

For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

JANUARY/FEBRUARY 2021

Volume 25 Number 4

- How has 5G progressed since the pandemic started?
- The growth and impact of OTT services Africa-wide
- Q&A: Pieter de Villiers, the boss of Clickatell, reveals all



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Vodafone and AST set for space network launch in 2023

Vodafone Group-backed AST SpaceMobile set a date of 2023 for the launch of what it said is the first space-based mobile network delivering high-speed connectivity without the need for specialist consumer hardware.

The AST SpaceMobile project, backed by Vodafone and Japanese electronic commerce and online retailing company Rakuten, is designed to provide coverage to the 49 largest countries around the equator, including several key markets served by Vodafone Group affiliates, such as Safaricom and Vodacom in Africa.

US-based AST SpaceMobile has a fleet of satellites designed to provide data speeds commonly associated with 4G or 5G to

general, commercially available handsets. In the first phase it expects to cover an area inhabited by 1.6 billion people with 20 birds.



US-based AST SpaceMobile has a fleet of satellites designed to provide data speeds commonly associated with 4G or 5G to general, commercially available handsets

The first markets, subject to regulatory approval, will include Democratic Republic of the Congo, Ghana, Kenya, Mozambique and

Tanzania, where Vodafone affiliates plan to incorporate the service into their offering for remote communities.

AST SpaceMobile added it also plans to apply for regulatory approval to deliver the service in India as part of this first phase.

In a statement, Vodafone backed the project to boost connectivity in its markets, adding the service was “uniquely positioned to provide universal mobile coverage to rural areas in Africa, and in the future, Europe, further extending our leading network”.

“The space-based mobile network will also enable us to provide instant communications in the event of a natural or humanitarian disaster,” it added. Service in first batch of countries is expected in 2023.

Eswatini makes Huawei “Clean Network” U-turn

Eswatini has backed out of its plan to join the US’ anti-China “Clean Network” initiative, less than two weeks after it became the first African nation to “exclude high-risk digital equipment suppliers”.

The country’s acting minister of information, communications and technology (ICT), Manqoba Khumalo, and then-US under-secretary of state Keith Krach on January 15 agreed “on

the importance of securing telecommunications infrastructure and ensuring safe technology supply chains based on internationally accepted digital trust standards”.

However, landlocked Eswatini made a U-turn on plans to block Chinese telecoms equipment vendors such as Huawei and ZTE.

Its ICT ministry announced the country’s withdrawal from the joint statement signed with the US “due

to legitimacy issues surrounding the approval process of the document”.

“The ministry ... hereby announces the withdrawal of the joint statement made by Eswatini representatives of the ministry ... and the USA government on 15 January 2021,” the ministry said in a statement.

In addition, the ministry said it “understands the paramount importance of telecommunications infrastructure security and fact-based

and standards-based approach in addressing security challenges”.

South African media reported that Princess Sikhanyiso Dlamini, the eldest daughter of King Mswati III, intervened to reverse the decision to back the US in its technology war with China.

Eswatini is also the only African country that has diplomatic relations with Taiwan, which China considers a breakaway province.

Telkom Consumer and YahClick enter agreement

Telkom Consumer and YahClick have joined forces to enable consumers to make voice calls and access broadband data in South Africa using satellite connectivity.

For phase one, the former will commence with migrating a number of identified consumer customers first and launch to new customers in early 2021. The company also noted this significantly expands access to affordable connectivity in rural areas nationally without access to fibre.

YahClick Satellite Services will deliver the Telkom data and voice over internet protocol packages through its satellite platforms using

the Hughes Gateway and ground segment technology.

“This agreement enables us to seamlessly connect our customers nationwide,” said Telkom Consumer chief executive officer (CEO) Serame Taukobong. “Our data service with YahClick means we can overcome physical infrastructure constraints and give customers everywhere in South Africa the chance to enjoy high-speed connectivity to study online, to work and to stream content.”

Telkom said the new satellite offering will also be a game-changer for any business or government

services in rural areas which will soon be able to connect using Telkom’s satellite packages.

YahClick CEO Farhad Khan added that the agreement with Telkom “expands high-quality digital inclusion across South Africa and will really help communities to overcome communication barriers caused by the lack of connectivity”.

The satellite broadband service provider, from the UAE-based global satellite operator Yahsat and its partner Hughes Network Systems, utilises the efficiencies of the reusable Ka-band satellite frequency and multi-spot beam

technology to make satellite broadband affordable and dependable for consumers across the world who do not have access to reliable internet connectivity.



YahClick CEO Farhad Khan added that the agreement with Telkom “expands high-quality digital inclusion across South Africa”

TelOne Zimbabwe and Eutelsat sign satellite broadband deal

TelOne Zimbabwe, the state-owned operator, has signed a multi-year agreement with Eutelsat to bring high-quality satellite broadband to the country. The master service agreement will use the service of Eutelsat's satellite broadband division, Konnect Africa, to bring connectivity to households and businesses in remote and rural locations starting from March.

Eutelsat Konnect is a new-generation High Throughput Satellite (HTS) that provides almost complete coverage of Europe and sub-Saharan Africa with 75-gigabit per second (Gbps) of Ka-band across a network of 65 spot beams.

"By securing this premium capacity and service, we will be able to pursue our mission of offering

fast, reliable broadband services at an affordable price to homes, businesses, educational institutions and government departments all over Zimbabwe", said Chipso Mtasa, managing director of TelOne.

She added that TelOne remains passionate about providing long-lasting and meaningful connections through its services in line with the vision for a digitally-enabled society by 2023. "This will now become a reality for our customers in even the remotest regions", she said.

There are about 3.3 million internet users in the Jewel of Africa as of July. In January, Eutelsat signed a multi-year agreement with InterSat to provide connectivity service to about 170 post offices in Côte d'Ivoire.



Eutelsat Konnect is a new-generation High Throughput Satellite (HTS) that provides almost complete coverage of Europe and sub-Saharan Africa

Starlink internet coming to South Africa

Elon Musk's SpaceX's Starlink internet service has started taking deposits from users in South Africa, allowing them to pay for a priority position to receive the service when it arrives in their respective regions. Starlink uses a constellation of lower-earth orbit (LEO) satellites to offer fast, low-latency internet connectivity to its users. The service is of particular benefit to people living in rural locations who struggle to access fibre or mobile broadband. Starlink has started taking deposits from users in locations across the globe, allowing them to pay for a priority position to receive the service when it arrives in their respective regions. The Starlink website will now direct users with South African addresses to a payment gateway. Previously, South Africans saw a message that informed them they would get updates via their provided email address on when the service will be available in their location.

'Tanzanian telcos will reach all villages'

Tanzania's Ministry of Communications and Information Technology has ordered telecom operators to go nationwide and ensure their services reach all citizens, according to a government minister.

The companies have also been asked to improve capacity of their communication towers, especially in areas experiencing poor communication networks. Addressing Parliament in February, deputy minister, Eng Kundo Mathew said

the government is determined to ensure the whole country is covered by stable communication networks.

He made the note, while answering a supplementary question from a fellow MP, who asked to know when the government would avail stable communication in villages of Kalenga constituency, Iringa region.

"The government has tasked all mobile network service operators to improve scope of their investment and connectivity, and that their

network should be available across the country," Mathew said.

Meanwhile, mobile operator Airtel Tanzania has successfully upgraded its 4G telecom network across the country. This investment, which allowed the company to initiate the "Supa 4G" project, now enables it to offer the population much better-quality services on the 700 MHz and 2100 MHz frequency bands. Consumers now have access to Internet speeds above 40 Mbps.

The firm's director of communications said that with the improved 4G network, the company has once again demonstrated its commitment to providing efficient mobile data and voice services to the people. She also said that more than 500 cities in Tanzania are already covered by the enhanced network, representing several million people.

Airtel Tanzania's strategy is a response of the company to the strong consumer demand for broadband. It is also an opportunity for the operator to improve its reputation in the eyes of the Tanzania Post and Telecommunications Regulatory Authority (Potraz), after various telecom operators were fined by the regulator for the poor quality of service.



The companies have also been asked to improve capacity of their communication towers, especially in areas experiencing poor communication networks

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

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

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

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



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

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

About Telecom Egypt

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

Telemedia partners with ABS for Earth station and teleport services

Telemedia, a broadcasting and teleport service provider in South Africa has partnered with ABS, a global satellite operator, to provide teleport services for the Middle East and Africa (MEA) region.

Under the terms of the deal, the companies are forming a strong alliance with ABS gaining a full suite of telecom services provided

by Telemedia at its Johannesburg teleport. Its diverse facility provides seamless integration of satellite ground station and teleport services.

“Our collaboration with Telemedia reinforces and strengthens our presence in the MEA and provides an extension to our global connectivity network. Telemedia was chosen to provide teleport fibre con-

nectivity, data centre hosting and satellite uplink capabilities,” said Ron Busch, ABS’ EVP engineering and operations. “Its infrastructure offering with a solid track record, excellent customer support and can-do attitude during the Covid-19 pandemic shows its commitment to excellent customer service.”

Steve Bretherick, CEO Telemedia

added: “This partnership with ABS invigorates Telemedia’s ground infrastructure potential and its global coverage enables us to further expand our broadcast and satellite connectivity services in the MEA. The technical teams on both sides are working closely to leverage expertise to establish technical ground support within the region.”

DR Congo readies for 16,000km of optical fibre

The Democratic Republic of Congo (DR Congo) will soon be the beneficiary of a new high-speed telecom infrastructure, after Egyptian telecom and technology solutions vendor Benya Capital and the Congolese Post and Telecommunications Company (SCPT) finalised the contract to deploy 16,000km of optical fibre across the country.

Negotiations started last year and the signed contract was initiated between the two parties during the visit of the president of the Congolese Republic, Félix Tshisekedi, to Egypt in early February.

The 16,000km of optical fibre that will be deployed this year will realise the ambition of the Congolese head of state to make digital technology a pillar of national development. This new high-speed telecoms infrastructure expected from Banya Capital will therefore contribute to improving the coverage of the national territory with high-speed connectivity, reducing the digital divide and strengthening the technical resources essential to the country for its digital transformation. In May last year, Benya also helped to establish the largest fibre optic cable factory in Egypt and MENA, with a total investment of more than £1bn, at the Suez Canal Economic Zone (SCZone).

Aeris and Bboxx deliver clean energy to over one million people in Africa

IoT specialist Aeris has helped Bboxx, a next generation utility which manufactures, distributes and finances decentralised solar powered systems in the developing world deliver clean energy to over one million African citizens, courtesy of its Aeris Fusion IoT Network.

Bboxx’s core products are a range of solar home systems that enable both individuals and small businesses to power appliances—from lights and mobile phones to refrigerators and computers. It installs the Aeris global subscriber identity module (SIM) at the point of manufacture, reducing both supply chain costs and deployment time. Using Aeris’ single global access point name (APN), the Bboxx solar system can also be deployed anywhere in the world, even in the most remote locations, on a simple plug-and-play basis, without any requirement to configure local network settings.

Furthermore, the collaboration between Aeris and Bboxx means the latter’s devices have reliable IoT connectivity no matter where in the world they are deployed, allowing products to be remotely monitored and expediting deployment timeframes.

“Aeris’ high-quality service and IoT expertise have assisted Bboxx to deliver clean energy solutions to communities and households in eleven countries in Africa with minimal deployment time,” said Christopher Baker-Brian, co-founder and managing director at Bboxx. “By partnering with companies like



Bboxx’s core products are a range of solar home systems that enable both individuals and small businesses to power appliances—from lights and mobile phones to refrigerators and computers

Aeris, we are making reliable and clean energy more accessible as we continue our mission to unlock potential and transform lives.”

Paul Tarsey, IoT solutions consultant, Aeris, added: “Aeris’ ability to offer high-quality IoT connectivity at the most optimised total cost of ownership ensures that Bboxx’s solar systems are operational and reliable no matter where they are deployed. We look forward to continuing to help assist Bboxx to expand their capabilities

and deliver clean energy to people throughout the world.”

Since partnering with Aeris in 2017, Bboxx has utilised Aeris’ multi-carrier connectivity and the continued expansion of Bboxx in Africa is also assisted by Aeris’ global SIM, which is deployed at the point of manufacture, enabling Bboxx to reduce its supply chain costs and solution deployment time.

Telecom partners include Safaricom, MTN Rwanda, Tigo, Airtel Congo and MoovTogo.

Gender inequality fuelled by cheaper devices, says report

Budget mobile phones and the lack of payment interoperability exclude more women than men in Africa with regards accessing to finance systems, despite widespread payment technology, according to a new report.

Payment system design and the financial inclusion gender gap, research sponsored by the Bill & Melinda Gates Foundation, highlights a number of reasons that relegate women to the bottom of financial inclusion.

"Women are typically underserved and have more to gain from new providers and new services that target a wider range of client segments," it said. "In Kenya, where the market is more developed, we were able to assess various interoperable services such as M-Shwari and M-Shwari locked accounts in focus groups."

The report added: "In Côte d'Ivoire, a less developed DFS market with only rudimentary interoperability, women reported primarily moving money between networks by withdrawing and depositing cash. This cost them significantly in time and money - costs they would not face if interoperability were more prevalent in that market."



The report also found women are 20% more likely than men to own smartphones in low- and middle-income countries

Furthermore, the report found women are 20% more likely than men to own smartphones in low- and middle-income countries.

"We recommend updating the principles to support low-end devices with a principle that states: All primary functions should be accessi-

ble to users with inexpensive basic/feature phones - typically enabled through USSD interfaces on such devices," the report recommended.

Energy provider secures \$35m start-up funding

Inspired Evolution, the investment advisory firm specialising in clean and renewable energy, led a US\$35m equity investment by its Evolution II Fund and co-investor, Norfund and Sagemcom in Escotel, an energy services company working in sub-Saharan Africa.

Headquartered in Mauritius, Escotel was set up to provide energy services to mobile tower owners and operators, owning and operating decentralised renewable energy infrastructure spanning the continent.

Escotel will initially supply,

install, operate and maintain decentralised solar and storage hybrid power systems for a portfolio of around 900 telecom sites in Sierra Leone, Liberia and over time the Democratic Republic of Congo, owned by subsidiaries of France-

based MNO Orange.

Evolution II has ringfenced US\$20m alongside US\$10m from Norfund and US\$5m from Sagemcom Energy and Telecom, which will also act as an equipment supplier, EPC contractor and O&M provider to Escotel.

Africell wins Angola telecom licence

Africell has completed a deal that will give it a mobile telecommunications operator's licence in Angola, the company said.

The African mobile technology company will join three other operators: Movitel, Unitel and state-owned Angola Telecom. Furthermore, the firm said that it plans to

invest heavily in infrastructure and services during the first phase of its rollout in Angola. Operations are expected to create around 6,500 jobs over the next five years.

"Angola is amongst the most attractive investment destinations in sub-Saharan Africa and an African leader, so we see this as the logical

next step for Africell as we continue to grow our network and deepen our footprint across the continent," said Africell Group chief executive officer and chairman, Ziad Dalloul.

Africell already offers, low-cost and reliable mobile network coverage and related technology services to millions of individuals,

communities and businesses in Uganda, Sierra Leone, Gambia and Democratic Republic of the Congo.

The development in Angola prepares the UK-headquartered firm for a mid-2021 launch in the country and comes ahead of the former's government's ongoing efforts to open up some of its markets.

Vandals burn down Vodacom and MTN towers

Towers belonging to Vodacom and MTN were burned down by vandals in South Africa, with the government blaming conspiracy theorists who link 5G airwaves to Covid-19.

In a statement, Stella Ndabeni-Abrahams, minister of communications and digital technologies “condemned” the vandals and urged South African police to arrest those responsible “for this anarchy”.

“The burning of the cell phone towers follows a resurgence in conspiracy theories which link the emergence of the coronavirus pandemic to 5G”, the statement read.

Three telecommunications towers in the KwaZulu-Natal region were destroyed between January 5-6, according to local reports.

“The destruction of network towers compromises multi-pronged efforts and initiatives to stem the spread of the virus,” added Ndabeni-Abrahams. “We therefore, urge the police to arrest anyone who is threatening the removing of infrastructure network stations or towers.”

Vodacom urged for people to report those “deliberately spreading fake news” about the virus to the government. The Independent Communications Authority of South Africa (ICASA), the International Telecommunication Union (ITU) and the World Health Organisation (WHO), have confirmed 5G does not spread Covid-19.



Three telecommunications towers in the KwaZulu-Natal region were destroyed between January 5-6, according to local reports.

Orange announces Djoliba fibre network launch

French giant Orange is set to officially announce the launch of Djoliba, described by the company as ‘the first pan-African fibre optic network’.

The company released a brief statement confirming a media conference, scheduled for 10 November and involving Orange chairman and CEO Stéphane Richard, Alioune Ndiaye, CEO Orange Middle East and Africa; Jérôme Barre, CEO Orange Wholesale & International Networks; Mamadou Bamba, CEO for Orange Côte d’Ivoire, as well as Sékou Drame, CEO for Sonatel Group.

According to some media outlets, the new west African backbone network will connect several cities including Dakar, Bamako, Abidjan, Accra and Lagos.

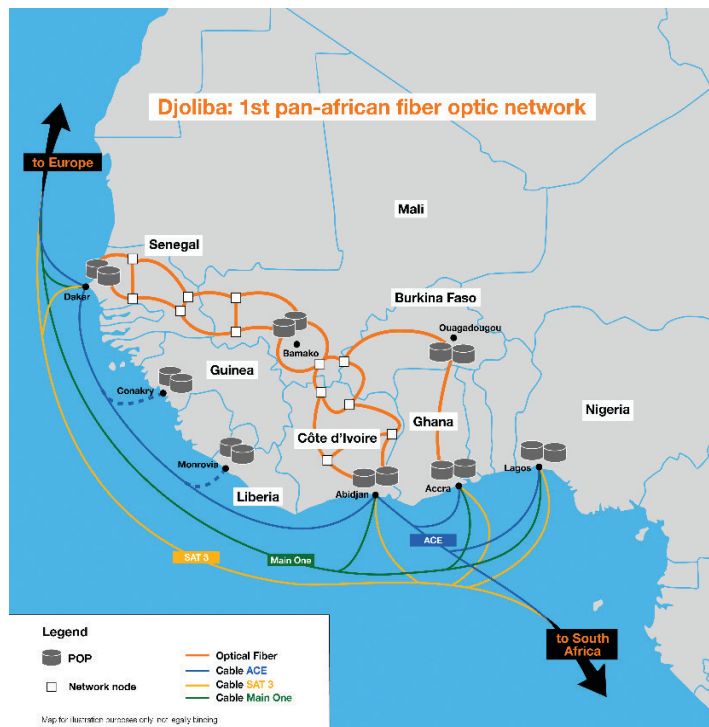
Orange also posted some details about the backbone via Twitter in June.

The company is present in 18 countries in Africa and the Middle East and claims to have 124 million customers as at 30 June 2020.

Recently Orange reaffirmed its support of the One Africa Network (OAN) project, announcing the creation of two new international voice Points of Presence (PoP) in Lagos.

Ndiaye said: “We are working hard to promote the emergence of a dynamic digital society, a key driver of African development. From this year, Orange will endeavour to keep African traffic in Africa.”

In September, during the GSMA’s Thrive Africa 2020 event, Chairman and CEO Richard raised the issue of the usage divide or residents



According to media outlets, the new west African backbone network will connect several cities including Dakar, Bamako, Abidjan, Accra and Lagos

who are covered by mobile networks but who do not access the internet.

He said 520 million people in Africa fall into this category, mainly because of the high cost of smart devices and mobile services, and that content made available through these devices is not always relevant and/or users do not have the skill sets to take advantage of the technology.

“On a global level 7% of world’s population lacks mobile broadband coverage, less than six hundred

million people, whereas in SSA, the gap is currently almost 30% of the population. The lack of internet excludes individuals from opportunities to overcome the social and economic impact of the current crisis. It also limits the ability of governments to effectively manage the pandemic and its economic fallout. If we don’t take action now, we run the risk of reinforcing existing inequalities in the digital world and further marginalising vulnerable people.”

Africa set to welcome new subsea system

The construction of Africa-1, a new 10,000 km subsea telecom system connecting Africa, the Middle East and Europe, has begun.

Current members of the consortium are Etisalat, G42, Mobily, Pakistan Telecommunication Company, Telecom Egypt and ASN, with other parties expected to join soon.

Africa-1 cable will provide eight fibre pairs to connect Africa and the Middle East eastward to Pakistan and westward to Europe, increasing

the available transmission capacity between Asia and Europe.

It is expected to be ready for operation by the end of 2023 and will initially have landings in Kenya, Djibouti, Pakistan, the United Arab Emirates, Saudi Arabia, Egypt and France. The system will also land in Sudan, France and further connect other countries in the Mediterranean such as Algeria, Tunisia and Italy.

The next phase will include additional landings in Yemen and

Somalia, as well as an extension from Kenya to South Africa with intermediate landings in Tanzania and Mozambique.

Alcatel Submarine Networks (ASN), which provides all elements of turnkey global undersea transmission systems, said the system will be equipped from the start with ASN 1620 Softnode transmission equipment, featuring high performance 200/300/400 Gb/s advanced coherent XWAV line cards.

China successfully launches Tiantong 1-03

China successfully launched a new mobile communications satellite on the S-band frequency, covering Africa and providing stable and reliable mobile communication services such as voice, messaging and data.

The satellite was launched into space from the Xichang Satellite Launch Centre in southwest China's Sichuan Province, on a Long March-3B carrier rocket.

At an altitude of 22,236 miles (35,786km), the satellite will orbit at a speed which keeps it fixed over a point on the Earth below, making such orbits useful for providing stable communications services.

The new satellite will network with the Tiantong 1-01 and Tiantong 1-02 satellites to improve resource efficiency and service capabilities.

All three are operated by China SatCom, a specialist in communication and broadcasting services.

Africa's telecom operators are currently facing a growing demand for quality connectivity.

Demand for the internet is growing as remote areas, poorly covered by mobile telephone operators, represent market niches that are still largely untapped.

This launch will make it easier to reach them, giving telecom operators a way to navigate the obstacle of network expansion in areas that often prove tricky to access.

It also means guaranteed new revenues for telecom operators and internet service providers in Africa, which rely on the Tiantong 1-03 satellite to extend their network coverage to new parts of the continent.

The three Tiantong 1 satellites will establish a mobile network with ground facilities to provide all-weather, all-time, stable and reliable mobile communications services such as voice, short message and data to users. They will cover China and its surrounding areas, the Middle East, Africa and other regions.

Launched in January 2021, Tiantong 1-03 was developed and built by the Chinese Academy of Space Technology.



Talking satellite

Engaging with the industry's global dialogues

With the conclusion on 3 December of the GVF-Satellite Evolution 2020 Webinar Series we are now planning the 2021 schedule. Whilst 2021 may at some point see a return to the joys of the visa applications, airport security queues, busy departure lounges, and boarding delays associated with international travel, I doubt a full return to the world as it was pre-pandemic: busy schedules of international travel to attend exhibitions, contribute to meetings, and address conferences. Consequent on the experience of lockdown, social distancing and WFH, and the realities of restrictions on moving around the globe introduced by governments responding to the pandemic, has come the realisation of effective alternatives to travel that employ cyberspace to convey ideas and enable exchanges of knowledge. This will mean a permanently different world when it comes to the means and platforms we use to collaborate and cooperate, debate and discuss, negotiate and forge deals.

Producing GVF's Webinar Series has been an interesting experience and a rewardingly successful response to this different world. With 15 events in the main 2020 webinar series, and a further number produced for embedding within partner online events, it was a notable year. A notable end to the year too, with the finale exploring NewSpace, with a panel of speakers moderated by one of the big names in space and satellite, the Founding President of the Society of Satellite Professionals International, Dean Emeritus at the International Space University, and member of the Executive Board of the International Association for the Advancement of Space Safety – Dr Joseph N. Pelton, <https://gvf.org/webinar/building-newspace-enterprise-application-in-a-rapid-growth-ecosystem/>.

It is important to note that the various thematic dialogues we created and produced through 2020 can still be experienced through the webinar archive on the GVF's YouTube channel and accessed through the GVF website at <https://gvf.org/webinars/>. Another example of a key, future-looking dialogue took place on 24 September, bringing the United Nations Environment

Programme Digital Transformation Task Force into discussion about Global Transitions: Digital Economy, Digital Infrastructure, Connected Communities, Digital Planet, <https://gvf.org/webinar/global-transitions-digital-economy-digital-infrastructure-connected-communities-digital-planet/>.

Over 8,000 individuals from at least 134 countries have, so far, watched the webinars, with approximately half this figure watching "live" and half viewing the recordings. Thematically wide-ranging, here is a selective list of some of our 2020 webinar sessions. If you did not have the chance to view the webinars "live", you can avoid missing out by using the specific links provided. Alternatively, go to the webinars home page at <https://gvf.org/webinars/>. Here you will also see details of our first webinar for 2021, Beyond 2020: New Applications, New Growth, taking place on 28 January.

Airborne Again? The Future Post-Pandemic Mobility Horizon

Global Eagle; Intelsat; PJT Partners; and KenCast. Moderated by Access Partnership.

<https://gvf.org/webinar/airborne-again-the-future-post-pandemic-mobility-horizon/>

Humanitarian Assistance & Disaster Response: The Evolving Role of Satellites in Disaster Response

Eutelsat; Inmarsat; Thuraya; and Knight Sky. Moderated by GVF.

<https://gvf.org/webinar/humanitarian-assistance-disaster-response-the-evolving-role-of-satellites-in-disaster-response/>

The Regional Satellite Operators' Voice

ABS; Arabsat; and Yahsat.

Moderated by Euroconsult.

<https://gvf.org/webinar/the-regional-satellite-operators-voice/>

A Regional Perspective on C-Band – The Next Battleground?

Intelsat; TV Globo; Sentech; and Hispasat. Moderated by ANATEL.

<https://gvf.org/webinar/a-regional-perspective-on-c-band-the-next-battleground/>

GEO/MEO/LEO – Satellite in the Finance Markets

Quilty Analytics; Melody Investment Advisors LP; and Seraphim Space Fund. Moderated by Milbank.

<https://gvf.org/webinar/geo-meo-leo-satellite-in-the-finance-markets/>

Serving Underserved Communities

Kacific Broadband Satellites; Gilat Satellite Networks; ViaSat; and SES.

Moderated by GVF.

<https://gvf.org/webinar/serving-underserved-communities/>

Ground Segment: Transformational Antennas II – Will Terminals Realize the Promised LEO Connectivity Revolution?

OneWeb; Isotropic Systems; ThinKom; SatProf/GVF Training; and Kratos. Moderated by Euroconsult.

<https://gvf.org/webinar/ground-segment-transformational-antennas-ii-will-terminals-realise-the-promised-leo-connectivity-revolution/>

Ground Segment: Transformational Antennas I – End of the Parabolic Paradigm?

AvL Technologies; Kymeta; Integrasy; and Alcan Systems.

Moderated by COMSYS
<https://gvf.org/webinar/ground-segment-transformational-antennas-i-end-of-the-parabolic-paradigm/>

5G & Satellite: Driving Forward the 'Network of Networks'

Norsat; Liquid Telecom; SpaceBridge. Moderated by European Space Agency.

<https://gvf.org/webinar/5g-satellite-driving-forward-the-network-of-networks/>

The Satellite Integral Factor II: Will Working from Home Render the Cloud a Different Animal?

Hughes; SES Networks; and ST Engineering iDirect. Moderated by GVF.

<https://gvf.org/webinar/the-satellite-integral-factor-ii-will-working-from-home-render-the-cloud-a-different-animal/>

Space Segment Disruptive Evolution: GEO, MEO & LEO – Does a Global Crisis Make a Difference?

SES; Hughes; and Telesat. Moderated by Satellite Evolution Group.

<https://gvf.org/webinar/space-segment-disruptive-evolution-geo-meo-leo-does-a-global-crisis-make-a-difference/>

Don't forget to periodically visit the GVF webinars home page to check the 2021 online event schedule and make the most of the opportunity to join in with the industry's important dialogues. You don't have to listen only, because just as though you were attending a physical and in-person event you can put questions to our speakers, and what's more the registration is free-of-charge. See you online!



Martin Jarrold, chief of international programme development, GVF



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

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

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Ericsson names new VP for MEA

Ericsson has named Sena Erten as vice president and head of people at Ericsson Middle East and Africa (MEA) and a member of the region's leadership team.

The Swedish gear-maker said in a statement that Erten will work to realise the company's people vision in the market area, "inspire and guide the business towards a world-class employee experience that is people centred, adopting the latest digital technologies and leading the way in driving our company culture.

"In a fast-transforming industry, Sena will drive Ericsson's people transformation in the region through innovative leadership, attracting and retaining the best talents and helping Ericsson to win in the talent marketplace while creating a compelling employee experience," the statement continued.

Fadi Pharaon, president of Ericsson Middle East and Africa added: "People are at the centre of everything we do at Ericsson. I am delighted

to welcome Sena into her new role. Her extensive knowledge and experience will further strengthen our people function. In a high-paced industry, pushing the envelope of technology, Sena will work to address the fast-changing competence development needs of our company by unlocking the human potential, upskilling and reskilling talents, enabling us to stay ahead of the market and adding value to our customers."



Ericsson said "Sena will drive Ericsson's people transformation in the region through innovative leadership, attracting and retaining the best talents and helping Ericsson to win in the talent marketplace"

Gabon gov to sell shares in Moov

The Gabonese government is preparing to sell more shares held in the recently rebranded Moov Africa Gabon Télécom

According to local reports, the sale is linked to a cash shortage, combined with a need to build up financial resources. A report also said that according to the 2021 finance law, the country's parliament has now authorized the state to sell its assets held in Maroc Telecom subsidiary Moov, as well as Gabon Energy and Water Company (SEEG), the Gabonese Banking Union.

At the moment, the state's share of in Moov

is 49% and a recently passed law specifies that the assets in all three groups will be reserved for Gabonese investors. In June 2016 Maroc Telecom merged Gabon Telecom with Moov Gabon, reducing the number of mobile network operators in the country from four to three.

In January this year, Maroc Telecom rebranded all its eleven subsidiaries in Africa as Moov. Active in Benin, Burkina Faso, Cote d'Ivoire, Gabon, Mali, Mauritania, Niger, the Central African Republic, Chad and Togo, the operator wants to unite its subsidiaries and customers around a common identity.

South Africa's Telkom sees 40% spike in mobile service revenue

South Africa's Telkom said service revenue from mobile soared 40.7% year-on-year for the nine months to end-December 2020.

This helped group revenue rise slightly by 0.9% to R32.4bn. However, this was against a shocking 26.2% decline in year-to-date fixed voice and interconnection revenue.

Ebitda climbed by 8.5% year on year to R8.6-billion thanks to "sustainable cost management" measures. Elsewhere, capital expenditure was down from R5.5bn to R5.1bn. However, there was an acceleration in the third quarter of the financial year.

Overall, Telkom liquidity remained "healthy", with a "stable balance sheet". In the first nine months, Telkom generated free cash flow of R1.6-billion, up from R211-million reported in the first half of the 2021 financial year. Excluding the year-to-date costs associated with retrenchments and early retirement packages amounting to

almost R1.3-billion, Telkom generated free cash flow, year to date, of R2.8-billion.

"The group delivered a solid set of results where growth was challenging due to Covid-19 and the strained South African economy," said Telkom chief executive officer Sipho Maseko. "This was driven by robust mobile growth, solid sustainable cost management and strong free cash flow generation."

Talking about cost management, Maseko said Telkom's broadband-led strategy and the decision to invest in infrastructure ahead of demand enabled it to meet the surge in demand for broadband services. "These results also reflect the success of our financial strategic objectives, which include building financial resilience through sustainable cost management, cash preservation and disciplined capital allocation as we weather the impact of Covid-19 in our businesses," he added.

MTN launches Supersonic AirFibre offering

MTN launched its Supersonic AirFibre offering, designed to overcome distance and a lack of infrastructure in urban, township and rural communities to bring fibre-quality connectivity to more households across South Africa.

Built on unlicensed spectrum, the operator says the solution was designed, built and is maintained by MTN's technology team to deliver a network quality that is in line with MTN's standards, at affordable rates.

"We are breaking down the traditional barriers to entry that have denied many access to a modern, connected life," said Calvin Collett, managing director of MTN South Africa's ISP – Supersonic. "From Soweto to Swellendam, we believe that every household deserves the speed and benefits of fibre-like connectivity, and through AirFibre, we believe we can achieve this."

MTN also said that Supersonic AirFibre will bring high-speed, inexpensive and uncapped connectivity solutions to areas in which traditional fibre installations are not available.

Due to the current major lack of available spectrum, MTN has located unlicensed spectrum – a readily available resource – and combined it with technology now available to effectively leverage open spectrum.

This is something that was previously not possible or stable, the company said.

Regulator the Independent Communications Authority of SA (ICASA) is set to auction the much-needed high-demand spectrum in March.

Meanwhile, MTN Group has unveiled its new Employee Value Proposition (EVP) entitled "Live Inspired" which aims to foster agility, flexibility and adaptation of future employee skills, in the wake of the Covid-19 pandemic.

The operator has adopted a new approach within its organisation that involves abandoning old conventional ways of working and embracing the "new normal" with confidence and optimism.

"For us, it's really about the power of choice. We recognize that what our people value is motivated by choice and flexibility," said Paul Norman, human resources director, MTN Group. "That's why our "EVP" is designed to respond to the diverse personalities and preferences that inspire and help people realize their true potential."

Norman added that real growth is inspired by a goal that advances individuals and impacts organizations and communities. MTN's goal will be to create an inspiring environment for everyone to "get active". This goal will be fuelled by true inclusion, respect for diversity, fair rewards, true recognition and personal flexibility to contribute in the most productive way possible, company said.

Airtel Uganda and Mastercard launch virtual debit card

Airtel Uganda has joined forces with Mastercard to introduce a virtual (non-plastic) debit card offering the operator's customers a safe, convenient and secure platform for online transactions.

Airtel Money customers, even those without a bank account, can now make payments to local and global online merchants that accept Mastercard cards like Netflix, Uber, Amazon, Google play, Aliexpress, Alibaba. Both companies also said the customer's financial data is always secure and private.

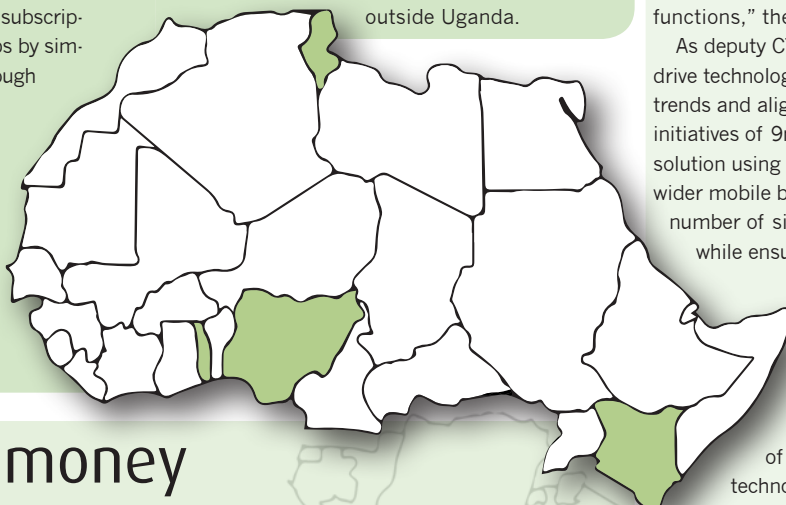
"Airtel and Mastercard have a shared passion for digital transformation and making mobile financial services accessible to everyone across the country," said Amit Kapur, chief commercial officer Airtel Uganda. "Airtel Money customers can conveniently do online shopping, pay tuition and subscriptions to their favourite sites and Apps by simply registering for a virtual card through very easy and familiar steps."

Amnah Ajmal, executive vice president for market development, Mastercard Middle East and Africa added: "Across the MEA region our digital partnerships strategy remains focused on enabling digital transformation for our partners so that their consumers can enjoy

seamless access to payments and a superior experience. We are very excited to partner with Airtel to lead the transition to digital by enabling access to their millions of consumers for online and in-person payments across the globe. Mastercard is uniquely positioned as a single technology provider to enable our digital partners like Airtel to transition seamlessly into digital."

The virtual card is valid for one year and can be deleted by the customer at any time. Customers can also generate a new one immediately. All transactions have a maximum charge of Ush 1,000.

The new card also means Airtel is poised to tap into the customers who already use the Airtel mobile money service but might be having problems making international transactions outside Uganda.



New global money transfer solution in Kenya

Co-operative Bank of Kenya, financial institution in Kenya and the larger east Africa region, has partnered with Thunes, a cross-border payment provider, to launch an alternative global money transfer solution.

Called Co-opRemit, it streamlines the process of real-time money transfers, particularly within Africa, allowing Co-op Bank customers in Kenya to move funds across the world quickly at an affordable rate.

Customers may send money directly to a

foreign bank account or mobile number. Thunes says money transfers through this platform will bear no extra charge beyond the tariff, thus offering full transparency on forex fees.

Thunes said that Co-op Bank will enhance its digital banking services and deliver a convenient and cost-effective money transfer experience to its customer base of over eight million.

Co-opRemit users will be able to access the service from a number of channels starting off with any of Co-op Bank's branches across the country.

Nigeria's 9mobile makes executive level changes

Nigerian operator firm 9mobile has made several new executive appointments, including new chief technology officer (CTO), deputy CTO and director of strategy.

Juergen Peschel has been appointed as the new CTO, Baqi Salihu as his deputy and Karn Gulati as director of strategy.

"As CTO, Peschel, an experienced professional with an international executive track record within the IT, managed services and telecommunications industry, including expertise in a wide variety of industry verticals and markets, will oversee the evolution and integration of the company's technical functions," the company said in a statement.

As deputy CTO, Salihu will support the CTO to drive technology decisions in line with current trends and align the technical and transformation initiatives of 9mobile. He executed the LTE re-farm solution using 1800MHz spectrum, achieving wider mobile broadband coverage, slashing the number of sites, and reducing carbon emissions while ensuring high-quality data service.

The new director of strategy, Gulati, will be responsible for developing strategic, tactical, and operational initiatives.

"He is a long-serving management consultant with over 12 years of experience in the telecom and technology sector," 9mobile added. He has led advisory services teams focusing on

Telecom, Media & Technology (TMT) industry and has worked across India, Africa, and south east Asia for various telecom clients. He also took a break and founded a tech & food start-up during his entrepreneurial stint for three years. His accomplishments include programme management of large-scale projects, achieving operational excellence with digitisation and process engineering, customer strategy, and greenfield launches."

Meanwhile, 9mobile said it has introduced its intelligent portal for instant verification to help its customers link their SIM cards with their National Identification Number (NIN).

Covid-19 leads to MoMo explosion in Kenya

Mobile Money (MoMo) usage in Kenya has exploded by 26.17% in 2020 compared to 2019 - with a financial value of US\$45.3bn between January and November, as nationals followed government payment recommendations to curb the spread of Covid-19.

According to data from the Central Bank of Kenya, the mobile money segment has benefited

greatly from the coronavirus crisis to the detriment of that of bank cards. The number of transactions, which was 1.7 billion from January to November 2019, rose to 4.4 billion during the same period in 2020. That is a growth of 160.45%.

The financial value of these transactions amounted to Ksh5,000bn (US\$45.3bn) against Ksh3,962.834bn (US\$35.9bn) in 2019. This

represents a growth of 26.17% driven by the recent message of the president Uhuru Kenyatta, March 20, 2020. He urged people across the country to adopt mobile payments to help curb the spread of the virus. The number of subscribers has also increased from 58.039 million in November 2019 to 65.766 million in November 2020.

Tanzania joins regional community on the abolition of roaming charges

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

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

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

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

In correspondence to the EAC secretariat,

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

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

Mara Phones appoints new MD

Mara Phones, the South African manufacturer of smartphones, has appointed Sylvester Taku to the position of managing director with immediate effect.

He has been the head of growth at Mara Phones since 2019 and led the opening of the first bricks-and-mortar Mara Experience Store in Maponya Mall, Soweto, exactly a year after Mara Phones unveiled the country’s first smartphone manufacturing facility in KZN.

The retail store enables customers to experience the look and feel of Mara Phones’ devices while being able to interact with technical specialists in their own community.

“Sylvester is bold and dependable with an amazing ability to spot the next opportunity. He will continue to do exceptionally well at Mara Phones as we grow together and make a huge positive social impact, bring fantastic shareholder returns and create real value for customers,” said Mara Phones CEO Ashish Thakkar.

Taku added “It is a privilege to lead the South African operations of the continent’s flagship smartphone brand; Mara Phones. Every South African can be proud that world-class smartphones roll out of our South African factory every day and my focus going forward will be on growth in new markets and forging new partnerships while solidifying the brand where we’re currently achieving.”

Mara is a subsidiary of Mara Corp, an African brand and company that has been working on the continent for over two decades.

Econet says data traffic up 90%

Econet Wireless Zimbabwe (EWZ) registered a 90% upturn in data traffic on the backdrop of shifting Covid-19 linked work patterns by locals, the company said. The country has been on different levels of lockdowns since March 2020 prompting a shift in work and study patterns in favour of home-based workstations.

Presenting a trading update for the third quarter ended November 30, 2020, EWZ company secretary, Charles Banda said the firm had demonstrated foresight.

“Our past investment in resilient network infrastructure has positioned us to be the digital connectivity partner of choice,” he said. “We continue to enable our customers to work and learn from home whilst observing social distancing etiquette. This is reflected in the data traffic volumes which have increased by 89.5% from the previous year.”

Banda added that the pandemic has helped the group to understand the opportunities

presented by digitalisation.

The group did experience a decline in voice traffic volumes following the tariff adjustments in July and August last year, but they have since started to recover.

Growth was experienced in SMS volumes reflecting the increased usage of e-commerce platforms which drives customer SMS interactions.

“As we go into the next decade, we are intensifying our efforts to adapt our business model to deliver digital solutions,” added Banda.

“The next few years will be pivotal to our transformation from a communications service provider to a digital service provider.”

MTN offers new range of ‘Back-to-School’ bundles

MTN has introduced a range of Back-to-School device and data deals for pre-paid and post-paid in South Africa. The operator said the deals help nationals get “a fresh start” and offer them the value and flexibility they need for online and home-learning.

All MTN Back-to-School deals include free MTN Home bundles for data access to Google Classroom and Hangouts, Skype and WebEx.

Furthermore, for a one-off R599, prepaid customers will get a Sharelink H220M Mi-Fi LTE router + 50GB of value consisting of 13GB Anytime data (one-off), 1GB per month for 12

months, free 5GB YouTube Entertainment bundle and a free one-off 20GB MTN Home Bundle.

Customers already with a PayAsYouGo router can take up prepaid SIM-only deals including R99 for 15GB data, which includes 5GB Anytime and 5GB Night Express data valid for 30 days, plus a free 5GB MTN Home Bundle once-off or R149 for 30GB data (10GB Anytime, 10GB Night Express and 10GB MTN Home Bundle).

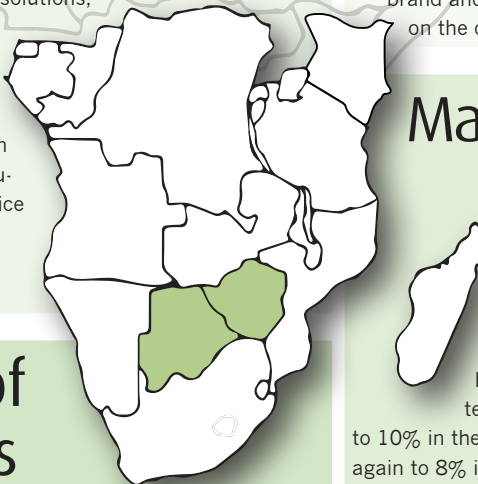
Subscribers under the age of 25 are eligible for the 10GB MTN Pulse Student Bundle which comes with free 500MB MTN Home Bundle (5GB Anytime and 5GB Night Express) for R49.

Madagascan gov cuts telecom tax to 8%

The government of Madagascar has cut the excise duty on the telecom sector, which rose from 8% to 10% in the 2020 finance law but dropped again to 8% in the 2021 finance bill.

Ranesa Firiana Rakotonjanahary, the secretary-general of the Ministry of Posts, Telecommunications and Digital Development (MPTDN), said the decision followed a study conducted by the department which showed that a decline in the excise duty will benefit consumers at all levels.

However, the department said it will continue to monitor the actions of Airtel, Blueline, Orange Madagascar and Telma to improve the telecom environment. The rationale is to ensure that there will be a drop in prices for all consumers and not only for users of social networks, which has happened in the past.





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The impact of OTT on the telecom industry

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

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

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

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

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

Loss of revenue

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

Increased infrastructure cost

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

Lack of regulatory framework

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

So how can operators across Africa respond?

However, as with all challenging situations, there are solutions to this OTT conundrum. The African multi-

channel market is dynamic, reflecting the ongoing rollout of 4G and 5G mobile networks. Also, investments in terrestrial backbones, submarine cables and satellite capacity to fulfil future needs and reduce transmission and backhauling costs are ongoing. Some of the resulting opportunities are outlined below.

Improved customer experience

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

Collaborations and partnerships

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

However, the partnering of OTTs and telcos can be challenging in absence of a common service platform. The bundling of services (telco & OTT) with manual integrations may be a tedious task, but this is an opportunity for digital technologies and platforms. Utilising API platforms, cloud services and AI-ML techniques can save a lot

of operational costs and can also overcome issues around legacy systems. This will create a win win situation for both parties where OTTs can use the CSPs infrastructure and CSPs will have an attractive and diverse portfolio to offer.

Develop their own OTT platform

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

Conclusion

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



5G in Africa: where were we?

Prior to the global pandemic that is Covid-19, 5G was making big waves in Africa. Now, approaching one-year since the first cases surfaced and subsequently grounded economies, Robert Shepherd goes back to the once hot topic

remember walking through the halls of GITEC in Dubai and AfricaCom in Cape Town last year and not being able to move for talk about 5G. Whether it was infrastructure, monetisation, masts or who would “get there first”, the pure hyperbole associated with next-generation technology was, arguably, becoming tiresome. It almost reached the stage where I took off my lanyard so that I couldn’t be easily identified as a member of the press fraternity. It’s a bit like Brexit in the UK. It was a staple news diet for a few years and then it was like it never happened.

Then, at the turn of 2020 rumours started that someone ate a bat purchased from a wet market in Wuhan, China - and the world was suddenly bracing itself for a pandemic not seen in a very long time. While we still don’t know for sure how the novel coronavirus and Covid-19 came into being, what we do know is that the pandemic has caused a level of devastation that we weren’t ready for.

In the meantime, the tech and telecom industries have continued to pump out their 5G goals and achievements, so let’s get back to more - dare I say it - positive news and find out what’s been going on in Covid’s deadly shadow.

So, one year on, where are we?

“Not much further - but 5G will happen in hotspots (major cities) and it will definitely emerge in self-contained networks to service particular needs,” says Sanjeev Verma, CEO of Squire Technologies. “Some of these will be run by private enterprises, depending on the spectrum policy in individual countries.”

Verma says that we are still in the very early stages, because while there is activity in north Africa, some in the west and east coast and in the southern region, the vast majority of sub-Saharan Africa remains without 5G. “Announcements regarding launches have to be checked carefully to determine the level of coverage delivered - it can be concentrated in a few urban areas, so we may see that MNO A has deployed 5G, but we should check to see if this is anything beyond a few key cell sites,” he adds. “Moreover, penetration depends on the research you read - for example, Ookla reports very different results from GSA data. It’s definitely in its infancy is the only real conclusion one can draw.”

Talking of reports, GSMA a global trade organisation for mobile operators,

has gone on record saying 5G in Africa is inevitable but not imminent. Is that fair comment? “It’s true that there are some challenges related to the vast scale of the region, such as the availability of utilities and the low population densities in remote regions, causing the 5G business case to struggle, says Camille Abusaba, chief executive officer (CEO) Comtinu, the regional integrator and equipment supplier. “Yet, advances in handsets and network technology mean that it’s inevitable that 5G will arrive, as no one will want to invest in equipment that is already many years old. Geopolitical ambitions also will demand that everything remains competitive as the rest of the world rolls out 5G.

Simon Fletcher, CTO at Real Wireless concurs.

“There are certainly challenges presented by the transition to 5G - many of which wouldn’t have even been considered a few years ago,” he says. “We’ve seen a lot of regulators considering different routes to deployment and the challenges they are facing include how to best manage spectrum to balance the demands of often conflicting sectors. It’s going to be a long road, but 5G will be rolled out across the continent - not imminently though as there is a lot of groundwork to be undertaken before deployment can occur.”

Clementine Fournier, VP sales Africa at BICS says she agrees with GSMA’s position.

“Due to the challenges posed by Africa’s size, the need for new architecture, and the delays brought about by Covid-19, 5G is not imminent,” she continues. “However, 5G roadmaps are progressing, particularly in markets like South Africa.”

In fact, a report on 5G in Africa by GSMA, estimates that only seven African countries, including South Africa, Nigeria and Kenya, will have 5G by 2025. And this will account for only 3% of mobile data compared to 16% globally.

Just recently, Tunisia’s digital economy minister Mohamed Fadhel Kraiem that said he expects 5G commercial services to become available in the country starting from 2022. He also indicated that the regulatory process to award the licences should be completed towards the end of 2021, leading to the launch of 5G pilots by network operators. Still, it remains unclear at this stage whether that will actually happen, or if it’s just posturing.

The problem, like with many things, is political red tape. Many African governments haven’t yet developed the regulations that would allow for a 5G rollout. In addition, mobile operators face huge infrastructure costs and that they aren’t sure how they’ll recoup.

Jan Liebenberg, customer chief technology officer at Nokia, adds that in many countries the regulatory frameworks and spectrum policy for 5G still needs finalisation. “Based on the 5G use cases, infrastructure might not be able to provide enough power, sufficient space on a mast, sufficient mast loading capability or sufficient backhaul / fibre might not be available,” he says. “As part of the move to deploy 5G these aspects need to be addressed, including readiness for the next set of use cases that might include low latency, whereby a cloud strategy is required with different types of datacentres, core, edge and far edge datacentres.”

Mobile carriers on the continent aren’t able to offer full 5G services until each country’s communications regulator holds a spectrum auction to sell the rights to transmit over specific frequencies. Rain in South Africa is able to provide 5G because it’s using its existing spectrum to transmit the signal. Not many have that luxury.

Furthermore, mobile operators also need to build the vast network of masts or antennas to transmit the signals. For carriers, rolling out 5G services entails expensive investment - and in the African context, there are question marks as to whether it’s worth it.

In fairness to Africa, 5G is still in its infancy



Camille Abusaba,
CEO,
Comtinu

“5G roadmaps are progressing, particularly in markets like South Africa”

across the globe. Still, there are countries in the West and Asia that are certainly further ahead than others. Is the same true of Africa?

For Sam Darwish, the 5G business development manager for Viavi Solutions, says “presently”, 5G is still under discussion in most of the African countries and the 5G spectrum has not yet been auctioned in the region. “This is not necessarily a barrier though,” he continues. “As with many areas around the globe including Europe, the spectrum is being re-farmed and technologies such as dynamic spectrum sharing (DSS) are being used.”

Although there could be a number of reasons why some areas of Africa might be gaining more traction with 5G than others Fournier, says the northern part of Africa might be slightly ahead of the southern part, because “in general, economies in north Africa tend to be stronger than in sub-Saharan Africa”, providing MNOs with a more compelling business case for launching 5G. These regions, she says, tend to have greater smartphone penetration, higher average revenue per user, IoT adoption and more demand from enterprises for 5G.

“The exception to this is in South Africa, where 5G is gaining increasing traction, with operators including MTN, Rain and Vodacom all launching 5G fierce wireless,” Fournier adds. “It’s also worth noting that 5G necessitates that operators have already deployed 4G, and requires new, expensive core network equipment. As a result, the costs of building next generation networks can be prohibitive in regions with struggling economies.”

It’s no secret that Africa is still using 2G and 3G and so for many, 5G is a distant dream. Many have argued that Africa should develop what it has before jumping to 5G, while others say it makes more sense to go straight to it and not waste time and money developing technology with a potentially short shelf life.

Take Nigeria, for example, a country which regularly jockeys with South Africa for number one economy in the continent. Only about 4% of mobile internet users pay for 4G services while more than 40% use the cheaper, yet slower, 3G internet, even though Nigeria has an extensive 4G network. The same story is true for most of Africa. Furthermore, if people are struggling to afford 3G and 4G, then availing themselves of 5G really will break the bank.

“This is far more important for economic devel-



Many African governments haven't yet developed the regulations that would allow for a 5G rollout, is now a good time for the next-generation technology?

opment," argues Verma. "Nationwide coverage is needed to eliminate or reduce the digital divide – and this should build on 3G and 4G."

Fletcher says that the development of mobile infrastructure across an entire continent is a big undertaking, but one that will be necessary to continue the economic development being seen in the more affluent areas. "What starts in cities will roll out across rural areas, bringing connectivity where before users had to rely on ageing 2G/3G systems. Installation of newer technology in hubs will always have a knock-on effect, resulting in improvements to rural connectivity and the benefits it brings," he says. "Think of the benefits for rural communities being able to have a high definition video call with a doctor many miles away. If that call is reliant on aged and unreliable equipment and connections, the ability to accurately diagnose and recommend treatment may be significantly impaired."

But let's imagine that all the countries wanted or, indeed, were ready for it tomorrow: are there parts of the continent that, for want of a better expression, "need it more" than others? If so, which ones?

Fournier says that with 5G set to support a wide range of use cases, every country will harness 5G in different ways. "Countries that

depend on tourism, for example, will need 5G NSA to offer a seamless roaming experience to inbound travellers," she says. "Nations that have a heavy business and industry focus, on the other hand, will benefit from local 5G SA solutions for different use cases, such as logistics or security."

It's a big "yes" from Abusaba, too. He says: "With the increasing demand for high data rates and high coverage in dense areas, 5G would be welcome, while the benefits of additional capacity to cope with massive machine type communications (mMTC) also would be helpful in agricultural areas. Moreover, political reasons might push some countries to deploy 5G faster than others. Egypt, Algeria and Morocco are probably at the top of that list of countries which need 5G more."

With that in mind, which sectors will benefit the most from 5G? It's an important question to ask, especially when it's assumed enterprises and public institutions, rather than consumers, will be the initial 5G customers and that they'll access 5G via a fixed access point – something like a 5G hotspot beamed into a business – rather than using it as a mobile service on their smartphones.

"Enhanced mobile broadband (eMBB) is expected to bring anticipated benefits to consumers, although like with elsewhere in the

world, 5G handsets are not yet readily available," argues Darwish. "Likewise, 5G advances could enable rural broadband connectivity. And applications like mMTC would allow far more efficient agricultural production, where huge advances in agri-sensors can enable major improvements to farming with soil PH, hydration and temperature level monitoring, for example."

Verma argues that manufacturing is one sector that will benefit from 5G, "but this will depend on the needs of the specific industry", such as what latency is required. "What volume of data must be processed? Mining is a key focus area, as are trading hubs – ports and airports, for example," he continues. Self-contained facilities, such as high-performance automated warehouses, are other alternatives. Similarly, hospitals and healthcare facilities may also benefit from local 5G coverage to facilitate low latency 5G applications."

Additionally, Verma says that "the key thing to remember here" is that a private network does not need to be connected to a macro / country-wide network. "It can exist independently, using distributed processing (UPF) or even with its own core and edge functions," he continues. "That's because the 5G connectivity will service low latency and high-data applications that need local processing

resources. They do not necessarily need to break out to national networks. So, if we want to run a mine in the middle of a remote area, far from any macro network, that's OK. The coverage will serve wireless devices and high-performance capabilities locally, in a totally self-contained network."

As far as Fletcher is concerned, "there are very few sectors that won't benefit" from improved connectivity brought about through access to the 5G spectrum. "Mobile operators will have incentives to sell newer handsets and leverage charges for data usage, road and rail operators will have access to improved data and smarter traffic monitoring and control systems and local authorities will be able to deliver smoother, more efficient services to residents in their areas," he adds. "The socio-economic needs in the healthcare and education sectors should be on the vanguard of developments."

While planning and investing in the next-generation technology clearly seem like good ideas, what is the biggest challenge to building 5G infrastructure in Africa?

Fournier says the challenge is the continent's geography. "One of the main challenges to building 5G infrastructure in Africa is the size of the territory. 5G operates on higher bandwidths ('microwaves') and requires multiple radio sites to support it," she says. "For this reason, 5G stand-alone cases will be local and targeted at cities. The rest of the landscape will operate on lower frequencies (reusing 2G/3G) and will offer different 5G coverage, but still 5G." The second challenge is the fact that 5G is a fully new architecture and requires a complete change in RAN and the core network. While NSA 5G requires only a change in RAN, networks still have to be fully 4G deployed, which can be costly and challenging for operators in complex and competitive markets."

For Abusaba, the primary challenge is similar to that experienced in all regions — the cost.

"How long will it take for the service providers to see a return on their investment, when the average revenue per user (ARPU) is declining worldwide? On the flip side, the average age in these countries is lower and this demographic of consumers tends to exhibit a higher

"There are certainly challenges presented by the transition to 5G – many of which wouldn't have even been considered a few years ago"

expectation of mobile services."

Still, for anything to be successful, there has to be an alignment between supply and demand and not everybody is convinced now is the time for Africa to go full throttle toward 5G.

Verma is certainly of the opinion that the operators need not rush in just yet. "The operators don't really need it yet and without devices, it's hard to see any growth," he argues. "There's no return in it. But there is a clear need for industrial 5G – in the form of private networks for mines, ports, infrastructure and so, for secure private communication. Operators need to make their networks function better and increase coverage – and to ensure better inter-operator agreements to create pan-African coverage with lower fees for basic services. 5G doesn't resolve these challenges. What does Africa need? Less corruption, so that money available for rural coverage for existing and affordable technologies, such as LTE, actually gets spent on rural connectivity. We need fewer headline-grabbing pilots (with 'free' offers from TIP) and more commercial deployment of existing technologies to give a better experience to users."

Darwish says it's certainly true that there are some challenges related to the vast scale of the region, such as the availability of utilities and the low population densities in remote regions, causing the 5G business case to struggle. "Yet, advances in handsets and network technology mean that it's inevitable that 5G will arrive, as no one will want to invest in equipment that is already many years old," he adds. "Geopolitical ambitions also will demand that everything remains competitive as the rest of the world rolls out 5G."

Now, time to revisit the dreaded C-word (Covid). It's hard to see how Covid could possibly have helped the deployment of 5G, so it appears some operators have had to get creative.

"Covid-19 has delayed standalone 5G, as it has made it harder for operators to fully invest in new network infrastructure," says Fournier. "However, we are seeing non-standalone 5G being implemented wherever possible."

Abusaba says that in many parts of the world, local lockdowns have driven an enhanced consumer demand for broadband, but it has in parallel hampered government activity around things like the spectrum auctions. "For example, even in South Africa, where there have been some 5G developments, the only license in existence is with Rain, and even that is a temporary license. Business justifications, just like everywhere else, have to come to the fore," he adds.

As things stand, Lesotho and South Africa are the only African countries where 5G is commercially available, even if the services are extremely limited.

Simon Fletcher,
CTO,
Real Wireless



For example, in Lesotho, only the Central Bank and a mining company can access 5G so far.

In South Africa, the data provider Rain is offering 5G to a select group of customers in Johannesburg and Tshwane, a municipality that includes Pretoria.

As we knock on the door of 2021, operators the length and breadth of Africa will be racing to bring their 5G service to the fore. But seeing as the general consensus is that progress with 5G hasn't been as fast as many would have liked, is it fair to expect a lot of progress in the short-term?

"That's hard to say," says Verma. "4G is widespread in many countries, but there are plenty of gaps left to fill – and we have yet to see evolution to LTE-A or VoLTE in many cases. Simply tracking availability isn't good enough – we need to know how extensive the coverage is, the percentage of population covered vs. land area, and so on. We would argue that consumers in Africa do not need 5G right now," he argues that they need better 2G, 3G and 4G networks, and better devices – ones that work well and are affordable." Unless and until affordable 5G devices are available, a national 5G network is a bit of a waste of money," he continues. "The issue is connectivity per se, not 5G. Money should not be diverted from 4G rollouts to subsidise 5G. Yes, 5G gives capacity benefits, but these come at a price, with much greater density of cell sites being required to deliver the promised performance."

Then, there's the argument as to whether Africa risks missing out on the digital boom if it doesn't embrace 5G sooner or later. After all, this is quite a big deal when it's predicted that a quarter of the world's population will be African by 2050.

"The time lag before large-scale 5G deployment could have positive implications for the region," according to the recent GSMA study.

This could allow 5G technology to mature and be tested in other markets allowing Africa to learn from the mistakes made in the most developed nations around the world. In addition, the continent could also benefit if the costs of devices and equipment fall once more countries around the world start launching 5G. In other words, timing could be key.

Optimists claim say 5G could allow Africa to access faster and more stable mobile internet without having to lay fibre optic cables that deliver high-speed broadband.

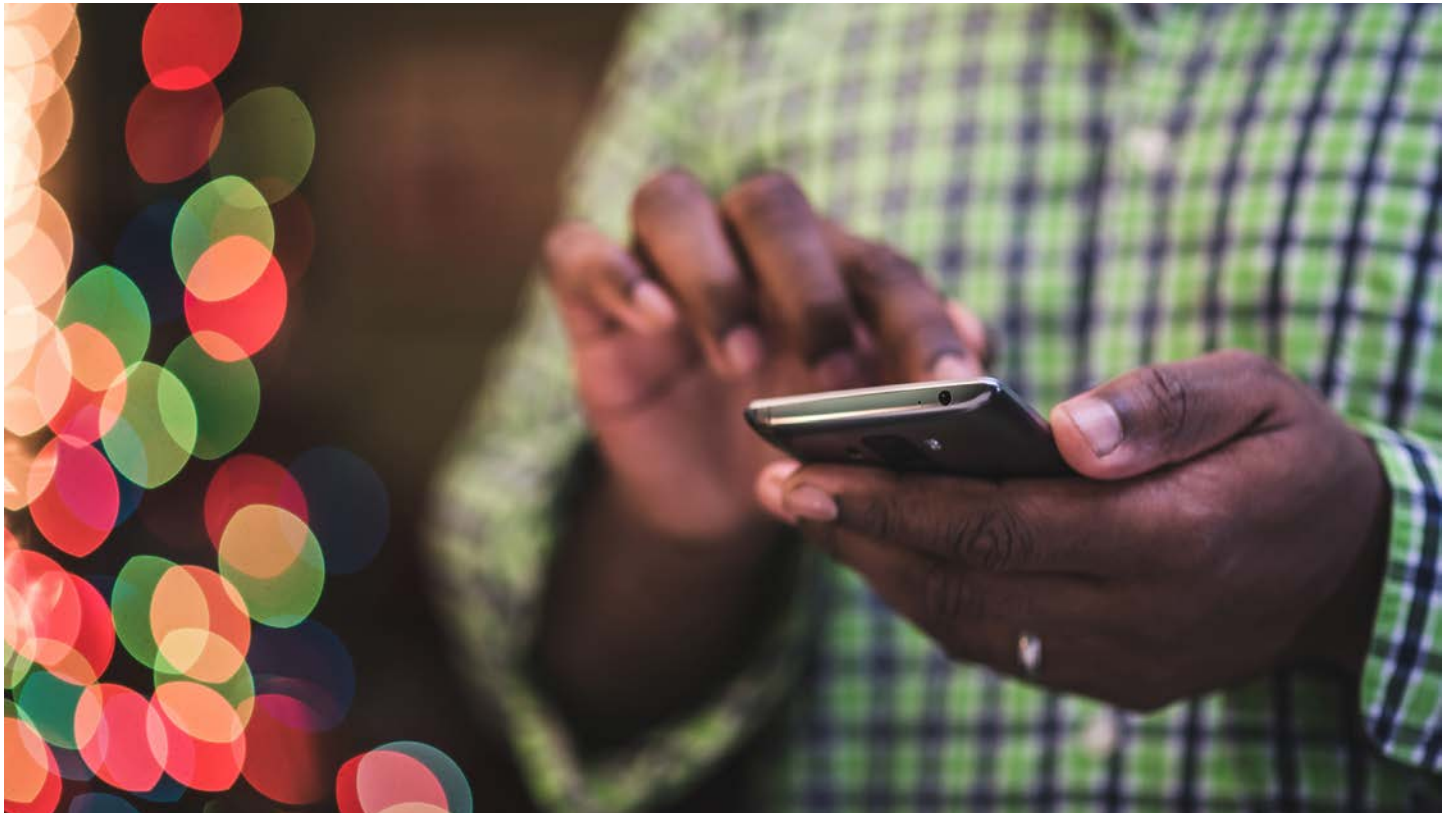
Just over half of Africa's population live within 25 km of a fibre network and in Nigeria, for example, independent estimates put it much lower at around 14%.

Africa definitely has the appetite for 5G. It might just need to be more realistic re timings. ■

Sam Darwish,
5G business
development manager,
Viavi Solutions



"As with many areas around the globe including Europe, the spectrum is being re-farmed and technologies such as dynamic spectrum sharing (DSS) are being used"



How mobile fraud is draining Africa's economy

David Lofti, CEO at Evina, explains how mobile carriers can stop the financial havoc perpetrated by fraudsters and increase their revenue through secured mobile payments

Evinna, as a leading cybersecurity company specialised in payment and advertising, has been monitoring the worldwide digital market for years and has witnessed a steep increase in fraud everywhere: malwares are present today more than ever, and fraud has never been so malevolent. This means every company in the digital market experienced, is experiencing or will experience fraud. It also means you shouldn't take it personally or be surprised if fraudsters attack your company.

How has fraud become so pervasive? A few years back fraud was mastered by a limited number of hackers, but today fraud has become a widespread phenomenon managed by professional criminals across the globe who have only one goal in mind: target the most vulnerable. Moreover, many criminals have specialized in mobile fraud, as mobile payments

are believed to surpass credits cards and cash payments by 2021 . Meaning mobile phones will become a breeding ground for fraudsters to apply their mischievous tricks.

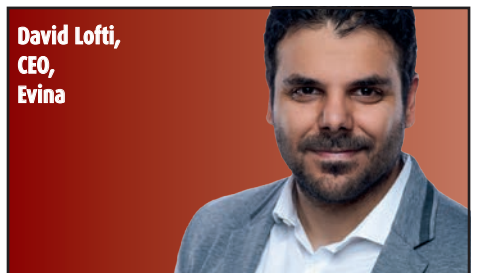
Africa's mobile payments: nectar for fraudsters

Fraudsters are more and more interested in targeting the African continent. Africa is first and foremost an opportunity in demographic terms with its 1.2 billion people in 2025, mainly young people under 20 years of age. According to GSMA, there were 866 million mobile money accounts in 2018 and 110 million new mobile money accounts are expected in the next five years.

Africa has great potential in mobile payment. The growth of internet penetration rates and the sustained fall in smartphone prices have had a

positive impact on the breakthrough of fintech in Africa these past few years. Telcos are key players in this arena, to compensate for under-banking and enable e-commerce to compensate for weak distribution networks and logistical problems in the local market. With the world's fastest growth in mobile payment, Africa is both a tremendous opportunity for digital market players, but also a very great risk because this

David Lofti,
CEO,
Evina

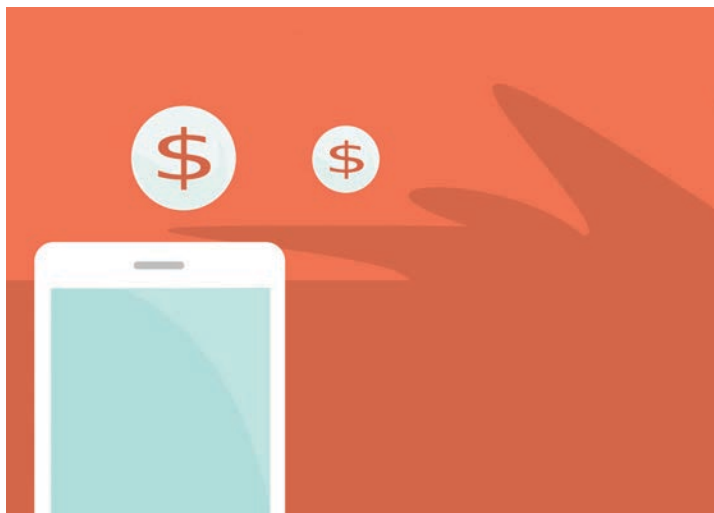


growth attracts all the cybercriminals on the planet. The costs of cybercrime in Africa is said to be over \$4bn yearly, yet this figure is likely to be underestimated as the fear of fraud leads to many missed business opportunities.

Let's take the example of carrier billing, an alternative to the credit card payment method used in many other countries, where users are billed for their purchases directly on their phone bill. This payment method shouldn't be a problem, as mobile payment is fast and practical, however in too many cases, it isn't appropriately secured and the numbers speak clearly. Thanks to multiple fraud sensors placed on the African continent, Evina is able to monitor mobile fraud activity and has identified the countries in which fraud rates are excessively high. Kenya's fraud rate, that is to say the percentage of transaction attempts that are fraudulent, is estimated at 51%, closely followed by South Africa at 30%, Jordan at 21%, Oman at 18%, and Cameroon at 10%. If we take a closer look at South Africa, one of the biggest economies of Africa, as well as the holder of the second-highest fraud rate of the continent, the fraud attempts amounted to 369.5K in September 2020. Of these fraud attempts, the most common fraud type detected in South Africa was clickjacking, as it amounted to 37.00%, closely followed by malicious apps at 35.43%. Clickjacking is when a fraudster intercepts a click, leading the user to believe he has clicked on a specific button when in reality the hacker has guided him to click elsewhere. This is how unconsented mobile subscriptions happen and why one out of every three mobile subscription attempts in South Africa are fraudulent. Unfortunately, clickjacking is a fairly basic fraudulent technique that has been around the past five years, which with the right approach, could easily be avoided. The second trending fraud type, malicious apps, can be a more refined fraud technique, presented in the form of an application that is programmed to go through all the steps of the flow in the name of the end-user, without his consent. This type of fraud can also be fought off with the right anti-fraud tools. These facts and figures show how much wealth is stolen from end-users and the whole mobile payment industry in Africa, and they highlight the urgency to take fraud seriously by implementing real measures and solutions.

Principle of unity in mobile payment

In concrete terms, all key actors of the African mobile payment ecosystem must take action and unite for anti-fraud measures to work. Mobile operators, payment aggregators, merchants and even regulators need to understand that if one is hit by fraud, they all are. Now considering that mobile operators are the most powerful and influential market players, they need to set the example and ensure they are securing their flow and payment process. Not only will they foolproof their



We cannot talk about an eventual secure mobile payment industry in Africa if each of the mentioned market players don't follow through with implementing the correct anti-fraud solution. Because one weak link breaks the entire security chain

payment method and overall brand image, they will also encourage merchants and online aggregators to follow. Securing all the payment flow chain indubitably also protects the most vulnerable of the lot: the end-user. We cannot talk about an eventual secure mobile payment industry in Africa if each of these market players don't follow through with implementing the correct anti-fraud solution. Because one weak link breaks the entire security chain.

A thoroughly secure mobile payment chain isn't achievable without a cybersecurity partner that acts as the binding glue. Security has the power to restore trust in the industry: on the merchant and online aggregator side conversion rates and revenues increase, and on the end-user side the brand image improves and the user will be more likely to take part in secure payment transactions. Market players need to change from an individualistic mindset to a collective one, that looks out for the entire ecosystem. This ensures players get what they bargained for and that Africa does not lose money to avoidable online frauds.

An array of opportunities for mobile payment in Africa

The fight against fraud is a battle that must be fought with the right tools and more importantly with the right allies. At your side should be a cybersecurity partner that has the one and only objective to track and stop fraudsters across the globe. It's also fundamental that your ally be independent, and an expert in what they do. Evina owns a cutting-edge anti-fraud solution relying on the latest technologies.

To be certain that all types of frauds are identified, Evina uses its own global mobile networks to attract fraudsters, reverse-engineer their patterns and reinforce its solution.

We also keep a proactive approach on new fraud patterns and breach exploitation: we run a Cyber Threat Intelligence team involving in-depth analysis of threats from all sources, including the hidden ones in the dark web. Because Evina has sensors all over the world, we are able to gather data from millions of transactions analysed every

day to detect fraud patterns and block fraudulent payments through machine learning. Finally, Evina has the most advanced fraud sensors possible which allows to take a 3D footprint of suspicious behaviour on mobile phones and to not miss any clues of fraudulent attempts.

But the most efficient cybersecurity cannot satisfy itself by only blocking fraud. If the solution is too slow, many legitimate transactions will not happen and the revenue of all players will decrease. That's why Evina goes out of its way to be superfast, by using computing at edge technology, the latest in cloud technology, where data treatment & storage is the closest to the end-user in order to have the best response time and bandwidth.

Evina's solution is starting to be deployed in Africa: 90% of mobile transaction activities in Morocco, Côte d'Ivoire, Cameroon, and Senegal are protected by our technology. At the moment, Evina is in talks with many African telecom operators to expand in other African countries; proof of our efficiency and the trust we have acquired among market players. Worldwide, Evina secures over sixteen million daily transactions across 60 markets by providing mobile carriers, merchants and payment gateways with proprietary Direct Carrier Billing (DCB) protection technology that prevents fraudulent payments. Many of these markets have seen dramatic drops of fraud, even more so when it came to collaborating with local telcos. The latter doesn't need to be a victim but a vessel that holds the key to cleaner traffic and secured mobile payment. Through their collaboration with Evina, Proximus and Bouygues Telecom, two renowned telecom companies in Europe, achieved excellent results by implementing Evina's carrier billing anti-fraud solution: complaint rates decreased, click-flow was restored, and the overall revenue increased. It's time market players realize the power that comes with managing fraud the right way.

Telcos, digital merchants and payment aggregators in Africa need to act, sooner rather than later, if they want to ensure a bright future for the mobile payment market, protect their end-users, increase their revenue and fuel the growth of Africa. ■



Ooredoo Algeria deploys Nokia Cloud Mobile Gateway

Ooredoo Algeria becomes the first telecom operator in north Africa to deploy a virtualised telco application as part of its key partnership with Nokia

Last year, Ooredoo Algeria partnered with Finnish gear-maker Nokia to take the first step towards next generation networks and reinforce its technology leadership in the region with the successful deployment of North Africa's first virtualised Mobile Gateway.

This is a crucial step for the migration of core network elements to the cloud and paves the way for the transformation of the core network to support next generation mobile network technology. The deployment allows Ooredoo Algeria to meet growing data demand in the region and provide new and innovative services like Internet of Things (IoT), in addition to enhanced broadband to its subscribers.

Once deployed, Ooredoo Algeria's subscribers will be able to enjoy high bandwidth-consuming services, delivering the best possible performance and reliability.

Nokia's Cloud Mobile Gateway has been installed and placed into commercial service. Nokia will be deploying more gateways in the near future.

Next Generation Core (NGC) is a service-based architecture that calls for the evolution of the core network. Deployment of the Cloud Mobile Gateway is one of the most important steps in this transformation. It will help Ooredoo Algeria "deliver a seamless network" experience across fixed and wireless access technologies. With the help of the Nokia AirFrame data centre solution, Ooredoo Algeria will be able to deliver telco applications that demand low latency.

"Collaboration with Nokia for this initiative will help us in transforming our networks for next generation mobile broadband services and reinforcing our technology leadership," says Abdullatif Hamad Dafallah, chief executive officer at Ooredoo Algeria. "Nokia's field-proven, end-to-end solution will enable us to enhance packet core

capacity and to start the process of cloudification for telco applications. With this solution, we will be able to support more users, devices and services over wireless and fixed access. We are proud to continue our pioneering technology deployments with the implementation of this first virtualised network application in north Africa. We look forward to working with Nokia for future projects as well."

Pierre Chaume, head of the north and west Africa market unit at Nokia, adds: "The consumption of data is increasing across the world and telcos are grappling with ever-increasing demand for capacity. The deployment of the Cloud Mobile Gateway will help Ooredoo Algeria in the evolution of the core network to enable its customers to enjoy high-bandwidth services, delivered with the highest possible performance and reliability."

Africa definitely has the appetite for 5G. It might just need to be more realistic re timings. ■

Network upgrades during Covid-19: the world's first remote activation of a cellular backhaul network

Vodacom DRC is the second largest MNO in DRC with around 15m customers, with a voice and data service provided over nationwide 2G, 3G and 4G networks. The operator's cellular backhaul needed an overhaul and as Vodacom's largest operational overhead, the network needed to be more efficient with capacity maximised and the flexibility to meet the TTM (Time-To-Market) changes. It also needed to be able to adapt and be upgraded so Vodacom can continue to grow its revenues.

Vodacom turned to its long-term supplier and trusted advisor, Gilat Telecom, for help with re-designing and upgrading its network.

In 2019 after two months of extensive research and analysis, Gilat Telecom presented a thorough plan which included:

- A complete network re-design including RF and satellite

- Procurement of new equipment - and shipping
- Integration with 3rd party vendors including Huawei and ZTE
- Physical end terminals migration
- Disaster recovery
- Rollout and Activation
- The arrival of Covid-19

Unfortunately, Covid hit the DRC before the network upgrade had started. Equipment was stuck in the port and overseas engineers were unable to enter the country.

However, Covid didn't stop Gilat Telecom from improving Vodacom DRC's network

Thanks to the strong relationships of Gilat Telecom's team on the ground, they were able to organise the shipping and customs clearance with small engineering teams assembled across the country in both cities and rural areas. Deployment, integration and activation were all completed remotely.

The network upgrade has been a fantastic success. Vodacom's OPEX has been reduced by 20%. This was achieved by squeezing more

capacity by integrating the latest technology with a new network design.

DRC's network is now more agile and able to meet changes in demand and needs. As a result, customer satisfaction and ARPU's are rising.

Vodacom now has a network that is easier to manage, with the ability to pro-actively monitor and earlier identification of problems.

Gilat Telecom is also working on a similar project in West Africa to reduce OPEX by re-designing a nationwide cellular network - and aligning existing technologies and equipment.

Davor Folkenfolk, head of business development, Gilat Telecom says: "The OPEX of many MNOS across Africa can be reduced by understanding the actual needs, bottlenecks and overheads. The network's re-design becomes much easier with all data now available. Deployments are never easy in the DRC and COVID complicated matters. However, we were determined to see this project through. The results were immediate, and the customer delighted". ■

How mobile money is helping to connect the women of Ghana

Access to financial services can be a critical driver of economic growth and opportunity. In Ghana, mobile money has opened access to financial services for millions of people for the first time, strengthening the payment ecosystem and deepening financial inclusion. Despite its capacity to widen access to financial services, mobile money has not proven to be equally accessible for women in Ghana. According to the World Bank's Global Findex 2017, women in Ghana are 23% less likely than men to have a mobile money account.

Mobile money is particularly relevant for women in Ghana given the prominent role they play in commerce. As both merchants and customers, women dominate the open markets that drive trade and business in many towns and cities across the country.

To encourage the digitisation of merchant payments in these markets — the economic lifeblood of the country — MTN Ghana launched a merchant payment service in January 2017 called MoMo Pay. While MTN Mobile Money could already be used informally by customers to make payments to vendors, MoMo Pay simplifies and streamlines the process and offers reduced customer transaction fees.

There is evidence that MTN MoMo Pay is providing two important and distinct benefits to women in Ghana, particularly those who work as vendors in the open markets. First, MoMo Pay empowers female microentrepreneurs in markets through the digitisation of their transactions, thus deepening their financial inclusion. Second, it drives greater mobile money use and engagement among female customers. This study found that, after adopting MoMo Pay, customers increased both the frequency and value of transactions and became more likely to remain active users, especially women. MoMo Pay addresses barriers to using mobile



Women tend to dominate commerce in Ghana's open markets, making up the majority of both customers and merchants

money when paying market merchants, including cost and lack of convenience, and has commercial benefits for merchants that offer the service and actively promote it to their customers.

Mobile money was first launched in Ghana in 2009 by MTN. Uptake has increased quickly since then and today Ghana is one of the most mature mobile money markets outside East Africa. In 2012 there were only 345,000 active mobile money accounts in Ghana, and by March 2019 this had grown to 12.7 million — a rapid pace of growth. However, some research suggests that access to mobile money in Ghana has not necessarily been equally distributed: according to Findex, in 2017, women were 23 per cent less likely than men to have a mobile money account— although a phone survey of MTN Mobile Money customers conducted for this study found a more equal gender balance.

Women tend to dominate commerce in Ghana's open markets, making up the majority of both customers and merchants. In an economy where 80 per cent of the workforce is employed in the informal sector, these markets play a vital role in driving commerce and economic activity.

Most markets currently operate almost exclusively in cash, while mobile money transactions are typically used for either non-commercial purposes or high-value transactions. This is perhaps unsurpris-

ing given the fast-paced, informal nature of market transactions. In 2016, an estimated 99 per cent of all transactions in Ghana were made in cash.

Women's prominent role in market commerce in Ghana, combined with low mobile money uptake for vendor payments, signalled an opportunity for MTN to promote a new mobile money use case while also driving mobile money use among this underserved group by launching a dedicated merchant payment service — "MoMo Pay".

MoMo Pay is a use case that is most likely to be embraced by those already using MTN Mobile Money. Most existing MoMo Pay users had already registered for Mobile Money before MoMo Pay launched in January 2017. It has therefore not driven significant uptake of MTN Mobile Money by new customers, either male or female.

However, both the qualitative research and transactional data analysis show that, for those who use the service, MoMo Pay can encourage more regular use of MTN Mobile Money and engagement with a wider range of Mobile Money services.

After customers adopted MoMo Pay, several effects were observed that led them to rely more heavily on MTN Mobile Money, maintain a higher balance in their mobile account and spend more using mobile money. Some of the more engaged users of MoMo Pay were also acutely aware of the indirect savings MoMo Pay provided, such as reduced travel times and cost that would otherwise be needed to acquire cash.

Our qualitative research also demonstrated that particularly engaged users, both male and female, began using Mobile Money in other ways, such as connecting their bank account to their Mobile Money account, ordering home deliveries, saving through an MTN Y'ello Save account and using Mobile Money for leisure applications, such as paying for Uber ride sharing, making purchases through e-commerce sites like Jumia and Kikuu, paying bills and buying airtime and accessing loans like the MTN Qwik loan. ■



Lives go wireless for villagers thanks to new base station project

Long treks are over for villagers thanks to a solar-powered base station. Here's how it has transformed their shopping and security and access to money and healthcare

With a population of about 2,000, Duse is a remote village in north-eastern Kenya – 360km from the capital, Nairobi – where most people are livestock farmers and others are involved in small-scale mining and agriculture. When they needed internet access it meant a walk of 20km to the nearest town.

While the cities of Nairobi and Mombasa have good wireless infrastructure, just 22 per cent of Kenya's population – most of whom live in villages – have internet access.

Rural connectivity for small populations spread over a wide area is expensive and takes a long time

to build, reports the GSMA (GSM Association).

In partnership with Safaricom, Huawei developed a mobile base station called RuralStar, specifically designed to provide 2G voice, SMS and mobile money services, and 3G broadband data services. It has also been used in Ghana by MTN.

Connectivity to the main network is provided via a relay transmission from a nearby 4G base station, without using cabling or physical connectivity: this is cheaper to install and more power-efficient to run. The smaller coverage area and lower running costs mean that the base station can be powered by solar energy, with a battery back-up

for night-time – which saves on the set-up and running costs of a diesel-powered generator.

This solution combines Relay Remote Node (RRN) wireless backhaul, a simple pole tower and a green solar energy. It also supports multiple RATs, multiple frequency bands, and multi-level cascading.

RuralStar is designed to provide communications services only to the immediate surroundings of the village, so the antenna mast is smaller and cheaper than usual. Connectivity to the main network is provided via wireless a nearby 4G base station.

Within two months more than 550 people

had connected for the first time. Now, people can now call for ambulance services, which was previously impossible. A nurse who works at the local dispensary can now access online health information to help treat her patients. Previously she had to travel for 20 kilometres to the nearest phone to place orders for new medicines. Now she can do this whenever supplies run low and correct stock levels can be maintained avoiding both wastage and shortages. Health reports can be emailed instead of hand delivered to the authorities 40km away in Garba Tula town. Previously the nurse went from door to door to inform people whenever food relief arrived. Now this can be done by phone.

Villagers reported security as a serious problem but now this has improved because incidents such as cattle rustling can now be reported quickly and the Kenya Police Reserve and local administration police can mobilise faster.

They also now have access to online information, can monitor events and submit reports more quickly.

In addition, Kenya's popular mobile money service, Safaricom's M-PESA application, became accessible for the first time, and an M-PESA store is now in the village. Villagers and shopkeepers use their phones to save and store money, to trade goods, re-stock their stores and to sell their products securely and with convenience.

One man reported that, before the service began, to withdraw 1,000 Kenya shillings a return motorcycle ride would cost the same as the withdrawal, leaving him with nothing.

The local store was able to expand and a number of new jobs have been created. For many workers in Duse whose families live elsewhere, they can now communicate more regularly and send money to distant loved ones. With the help of the local leaders, several young people in Duse have also been able to apply online for jobs, scholarships and college placements that would have been impossible before.

It has also resulted in improved education.

The Duse primary school has 320 students and eight teachers. According to the head teacher, attendance has improved because of the improved security situation within the village. Teachers with smartphones have been able to access information online and show videos and other content to students to aid in their teaching, as well as staying up to date with government advice on education.

GSMA reports that, while other challenges associated with the digital divide remains, such as improving basic knowledge and skills to access mobile services, RuralStar and Safaricom have brought a real improvement to Duse villagers' lives within just a few months. Recognising the need to help people get more use out of their mobile devices and the internet, training is being provided to the community so they can access more services and information.

It says that Huawei's RuralStar2.0 was specifically designed to provide 2G voice, SMS and mobile money services; and 3G broadband data services.

With low power consumption, new battery technology, easy installation and innovations in both technology and tower design, RuralStar shortens the return on investment for operators to less than five years and promotes new rural network construction in emerging markets.

It had been installed in a number of other countries, including Thailand, Ghana, Indonesia, Nigeria, and Mexico.

GSMA says the RuralStar self-contained cell-site design makes it possible to extend cellular coverage economically to even very small communities with minimal site preparation or infrastructure requirements.

It cites these advantages: easily deployed wireless backhaul based on LTE self-backhaul rather than satellite or microwave, that significantly reduces transmission costs; automatic antenna alignment, further reducing civil work costs; the option to utilise existing infrastructure such as electricity poles or other utility poles; poles can be



Huawei's RuralStar2.0 was specifically designed to provide 2G voice, SMS and mobile money services; and 3G broadband data services

as short as 12m instead of a 30-50m tower.

In addition there is a full coverage, energy-efficient solar option for where no existing power infrastructure currently exists; the low power-draw BBU and RRU are the most efficient in the industry; total power consumption at around 200W~220W makes solar power a viable option; and savings in operating expenditure compared with diesel fuel costs and maintenance; robust materials to withstand a wide temperature range; new battery technology which allows lithium and lead-acid batteries to work together, extending battery life-span from two to five years; anti-theft fencing and anti-climb wire to prevent damage or theft (batteries can be underground to prevent theft). ■

Big project delivers low-cost broadband to rural areas

Masoro, in the northern province of Rulindo in Rwanda, has a population of 21,000. And it was among the first in a big project to deliver low-cost broadband services to schools, healthcare facilities and community centres in rural areas of Rwanda and Tanzania.

The project was carried out by CableFree; Wireless Excellence is the designer and manufacturer of CableFree products.

It reports that it installed high gain 4G CPE devices high up on poles to receive strong signals from the nearest cell tower even when mobile devices cannot connect at ground level. CableFree says the high gain and latest-generation chipsets in the CPEs provide strong signals with stable throughput and high capacity, compared to the inherently low gain of mobile handsets.

Inside the community centre at Masoro, where no Cat5 cabling was assumed, Mesh Wi-Fi was installed as the best method to connect rooms and buildings at each location.

The company says a further request was to reduce the daily data usage and hence cost to the operator. At no extra cost CableFree implemented local file storage/server capability to the Wi-Fi Mesh radios by adding a USB thumb drive to most to allow content to be cached locally.



At no extra cost CableFree implemented local file storage/server capability to the Wi-Fi Mesh radios by adding a USB thumb drive to most to allow content to be cached locally

For example, teachers in each of the schools can download large files, presentations and multimedia content once, and have a cached local copy for the students to access as needed.

CableFree says that, working with local partners, it has delivered low cost, reliable and fast internet to aid education, healthcare provision and community services in regions where there was previously no broadband and cell coverage almost non-existent. ■

ZTE 5G router makes debut in Africa

In a first for the company, ZTE Corporation has introduced its first 5G wireless router in South Africa, in collaboration with MTN Group which began 5G services earlier this year.

ZTE, a Chinese company, says 5G Indoor CPE MC801A supports Wi-Fi 6, allowing multiple users to access the network at the same time.

It says that the use of its "Smart ANT" algorithm allows the unit independently select the best signals. It supports both NSA and SA 5G networks and is compatible with mainstream 4G and 5G standards and won a design award last year.

The MC801A is configurable from any web browser or an app. It uses the Qualcomm Snapdragon X55 chipset, has connections for two external antennas and is supplied with an ethernet cable and power adaptor. It measures 182x124x70mm and weighs 632g.

ZTE says that the new unit offers high speed – up to 10 times faster than 4G and fibre networks – low latency, wide coverage and accessibility. In addition, it says it accelerates the application of 5G technologies in the fields of the Internet of Vehicles, smart grid, intelligent manufacturing, and the Internet of Things (IoT).

In 5G services in South Africa, MTN is in competition with Vodacom and Rain. zte.com

TETRA radio does much more

Citing the increasing use of 4G by the emergency services, Motorola has introduced the MXP600 TETRA radio.

It features smartphone pairing via an embedded NFC chip alongside Bluetooth 5.0. And it includes a broadband app called M-RadioControl with which users can access talk groups.

The chip and the app, says the company, means the wireless connection between radio, smartphone and other devices remains secure.

The company says that instead of handling multiple devices simultaneously, users can activate other devices through the one which feels most intuitive in that situation.

If, for example, a police officer pressed the emergency button,

the radio would in future be able to automatically activate the body worn camera, without them needing to start the process separately.

The MXP600 uses microphone technology to suppress background noise and has a claimed maximum loudness around four times greater than a typical smartphone. When operating in windy conditions, the device automatically uses the loudspeaker as an additional microphone for optimal wind noise mitigation. When multiple radios are in close proximity, the MXP600 automatically eliminates acoustic feedback to allow for effective communication.

Motorola says over-the-air programming means radios can be updated in minutes, avoiding

the time, logistics and costs involved with traditional radio programming. It is said to be fast, secure and convenient to maximise the productivity of frontline workers and help to keep them in the field.

The MXP600 measures 120x54x25/30mm (depending on battery) and weighs 200g; 212g with 60mm antenna. It supports GPS and has a 2.4in display. motorolasolutions.com



Stay connected with or without wires

Designed for locations where wired connections are absent or limited, a new router from Netgear includes a 4G cellular modem.

It has combined its Orbi Tri-band Mesh Wi-Fi system with a 4G LTE Advanced cellular connection.

The Orbi 4G LTE Advanced Wi-Fi Router (LBR20) is said to be the industry's first tri-band mesh system with LTE-A Cat 18 modem technology.



Additionally, Netgear says the Orbi router can be used with a wired service to provide a fail over to ensure internet connectivity is consistent and uninterrupted.

With 1.2Gbps over 4G LTE Advanced and the high-performance tri-band AC2200 Wi-Fi, the router is said to be able to provide an uninterrupted network connection for small businesses.

Its integrated Cat 18 cellular modem will work with SIMs from all major 4G LTE Advanced cellular networks. Its high-gain internal antennas offer up to a claimed 2,000 sq. ft. of Wi-

Fi coverage and can be extended by pairing with any Orbi Tri-band Wi-Fi 5 (802.11ac) satellite to create a mesh Wi-Fi system.

Netgear says the router has a patented dedicated wireless backhaul between the router and satellites to provide a robust uninterrupted data connection to extend the reach by an additional 2,000 sq. feet for each satellite added. With a single Wi-Fi network name (SSID), uninterrupted seamless connectivity is supported while roaming.

It can also be paired with additional satellites such as Orbi Voice or Orbi Outdoor to gain greater coverage and additional features, like smart speakers. netgear.com

Spot Gen4 pocket-sized device will call for help

Designed for lone workers and adventurers, Spot Gen4 is a device about the size of a pack of cards which uses GPS to locate and track users.

It is the latest model from a subsidiary of the operator of low-earth satellites, Globalstar. Features include requesting help, allowing contacts to track the user's progress, single-press emergency SOS alerts and pre-programmed messages. Up to 1,250 messages can be sent on a single set of four AAA lithium batteries.

Users can view or share locations

through live and historical maps. Maps can be displayed on a PC in light or dark modes, by satellite, open street map or terrain.

The new model has a cover which snaps over the help and SOS buttons and an upgraded IP68 rating.

As long as Spot Gen4 is on and moving, it sends tracks at a chosen rate; alerts can be set to auto-send to others when movement is detected or upon entry/exit of specific programmed areas.

Alerts are user-set and sys-

tem-generated emergency or custom messages, such as new movement, no movement, check in and help.

As with others in the range, when the SOS button is pressed, an alert along with the user's co-ordinates are transmitted to the GEOS International Emergency

Response Coordination Centre (IERCC) which in turn engages with local first responders. Alternatively, it can alert the user's company.

Spot Gen4 is sold for a one-off price, plus a monthly or annual subscription. It measures 8.83x6.76x2.36mm and weighs 142g with batteries. findmespot.com



Septentrio 'credit cards' track from the sky

Three credit-card sized devices to track machinery and vehicles through satellite positioning have been introduced by Septentrio.

Called the AsteRx-m3 range, they are the latest in the company's GPS/GNSS OEM products and are said to have the lowest power consumption on the market, allowing longer operation times.

And it says their new easy-to-integrate design ensures short set-up

Septentrio says that all three of them deliver centimetre-level accuracy, availability and reliability.

The AsteRx-m3 Pro is a rover receiver, for fitment on moving objects, which uses tracking signals

from all available GNSS constellations on three frequencies. Said to be simple and powerful, it operates both in single and dual antenna modes.

The AsteRx-m3 ProBase is designed to operate as a reference station for RTK and PPP-RTK networks. It can also be used as a base station or for network densification.

And the AsteRx-m3 Pro+ (pictured) is, says Septentrio, a full-featured OEM receiver board flexible enough to fit into any application and to be used either as a rover or a base station in a



single or a dual antenna mode. GNSS, or Global Navigation Satellite System, includes the American GPS, European Galileo, Russian Glonass, Chinese BeiDou, Japan's QZSS and India's NavIC. These satellite constellations broadcast positioning information to receivers which use it to calculate their absolute position. septentrio.com

Look out for...

NGMN unveils plans for 6G

The Next Generation Mobile Networks (NGMN) board has launched a 6G project, while continuing its 5G efforts, it said.

NGMN published the first 5G White Paper in 2015, which helped pave the way for standardising 5G and its commercialisation. A second 5G White Paper (5GWP2) followed in July 2020

The new 6G Vision and Drivers project is designed to provide early and timely direction for global activities around the next generation. NGMN will facilitate an information exchange within its internal partnership and with relevant external stakeholders.

With its new "6G Vision and Drivers" project, NGMN intends to provide early and timely direction for global 6G activities, which will develop the mobile network technology for operation in the future. In this context, NGMN will also facilitate an information exchange within its internal partnership and relevant external stakeholders. NGMN said it is "very excited" to be working on this future vision project and to set the footprint for generations to come.

"As we continue to implement and further develop 5G to maximize the benefit of its potential, our goal as NGMN is to remain at the forefront of next generation mobile networks," said

Arash Ashouriha, SVP group technology innovation, Deutsche Telekom and chairman of the board of NGMN said. "It is therefore essential that we start anticipating the future societal needs and elaborate the drivers for mobile communications in the future."

Anita Döhler, CEO of NGMN added: "The NGMN Board is committed to further drive the implementation of 5G. At the same time, we are looking at the future with our new work on 6G. Our organisation with its network operators, vendors and research associations has played such an important role for the requirements setting of 4G and 5G, and we will continue to provide guidance also for the next generation mobile networks beyond 5G. Interested parties are welcome to contribute to the "NGMN 6G Vision and Drivers" activity."



Extending Wi-Fi to outdoors

Made to extend Wi-Fi outdoors, the model CPE710

from TP-Link has a 23dBi high-gain directional Cassegrain antenna and dedicated metal reflector.

It offers 802.11ac for up to 867Mbps on 5GHz wireless data rate and is, says the company, ideal for long-distance applications.

It is said to have excellent beam

directivity, improved latency and noise cancellation with innovative snap-lock parts to make for fast assembly and a sturdy structural design keeps CPE710 stable even in strong winds

And durable IP65 weatherproof enclosure along with 15kV ESD and 6kV lightning protection ensures all-weather suitability

The CPE710 includes Pharos Control centralized management software, helping users easily manage all devices in their network

from a single PC. Its functions include device discovery, status monitoring, firmware upgrading and network maintenance. An intuitive web-based interface, PharOS, provides an alternative management method and allows professionals to access more detailed configurations

TP-Link says 256 QAM and an 80 MHz bandwidth boosts overall speeds up to 867 Mbps, three times faster than 802.11n Wi-Fi. tp-link.com

Get together when you're apart

Two companies have combined products to create all-in-one wireless video conferencing.

Barco's ClickShare Conference, its wireless conferencing product, has been combined with Logitech's Video Collaboration products for conference sizes ranging from huddle rooms to large meeting areas.

ClickShare Conference, the latest in Barco's range, features what the company calls BYOM (Bring Your Own Meeting) because attendees can join any type of video conference from their own devices.

It is said to work seamlessly with video conferencing software, cameras, laptops and makes remote meetings

as intuitive as face-to-face events.

The Logitech Room Solutions for Barco ClickShare Conference are all-in-one packages which pair ClickShare Conference with Logitech MeetUp or Rally conference cameras and contain all the components needed for video conferencing. There are three variants, depending on the size of the meeting.

Barco says that by integrating the functionality of the camera and audio in the meeting room, ClickShare Conference meets the market need for agnostic unified communication and collaboration.

It says that, since launch in 2012, ClickShare has become the industry's leading wireless presentation

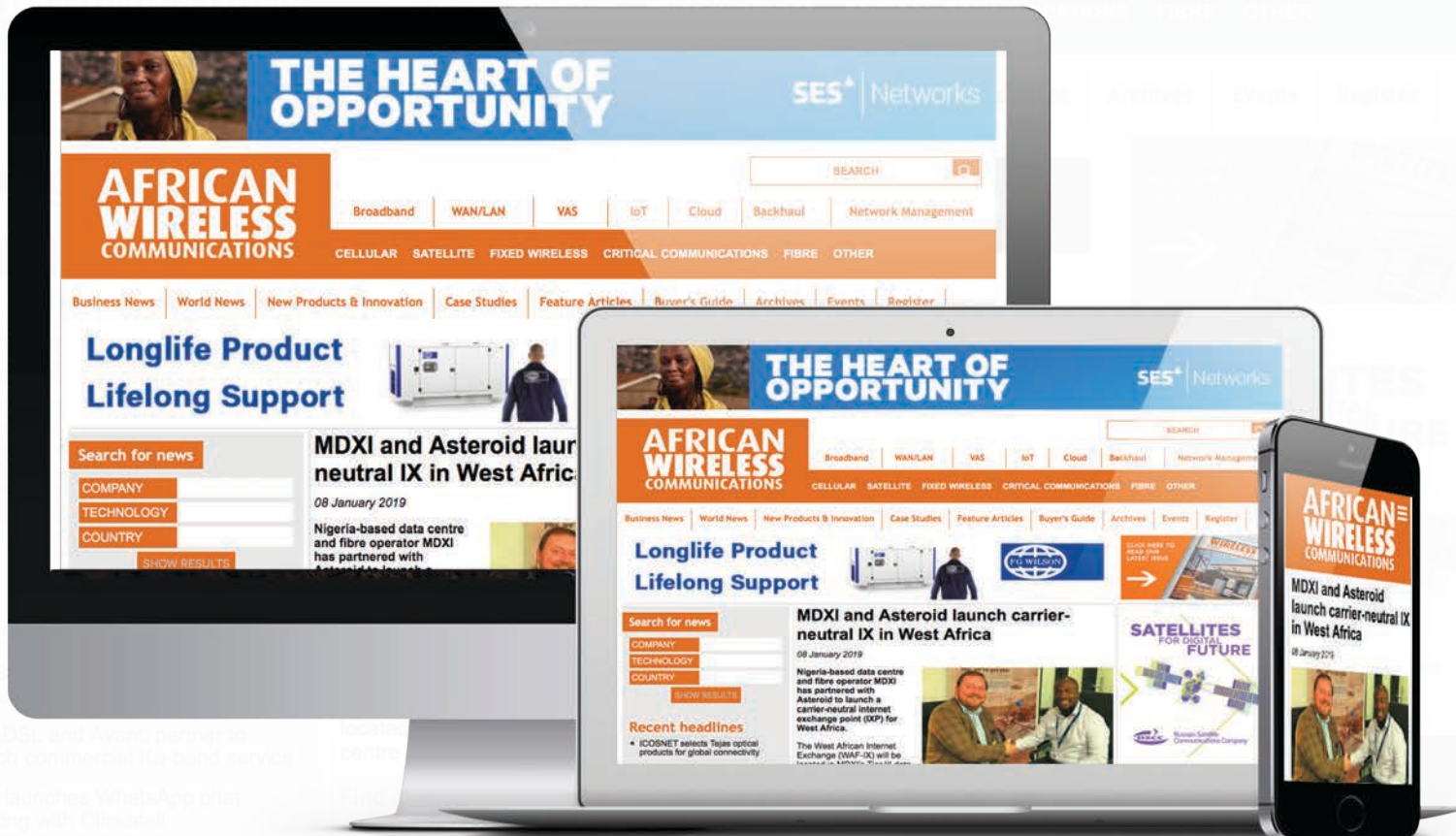
product, having equipped more than 700,000 meeting rooms worldwide at the end of 2019.

Barco says that by integrating the functionality of the camera and audio in the meeting room, ClickShare Conference meets the market need for agnostic unified communication and collaboration.

And Logitech said that, together, the companies were satisfying an important need for companies to simply start a high-quality video call with their own devices and also to use any cloud video service. barco.com



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CK Hutchison and Ooredoo talk Indonesia merger

 CK Hutchison and Qatar-based Ooredoo QPSC have entered talks to merge their Indonesian wireless phone businesses in a bid to fight growing competition in the country.

A deal would require the merger of Jakarta-listed PT Indosat, in which Ooredoo owns about 65% and CK Hutchison's PT Hutchison 3 Indonesia unit, the companies said in a statement.

The negotiations will be exclusive

until April 30, as both firms try to compete against state-owned PT Telkom Indonesia, the nation's largest operator and Axiata Group Bhd.'s local arm PT XL Axiata, in southeast Asia's biggest market by subscribers.

"Ooredoo is in the early stages of assessing the merits of such a potential transaction," the firm said in a statement. "As part of our corporate strategy, we regularly review our strategic priorities and market position across all of our

operations, and their contribution to the Ooredoo Group,"

Ooredoo which operates across the Middle East, north Africa and southeast Asia. CK Hutchison, a conglomerate founded by Hong Kong's richest man Li Ka-shing, said in a separate statement the potential transaction is subject to due diligence, agreement on terms, signing of definitive agreements and obtaining all required corporate and regulatory approvals.

Etisalat launches 4G LTE service

 Etisalat Afghanistan, a subsidiary of Abu Dhabi's Etisalat Group, has launched 4G LTE services in the country's northern Balkh province.

The introduction of the fourth-generation technology means customers in Mazar-i-Sharif can now enjoy up to 10 times high-speed internet at the same price as their 3G plans.

In a statement, the operator said the launch would also enable customers to choose from a wide range of 4G LTE data plans.

"We are pleased to witness the launch of our 4G network in the beautiful city of Mazar-i-Sharif," said outgoing Etisalat Afghanistan CEO, Matthew Willsher. "With Etisalat 4G, businesses and individuals will benefit from faster and more reliable internet."

Etisalat said it plans to expand its coverage after the 4G LTE launch in Mazar-i-Sharif and has published a list available on its website and Facebook page to show the exact locations where its 4G LTE service is available.

Etisalat launched Afghanistan's first 3G service and – to date – has been offering the most affordable voice and data plans in the country.

The 4G LTE launch ceremony was held at Etisalat's Mazar-i-Sharif branch December 28.

Orange shifts fixed fibre assets

 French operator Orange has agreed to sell part of its fixed fibre assets in the country to a consortium of three investors for about €1.3bn. The firm said in a statement that it agreed to sell 50% of Orange Concessions, a vehicle that will include some of its French fibre assets, to Banque des Territoires, part of France's state-owned bank Caisse des Dépôts, insurer CNP Assurances and EDF Invest consortium.

This is the first time that the Paris-headquartered company has announced a sale of part of its prized broadband network in France.

The move comes as the telecoms industry must invest to keep on deploying upgraded broadband networks in Europe as well as a costly new mobile Internet technology, or 5G.

This deal values Orange Concessions at €2.7bn, the company said. The entity covers circa 4.5 million fibre-to-the-home (FTTH) plugs in rural France.

Orange said it will update markets about its plans for its European mobile assets when it reports full-year results on February 18. The group is following similar moves by other European firms that are looking to sell

mobile networks as infrastructure valuations surge on interest from investors such as U.S. private equity firm KKR and Spain's Cellnex.

Stéphane Richard, chief executive officer and chairman at Orange said the "achieved valuation reveals the value of Orange's investments in fibre as well as the relevance of such a strategic move".

Orange's decision to sell comes as the company prepares to outline its strategy for its mobile towers, worth an estimated €10bn, following long-term rumours about the future of the assets.

CVC Capital acquires Myanmar's Irrawady Green Towers

 Luxembourg-based private equity firm CVC Capital Partners has agreed to buy Myanmar's largest telecom tower company, Irrawady Green Towers, in a deal reportedly valued at about US\$700m.

The purchase marks the global buyout firm's first venture into the south-east Asian country and sees it absorb 4,000 towers across Myanmar.

According to reports, CVC was given exclusivity after it was shortlisted from potential buyers, including regional telecoms groups and other companies.

Potential bidders – yet unnamed suitors – hired local consultants and technical advisers to conduct site visits and due diligence during the sale process that took just over

a year to be completed.

Law firms Freshfields Bruckhaus Deringer and SCM Legal acted as legal counsel to the selling shareholders.

"This landmark transaction was the largest mergers and acquisitions deal in Myanmar in 2020 and another example of the attraction of the Asian digital infrastructure sector, including data centre and fibre optic asset portfolios, for private equity investment" said Freshfields major projects partner Don Stokes in a statement. However, the recent military coup in Myanmar could thwart any deal.

Irrawaddy serves all major mobile network operators in Myanmar, including Norwegian telecom giant Telenor, Qatar-based Ooredoo and local firm Mytel.



The purchase marks the global buyout firm's first venture into the southeast Asian country and sees it absorb 4,000 towers across Myanmar

Vietnam slaps ban on 2G, 3G smartphones

 Vietnam said it will ban the importing and manufacturing of 2G and 3G phones, as part of move to promote widespread adoption of smartphones to support digital transformation in the nation.

The southeast Asian country's Ministry of Information and Communications said the new rule will come in effect from July 1. However, phones that do match up to the spec requirement but were already in the country before the deadline can still be sold.

Furthermore, the government said the move is considered a step towards plans to switch off 2G networks by Q1 2022 and its "programme of universalisation of smartphones".

Hoang Minh Cuong, Ministry of Information and Communications director of the Telecommunications Department, said production of phones with 2G technology had "decreased significantly" with units falling 6-7 million to 12 million, between the end of Q4 2019 to Q3 2020. Hoang tipped the remaining 12 million phones will be "wiped out" by advanced models by Q1 2022.

The country aims to have all citizens to own smartphones by 2025 by providing smartphones retailing up to US\$50 under its "Made in Vietnam" nationwide digital transformation programme, which was backed by operators and smartphone vendors such as Vingroup.

Vietnam announced previously to have 5G become the universal standard by 2023-2025, with operators already running pilots in preparations for a broad commercial rollout.

Meanwhile, Intel has invested \$475 million in its Vietnamese assembly and test facility, pushing the company's total investment in the local site to \$1.5 billion. The fund injection went towards "enhancing" production of Intel's 5G product line, Core processors integrated with its hybrid technology, and 10th Gen Core chips.

Located in Saigon Hi-Tech Park, Ho Chi Minh City, the facility is Intel's largest assembly and test sites worldwide.

Starlink launches satellite Internet in rural UK

 Elon Musk's Starlink broadband satellite network has secured a licence to install user terminals in Britain, the UK's telecom regulator Ofcom has confirmed.

The terminals consist of a Wi-Fi router and a small satellite dish which the company's official installation guidelines call "Dishy McFlatFace".

Starlink said it will focus on rural areas currently deprived of fibre broadband, where in the UK it will compete with government-backed satellite service OneWeb, which was rescued after filing for bankruptcy in March 2020.

Costs will run to £439 for the equipment and £89 a month for the service, with the UK trial's first invitation emails going out last week.

Musk's Space Exploration Technologies Corp (more snappily known as SpaceX) has also set up a UK company, Starlink Internet Services. SpaceX will undertake an initial public offering once its revenue growth becomes "reasonably predictable," Musk said in December.

Rural broadband has long been a thorny issue in the UK with much of the union only getting online through the telephone lines.

Approximately 5% of UK homes don't have access to download speeds of at least 30 megabits per second. The slowest street in the

UK (in Surrey, England) recorded an average speed of just 0.12 Mbit/s.

Despite being in the world's top six economies, the UK ranks 47th in the world for average download speeds.

Starlink has also received the green light from regulators in the US, Greece, Germany and Australia.



Starlink said it will focus on rural areas currently deprived of fibre broadband, where in the UK it will compete with government-backed satellite service OneWeb, which was rescued after filing for bankruptcy in March 2020

Deutsche Telecom looking to sell T-Mobile Netherlands for over €5bn

 Deutsche Telekom (DT) is looking to sell its Dutch subsidiary for €5-6 billion, a Dutch newspaper has reported.

According to Het Financieele Dagblad, T-Mobile Netherlands could soon find itself up for sale again and that DT is looking to offload the


company to private equity investors, seeking to raise €5-6 billion.

In 2015, it was also reported that the German operator was considering a sale, in part to reduce debt and raise funds to help purchase spectrum for T-Mobile US. Since then the Dutch division has grown

in size, merging with the Dutch operations of Sweden's Tele2, but rumours of selling the unit have long been circulating, with private equity firm EQT a company cited as a potential buyer November 2019.

Rivals KPN and Vodafone Ziggo will not enter the bidding.

India: Airtel becomes first telecom company to operate 5G network

 Bharti Airtel has become India's first telecom operator to successfully demonstrate live fifth-generation (5G) service over a commercial network in Hyderabad city.

It operated the 5G network over its existing liberalised spectrum in the 1,800 MHz band through the NSA (non-standalone) network technology.

Using dynamic spectrum sharing, Airtel operated 5G and 4G concurrently within the same spectrum block. The new technology will be made available to customers across the country when the adequate spectrum is available and required government approvals have been received.


Managing director and CEO of Airtel, Gopal Vittal said that every

investment the company has made and is making is future-proofed.

He added that India has the potential to become a global hub for 5G innovation and to make that happen, they need the ecosystem to come together including applications, devices and network innovation.

Airtel has operations in 18 countries across Asia and Africa.

Deutsche Telekom and O2 to share network

 Deutsche Telekom and Telefónica/O2 have agreed to share mobile networks in a bid to close the coverage gap in Germany.

The pair said they aim to overcome several hundred grey spots in 4G network coverage for their customers before the end of 2021. They will share active network technology at the sites.

However, unlike previous projects,

such as site sharing or the agreement to close white spots, no second separate wireless technology or additional antennas need to be installed.


“Joint projects like this are becoming increasingly important to network build-out – in both broadband and mobile communication,” said Srinii Gopalan, managing director of Telekom Deutschland.

Telefónica Deutschland/O2 CEO

Markus Haas, added: “German consumers and business are demanding rapid progress in mobile network coverage. Co-usage of sites is an important step in this direction and a positive signal to Germany’s mobile communications customers.”

In Autumn 2019, Deutsche Telekom, Telefónica/O2 and Vodafone signed an agreement covering under 6,000 new sites.

PTCL gets 25-year licence renewal

 State operator Pakistan Telecommunication

Company Limited (PTCL) has had its licence renewed by the government for a further 25 years.

The terms of the licence renewal state that PTCL must adhere to “enhanced quality of service (QoS) parameters” and will be obliged to deliver a 5% year-on-year rise in Next Generation Access Network (NGAN) connections.

The new validity period began at the start of the year and the Pakistan Telecommunication Authority (PTA) confirmed that the integrated licence is technology-neutral and permits the company to deliver all telecom services nationwide, except mobile services.

PTCL must pay 2% of its annual gross revenues into Pakistan’s Universal Service Fund (USF) and Research and Development Fund.

The operator recently appointed Matthew Willsher as the new chief executive officer (CEO). Previously CEO of Etisalat Afghanistan, Willsher succeeds Rashid Naseer Khan, who was appointed as the CEO of PTCL on February 12, 2019.

Thai operators TOT and CAT Telecom complete long-delayed merger

 Thailand’s state-owned operators TOT and CAT Telecom completed a long-delayed merger to become National Telecom, which was made necessary by growing private-sector competition.

The new company will consolidate overlapping administrative staff, initially in the financial, human resources and legal departments. National Telecom said this approach will streamline operations and reduce costs, with no staff cuts planned.

Somsak Khaosuwarn, the former acting chairman of TOT, initially will serve as acting CEO of the new company, which plans to boost earnings in the short term by capturing demand from public-sector agencies to introduce 5G networks.

TOT and CAT long-enjoyed and controlled monopolies over domestic and international telephone services, respectively. However, that changed post 2000 when Thailand opened the telecom market for competition

from privately-owned businesses.

That resulted in loss of earnings at both companies, while their combined share of the kingdom’s mobile communications market is around 2% to 3%.

There was talk of a merger a decade or so before new entrants were allowed in, but the deal was postponed repeatedly.

The completion was scheduled for July last year, but was stalled by the arrival of Covid-19.

Tawazun and Yahsat to develop UAE satcom solutions

 Tawazun Economic Council has penned a memorandum of understanding (MoU) with the UAE’s flagship satellite services operator, Yahsat to forge a new company that will develop critical in-country capabilities in relation to the manufacturing of advanced satcom solutions within the Middle Eastern country.

The new company will also focus on building intellectual property locally for increased national security and advanced technology development. Under the terms of the deal, the new company will develop technologies and produce products around three main streams: aeronautical satcom technologies, satellite modem technologies and enablement of other satcom products and technologies.

Yahsat is charged with ensuring



The new company will also focus on building intellectual property locally for increased national security and advanced technology development

that the new company’s products meet the requirements of its government customers with a differentiated and targeted product strategy, enabling the UAE government and other local and international users to address key technology development. It will source key product development capabilities from leading solution providers and man-

ufacturers to lay the foundation for local production lines and integrated value chain management, it added.

The MoU was signed by Eisa Al Shamsi, deputy general manager of Yahsat government solutions, and Matar Al Romaithi, chief economic development Officer for Tawazun, in the presence of Yahsat chairman Musabbah Al Kaabi and CEO Masood

M. Sharif Mahmood in addition to Tawazun CEO Tareq Al Hosani and other officials. Al Kaabi said: “Yahsat and Tawazun are playing a key role in accelerating the advancement of the satellite communications sector in the UAE, this collaboration is further testament to our country’s position as a global pioneer across a number of high growth sectors.”

“These partnerships are vital to the diversification of the UAE’s economy, and we are committed to supporting our UAE Investments’ portfolio companies as they contribute to our nation’s sustainable growth,” he added.

Al Hosani said: “At Tawazun, we seek to reaffirm Abu Dhabi’s position as a leading regional hub of strategic technologies and manufacturing. We are excited about the long-term prospects of our collaboration with Yahsat.”

Telefonica to sell Telxius Telecom to American Tower in €7.7bn deal

 Spanish telecom giant Telefónica agreed to sell its towers in Europe and Latin America to American Tower in a €7.7bn cash deal.

Under the terms of the deal, Telefónica subsidiary, Telxius Telecom, will relinquish over around 30,722 telecommunication towers. Telxius also has an extensive submarine cable portfolio.

The Spanish firm said that once the transaction is complete, the group's net financial debt will be reduced by approximately €4.6bn and the leverage ratio by around 0.3 times.

"This operation is part of the Telefónica Group's strategy, which includes, among other objectives, an active portfolio management policy of its businesses and assets, based on value creation and at the same time, accelerating the organic reduction of debt," it said.

American Tower said it expects the assets to generate around US\$775m in property revenue, approximately US\$410m in gross margin, and around US\$390m in adjusted earnings before interest, tax, depreciation and amortisation at current foreign exchange rates, in their first full year in its portfolio, pro forma for contributions from the committed future build-to-suits.




The Spanish firm said that once the transaction is complete, the group's net financial debt will be reduced by approximately €4.6bn and the leverage ratio by around 0.3 times

"This transaction is transformational for our European business and will establish American Tower as one of the largest independent communications infrastructure providers in Europe," said American Tower's chief executive officer, Tom Bartlett. "It is also complementary for our Latin American portfolio and positions us to drive strong long-term organic growth across both regions while augmenting our new build programs and enhancing our relationships with key tenants.

We are excited to broaden our partnership with Telefónica by acquiring a high-quality, well-located portfolio of sites that will further diversify our global footprint and enhance our ability to help provide broadband connectivity for billions of people."

Telefónica has a global reach, with a raft of greece subsidiaries including Movistar, O2 Vivo and Distrito Telefónica.

Indigo Telecom's 100 new jobs

 Telecoms support services group Indigo Telecom will create 100 jobs in Limerick over the next three years, the company said.

The new roles at its international fibre centre of excellence will come through its Irish subsidiary 4site. Among the new jobs are fibre planners, GIS engineers, design engineers, telecoms surveyors, project managers and business support roles in accounts, sales and operations. The company's Irish headquarters are located in Raheen Business Park.

This new recruitment drive is to support the group's planned international expansion as it seeks to capitalise on the growing market opportunities around fibre to the home (FTTH), the implementation of wireless and 5G technologies and telco network services.

"We looked at various locations to expand our existing fibre centre of excellence, as we see unprecedented demand for our services in new markets such as Germany and the US," said Ian Duggan, chief executive of 4site. "We decided on the midwest of Ireland due to the very best local talent that we can continue to build on and develop further. This is a great vote of confidence from Indigo Telecom Group and is testament to the brilliant local talent and the work we already do here in Limerick."

Indigo Telecom Group currently employs more than 400 people in 10 offices located in the UK, Ireland, France, Germany and the Netherlands. Last year the group added 140 jobs, about 90 of which were in Ireland.

Tánaiste Leo Varadkar welcomed the news of the new jobs and said it underlined the company's commitment to the region. "This year more than ever we have relied on our communications networks to keep in touch, and I welcome the expansion of this sector here."

Meanwhile, Ireland is set for another jobs boost after Chinese tech giant Huawei said it will create a further 110 jobs by 2022. It will invest €80m into its research and development department over the next two years. The new jobs will be mainly based in Huawei's Dublin headquarters.

Rajant furthers eastern Europe and CIS ambitions with CompTek deal

 Rajant, the US provider of Kinetic Mesh wireless networks, is expanding further into eastern Europe and the CIS following a strategic distribution agreement with Russian reseller of network and telecommunication equipment, CompTek.

The Moscow-based firm will help support machine-to-machine connectivity and mobility in markets like open-pit mining, underground mining, indoor warehousing, ports, and other

industrial markets, Rajant said.

"Russia has a vast, high tech economy and CompTek is keenly focused on providing their channel partners with value-added solutions within their portfolio to support emerging IIoT networking demands," said Marcin Kusztal, sales director eastern Europe and CIS for Rajant.

Nikita Ivanov, CompTek's head of sales, added: "We believe Rajant is the most valuable solution for clients in different verticals and markets. "Industrial wireless

networks are needed more than ever. As companies try to digitalise most processes to evolve their overall productivity, Rajant solutions are vital for them. We are happy to be partnered with Rajant."

In August 2019, Rajant said it was expanding its global presence to include eastern Europe and the CIS, with its first strategy targeting the mining market in Russia and CIS. Its second approach would look at developed countries such as Germany, Switzerland.

Q&A

Pieter de Villiers co-founder and CEO Clickatell



What was your big career break?

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

Who was your hero growing up?

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

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

A tale I share with many of our new starters is the one where

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

If you could live anywhere, where would it be?

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

What would you do with \$1m?

We are very blessed in that through hard work and growing up in a relatively privileged home in South Africa we have what we need, and aside from securing education for our kids and reducing debt, we would probably put the money into something that will make a difference in the community and country we live in such as SiMODiSA's efforts to

make it easier for businesses to get started in South Africa. Money was never Maria (my wife) or my primary motivator, as we both realized that it does not lead to fulfillment or long-term enduring happiness. SiMODiSA and its partners are working on a 10 year digital skills intervention program that hopes to see the establishment of 100+ digital skill apprenticeship centers around South Africa. This would be a good place to invest the money into.

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

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

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

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

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

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

What's the best technological advancement of your lifetime?

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

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

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

What was the best thing about lockdown?

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

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