For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

OCTOBER/NOVEMBER/DECEMBER 2021 Volume 26 Number 2

- Broadband: connecting the continent's hard to reach
- How IoT is helping Africa's agriculture industry
- Country focus: an in-depth look at South Africa

Communications | Connectivity

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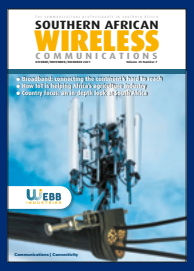

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Telecom26 to provide connectivity to SystemOne's new digital healthcare programmes in Angola and Nigeria

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.

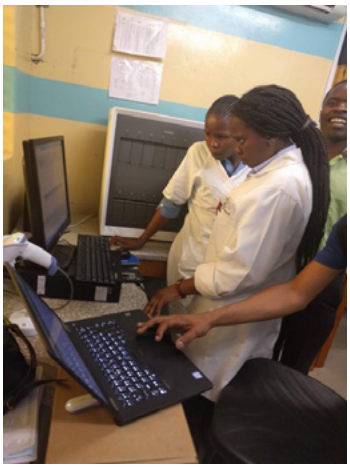
Unreliable bandwidth and patchy connectivity are problems encountered by ehealth programmes across the world. The traditional route is to buy local SIMs to provide device connectivity. Unfortunately, this limits users to one mobile network operator - and adds juggling multiple SIMs across devices to 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".

'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.

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.

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.

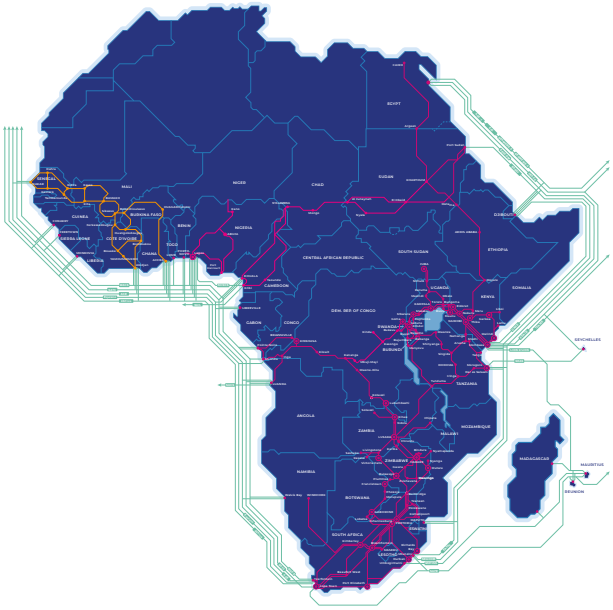
"We are excited about embarking on this partnership with Orange, becoming a major customer on Djoliba as we continue to grow our existing relationship," said David Eurin, chief executive officer, Liquid Intelligent Technologies international wholesale (Liquid Sea). "We've long been committed to providing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



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.

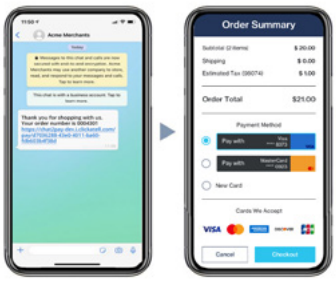
"Chat 2 Pay addresses today's boom worldwide in digital payments – a shift in consumer behaviour and response to the impact of the pandemic," said Clickatell CEO, Pieter de Villiers. "By taking the payment capabilities brands have on their websites, apps, and in their call centres, and making them available 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.



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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, which will see the latter's DTT service broadcast via the AMOS-17 HTS (high throughput satellite) into South Africa.

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.

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 €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 to strengthen its technical team with new talent.


David Lofti

"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.

Econet steps up network upgrade, orders new high-speed LTE base stations

Econet Wireless Zimbabwe has upgraded its base stations at Kutama, 80 km southwest of Harare, and at Murombedzi, about 110km west of the capital, to high-speed LTE/4G.

The move is part of a major rollout programme recently announced by the company to upgrade and install at least130 new base stations in 90 days.

Currently enjoying nearly 70% market share of high- speed LTE infrastructure in the country, Econet is on an ambitious drive to upgrade its existing sites to 4G as well as installing the faster technology base stations at new sites across the country to widen its

national coverage.

Econet chief operating officer (COO) Kezito Makuni said the network infrastructure upgrade at Kutama and Murombedzi will help the company increase coverage in the area and improve quality of access to services such as e-learning for underserved communities.

"We have witnessed an increased demand for data and connectivity across the country, which was necessitated by the Covid-19 pandemic, leading to a shift in education and learning methods, social engagements as well as how organizations conduct business and commerce," he said in a speech read on his behalf by Clemence Kawadza, the company's regional general manager for Mashonaland West.

Zambian watchdog grants Beeline launch extension until June 2022

Beeline Telecom, Zambia's fourth mobile licensee, has a deadline of June 30 2022 for its commercial launch.

The operator was issued its operating licence in February 2021 by the Zambia Information and Communications Technology Authority (ZICTA). Under the terms of the licence, Beeline was obliged to launch services within six months of receiving this permit or risk having it revoked.

However, ZICTA admitted the procurement of equipment and installations has made it difficult for Beeline to commence operations within the original timeframe. As a result, the regulator has offered Beeline an extended grace period, acknowledging that it has faced challenges.

In 2018, the authority issued the same licence to Uzi Mobile but the company failed to fulfil its investment pledges. It originally promised to invest US$400m in mobile phone operations, creating 450 direct jobs.

Uzi, owned by Unitel of the Netherlands, had its licence revoked in 2020 after failing to commence operations.

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South African operators retain interim broadband spectrum until mid-2022

South African operators MTN, Vodacom Telkom, and even Cell C, Rain Networks along with Liquid Intelligent Technologies will be using the provisional broadband telecom spectrum until the middle of next year.

The Independent Communications Authority of South Africa (Icasa) granted them all a licence to use these resources in the 700 MHz, 800 MHz, 2300 MHz, 2600 MHz and 3500 MHz bands on Friday 26 November.

This licence officially came into effect on December 1 and its validity date will end on June 30, 2022. Telkom emerges as the biggest winner of this temporary frequency allocation, followed by MTN and Vodacom.

The chairman of the telecoms regulator, Keabetswe Modimoeng explained that "this temporary spectrum allocation remains an interim measure", aimed at improving communication services for consumers during the interim period, with the objective of awarding a permanent spectrum license through an auction starting in March 2022.

He added that "this interim licensing phase attempts to temporarily address competition issues and levy appropriate fees", but a more comprehensive regime will be obtained through a competitive bidding process.

The various operators holding provisional frequencies are once again able to provide broadband to their consumers thanks to the blockade by Telkom, MTN and Vodacom last October, after the telecom regulator decided in August to take back the frequencies.

Icasa said that once the Covid-19 crisis had passed, as well as the urgency that led to the allocation of these telecom resources on which Rain Networks, MTN and Vodacom have launched 5G in the meantime, it was high time that these frequencies were handed back pending their final auction. The operators had taken legal action, forcing Icasa to seek a non-litigious resolution.

Modimoeng said the authority will collect about R200m (US$12.2m) for the national tax authorities in the short term through the allocation of the provisional frequencies. All licensees will be required to pay a spectrum acquisition fee, as well as a user fee, in addition to the initial application fee.

World Mobile picks Zanzibar for balloon-driven mobile network

World Mobile, the UK-based mobile network firm, will launch its balloon-based hybrid mobile network in Zanzibar and is in discussion with the governments of Kenya and Tanzania to roll out similar projects.

The project will deliver coverage and access to the digital economy for over a million people in Zanzibar by end of 2023, the company said.

Its mobile network is supported by low altitude platform balloons to provide mobile internet connectivity to more people at a lower cost in Africa.

"World Mobile's balloons will be the first to officially launch in Africa for commercial use, providing a more cost-effective way to provide digital connection to people compared to rolling out legacy internet infrastructure," the operator said in a statement. "The remotely controlled aerostat balloons are powered by solar panels, inflated by helium and tethered to the ground. Once airborne, they act as floating cellular base stations transmitting radio signals to ground stations and personal devices."

According to World Mobile the project will deliver coverage and access to the digital economy for over a million people in Zanzibar by end of 2023.

World Mobile is also in discussions with government officials in Tanzania and Kenya, as well as other territories underserviced by traditional mobile operators.

It plans to have 20 mesh sites – local Wi-Fi nodes – rolled out by January 2022 and 120 sites during the first six months of 2022 including the first aerostat balloon launch.

"We want to help create a world where everyone can access affordable connectivity, a world where economic freedom is a truth and a world where people are able to jump on the opportunities that internet creates," said Micky Watkins, chief executive officer of World Mobile. "Zanzibar will become the world's first smart region powered by World Mobile, connecting businesses, schools and society as a whole."

World Mobile already has agreements in place with the Zanzibarian government to provide connectivity for 300 schools, and a four-step plan is in place to unlock Zanzibar's Blue Economy, across marine industries.

SA revises space programme to accelerate satellite development

The South African government has initiated a review of the national space programme to accelerate the development of telecom and location satellites, according to the country's minister of communications and digital technology.

Speaking November 22 at the 23rd Southern African Telecommunications Networks and Applications Conference (SATNAC), held from 21 to 23 November, Khumbudzo Ntshavheni

said "we are currently working on accelerating the development of South African-owned satellites and are looking at ways to condense an eight to ten year project into three to four years, but this depends on access to finance, which I hope will be from telecommunications, mining, etc".

The minister added that "companies will participate" in the project and co-finance this development. "Of course, we cannot afford to deploy a single satellite and as a government we will coordinate with South African industry and other interested investors to also deploy South African-owned low earth orbit satellites," she added.

South Africa's renewed interest in satellites stems from the growth that this segment of the telecom market has seen since last year with Covid-19 pandemic. Across Africa, many satellite telecom service providers have been ramping up contracts with various governments to meet the growing demand for connectivity in rural and landlocked areas. Prior to Covid-19, since 2018, satellite connectivity had already regained its appeal after fibre optics advocated since 2010 showed its limitations in connecting landlocked areas of Africa.

Other African nations such as Morocco, Egypt, Algeria, Nigeria, Angola, Burkina Faso, have launched several projects to build their own satellite equipment in order to further consolidate their sovereignty in telecoms and also earn revenues from telecom capacities that would be sold to other countries.

By 2025, the new satellites that South Africa wants to develop should help strengthen the universal connectivity plan that the government wants to initiate in the next 24 months. Ntshavheni added that the meeting of the BRICS economic group's communications ministers November 11 explained that the objective is to facilitate access for the entire South African population to high-quality connectivity, which is essential for everyone to participate in the digital economy.

Zimbabwe introduces levy on imported phones

The Zimbabwean government announced the introduction of a new US$50 levy on imported mobile phones, according to the 2022 national budget presented in November.

Finance minister Mthuli Ncube told MPs that although "imported cellular telephone handsets attract modest customs duty of 25%, the funds realised, however, point to evasion of the customs duty due to the nature of the items which can easily be concealed" at the country's ports of entry.

"I propose to introduce a levy of US$50 which will be collected prior to registration of new cellular handsets by mobile network providers," Ncube added. "However, where duty would have been paid, the Zimbabwe Revenue Authority will provide a refund of the levy, within 30 days of receipt of payment from the mobile network operator."

Details of how the new tax will be collected have not yet been confirmed, but will be if the tax is approved by Parliament. As a reminder, the government has already introduced a 5% excise duty on communication credit recharge cards, 25% customs duty on imported mobile phones, and 2% tax on electronic financial transactions.

Ncube says the Zimbabwean economy is expected to grow by 5.5% in 2022, supported by higher output in the mining, manufacturing, agriculture, construction, and accommodation and food services (tourism) sectors. This 2022 growth projection is subject to risks related to the future evolution of the pandemic and its impact on key sectors of the economy.

Consumers denounced this new tax, which they consider a threat to mobile penetration in the country.

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!

Webb's role in the telecommunications industry

Webb Industries plays a critical role in providing Mobile Network Operators and their customers with vital components and services to enable them to provide services to business and the public.

Webb offers a range of products and solutions that contribute to the availability of connectivity across the Southern African region, including:

- RF and power cables,
- RF connectors,
- Antennas,
- Fibre optic data infrastructure,
- Surge and lightning protection devices,
- Mounting accessories e.g cable clamps and various mounting brackets
- Lattice towers, rapid deployment tower solutions and
- Project services such as IBS (In-Building Solutions), active iDAS (integrated Distributed Antenna Systems), CPE installations and cellular enhancement systems for private industry.

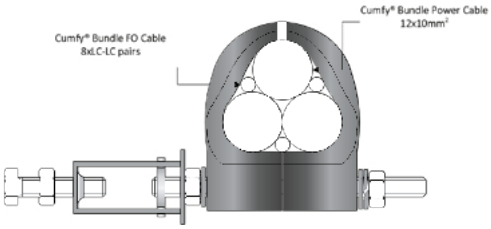
Recent challenges that required innovative thinking

Webb has consistently, over the years, been at the forefront of innovations in our market niche and often released solutions that addressed specific challenges.

Recent examples include the design and development of surge and lightning protection devices for telecoms power supply systems, the manufacturing and supply of tinned copper cable to reduce cable theft from outdoor telecom sites, and an innovative cable management system for telecommunication tower optimisation.

Problem: There is an increased occurrence of theft of copper cable from base station installations.

Solution: Webb now offers a full range of class 5 tinned copper cables in sizes from single core 16mm²; 25mm²; 35mm²; 50mm² and 70mm² cable. These cables serve the Telecommunications Industry's DC power applications and grounding (lightning surge protection) needs. Blue and red DC cables meet SABS 1547 standards. They are insulated with an inner nitrile PVC bonding layer and an outer PVC coloured layer and offer excellent "double insulated" resistance to water ingress. The green/yellow standard for earth cable is available in 16mm² and 70mm² with a single bonding and outer layer of coloured PVC intentionally designed for high current lightning surge dissipation to grounding systems.



Benefits: Using the new tinned copper cables reduces incidences of theft and provides the tower operator increased flexibility.

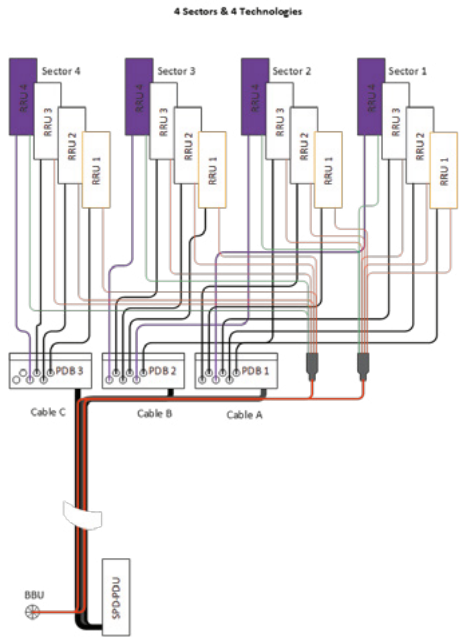
Problem: An increasing amount of active equipment is mounted directly on the towers and close to the antennas. Modern telecom networks require several different antennas and associated radio equipment on every tower, which increases the load in terms of power and communication cables that must be accommodated.

More equipment on the tower means more wind loading on the tower structure. This genuine issue and safety factor required innovation to reduce the wind loading created by individual power and fibre cable runs to the ever-increasing equipment count on towers.

Solution: The above trends prompted Webb's design team to design and implement an innovative end-to-end tower optimisation solution.

Webb's Cumfy® Bundle PTTA-FTTA Solution – 18 x 10mm² pairs for DC power and 24 x duplex/single-mode fibre optic pairs in a cross-section profile of only 63mm. The solution is a complete package, offering the following:

- DC power cable bundle, six pairs by 10mm² x 3 for 18 pairs
- Fibre Optic Bundle 16 fibres in a rugged outdoor main body cable factory terminated and tested into 8 x LC duplex 3m armoured patch cable pairs at each end.
- Spare and slack FO cable management: tower top kit
- All tower mounting clamps for the cable run
- Tower top DC power cable termination and distribution units



- FO split gland and optional slack cable management for entry ground-level outdoor cabinets or shelters.

The diagram (bottom left) shows a close-up view of the Cumfy® Clamp solution. The total cable bundle has a cross section of 63mm, while allowing power and signaling connections to up to 9 RRUs.

The above diagram shows the layout and capabilities of the solution.

Benefits: The Webb Cumfy® Bundle Solution meets the objectives and provides:

- A very low wind loading factor for multi sector/ multi technology sites
- Easy and cost-effective installation
- Minimal site technology upgrade time and cost
- Neat and aesthetically pleasing installation

For more information, please contact us on +27 11 719 0000 or webb@webb.co.za. Webb would be delighted to be given an opportunity to present the entire solution to interested parties.

WEBB INDUSTRIES

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.

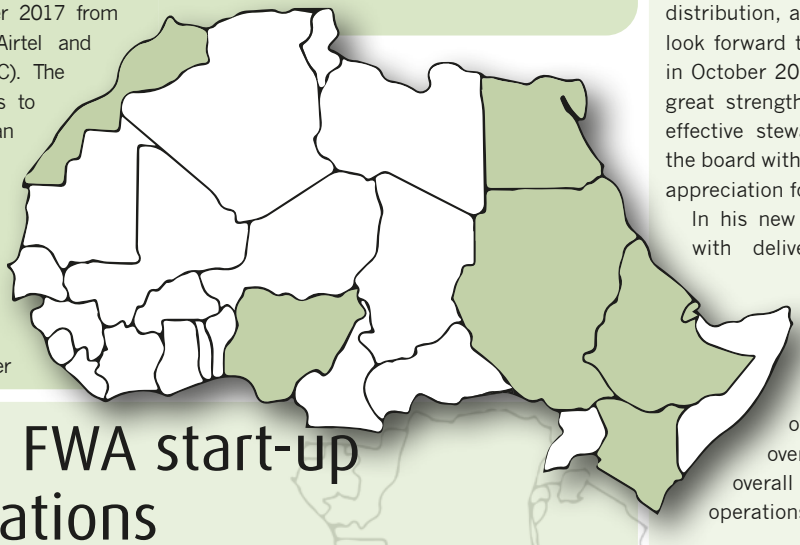
During a visit to AirtelTigo's premises in April, Ghana's minister of communications and digital economy Ursula Owusu-Ekuful said that by taking over the mobile operator, the Ghanaian government was committed to making appropriate investments for its revival and exploiting it while protecting the interests 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".

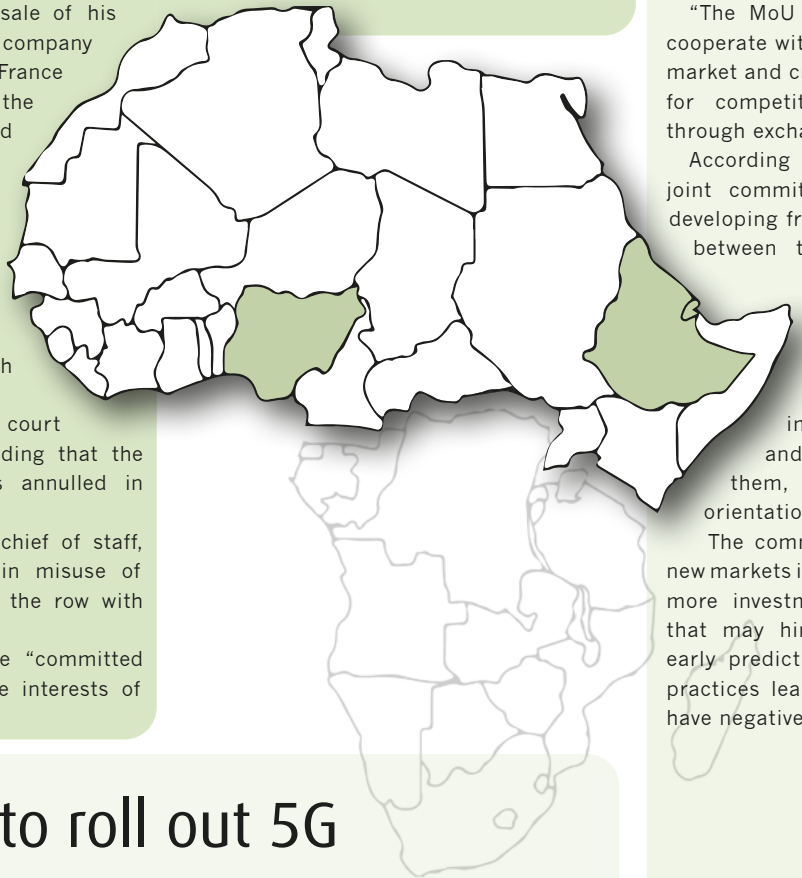
Richard, who was Lagarde's chief of staff, was convicted of complicity in misuse of public funds for advising that the row with Tapie be settled out of court.

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

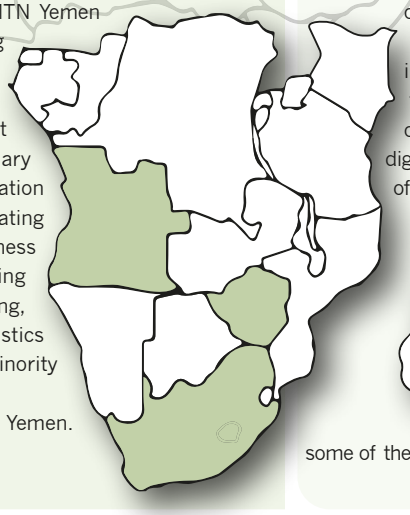
South Africa's MTN Group has officially begun its exit from Yemen by transferring its majority stake in its Yemeni arm to Emerald International Investment, a subsidiary of Zubair Investment Center.

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 the 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 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.

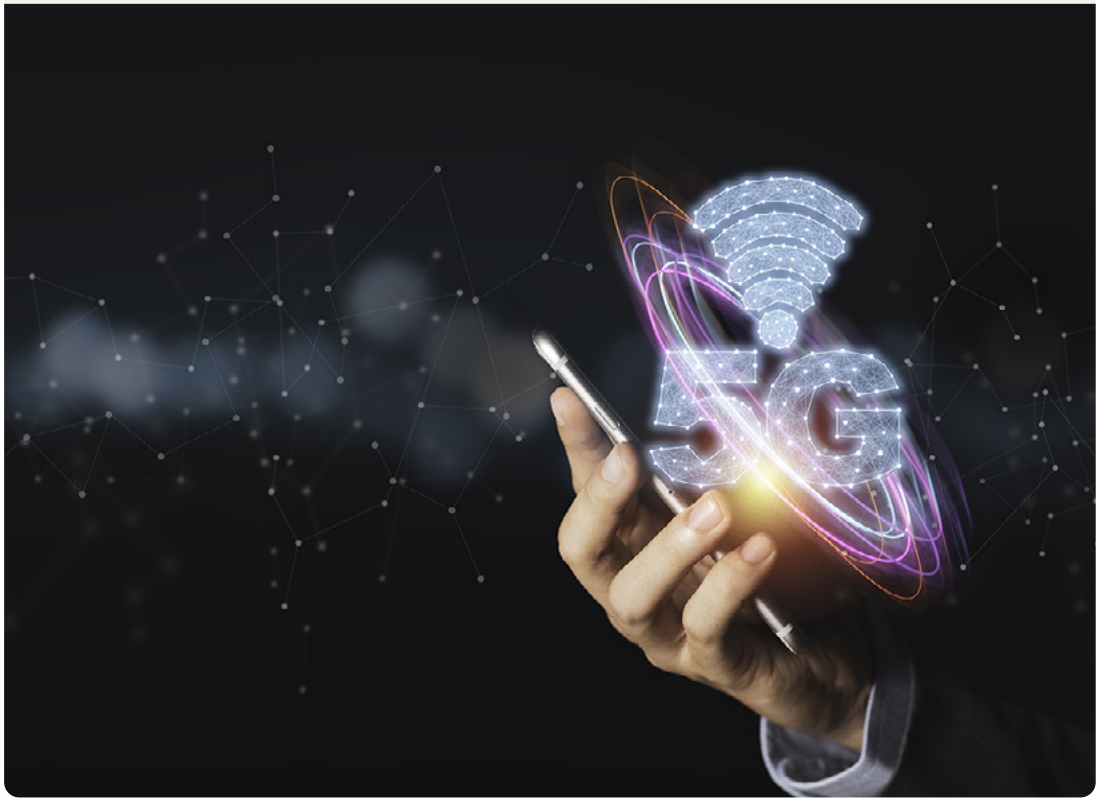
5G opens up the potential for a range of new services, most notably driven by 5G's ultra-reliable low latency communications and support for massive machine-type device deployments. Use cases that will benefit users include enhanced situational awareness through the use of advanced video recognition 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.



Why is broadband connectivity still a problem in Africa?

Lack of access to reliable and affordable electricity and other services make accelerating Africa's broadband penetration difficult. But what are the other reasons? Robert Shepherd poses the questions

Every few months comes a new report about Africa's broadband/internet penetration – or lack thereof. What's more, it's not always easy to tell which paints the most accurate picture, with figures often skewed to suit a certain narrative.

One thing that's very clear is that broadband and internet penetration has never been more important, according to Richard Jacklin, director of sales, ViaLite Communications. "Covid-19 has brought in 'lockdown', requiring adults and children to be kept within the homestead," he adds. "For employees who can perform their work on a broadband connected device then connectivity to the home is essential to continue that work. Similarly for children and students, moving classes on-line also necessitates a broadband connected device. So broadband penetration is critical to enable this and reduce


Christoph Fitih, Parallel Wireless

"These functionalities of wireless tech and 5G could help the governments in African countries to close the gaps in governance and deliver services like healthcare and education on a mass scale by side-stepping infrastructural challenges with Open RAN"

the number without access to the connected technology – the digital divide."

What's also clear is the world's richest and most developed countries are committed to engagement in the race for digitalisation of their economies and societies. However, with its foundations embedded firmly in faster and expanded national broadband infrastructures, Africa lags behind, with numerous broadband access technologies still only scraping the surface of the continent's unmet and growing connectivity needs. Time to ask why.

Time to bore you with some facts, but they are necessary, so stay with me at the back.

As the second largest continent by land mass and population with circa 1, 340, 598, 147 inhabitants in 54 countries, broadband access is only enjoyed by a third of the population. What's more, achieving universal, affordable and good quality internet access by 2030 will require an investment of at least US$100bn. This is according to a report (The Broadband for All Working Group) launched at the Annual Meetings of the World Bank Group in 2019, which called for urgent action to close the internet access gap while providing a roadmap to reach this ambitious goal.

Compare that to the 27-nation European Union, where in 2020, Statista, a German company specialising in market and consumer data, recorded that 89% of households in the EU-27 had access to broadband internet.

So, let's get to the point: why in 2021 are large swathes of Africa still without broadband?

Farhad Khan, chief commercial officer of Yahsat and chief executive officer of YahClick, says it's linked to the sparse distribution of communities that are in rural areas and the high cost of connection per subscriber. "Unlike in the dense urban and suburban areas, where the delivery of fibre and installation of cell towers have economic benefits for operators, the rural areas rely on USO (universal services obligations) and donor funding or project funding to pay for access technology," he adds. "In addition, lack of electricity makes it difficult for operators, as diesel theft is rampant, and natural power technology costs have not reached critical mass economics."

For Brian Jakins, regional vice president of Africa sales, at international communications satellite services provider, Intelsat, there are two key reasons: "Africa is a vast continent and the differences in terrain can make it difficult to access certain regions," says Jakins. "The cost of handsets, energy and data can also be too high for some populations." More on cost later.

US-based Open Radio Network (Open RAN) specialist Parallel Wireless has a long and rich history in Africa, partnering with some of the biggest players on the continent. Christoph Fitih, sales director, Africa extolls the virtues of the technology and highlights the difference it's making.

"The mobile penetration in Africa remains at 44%, which means over 600 million people in Africa are still without mobile connections," he says. "The internet penetration in the continent is still at 25-30%. The biggest advantage of Open RAN as the technology to build 2G, 3G, 4G, and future 5G networks in Africa is that it brings down the capital as well as an operational expense and at the same time improves the experience for the end consumer. Infrastructure based on Open RAN can deliver high data speed, low latency, effective use of spectrum, better coverage, and support a larger number of devices."

As a result, Fitih says it enables service providers to offer several innovative services like augmented reality, virtual reality, remote surgery, autonomous transport system, industrial automation and more. "These functionalities of wireless tech and 5G could help the governments in African countries to close the gaps in governance and deliver services like healthcare and education on a mass scale by side-stepping infrastructural challenges with Open RAN," he continues. "It enables the authorities to provide services, including e-learning and e-health, through digital platforms, which is more cost-effective and improves lives of people across the continent."

Statista provides an interesting breakdown of internet users in Africa – as of December 2020 – by country.

At the top is Kenya with 85.2%, followed closely by Libya with 84.2%. Nigeria 73%, Mauritius 73% and Seychelles 72.2% make up the top five. Kenya's spot will come as no surprise, owing to its dominant position in the mobile money space, while Libya is going through a renaissance in the post Muammar Gaddafi era. Mauritius and Seychelles are investing heavily to service the tourists who frequent the Indian Ocean islands.

Indeed, the future looks bright for Nigeria - projected to double its 200m population by 2050 - which is embracing improved broadband connectivity.

For example, South Africa's MTN announced plans to invest ₦640bn (US$1.5bn) in the west African nation over the next three years to improve access to broadband.

MTN's investment in Nigeria is in line with the National Broadband Plan 2020-2025 adopted by the government last year, which aims to increase the penetration rate of quality Internet connectivity to 90%. It is also in line with the company's "Ambition 2025" development strategy, which is to become a "leading provider of digital solutions for Africa's progress".

Craig Thomas, vice president strategic marketing and business development at the body Broadband Forum, says the marketplace for broadband experience in the African region is diverse and is characterised by limited fixed broadband penetration. "In more developed areas, customers have the choice of mobile networks such as 4G, 5G, fixed wireless access, fixed access and satellite technology," he says. "Where internet connectivity is limited to 3G or 4G, that inaccurately becomes the expectation of what broadband is. There is a clear argument

"This really could be a game changer for the rural coverage black spots, emergency scenarios and connecting the next billion using a standard smartphone"

to invest once and look at the broadband access network holistically to deliver next-generation access. One unified access network can integrate all technologies, with the final access technology the only variable as the network can be built to accommodate all broadband access technologies."

Jakins is of the view that Africa, with its burgeoning economies and rising youth populations, is transforming quickly, with cross-generation entrepreneurs set to drive the continent into its next phase of development, and broadband connectivity is a key enabler.

"Submarine cables running up and down Africa's coasts, combined with fibre-optic cables and cellular towers, have dramatically improved access to connectivity in the continent over the past 10 years," he says. "Yet, last-mile connectivity remains a challenge and according to GSMA, as of the end of 2019, 670 million people were still not covered by mobile broadband (3G or higher). The Covid-19 crisis highlighted even more the digital divide across the continent as people become even more dependent on connectivity for work but also to access news, health, finance services and education, as well as communicate with friends and family."

Time now to learn of some other figures. Martin Jarrold, vice president international programme development at GVF, the global non-profit association of the satellite industry, cites that broadband penetration figures for Africa – including 3G and 4G mobile connections – "do significantly vary by region" (southern = 62%, northern = 56%, western = 42%, eastern = 24%, central = 26%). "Expansion of broadband networks (not necessarily exclusively based on mobile/cellular technology, as will be explored below) and increasing these internet access percentages has many challenges," he adds. "One of these challenges is that meeting Africa's 2030 internet access target and carrying the burden of the US$100bn investment funding requirement is beyond the capability and means of any one of the stakeholder types sitting on the Broadband Commission for Sustainable Development."

"The cost of handsets, energy and data can also be too high for some populations"

Of course, there are other challenges. Covid-19 has been felt throughout the ecosystem surrounding the internet and communications technology everywhere and certainly across Africa with the build-out of mobile/cellular networks being slowed due to various reasons. They include the declining affordability of network access as disposable incomes have declined during the pandemic, says Jarrold. "This has happened exactly as internet access has become even more vital, as the pandemic has manifest itself as a driver of an even greater need for bridging the digital divide," he says.

American, Asian, British, French, Italian and Middle Eastern companies – among others – in the telecommunications and technology sectors continue to invest in Africa. While there have been a number of success stories, it can still be a notoriously tricky place to do business for a number of reasons. However, one stands out more than the others, argues Jakins.

"Infrastructure in Africa remains the biggest challenge for telecom operators," he says. "Reaching the remote communities, in dire need of connectivity, is often uneconomical or not feasible. This creates a very meaningful opportunity for satellite technology, which is the most effective and cost-efficient way of connecting these communities." Jakins adds that satellite "is typically the only practical way to provide connectivity" to areas underserved or un-served by terrestrial networks, where economics do not make sense. "Satellite's ubiquitous coverage means that there are no 'last mile' issues, while the scalable and cost-effective space-based solutions can help countries meet connectivity challenges quickly," he says.

Jarrold counters that the state of Africa's broadband does not rest on the single issue of physical infrastructure roll-out. "Coordinated efforts by governments, the private sector, development agencies and civil society are necessary in supporting the prioritising of development of an overall ICT environment," he says.

Nevertheless, being a satellite official, he echoes Jakins' views on the technology and adds that there are challenges and obstacles to broadband access that cannot be blamed on power and pandemic. "To put it bluntly, terrestrial broadband infrastructure has fundamental limitations," Jarrold says. "Fibre landing from the trans-oceanic floor serves well many of the continent's coastal major cities their commercial business districts and richest residential neighbourhoods but is too expensive and impractical to roll-out far inland." He doesn't stop there – arguing that microwave towers are also expensive and geography and topography "can create too many practical deployment problems" for line-of-sight based services. "Mobile wireless cellular technology has been a considerable connectivity game-changer for Africa, but it does not have all the solutions to Africa's broadband connectivity needs within its 'gift'," Jarrold continues. "That is where and why satellite is now playing a bigger role in Africa's broadband connectivity expansion than ever before, an expansion that is significantly evolving away from any concept of satellite as a stand-alone technology used only as a rural and remote area service provision gap-filler. The era of the 'creative partnership' is what is beginning to change Africa's broadband connectivity/internet access status."

We know that terrain, cost and inconsistent power have often been used as blunt tools to explain Africa's slow progress in the broadband connectivity space. Another is politics.

Jakins says governments the length and breadth of Africa have understood the importance of broadband connectivity and are working on accelerating its deployment. "For instance, Intelsat, Liquid Telecom and senior leaders from the Rwandan government have been working together to support a pilot project in Rwanda that tests the viability and sustainability of VSAT based broadband services to connect schools in underserved areas to the internet," he adds. "Also, South Africa's Department of Telecommunications and Postal Services (DTPS) has partnered with its social partners and the World Economic Forum to develop the South African Internet for All initiative (Internet4Mzansi)."

He explains how through a strategic partnership Intelsat, Didusec and Sentech have rolled out five Wi-Fi hotspot pilot sites at locations selected by DTPS. "Private-public partnerships and innovative business models can help governments accelerate the deployment across the whole region," he says.

While the number of broadband connections in Africa crossed the 400 million mark in 2018 (nearly twenty times 2010 levels), the regional average broadband penetration —including 3G and 4G connections— is only just north of 25%. Mobile broadband coverage in Africa is still at 70% of the population. Even in north Africa, there is ample room for growth with 4G networks covering only about 60% of the population.

Nevertheless, there continues to be an almost tangible disparity between north African countries and sub-Saharan nations, as well as those much further south.

Jakins believes that's because sub-Saharan Africa "is one of the most difficult and challenging regions of the world to connect because of its geographic complexities" and number of remote communities. "Also, north African countries were amongst the first ones on the continent to get connected with two fibre-optic submarine cables, out of the three connecting the entire continent, dedicated to north Africa from 2008," he says. "This early adoption helped north African countries pursue the deployment."

Khan's analysis is a little starker. "The disparity is largely historical, with the divergences accentuated by massive differences in GDP and monetisation of resources, governance and related fiscal agility," he says. "We must also consider the magnitude of corruption and

literacy levels."

Farhad Khan, CCO of Yahsat and CEO of YahClick concurs.

"Besides the challenges in the roll-out of infrastructure described above, pricing is a stumbling block," he says. "Whether it's a mobile device, or customer premises equipment (CPE) for fibre/VSAT, the question is often one of affordability. If the CPE or device is subsidised, then cost of access is contended with essentials like rent and food, as the disposable income in some of these regions is often on average US$2-3 per day, if not less."

Khan adds that Africa cannot be treated as a single homogenous entity. "Whilst southern Africa and north Africa are in line with the global benchmark of 60% internet and broadband penetration, a big cause for concern is the west Africa cluster at an average of 40% and east and central Africa at approximately 25%," he says.

It's a view shared by Jarrold, who says the continent should be treated as 54 countries. He adds that generalisation is always problematic but sometimes serves a purpose when trying to grasp a broad and complex problem in the most intelligible and easily digestible terms.

"To achieve anything like universal broadband access, it will require that an additional 1.1 billion people get online," Jarrold continues. "The World Bank's call for action to close the internet access gap – the 'digital divide' – includes the estimate that realising universal, affordable, and good quality internet access by the 2030 target for achieving the United Nations Sustainable Development Goals will require an investment of US$100bn."

It's hard to reach a clear conclusion as far as improvement as to the future of Africa's broadband connectivity is concerned – that's because many of the points raised in this piece have been aired on many times over the years.

The good news is entities such as the World Bank Working Group on Broadband for All and the Broadband Commission for Sustainable Development have identified investment requirements and policy roadmaps to increase connectivity and to reach full coverage in Africa.

So, is enough being done to improve broadband connectivity in Africa?

Jacklin says there's still some way to go to get to the types of broadband penetration rates needed for a technically advanced and connected economy. "I guess this forms a large part of the business case for new LEO based satellite services," he says. LEO constellations are being built on completely different economics compared to the GEO systems; the satellites are mass produced and lightweight, the launch costs have reduced significantly as they launch large batches, and huge effort is being applied to produce lower cost user terminals. These terminals will be ideally suited for roll out across Africa."

Moreover, Jacklin points to one other connectivity technology "that is worth watching out for" is what he calls "Cellular from Above". He believes "this market really is an exciting area of telecoms combining capabilities of the 4G / 5G standards interoperating with standard off-the-shelf smartphones", along with new flying platforms including stratospheric planes and LEO satellite. "This really could be a game changer for the rural coverage black spots, emergency scenarios and connecting the next billion using a standard smartphone," he concludes.

The investment is there and so is the willing, but some things just take time.

As the old African proverb goes: "Only a fool tests the depth of a river with both feet." ■

Sensor to satellite sows new IoT seeds for agriculture

Alastair Williamson, CEO at Wyld Networks looks at why agriculture is turning to the IoT for help and the role of satellite comms

According to a recent UN report on the State of Food Security and Nutrition in the World, between 720 and 811 million people in the world went hungry in 2020. Using a different indicator that tracks year-round access to adequate food, the UN says that nearly 2.37 billion people - or 30% of the global population lacked access to adequate food in 2020 – a rise of 320 million in just one year.

In regions across Africa and SE Asia the challenges are particularly acute, compounded by the impact of the global pandemic and climate change. According to an 'African agriculture and Covid-19 report published by McKinsey, some 650–670 million people in Africa, roughly half of the population, already face food insecurity. Meanwhile, a report entitled 'Food Security in

Asia and the Pacific' produced by the Asian Development Bank' says that over half a billion—or about 14% — of Asia's population are undernourished, more than all the undernourished in Africa.

While many nations already face a food crisis, the problems are only going to get worse. The United Nations projects that the world's population will reach 9.7 billion by 2050, requiring global agricultural production to rise by 69% from 2010 levels to meet this population demand along with the increase in calories per capita intake.

To generate increases in yield without a major increase in land resource is going to require major changes in the face of climate change; forcing agricultural producers to battle against water shortages, increasing temperatures and more freak weather incidents. Meeting these targets will require a commitment and investment from Governments along with a quantum leap in harnessing the power of technology and take up in farming.

This transformation is already underway and at its heart is a growing, super-efficient agritech ecosystem with a dynamic, wirelessly connected Internet of Things (IoT). Over the last few years, IoT has emerged as one of the most important technologies of this century to create communications between people, process and things and deliver rich, insightful and actionable data. And agriculture is one of the fastest growing markets. According to the 'Worldwide IoT in Agriculture Market Size 2023' report from Statista, it is expected that the global agricultural IoT market will reach almost 30 billion U.S. dollars by 2023.

Demand for data

Fundamental to the agricultural innovation revolution is the

need for more data points to give agronomists, engineers, designers and farmers a highly granular data picture of the food production cycle. BI Intelligence predicts that by 2035 there will be over four million data points per day on the average farm - an eight-fold increase on 2020.

Key data sources include soil moisture sensing, weather stations, crop and storage monitoring, livestock and asset tracking, following the complete field to fork journey. For example, the moisture level of soil at different locations and depths across a farm helps to calculate the best times for sowing and harvesting, while detecting temperature changes in a greenhouse makes it possible to adjust ventilation and irrigation accordingly.

So much of agricultural success depends on being able to accurately measure and translate environmental conditions into intelligent insights and acting upon them – presenting truly enormous possibilities for agricultural IoT. Sensors measuring the location of livestock, weather or soil conditions are relatively cheap and straightforward to deploy yet deliver unparalleled visibility and benefits across the biggest farms and ranches.

Farmers can monitor field conditions from anywhere, with data flowing seamlessly from sensors to the cloud and on to a laptop or cell phone app. This increases operational efficiency, lowers costs, reduces waste and improves the quantity and quality of yield. For example, it is estimated IoT could save up to 50 billion gallons of water annually, as sensors help farmers to optimise water usage.

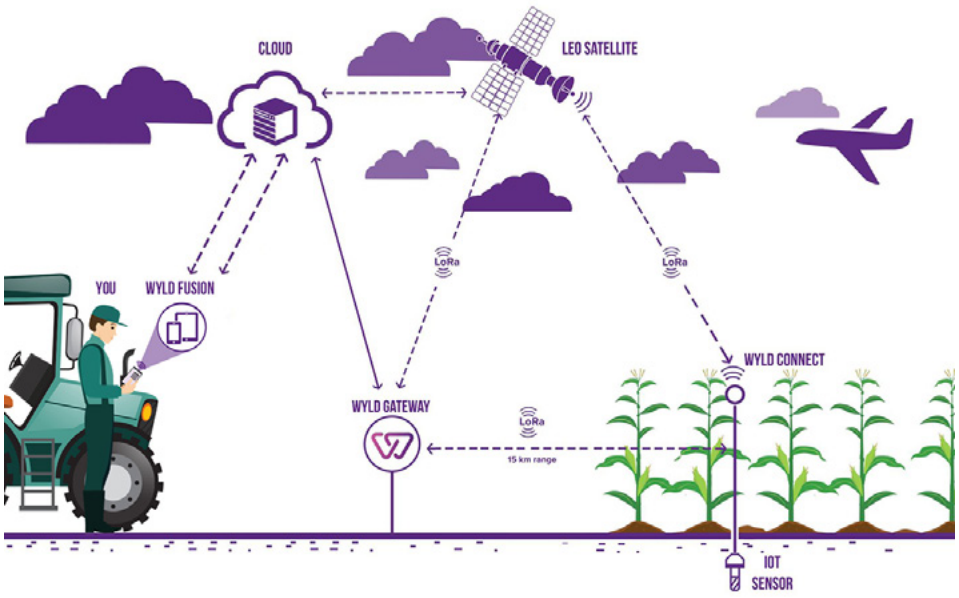
A study conducted by OnFarm in the US found that the use of IoT on the average farm, increased yields by 17.5%, reduced energy costs from $13 to $7 per acre, and cut water use for irrigation by 8%. The US, where IoT is currently most widespread, produces 7,340 kgs of cereal per hectare of farmland, compared to the global average of 3,851 kgs of cereal per hectare.

Connectivity problems

Designing, producing and deploying sensors and devices needs to go hand in hand with connectivity improvements. The full benefits of the IoT will never be achieved while some 3.5 billion people still do not have access to or cannot afford the internet, while mobile cellular networks only cover 20% of the earth's surface and low-cost access only covers about 1%.

IoT devices in agriculture usually have specific communications requirements such as low cost, low power, long range and low data rates, which have driven the development of new connectivity technologies such as Low Power Wide Area Network (LPWAN), non-cellular standards like LoRa and Sigfox along with cellular standards like NB-IoT and LTE-M. Some of these are listed below.

LoRaWAN	Long-range – up to 10-15km line of sight, Low-power (10 yr battery life) license free device level, private/community network. 490, 868, 915MHz
M-Bus	Wireless M-bus (meter bus) for Smart metering applications as defined in EN 13757-4
Bluetooth SMART	Bluetooth low energy for IoT applications. aka Bluetooth LE, BLE or Bluetooth SMART running on 2.4GHz
NB-IoT	Narrow band-IoT or LTE-M cellular licensed band esp 800MHz Long-range, low-power, reliant on local cellular operators available
sigfox	Ultra Narrow band Sigfox owned network at 868, 915MHz Long-range, low-power licensed network
	Wyld Networks - sensor-to-satellite LoRa - low-power connectivity anywhere



LPWAN makes it possible to communicate at significantly longer ranges and at a much lower power consumption than cellular or Wi-Fi options. Also, as LPWAN networks can be created anywhere, they offer farmers the opportunity to have connectivity of sensors even when there is no cellular coverage.

LPWAN and especially LoRaWAN radio technology is low power – think 2 x AA batteries lasting years sending small packets of data on an hourly or daily basis to a cloud-based application and to applications that can be used on a desktop, tablet or mobile. In contrast to Wi-Fi, LoRaWAN can operate at distance, as the lower power signals operate at much longer wavelengths. This means data can travel 10-15km without reaching much resistance. For billions of the sensors that will come online over the 2020s data packets will be small – temperature, humidity, ammonia readings etc. – and for these, LoRaWAN is a game changing solution.

Sensor to satellite

But even with all these benefits, LoRaWAN is limited by scale. On farms in Africa and SE Asia, 10-15kms is nothing. That's why an emerging technology in agritech is sensor-to-satellite connectivity. Using LoRa, it is possible to send data from a farm directly to a Low Earth Orbit satellite without the need to maintain a terrestrial LoRa network. Effectively, the terrestrial gateway is replaced by a gateway in space, freeing up sensors to be placed literally anywhere on the globe, however remote.

This means unserviced connectivity areas will come into range, while access to remote data opens up new applications. For example, a crop requiring a certain soil type, water input and fertiliser may become possible in a given environment if the true information of the ecosystem is understood, both on a macro level and in a highly-localised way. Specific, granular conditions can alter inputs to improve yield and reduce environmental impacts. The opportunity to blend this data with highly local satellite imagery is a potential game changer.

Future harvests

There is a massive potential for IoT innovation in global agriculture, connecting wireless sensors, from the corn and wheat heartlands of the USA, to sub-Saharan cassava production to livestock farms of South East Asia and farming in any urban global area. East-West Seeds Philippines is one organisation working with Wyld Networks to capture critical data from vegetable farming across South East Asia in order to improve sustainable seed production for farm and research environments.

In addition to helping to meet the growing demand for food, the sensor-to-satellite revolution will also support struggling economies. Agriculture is also one of Africa's most important economic sectors, making up 23 percent of the continent's GDP. In sub-Saharan Africa, it provides work for nearly 60 percent of the economically active population, while Africa's exports of food and agricultural products are worth between $35 billion and $40 billion a year.

According to McKinsey, IoT in Agriculture could add $500bn to global GDP by 2030, a critical productivity improvement of 7 to 9 percent for the industry if connectivity issues can be resolved.

With sensor-to-satellite, the cost for access to the internet for IoT devices using this technology is expected to be only a few dollars per node per year. With sensors able to run off low voltage batteries or small solar cells, this will enable IoT technology to reach everyone.

So, this revolution in satellite IoT technology will overcome the two key barriers to universal access – global coverage and affordability - and as such can truly be termed as technology to democratise the IoT and help to deliver against the ever demanding environmental and agricultural targets lying ahead. ■

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South African government planning to provide national broadband coverage by end-2023

Sébastien de Rosbo,
research manager, BuddeComm

South Africa's telecom sector boasts one of the most advanced infrastructures on the continent. There has been considerable investment from Telkom, Liquid Intelligence Technologies, Broadband InfraCo, and municipal providers as well as from mobile network operators all aimed at improving network capabilities. In mid-2021, Vodacom Group announced plans to set up its own InfraCo, merging its own fibre assets with those belonging to two recent acquisitions.

The focus in recent years has been on backhaul capacity and on fibre and LTE networks to extend and improve internet service connectivity. With the ongoing migration to fibre, the incumbent telco Telkom expects to close down its copper network in 2024.

The mobile sector has developed strongly in recent years, partly due to the poor availability and level of service of fixed-line networks, which meant that many people had no alternative to mobile networks for voice and data services.

A multi-spectrum auction has been delayed several times due to legal wrangling, and is now expected to be held by mid-2022. The delay has caused difficulties for network operators, which have had to refarm spectrum for 3G and LTE use, and provide 5G services on temporary licences.

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

Table 1 – Growth in the number of mobile subscribers and penetration – 2011 – 2026

Year	Subscribers (million)	Penetration
2011	64.000	123.1%
2012	68.394	129.5%
2013	76.865	143.2%
2014	79.280	145.4%
2015	86.985	157.1%
2016	81.314	144.7%
2017	87.153	152.9%
2018	91.708	158.7%
2019	96.972	167.8%
2020	94.953	164.3%
2021 (e)	93.810	162.3%
2022 (f)	95.310	164.9%
2023 (f)	97.125	168.1%
2024 (f)	99.360	171.9%
2025 (f)	101.340	175.4%
2026 (f)	103.070	178.3%

Source: BuddeComm based on regulator data. Note: Data is for the year to September

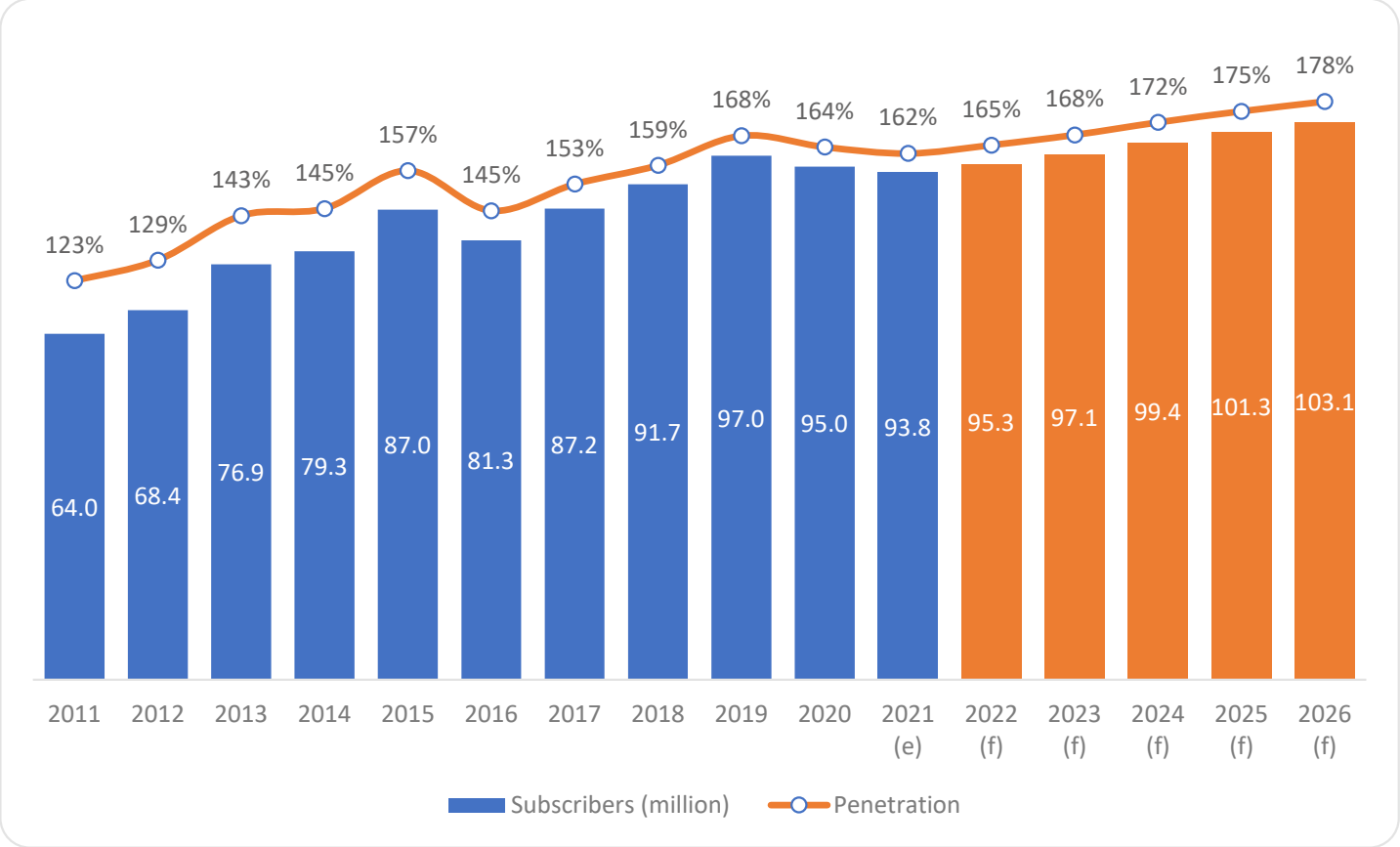
The report also covers the responses of the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education,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

Key developments

- Telkom enters the mobile financial services sector, renegotiates a roaming deal with MTN;
- Government initiates plan to provide national broadband coverage by end-2023;
- Regulator to issue provisional spectrum licences under new regulations introduced as a response to the pandemic;
- Virgin Mobile stops trading in South Africa, after 15 years;
- Vodacom Group sets up its own InfraCo after acquiring a 30% stake in Vodacom Group acquired a 30% stake in CIVH, launches its VodaPay m-payment app;
- Rain launches standalone 5G network in Cape Town;
- Report update includes the regulator's March 2021 report on the ICT sector, operator data to September 2021, updated Telecom Maturity Index charts and analyses, assessment of the global impact of Covid-19 on the telecoms sector, recent market developments.

www.budde.com.au ■

Chart 1 – Growth in the number of mobile subscribers and penetration – 2011 – 2026



Source: BuddeComm based on regulator data

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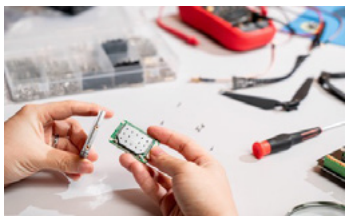
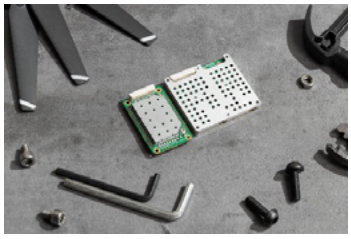
New from Doodle Labs

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.

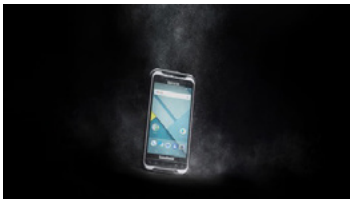
Helix is powered by Doodle Labs' patented Mesh Rider technology. *doodlelabs.com*

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 03b 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.

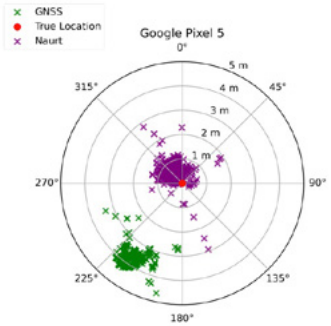
"We have removed the major bottleneck holding back the expansion of the satellite sector for both commercial and defence communications. Users can finally connect to as many satellites as they want, when they want, wherever they want and that's a game-changer for enterprise, aero, maritime, government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

Look out for...

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."

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. 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. ■

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 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 US$2.4bn 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 at 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. ■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