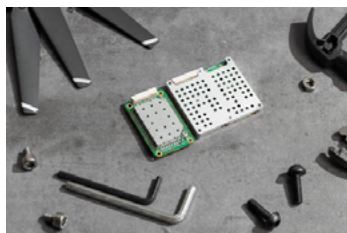
The Helix has been field proven for video streaming for up to 25 km, which can be extended with high gain antenna systems.

Helix is powered by Doodle Labs' patented Mesh Rider technology. *doodlelabs.com*
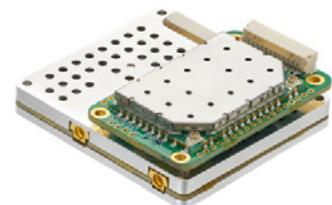

Ultra-rugged phablet

Handheld Group, a manufacturer of rugged mobile computers, brings to market a new version of its NAUTIZ X6 ultra-rugged phablet – a handheld computer that combines the big-screen functionality of a tablet with the go-anywhere performance of a rugged phone.

With this platform upgrade, the new version of the Nautiz X6 ultra-rugged phablet runs Android 11 and is Android Enterprise Recommended (AER). Apparently one of Handheld's most successful products since its launch in 2019, the Nautiz X6 is supposedly ideal for industrial and field applications with the reliability to perform in the most challenging outdoor and industrial environments. Amongst other things, you get an Android 11 operating system with GMS, Android Enterprise Recommended (AER) and a sunlight-readable, 6-inch capacitive multi-touch display with super-hardened Gorilla Glass.

"Since its introduction, the Nautiz X6 has been one of our fastest-selling devices," says Johan Hed,
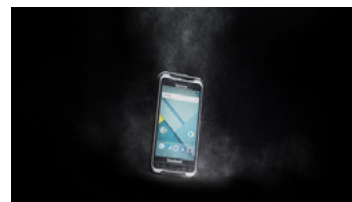
Handheld Group director of product management. "With its combination of military-level ruggedness, slim design, and reliable performance, the Nautiz X6 has been exactly the rugged handheld our customers needed." *handheldgroup.com*

Isotropic, SES complete multi-orbit antenna field tests

SES and partner Isotropic Systems, a developer of transformational multi-link satellite technology, successfully completed "the first-ever" simultaneous multi-orbit antenna field tests.

Described as a "game changer" as far as multi-satellite and multi-orbit connectivity is concerned, the new versatile antenna successfully connected with SES's satellites in their geostationary orbit as well as simultaneously connecting with a O3b satellite in medium earth orbit (MEO).

Currently, users are reliant on legacy ground antennas which only connect to a single network at a time. This industry breakthrough enables satellite end-users to combine the best attributes of all available networks achieving superior network uptime and application performance. Isotropic's deep tech solution multiplies the performance of single antenna solutions to transform the global appeal of satellite connectivity, ensuring critical defence communications infrastructure and delivering multiple broadband that are highly reliable.

SES and Isotropic listed a number of ways in which the technological breakthrough include the fact "NATO and other international forces will finally be able to converge the most advanced military and secure commercial satellites, ensuring total mission assurance around the world". Another example is that aircraft pilots will be able to connect to the optimal satellites for navigation and ground communications, "while passengers in the cabin can connect to entirely separate satellites in different orbits to access live television, super-fast broadband, and enhanced

entertainment options with streaming and gaming". It will also help the land transport and shipping industries, the partners said.

"We have removed the major bottleneck holding back the expansion of the satellite sector for both commercial and defence communications. Users can finally connect to as many satellites as they want, when they want, wherever they want and that's a game-changer for enterprise, aero, maritime, government and defence," said John Finney, founder and chief executive officer of Isotropic Systems."

First-of-its-kind location hyper-precise tracking software

Geo-location startup, Naurt, welcomes full public access to what it claims is "game-changing" software set to unlock the future of hyper-precise location tracking. Following a year of beta testing with a pilot group of high-profile local and international businesses and governments, Naurt has now made its first-of-its-kind software accessible to any and all businesses around the globe. The startup's plug-and-play toolkit apparently has no direct competitors and promises to deliver 45 times more accurate location data when used indoors or outdoors and across borders.

Naurt says its software does not replace the satellite location services businesses currently use - "instead, it simply integrates seamlessly with it and fixes the problems that cause the location data to be inaccurate". Where businesses might currently be able to pinpoint a location to within around 20 metres, integrating Naurt could improve accuracy to within centimetres, it claims.

"Standard satellite location services are no longer fit for purpose and are costing businesses and people time, money and safety," says
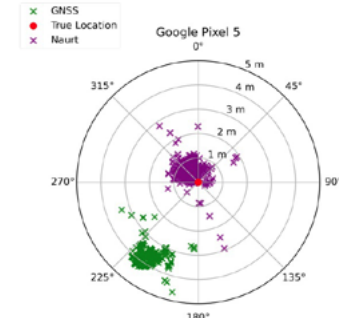
Jack Maddalena, co-founder and CEO of Naurt. "Naurt is making geo-location ultra precise." *nuart.com*

Intellian and Inmarsat launch FleetBroadband terminals

Intellian says it's pleased to announce that it has received type approval from Inmarsat for its new FB250 and Fleet One L-band terminals, "making it one of the first to market" with user terminals for operation on Inmarsat's innovation catalyst L-band network, ELERA. The FB250, the company claims, is a multi-functional terminal, either acting as a stand-alone primary communications terminal or combining with Intellian's GX60NX and GX100NX to create the Fleet Xpress (FX) solution. The Fleet One terminal, Intellian says, provides

an easy-to-install, reliable voice and data solution, ideal for smaller fishing and leisure vessels.

Meanwhile, Intellian's Fleet One terminal represents a lightweight, dependable and affordable solution for simultaneous voice and data connectivity of up to 150kbps on smaller vessels. The firm claims it's "an ideal product for those operating beyond terrestrial coverage", whether as seasonal users or simply not in need of the capabilities of higher-end satellite communications, the terminal guarantees peace of mind with

secure, unbroken access at any time for safety alerts, navigational warnings, emails, internet-based messaging and voice calls. *intelliantech.com*

Sepura's new SCU3 Broadband Vehicle Device

Sepura says its "powerful" SCU3 Broadband Vehicle Device" is ready for today's mission critical users and offers flexible opportunities for the future".

The new piece of kit has been designed for use in vehicles and/or fixed office locations and supports Mission Critical Voice (MCPTT), video (MCVideo) and data (MCData) features.

Built on the Android operating system, the device provides compatibility with a wide range of applications which have been designed to run on existing Android

smartphones and tablets.

It also features an optional TETRA modem, enabling narrowband voice and data services, whilst also supporting Bluetooth, Wi-Fi and ethernet, providing connections to a range of accessories and ancillary systems. Paired with Sepura's Mobile Device Management (SDM) solution, the SCU3 Broadband Vehicle Device is the complete communications solution for today's critical communications users.

"The SCU3 is the next step forward in supporting our customers

around the world," says Steve Barber, Sepura's CEO. "With increasing demand from the market to integrate data into their operations, the SCU3 complements the TETRA solutions used and trusted by Sepura's customers."

New directional coupler

Krytar, known for its design and production of ultra-broadband microwave components and test equipment, has continued the expansion of its line of directional couplers with the addition of a new model offering 30 dB of Coupling over the broadband frequency range of 18 to 40 GHz (K- through Ku-Bands), in a single, compact and lightweight package. The firm reckons its new directional coupler, Model 184030, enhances the selection of multi-purpose, stripline designs that exhibit excellent coupling in a single, compact and lightweight package. Krytar claims

it's "uniquely designed for systems applications where external levelling, precise monitoring, signal mixing or swept transmission and reflection measurements are required". The new directional coupler also lends itself to wireless designs and many test and measurement applications within K- through Ku-Bands including electronic warfare (EW), commercial wireless, 5G communications, Satcom, radar, signal monitoring and measurement, antenna beam forming, and EMC testing environments. The new directional coupler comes with industry-standard 2.4mm SMA

Female Connectors. The compact package measures just 1.12 inches (L) x 0.40 inches (W) x 0.62 inches (H), and weighs only 1.0 ounces. Operating temperature is -54° to 85° C. The directional coupler can also be manufactured to meet ridged military specifications. *krytar.com*

European scientists bounce first ever LoRa message off the Moon

A European team of scientists have bounced, for the first time ever, a LoRa (long range) message off the Moon.

The feat set a new record of 730,360 km for the furthest distance a LoRa message has ever travelled. It was also the first time a data message was bounced using an off-the-shelf small RF (radio-frequency) chip. For a brief moment in time the entire message "PI9CAM" (the call sign of the telescope) was in space on its way from Earth to the Moon and back.

It also proved that LoRa technology, used for many IoT (Internet of things) applications, can cover such great distances and that it is possible to send and receive low-powered messages from the Moon. This could become relevant for future lunar communications.

The team, some of them licensed radio amateurs, consisted of Jan van Muijlwijk (CAMRAS), Tammo Jan Dijkema (CAMRAS), Thomas Telkamp (Lacuna Space) and Frank Zeppenfeldt (ESA). To achieve the transmission, the team used the Dwingeloo radio telescope, operated by the CAMRAS foundation in the Netherlands. The radio telescope has a history of being used in amateur radio experiments and is now often used for moon bounces.

"I had never dreamed that one day a LoRa message would travel all the way to the moon and back," said Nicolas Sornin, co-inventor of LoRa. "This dataset is going to become a classic for radio communications and signal processing students. A big thumbs up to the team and CAMRAS foundation for making this possible."

Nokia and Orange complete network trial

Nokia and Orange announced today the completion of a network trial using the Nokia PSE-Vs, its fifth-generation super coherent optics.

With this field trial, Orange validated a planned upgrade of its long-haul backbone networks to support new high-bandwidth 400 Gbps services, and the ability to scale fibre capacity up to 600Gbps. This represents an increase in spectral efficiency by 50% compared to prior technologies on its long-distance network.

The trial was performed in real-world conditions using Nokia PSE-Vs optics in production-ready optical transport hardware, just 16 months after the lab prototype trial done on Orange's live network.

Orange and Nokia demonstrated error-free performance at a data rate of 600Gbps over a 914km network between Paris and Biarritz, under what the company describes as "challenging live network conditions". The fibre network consisted of 13 spans of Orange's existing network, through multiple cascaded reconfigurable optical add/drop multiplers (ROADM), using 100GHz WDM spectrumchannels.

"With the booming market bandwidth requirement and need for scalability and flexibility, it is important that Orange continues to support an ever-greater network scale and new high-bandwidth services across our terrestrial and subsea global footprint," said Jean-Luc Vuillemin, vice president of international networks and services at Orange.

"Validating super coherent optics with Nokia represents an important enabler for future-proof networks which will bring spectral efficiency and operational deployment flexibility to our customer solutions. Furthermore, this technology will allow for power savings by nearly 50%, which is key to our objective of developing greener networks for our customers. "

James Watt, head of optical networks division, Nokia, added: "We are delighted to work with Orange in continued support of their network upgrade plans. With the introduction of the PSE-Vs super coherent capabilities across our entire 1830 portfolio, Nokia enables spectrally-efficient transport at 600Gbps over real-world long haul networks, and 400Gbps services over ultra-long haul networks spanning multiple 1000's of kilometres."

4iG acquires Telenor Montenegro

Hungary's 4iG has penned an agreement with PPF Telecom Group to acquire 100% of Telenor Montenegro for an undisclosed sum.

The former made its first bid for the unit in July and the deal is expected to close by the end of the year providing it meets the relevant regulatory requirements.

"Our business strategy focuses on markets offering significant growth potential and solid weighting within our portfolio," said Marek Slacik, executive director TMT CEE at PPF Telecom Group. "Therefore, we have decided to sell Telenor Montenegro to a party that has a long-term interest to develop the mobile operator further."

Gellert Jaszai, president and CEO of 4iG added: "Telenor Montenegro is a mobile operator with a stable growth background, the acquisition of which is an important step through the implementation of our strategy in the western Balkans. The acquisition may open up additional opportunities for us in the region in the telecommunications and ICT markets."

PPF bought Telenor Montenegro from Norwegian parent company (Telenor) along with its businesses in Bulgaria, Hungary and Serbia in a US$3.3bn deal.

Australia's Telstra acquires Pacific firm 'to block China'

The Australian government and telecoms firm Telstra are buying a Pacific telecoms company in a joint venture viewed as a political block to China's influence in the region.

Telstra called the A$2.1bn deal to acquire Digital Pacific a "unique and very attractive commercial opportunity to boost our presence in the region".

The latter employs 1,7000 people spanning Fiji, Papua New Guinea, Samoa, Tahiti and Vanuatu.

In 2020, the firm was forced to deny a report that it was negotiating the sale of its Pacific unit to state-owned China Mobile.

Telstra said the Australian government approached it "to provide technical advice in relation to Digicel Pacific, which is "critical to telecommunications in the region". The government then agreed to finance the bulk of the bid.

"Partnering on infrastructure development is a key part of our Pacific step-up," a spokesman for Australia's Department of Foreign Affairs and Trade told newswire Reuters.

A fear of Chinese investments and control of telecoms has led many countries to ban Huawei, ZTE and other players from China supplying them technology.

Vodafone reaches over 35 million people in Germany with 5G network

Vodafone Germany's 5G network is now available to more than 35 million people across the country, the company said.

The operator had previously said it aimed to service over 30 million people with 5G in Germany by the end of this year. It also claimed that its 5G network is expected to be available to 60 million people by 2023.

"We are activating the most modern 5G network in Europe," said Vodafone Germany chief executive officer Hannes Ametsreiter. "In the coming year, every 5G antenna will also become a 5G standalone antenna. With 5G, we not only bring high bandwidths, but also extremely short response times and network slicing to people and factories. Our 5G network then reacts as quickly as the human nervous system and needs less and less power to transmit data."

Ametsreiter added that the entire 5G network will rely on standalone architecture by 2023.

Vodafone recently put 5,000 more 5G antennas into operation in urban and rural areas across Germany. The telco said a total of 15,000 5G antennas at 5,000 locations are now live.

Earlier this year, Vodafone Germany launched its 5G standalone (SA) network in partnership with Ericsson, Nokia, Qualcomm and OPPO.

Vodafone has already upgraded 3,000 sites to SA 5G.The new network was initially launched in some major cities including Frankfurt, Berlin, Hamburg, Munich and Düsseldorf.

Vodafone is also is installing new 5G antennas from Swedish technology partner Ericsson in its 5G network, which transmit data in a significantly more energy-efficient manner.

Latvia introduces 'first' 5G cross-border test site in Europe

Latvian operator Latvijas Mobilais Telefons (LMT) has created a 5G mobility innovation testbed, which is understood to be the first ever cross-border mobility simulation space in Europe.

Located at the Bikernieki racetrack in the capital, Riga, the plan is to use LMT and Estonia's Telia 5G networks to imitate fully functioning international connectivity.

The new testbed has already demonstrated its first use – a teleoperated vehicle simulation was carried out remotely over LMT's 5G network from the town of Cesis, some 80km away, the firm said.

Moreover, the testbed is part of the 5G-Routes project, an international effort to ensure cross-border automated mobility and to develop and demonstrate several 5G-Routes project use cases.

With a consortium made up of 21 partners, the 5G-Routes project began work in September. It is designed to validate 5G field trials on the "Via Baltic North" 5G cross-border corridor spanning the borders of Finland, Estonia and Latvia.

Greek tourism boosts OTE profits

The Greek government's decision to lift Covid-19 travel restrictions over the summer boosted third-quarter core profit for OTE, according to Greece's biggest telco.

Growing demand for higher data speeds and volume in mobile also helped the group, which is 46% owned by Deutsche Telecom.

Earnings before interest, tax, depreciation and amortisation (EBITDA) reached €341.6m in the same period last year.

OTE has been investing heavily in fast broadband services in recent years and it launched 5G in 2020. The next-generation technology is expected to be made available to more than 60% of the country's population by the end of 2021.

'Iranian hackers targeting telcos and ISPs using upgraded malware', says report

Iranian-backed criminals have been hacking into ISPs and telecoms companies since July this year, according to a new Accenture report.

The group known as Lyceum, which also goes by Hexane or Spirlin, has been in existence since 2017 and been linked to malicious campaigns targeting Middle Eastern oil and gas companies.

From July-October this year, it carried out attacks on Internet providers and telcos organisations in Israel, Morocco, Tunisia, and Saudi Arabia, according to researchers from Accenture's Cyber Threat Intelligence (ACTI) group and Prevailion's Adversarial Counterintelligence Team (PACT). In addition, the APT is responsible for a malicious campaign against an unnamed African country's foreign affairs department.

"Telecommunications companies and ISPs are high-level targets for cyber espionage threat actors because once compromised, they provide access to various organisations and subscribers in addition to internal systems that can be used to leverage malicious behaviour even further," said security researchers.

Lyceum appears to be using two families of malware, Shark and Milan, according to the most recent operation analysed in a joint report by researchers at Accenture and Prevailion.

Shark backdoor is a 32-bit executable file written in C# and .NET, and it executes commands and exports data from infected systems. Milan is a 32-bit remote access trojan (RAT) that can retrieve data from the compromised system and send it to servers derived from domain-building algorithms (DGAs).

Both backdoors communicate via DNS and HTTPS with the command and control (C2) servers. Shark also uses a DNS tunnel.

Researchers said they also identified beaconing from a reconfigured or a new Lyceum backdoor in late October 2021.

Unitel inks satellite deal with Lynk for coverage across Mongolia

Mongolia's biggest player Unitel has entered into an agreement with Lynk Global, enabling its subscribers to remain connected anywhere around the world with "ordinary cell phones".

The deal will hand Unitel first-to-market rights to implement Lynk's service in Mongolia, with the latter's global commercial service providing direct satellite to cell phone service is on schedule to be deployed in 2022.

Lynk characterises itself as a cell-tower-in space connectivity provider and recently agreed similar deals with Aliv in the Bahamas and Telecel Centrafrique in the Central African Republic.

"The landscape of Mongolia represents a significant challenge to the country's telecommunications sector as we have a sparse population that's spread throughout the Gobi Desert, temperate forests, vast steppes and extensive mountain ranges," said Enkhbat Dorjpalam, CEO, Unitel Group. "Under these circumstances, Unitel Group has been successfully providing many modern B2C and B2B tech services and solutions including mobile plans, high-speed internet, IPTV, OTT and cloud services to Mongolians for the past 15 years."

Dorjpalam added that the company is "excited" to make its services "more inclusive and extensive for thousands of people."

Orange CFO predicts 'inevitable' merger within French telecoms

France will "inevitably" see the number of telecom operators drop from four to three, Orange's (chief finance officer) CFO said, adding that recent take-private deals by two of them, Iliad and Altice, could improve conditions for a merger.

The French telecoms has yet to fully recover from a protracted price war started by Iliad's Free Mobile services in 2012, with aggressive offers successively impacting the performance of all four operators, including Bouygues Telecom.

This has prompted industry leaders to pursue consolidation, but all attempts have so far failed.

The de-listing of Iliad and Altice Europe from the stock market may facilitate deals, Orange CFO Ramon Fernandez told the Morgan Stanley TMT conference.

"For companies which are private now, it's probably easier to consider... strategic options, maybe consolidation in the French market," Fernandez said. "I'm not saying that we are now on the verge of seeing something happening in France. But when the time will come, and inevitably it will come, it will be easier for these players to engage into discussions."

IDB Invest improves efficiency of wireless broadband in LatAm

IDB Invest has granted a senior credit line of US$45m to the subsidiaries of QMC Telecom International Holdings in Mexico, Colombia and Peru – a 10-year transaction to improve the quality and efficiency of wireless broadband services in the countries.

Lockdown and social distancing measures have made broadband connectivity essential for most social and economic activities, including work, education, and healthcare.

Mobile data traffic was already expected to increase considerably by 2025, but the pandemic has significantly accelerated data traffic with increased adoption of digital services.

QMC Telecom said it expects to significantly increase its portfolio of towers, distributed antenna systems and street-level solutions in Mexico, Colombia and Peru as all of these countries prepare for 5G spectrum deployments and the required network densification that

will follow. In Colombia, the new financing will allow QMC Telecom to support national deployments by operators of the recently auctioned 700MHz spectrum, including those in communities that currently do not have cellular coverage.

"Our partnership with IDB Invest underscores QMC Telecom's commitment to corporate citizenship, sustainability and diversity in the communities it serves," said Ricardo Zubieta, CFO of QMC.

Lebanon's telecoms sector 'days from collapse' due to deepening fuel crisis

Lebanon's worsening financial crisis is so close to the brink for the country's telecoms sector, with the national Parliamentary Media and Communications Committee warning that the nation's networks are on the brink of collapse.

According to local reports, state-run telcos only have enough diesel in storage to keep networks operating for a few days.

"The quantity of diesel at

Lebanon's state-owned Touch and Alfa mobile companies and the state-run telecommunications company Ogero, which operates fixed lines and fixed internet, is enough to run for only a few days, otherwise telecom services will crumble," the committee said.

In September, Lebanese telcos started to show signs of struggle, with fixed-line operator Ogero being forced to shut down services in parts of the country temporarily due

to lack of fuel.

"Our services have stopped temporarily with the range of the Barouk, Halba and Qoubayat centres until we are resupplied with diesel fuel," the company said in a statement.

Lebanon's financial crisis dates back to 2019 and was then exacerbated by the coronavirus pandemic of 2020.

Rakuten Mobile enters towers business

Japan's Rakuten Mobile is acquiring a stake in towers operator JTower in a move to roll out its network more quickly and cost-effectively.

The country's newest mobile operator said it has agreed to buy an undisclosed number of JTower shares from its president and chief executive Atsushi Tanaka for an undisclosed sum.

The deal will "strengthen cooperation and accelerate network development by promoting the utilization of infrastructure sharing," Rakuten Mobile said, in a statement.

This "capital alliance" will help to promote infrastructure sharing both indoors and outdoors, using shared equipment and towers, mainly in 4G and 5G networks. Rakuten has been using JTower's Infra-Sharing solutions since the start of 2020, it said, adding Tokyo-based smart poles into the mix in April this year.

"We and Rakuten Mobile will use this capital alliance as an opportunity to deepen our collaboration, and we will promote Infra-Sharing in indoors and outdoors using sharing equipment and sharing towers in the development of 4G and 5G networks, and work to build a more comfortable communication environment at an early stage," JTower said.

Rakuten recently partnered with Oki Electric and Nagoya University to develop autonomous mobile networks incorporating AI to manage operations independently, as part of Japan's Beyond 5G R&D Promotion Project.

The operator said the trio aims to work on technologies and applications to enable networks to autonomously respond to diverse service demands while operating stably. There are also plans to create IoT services for a robot connecting to an autonomous network, Rakuten added.

Turk Telekom's revenues reach $US2.4bn in first nine months

Turk Telekom has earned revenues worth US$2.4bn in January - September 2021 and achieved 18% growth to exceed the expectations for the third quarter.

The company's net profit amounted to US$484m, while its investment expenditures increased to US$443m in the first nine months of 2021.

Turk Telekom's investment target increased to US$897m and the investments will mainly be made in a fibre network, which it sees as a powerful tool for future technologies.

Furthermore, the total number of subscribers rose to 51.4 million in the reported period, with a 12-month net subscriber gain of 1.9 million.

"We are happy to see once again the strengths of our financial and operational results underline our history, experience, investment decisions, human capital, and application competencies," said Turk Telekom CEO Umit Onal. "We are determined to complete the digital transformation for our country and to make Turkey a pioneer in the 5G journey."

Onal added that fixed broadband continued to be the driving force of growth in the third quarter with its 29% revenue growth.

"Digitalisation fuels the demand for technology and communication services, leading to a permanent transformation in consumer behavior," he said.

OneWeb signs LoI with Kazakhstan aerospace firm for satellite component production

OneWeb, the Bharti-backed low Earth orbit (LEO) satellite communications firm, has signed a letter of intent (LoI) with Kazakhstani aerospace business, Ghalam, to explore opportunities for locally-produced components for the second generation of its satellites in the country.

The two companies signed the LoI during the annual international technological forum Digital Bridge 2021 in Kazakhstan's capital Nur-Sultan in late October.

At the event, OneWeb chief executive officer (CEO) Neil Masterson also oversaw the satcom company's first-ever demonstration of LEO-powered broadband within the Commonwealth Independent States (CIS).

"OneWeb's demonstration network delivered a significant performance in both downlink and uplink peak rates, together with low latency, during demonstrations using video conference calling, content streaming and cloud-based applications," the company said in a statement. "This demonstration set the stage for the formation of a centre of expertise for the use of low-orbit satellite communication systems in CIS."

The demonstration tests were carried out by OneWeb Kazakhstan, with the support of the Republican Centre for Space Communication JSC and Jusan Mobile JSC.

Also in October this year, OneWeb launched another 36 satellites from the Vostochny Cosmodrome, bringing the total currently in-orbit constellation to 358. That figure is over half of its entire 648 LEO satellite fleet that will deliver high-speed, low-latency satellite broadband worldwide.

Remote Mobile subsidiary to acquire 49% stake in Kuwaiti firm

Routesms Solutions FZE, a subsidiary of Indian cloud firm Route Mobile, has signed a share purchase agreement to purchase 49% of the total outstanding equity share capital of Kuwait-headquartered Interteleco.

Under the term of the deal, Routesms will also acquire an additional 41% of economic and beneficial interest, including distributions, dividends, profits and voting.

Mobile communications services provider Interteleco offers mobile app services, payment solutions, chatbot and conversational AI.

It serves sectors such as telecommunications, e-commerce, financial accounting, inventory management and project management service companies.

"Route Mobile has been a communication enabler in the GCC and this acquisition further reinforces our commitment in bringing global personalised communications solutions to businesses in the regions," said Rajdipkumar Gupta, managing director and group CEO, Route Mobile.

The acquisition is expected to be completed in the next two months, subject to certain conditions being met.

Colombia begins public consultation on spectrum caps

Colombia's ICT ministry said it will publish a draft decree for public consultation related to updating spectrum caps and enable frequency allocation to foster the development of 5G.

Telecommunications minister Carmen Ligia Valderrama said during the Andicom event that plans involve increasing the caps for the bands below 3,000MHz and add a category for bands between 3GHz and 6GHz.

She added that Colombia could license about 400MHz in the 3.5GHz band.

Valderrama also encouraged participation in the consultation to achieve broad consensus.

Colombia has a spectrum cap of 45MHz in low bands and 90MHz in high bands.

In May, the ministry proposed raising the ceiling in low bands (698MHz-960MHz) to 50MHz, establish a 95MHz cap in medium bands (1,710MHz-2,690MHz), and an 80MHz cap for upper-medium bands (3,300MHz-3,700MHz).

However, the government will not be able to launch the 5G tender but Valderrama said it will leave Colombia prepared to receive the technology.

She added that the government and spectrum agency ANE will produce a study on the best 5G test experiences.

Meanwhile, satellite internet company Viasat is entering Colombia as an internet provider targeting remote communities with limited technology. The Latin America-wide move is designed to win customers where telecoms have failed to make inroads.

"We can drive the cost of (internet) delivery dramatically," said Rick Baldridge, Viasat president and chief executive said in an interview. "That allows us to go anywhere. To do that a very , very low cost."

Viasat said it can currently serve customers up to north Colombia.

Q&A

Kamal Antoun
director
Hughes Network Systems

What is your big career break or highlight so far?

One of my career highlights so far has been joining Hughes Network Systems after being with my previous employer for 13 years. I have been with Hughes as the Director of our Middle East North Africa region for 3 years now, so I'm still relatively new around here compared to many of my colleagues. It's very exciting to be part of a company with such a long and celebrated history in the satellite industry – this year marks our 50th anniversary!

What was your first job?

My very first job, I worked in an accounting department – I only lasted one week in an office in between two chain smokers. But my first real job, I worked for Cisco systems as part of their systems engineering team. And many years later, it all led me to where I am today with Hughes!

Who was your hero growing up?

I used to love Formula One driver Ayrton Senna, he was my hero growing up. But I get inspiration from every single person, regardless of which industry they are in. I look to people who try their absolute best and put their heart into their job, whether it's in sports or another industry, they all inspire me.

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

I think the best piece of advice I've gotten in life is to enjoy everything in moderation. The best piece of advice I've been given in my career is to learn how to listen – although that advice could serve you well both in your career and in life in general! Sometimes we forget to sit back and listen to what others have to say, but being an active listener is such a valuable quality as you grow and develop in your career.

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

I think it's so important to keep up with market trends if you want to stay up to date in the satellite industry – read articles, listen to podcasts, subscribe to industry publications, follow the discussion on social media, etc. You should also strive to learn everything you can about your competitors. Knowing the competition inside and out is very helpful in my line of work in particular – sales – when you are trying to negotiate and ultimately win a deal. You must understand how to position your offer and product in comparison to the competition.

What's the best technological advancement of your lifetime?

Without a doubt, the Internet. And smart phones. They have changed our lives dramatically, that's for sure. I can't imagine what my life would be without either of these innovations. They have impacted every aspect of our lives – our ability to work remotely, the way we purchase things, how we book appointments, do our banking, etc. I am able to instantly connect with my friends and colleagues around the world because of the power of the Internet. Just imagine this pandemic without the ease of access to information, I think we would have faced the biggest economic depression of our lifetime otherwise.

If you could work in any other industry, which one would it be?

If I weren't in the satellite industry, I think it would be so cool to have a career in sports. When I was a kid, I wanted to be a soccer player. I love all sports -- apart from baseball and cricket (sorry if I offend anyone!). Soccer, American football, basketball, all the motor sports, I just love them all and it would have been incredible to turn that into a career.

If you could live anywhere in the world, where would it be?

I love where I live, in Dubai, because it is a safe, modern, and diverse city. But if I could move anywhere in the world, I would have to say the French or Italian riviera. Or San Diego -- anywhere there is a sea and beach, I am happy. I don't think I could live somewhere if I cannot see the sea. I am fortunate to have been to a lot of amazing destinations over the years and I absolutely love traveling with my wife and kids.

What is the best thing about your job?

I love engaging with people of different cultures and nationalities as part of my job covering the entire Middle East and North Africa region. I get to meet with and talk to so many different people all over the globe. One of the best parts of my job is that I get to travel to a variety of interesting locations I might not otherwise get to visit. Although, during the pandemic, I feel sort of like a fish out of water, being a salesman without any travel on the horizon. I hope to get back out and start travelling again soon!

What is the hardest thing about your job?

Although it's one of my favorite things about the job, traveling is also one of the hardest parts of the job. It's so hard to be away from family for long periods of time. And as a salesperson, it can be difficult when we don't hit our targets. We work all year long to hit our sales goals and that's how we measure our success.

What do you want to do when you retire?

I would like to travel more with my wife and kids – if, by the time I retire, they still want to travel with us! I would like to help underprivileged people back in my country, in Lebanon, if I have the means and the opportunity to do so. And maybe we would settle down and retire in another city I love, in Cape Town, South Africa. There are so many possibilities to consider, but luckily, I still have many years before I have to make any decisions!

What is the best business lesson you have learned?

Don't hesitate – always be ready to spring into action. You never know what you might miss out on if you wait too long to seize the moment right in front of you. It has taught me to always be prepared no matter the situation.

What is one lesson you'll take from the pandemic?

Although this has been a very tough stretch for all of us, there are always lessons to be learned from our experiences. Always be flexible and ready to adapt and change – you never know what life will throw at you, so you must be ready for anything. And just try to make the best of any situation, there is always a silver lining to be found.

What is the biggest challenge the industry faces at the moment?

I think we face the same challenge as many other industries right now as we adjust to the post-pandemic economy and environment. The fact that some regions are opening up while others continue in lockdown makes it difficult to resume travelling. And while we've all learned to operate virtually, you cannot undervalue the opportunity to meet in person.

What is the best part about working in this industry?

I love that I have the opportunity to be at the forefront of new trends and innovation driving market growth. Technology is constantly changing and evolving so it's very exciting to have a front row seat as we explore new and improved forms of connectivity.

Which competitor do you admire the most and why?

In my role as part of the sales team, I am always keeping an eye on the competition - it is crucial to know what others in the industry are up to. I don't want to single out any particular company but I respect all of our competitors. A bit of healthy competition is beneficial to us all – it keeps us on our toes and pushes us to continue innovating.

Which industry leader do you most admire and why?

While there are so many inspirational leaders to choose from, I'd have to say Pradman Kaul, president and CEO of Hughes. He has helped shape this company into what it is today and I feel honored to call him a colleague. A true industry pioneer, he has demonstrated excellence in technology development, production management and leadership. His vision and commitment to innovation are a huge part of our success at Hughes over the last 50 years. Not to mention he is humble and approachable – always willing to share his insights about the satellite industry and connectivity solutions. ∎