- **How has 5G progressed since the pandemic started?**
- **Villagers go wireless thanks to new base station project**
- **How the industry can battle mobile fraud**

Sanjeev Verma, CEO of

squire technologies

Connecting the unconnected, *p16*

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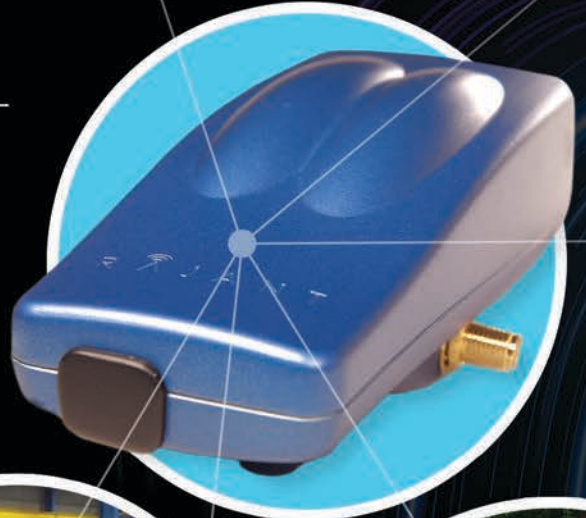Intelligently self-optimizes to **change in real-time, ensuring mission-critical reliability**

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Uganda: Roke and Facebook supply affordable internet access

Roke Telkom, a Ugandan public service provider for voice and data communications services, has partnered with global social networking firm Facebook to launch a new internet service programme.

The new Roke Express Wi-Fi service aims to take high-speed internet connections to millions of Ugandans at a lower cost. Roke said that, according to a Uganda Communications Commission 2019 report, only 23% of a population of more than 44 million Ugandans were internet users.

A Forbes 2020 report also indicated that there was a 70% increase in internet usage due to the Covid-19 pandemic, suggesting that this initiative will help to enable a number of Ugandans to access the internet.

"The Roke Express Wi-Fi is a more scalable service network that will enable us to increase the number of access points to the internet, improve our deployment scale and enhance efficiency to over 600 Rokespots," said Roger Sekaziga, chief executive

officer of Roke Telkom. He added that Roke is now able to offer a more diversified set of services, including promotional offers.

Roke Telkom said the programme will enhance its ability to understand the market and tailor products to better fit customer needs.

Facebook first began testing its Express Wi-Fi service network five-years-ago and has since expanded across many African countries including Tanzania, Kenya and, most recently, Uganda. The programme is intended to offer local entrepreneurs and grass-roots communities affordable internet services.

The potential for Wi-Fi as a way of bringing the internet to the less well off is being explored in a number of African countries. For example, Fiam Wi-Fi, a new Nigerian telecommunications company, which aims to provide affordable internet via public outdoor hotspots to underserved communities, is now rolling out in the city of Lagos.
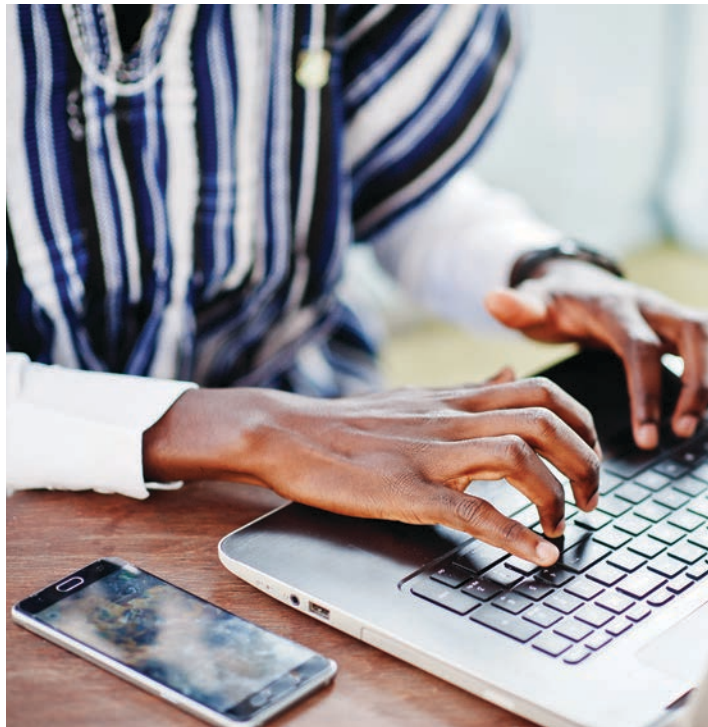
The new Roke Express Wi-Fi service aims to take high-speed internet connections to millions of Ugandans at a lower cost

Benin's ISP Isocel raises €6m for network expansion

ISP Isocel has secured a loan of €6m from French investment bank Bpifrance to expand its fibre optic network to more locations across Benin's economic hub, Cotonou.

First announced in June 2018 and targeted at business and high-end residential customers, the project was expected to be completed in 2020, but has now been extended to 2021.

"Isocel will deploy by the end of 2021, 500km of optical fibre in

Benin through the implementation of the project called Isocel Next Generation Access Network (INGAN)," the company said in a statement. With this project, Isocel is renewing its commitment to offer very high-speed internet in order to meet the increasingly growing demand for user bandwidth."

It added that the project is in line with the government's plan to develop and promote the digital sector in order to establish Benin

as the digital hub of the sub-region.

"The company's goal is to acquire at least 10,000 subscribers over the next three-to-five years in addition to the 500 customers already served through the fibre optic network," it added.

April 2019 saw the launch of the first phase of its fibre optic network in Cotonou, during which it offered customers zero cost on the migration to fibre.

First announced in June 2018

and targeted at business and high-end residential customers, the project was expected to be completed in 2020, but has now been extended to 2021.

"We will have teams on the ground going door-to-door so that we can clearly identify potential customers," said Robert Aouad, chief executive officer of Isocel Benin. "We will not go to areas where there is not enough income to support the roll-out."

Kenya deploys 630km of fibre optic up north

Northern Kenya's Rift Valley province will soon be covered by broadband, courtesy of 630km of optical fibre are being deployed there, under the supervision of the ICT Authority.

With funding of nearly US$28m from the government and the World Bank, the broadband telecoms network will benefit the counties of

Turkana, Trans Nzoia, Uasin Gishu..

It will also strengthen the existing, recently rehabilitated fibre optic network between the towns of Eldoret and Nadapal.

Katherine Getao, CEO of the ICT Authority, said the telecoms infrastructure being deployed will connect various public and social institutions including

hospitals, administrations and schools. Part of its capacity will be leased to telecommunications operators whose funds will be used for its maintenance.

"Cities like Eldoret, Kitale, Lodwar, Kakuma, Lokichar and Lokichoggio will benefit greatly from the new high-speed fibre cable, in line with the long-term plans of the Ministry

of ICT to transform the life through smart ICT infrastructure, which bridges the digital divide and brings prosperity to the most remote parts of Kenya," added Josephat Nanok, Turkana county governor.

The construction of this cable will also help promote cross-border trade with South Sudan.

Somalia: internet services restored after four-day outage

Internet services have been fully restored in central and southern parts of Somalia, following a four-day shutdown that cost the country's economy millions of dollars.

The Horn of Africa nation's main internet services provider, Hormuud Telecom, said that the

problem was fixed and apologised to all customers impacted.

This latest outage came after the submarine fibre optic cables suffered a major disruption due to the rough waves of the Indian Ocean.

The blackout also had a major impact on Somali businesses,

especially the internet cafes that provide online access to many people. Hospitals, government offices and other organisations were also hit hard. Among the worst hit were money transfer businesses, which provide a lifeline for millions of Somalis who get support from family members.

Many people posted comments of celebration and relief on their social media sites, including photos, when the service was reinstated.

"The internet return is the return of my business profit, thanks to Allah," restaurant owner Mogadishu, Liban Ahmed, posted on Facebook.

Egyptian firm to build DRC fibre network

Egyptian telecom and technology solutions provider Benya Capital will build a 16,000km fibre optic network in the Democratic Republic of Congo (DRC).

Augustin Kibassa Maliba, DRC's minister of posts, telecommunications and new information and communication technologies (PT-NTIC), received an audience with the representatives of the Egyptian firm Benya Capital on October 21. It was then that the company presented the route of the project to him.

The officials presented him with the different stages and the route of the optical fibre network, 16,000km long, that it will deploy in 2021.

A project to build this fibre optic network is the result of a memorandum of understanding signed at the beginning of October in Kinshasa by the boss of the telecom sector and the builder of high-speed telecom infrastructure networks.

At the end of the meeting, Osama Qadan, operations manager of Benya Capital, explained that the firm "gave the general overview of the national fiber optic network project to mobile operators in the DRC. We are talking about digital transformation".

He indicated that "the implementation phase of this project will start in 2021. At the moment we are in the final planning phase". Qadan added that the current coronavirus pandemic has not helped ramp up work in recent months.

Telecom Egypt and Ericsson sign deal for international gateway migration

Telecom Egypt (TE) and Ericsson signed a cooperation agreement that will see the former's international portal modernised using the latest technologies.

The upgrade will contribute to improving the quality of TE's services, and achieve its aspirations towards developing the basic network, in addition to meeting customers' future requirements.

This deal was signed during a video conference by TE managing director and CEO Adel Hamed and president of Ericsson in the Middle East and Africa (MEA) region, Fadi Pharaon.

Under the terms of the deal, Ericsson will update TE's international portal based on its latest technologies, with the aim of enhancing the quality of landline and mobile services provided by TE.

The modernisation will also reduce the total cost of ownership and provide the possibility of quickly and efficiently publishing virtual network functions. In addition, it would pave the way for launching models of corporate business and services.

Moreover, as TE enters the Internet of Things (IoT) world, Ericsson will provide licences for narrow-scale software enhanced with IoT technology for the Egyptian company. It is expected that the implementation of this project will start by the end of 2020 in Cairo and Alexandria governorates, as they are two main international centres for TE.

Hamed said that the telecom market is witnessing rapid developments, with the increasing demands and aspirations of customers. The company continues

The deal was signed during a video conference by TE managing director and CEO Adel Hamed and president of Ericsson in the Middle East and Africa (MEA) region, Fadi Pharaon

the development and modernisation processes that ensure customers receive the best possible telecommunications services.

Pharaon said that this partnership confirms the technological leadership of his company in the field of international portals.

"The confidence that TE has in us in order to operate its network, implement transformative measures, and advance sustainable growth, encourages us to reach and even surpass our common aspirations," he said. "Digital transformation

is taking place throughout the telecom industry, which is why we look forward to helping TE enhance its managed services offerings and automation capabilities."

Pharaon further claimed that the relationship between Ericsson and TE dates back to 1897, when the first phone call was launched from Alexandria. Since then, the partnership has grown in strength, with Ericsson contributing to providing TE with voice and data services for the mobile network after its launch in 2017.

Globalstar Satellite IoT device deployments double in a year

Globalstar Europe Satellite services said specialist reseller Traksat has deployed over 1,200 Globalstar-enabled safety and tracking devices for humanitarian organisations in Africa and worldwide.

Prominent NGO Humanity & Inclusion (HI) is deploying SPOT Gen3 satellite messengers and SmartOne Solar IoT tracking devices to protect relief workers and support operations in several African nations. International Rescue Committee, rescue.org, headquartered in New York, uses SPOT Gen3s in numerous African countries to safeguard and track relief workers. ACTED is similarly using SPOT Gen3s in Niger.

Traksat reports dramatic uptake of its NGO-centric solution with Globalstar technology as its backbone. The number of Traksat-provided Globalstar devices being used to support humanitarian efforts has doubled in the last 12 months.

In Traksat's longest-standing project, over 250 devices enabled by Globalstar satellite technology are providing staff security and supporting vehicle management for Humanity & Inclusion's humanitarian workers in DRC (Democratic Republic of Congo), CAR (Central African Republic), Chad, Mali, Burkina Faso and Niger.

"Globalstar technology and expert support from Traksat together play a big part in helping

Traksat reports dramatic uptake of its NGO-centric solution with Globalstar technology as its backbone. The number of Traksat-provided devices being used to support humanitarian efforts has doubled in the last 12 months

us meet our security and fleet management challenges," said Emmanuel Bertolus, logistics manager at Humanity & Inclusion. "Our teams work in extremely varied and challenging contexts. Reliable, economical Globalstar technology, together with the wide-ranging expertise and responsiveness of Traksat, help us to consider geolocation as a key operational asset and never as a constraint."

H&I is equipping staff with SPOT Gen3s so that they can stay connected with their colleagues while working in locations where alternative communications networks are inadequate. In an emergency, a simple press of SPOT's SOS button immediately raises an alert and instantly sends the user's GPS location to HI's central operations centre and local coordination sites, from where a rescue can be initiated.

Traksat has developed a specialist software platform with extensive options to meet the particular needs of NGOs

and government agencies. With the combination of Globalstar technology, enabled by its fleet of Low-Earth Orbit satellites, the Internet of Things (IoT), and the Traksat platform, NGOs can benefit from a wide range of capabilities to support worker safety and other operational requirements.

Over 10 different mapping options can be chosen with Traksat, along with specific map layers with additional live detail on traffic, wind, weather and occurrence of natural disasters.

MTN officials visit Ghana for 'peace talks'

Senior MTN Group officials are on a "calming mission in Ghana", following tensions between the Ghanaian subsidiary and the telecom regulator.

Ralph Mupita, chairman and CEO of South African telecom group MTN and Mcebisi Jonas, chairman of the board, have been in the west African country since October 27, 2020. It is as part of a tour of priority markets.

In a statement, MTN Ghana said that during the two-day trip, representatives of MTN Group who have already met with Vice-president Mahamudu Bawumia and former

President John Kufuor, member of MTN Group's international advisory board, will also hold meetings with minister of communications, Ursula Owusu-Ekuful and minister of finance, Ken Ofori-Atta.

During these various exchanges, the MTN Group delegation said it wanted to "align itself with certain key stakeholders on important issues of common interest". The trip comes after some tensions between MTN Ghana and the government, following its designation as dominant operator which induces certain restrictions on

its competitive capacities.

MTN Ghana, which appealed to Ghanaian courts last June to overturn the decision of the state, represented by the Communications Authority (NCA), finally ended the action in mid-October. The company stressed its willingness to settle this dispute amicably.

MTN Ghana said progress had been made with the regulator and ministry of communication on settlement discussions, leading to the operator to withdraw its case lodged to the Supreme Court in September.

"It is our expectation that this action will pave the way for further discussions and an amicable resolution, in the spirit of the renewed channels of engagement", the statement read.

The operator noted "collective goodwill and commitment" was needed, to aid the country's telecoms industry, and support government plans to enhance connectivity and communications services in Ghana. It added the decision to withdraw its court case was in the best interest of customers, shareholders and stakeholders.

Central African MNOs told to stop deducting airtime as payment

The Bank of Central African States (BEAC), the sole central bank within the membership-based Central African Economic and Monetary Community (CEMAC), has warned MNOs in the sub-region to stop deducting airtime for payments.

In a correspondence dated 29 October 2020 sent to the president of Cameroon Association of Telephone Mobile Operators (CATMO), BEAC governor Abbas Mahamat Tolli insisted communication airtime is not a recognised mode of payment within CEMAC.

He stated subscribers' airtime should only be deducted for communications and data subscription.

"In effect, please note that communication airtime is a commodity, product or service, which only serves for telephone services and, even though they have a market value, they are not a mode of payment or currencies," Tolli said. "They are created by companies which are not payment service providers authorised to issue and manage means of payment."

The governor added that mindful of the applicable regulations within the monetary community, communication airtime is neither fiduciary money, electronic money, nor an instrument or means of payment.

Recently, network service providers operating within the sub-region, comprising Cameroon, Chad, Central African Republic, Congo, Gabon and Equatorial Guinea, and their third parties have deducted users' communication airtime to pay for value-added services.

The central bank wants this to stop as its persistence may give users the false notion that communication airtime is a legal means of payment within the sub-region.

Nigeria closes in on e-SIM service

MTN Nigeria and 9Mobile have secured approval to trial the embedded Subscriber Identification Modules (e-SIM) service in Nigeria.

The announcement by the Nigerian Communications Commission (NCC) follows its recent confirmation of approval for both companies to trial a national roaming service over a three-month period, scheduled to end on 31 October.

A roaming service trial, a first in Nigeria, is designed to test how subscribers of either telecommunications services provider can access each other's network service without the need for a SIM card change.

While the trial has not officially been judged successful, the NCC has now confirmed it has granted the two mobile network operators the approval to test five thousand e-SIMs for a year.

NCC executive vice chairman, Umar Danbatta, said this will assess the technical performance of the e-SIM on networks with a view to eventual roll out "if satisfactory"

According to the regulator trialling the technology will eliminate the need for physical SIM card slots on mobile devices in the near future, in line with what the NCC has called its forward-looking regulatory approach to the country's telecommunications industry and ecosystem.

Last year, e-SIM tech was launched in Sierra Leone through Africell.

BEAC responds to Cameroon's plans

The Bank of Central African States (BEAC) has responded to Cameroon's plan to utilise telecom services to automate the collection of import duties and relevant taxes on mobile phones and other electronic devices.

Officials had set October 15, 2020 as the date to roll out a new collection platform managed by Artificial Intelligence Technology (ARINTECH) SARL.

The platform was expected to be interconnected with the servers and network systems of mobile network operators in Cameroon.

Once a phone connects to any of the networks, the platform will automatically detect its IMEI number and if it realises that it is a first-time connection, a message will be sent to the phone owner notifying him/her of the amount of customs duties and taxes to be paid.

Users would then have the option of making a one-off payment in full or in instalments, using their airtime.

However, the project has now been deferred following national outrage.

Liberia begins SIM registration process

The Liberia Telecommunications Authority (LTA) has launched a SIM card registration exercise to be completed by February 2021, it announced.

Officials have described the exercise as the beginning of a difficult process towards regulation, but a milestone for the country.

The authority has signed an agreement with the National Identity Registry (NIR) and the country's two mobile phone operators, LoneStar Cell MTN and Orange Liberia, to ensure that from November 2020, all SIM cards are registered using the national identity card.

It will monitor the SIM registration process, the NIR will issue identity cards and operators will ensure that they comply with national ID card-based registration.

Officials have warned that any SIM card not registered within the given period will be suspended or blocked.

The Liberian government believes SIM card registration will improve national security, provide a platform for the efficient

The authority has signed an agreement with the NIR and the country's two mobile phone operators

functioning of other electronic communication services (including mobile money transfer) and create a reliable database for subscribers.

Edwina Crump Zackpah, the acting chairperson of the LTA said: "We all know that there are a lot of crimes that are committed using a cell phone and one of the first places that the police will go when investigating a crime is a cell phone. You may never know who committed such a crime if the SIM card they are investigating is not registered. So this is a milestone for the country."

NIR executive director Tiah Gagbe said the SIM card registration exercise is the beginning of a difficult journey to implement regulation.

"SIM cards registration is a very important thing in the world today for government and people that manage telecommunication services to know who is behind the scene," Gagbe said. "SIM card telecommunication is a very valuable technology but the same way it can be used for a lot of good, it can also be used for a lot of evil and therefore it is important to manage it in a responsible way."

According to the latest Digital 2020 report, there were 4.13 million mobile phone connections in Liberia in January 2020, equivalent to 83% of the total population.

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Egyptian quartet acquire new frequencies

The Egyptian telecoms regulator has awarded Telecom Egypt, Vodafone Egypt, Orange Egypt and Etisalat Misr new telecom frequencies for an estimated cost of US$ 1.1bn.

Vodafone said it acquired 40 MHz of 2.6 GHz TDD spectrum from the National Telecommunications Regulatory Authority (NTRA), with a 10-year licence term through to 2030. Payments will be through instalments over three years, with an initial payment of US$270m upon receipt of the spectrum and two other payments of US$135m due in 2021 and 2022 respectively.

Telecom Egypt said that the NTRA accepted its financial and technical offer for additional spectrum submitted on 17 September. The company is expected to receive 20 MHz of spectrum in the 2,600 MHz band, using TDD technology with a right of use of 10 years for US$305m, of which 50% will be paid in US dollars upon signing the contracts.

The operator said 25% of the total value will be paid in US dollars or its equivalent in Egyptian pounds according to the rate announced by the CBE at the time of payment no later than one year after signing the contracts. The other 25% will be paid within two years.

The NTRA said the remaining 2x10 MHz in the 2,600 MHz band was won by Etisalat Misr for US$325m.

The regulator said this was the first time it used TDD spectrum blocks and a closed-envelope system of bidding. The larger frequency blocks were offered with a discount to reflect the bigger investments in infrastructure required.

Telecom Egypt said that the NTRA accepted its financial and technical offer for additional spectrum

Chadian regulator aligns the prices of operators

The Chadian government has taken strong measures to increase competition in the national telecoms market via the country's watchdog..

It aligned the intra and inter-network tariffs on October 18 and is also preparing the introduction of mobile number portability.

Chad's Autorité de Régulation des Communications Électroniques et des Postes (ARCEP) has made public the decision aligning the "off-net and on-net" tariffs charged by mobile phone operators. From now on, consumers will pay FCFA90 for intra-network and inter-network calls. Operators are required to apply this decision as soon as possible, underlines the regulator.

The alignment of telecom tariffs reflects the government's desire to increase competition in the national telecoms market for the benefit of consumers. By applying the same rates, Airtel and Tigo will only have quality of service as a battleground to convince the population.

In addition to tariff alignment, the

The alignment of tariffs reflects the government's desire to increase competition in the national telecoms market for the benefit of consumers

government's desire to increase competition in the quality of service was reflected a few days earlier by the signing, by the head of state Idriss Deby, of the decree on the obligation of portability of mobile phone numbers. Number portability is provided for in article 58 of law n ° 14 of March 21, 2014 on electronic communications.

ARCEP is responsible for ensuring the definition and implementation of the terms and conditions for number portability and will settle the related disputes. It will set up, in conjunction with telecom operators, the appropriate system to allow consumers to keep their numbers in the event of a change of operator.

Tunisia targets 2022 for 5G launch

Tunisia tipped 2022 to be the year the north African nation launches commercial 5G services.

Mohamed Fadhel Kraiem, the minister of communication technologies and digital economy, told media that "the launch of 5G services is only possible from 2022" in Tunisia.

"According to the initial results of

a study prepared by an international consulting firm under the auspices of the National Telecommunications Authority, the launch of 5G services is possible only from 2022," Kraiem told reporters at the opening of Tunisia Digital Summit in late October. "After the launch of the specifications, by the end of 2021, pilot

experiments will be conducted by the three telephone operators Tunisie Télecom, Ooredoo and Orange."

The 5G technology will give access to speeds far exceeding those of 4G, with very short latency times and high reliability, while increasing the number of simultaneous connections per area covered.

Pawa to the people: Telkom Kenya repackages SMS and data bundles

Telkom Kenya has recently revamped its Pawa bundles with added value perks which include SMS and mobile data at more affordable price points.

Subscribers can sign up for these bundles by dialing *544# or *10# and choosing the Pawa option. You are allowed to buy another bundle before the existing bundle expires.

The operator sees this new offer as a commitment to providing solutions that address the customer's everyday communication needs.

"It is worth noting that SMS and WhatsApp communication are popular among the young audiences who have been actively at home following the prolonged closure of educational institutions due to the

current pandemic," Telkom Director, marketing, Eric Achola, said.

Bundles like this have proven popular with Kenyans due to their low prices and value for money when compared with separate bundles.

Early this year, Telkom revamped its data focused bundles where subsribers could access up to 100% data for the same price.

TE to provide SHG with first subsea solution

Telecom Egypt and St Helena Government (SHG) have inked a deal to connect the island to the former's subsea system over the Equiano submarine cable system.

The operator will be the first to provide St Helena with a fibre optic connection to the rest of the world, which is a crucial step towards the island's economic growth. The cable, along with the associated high-speed internet, is planned to be delivered to the Island by early 2022.

This particular branch connecting Telecom Egypt's system to St Helena will be 1,140km long. The cable itself will run from the west coast of Africa and provide St Helena with access to both Lisbon, Portugal and Melkbosstrand, South Africa with scalable connectivity ranging from a few hundred gigabits up to multiple terabits, as demand varies. It, therefore, provides the most cost-effective solution to the growth in the island's bandwidth needs.

In light of its vast experience in the subsea connectivity business, Telecom Egypt will provide a dynamic circuit network functionality, which will ensure that SHG's communication partners have access to fixed bandwidth. Telecom Egypt will also support SHG in the design, installation, and configuration of the submarine and network equipment.

"From an operational perspective, this is a key milestone for the fibre optic project, as we now have an association with an international partner of high repute who will ensure that all the necessary technical prerequisites are installed in readiness for the arrival of the Equiano System," said SHG's fibre optic project manager, Jeremy Roberts.

Telecom Egypt's VP for international and wholesale, Seif Mounib, added: "We are delighted to have signed this agreement with St Helena Government as this cooperation is part of the initiation of Telecom Egypt's endeavour in western Africa and is a step forward in Telecom Egypt's plan to expand its services beyond the MENA region."

Talking satellite

Martin Jarrold, chief of international programme development, GVF

'Zoom'ing in on a Global Digital Ecosystem

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

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

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

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

The importance of the digital communications technologies behind our now having been forced to realise the full potential of virtual business meetings/events has been boldly underscored. Lockdown necessitated digital ways of working to allow people still to do their jobs. Extending digitisation will help recovery from the economic recession engendered by pandemic. Notions about, and gearing-up for, Digital Economy and Digital Infrastructure, are not new but a global socio-economic crisis has elevated

debate about the necessity, and advantages, of far greater change than previously conceived. Though a necessary consequence of the (hopefully) limited phenomenon that is the SARS-Cov2 virus, we have undergone a profound change in the human experience, one which gives small illustration of the importance of a much more deeply rooted and strategic phenomenon: our ability to gather, analyse and disseminate that which can be digitised.

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

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

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

Data in the Zettabyte Age will flow in vast volumes from the tap of the Internet of Things (IoT), including devices from our own personal wireless communications (i.e., smartphones with social media, plus increasing biometrics-based data generation) to our Wi-Fi-enabled domestic appliances. All this data will only be of use when it is determined exactly what it is for. Data may be just measurement, quanta, of things,

but when data is analysed it becomes information, and information is the building block of the knowledge that facilitates effective decisions and enables positive and productive action.

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

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

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

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

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

The transformation of 5G and telemedicine

Telemedicine in Africa is becoming more advanced as we see mass progressions in the field of 5G. Kyle Whitehill, CEO of Avanti Communications, explains how satellites can connect those in remote regions to receive the healthcare that is required

Developing communities, particularly the most marginalised, are playing catch up in telecommunications infrastructure.

There are various ways that satellite technology can support 5G satellite connectivity services to lots of different locations. Extending this to include efficient content pre-positioning to edge caches to take advantage of an inherent satellite strength may require some further integration work. The provision of 5G service direct to consumer phones via satellite will however require considerable further developments. This is expected to take time for the relevant development work to be carried out.

Avanti led the SaT5G project that developed standards and prototype systems to ensure seamless integration with terrestrial 5G.

Based on SaT5G analysis we think there are four immediate roles that satellite can play in the 5G ecosystem: providing backhaul connections to remote and rural locations; using satellite multicast in video and game content to store data; providing 5G services direct to homes and small businesses and providing 5G connections direct to moving locations such as planes, ships and trains. The capabilities can further extend to include providing 5G connections to collect massive machine-type communications (mMTC) data and to add alternative resilient connections to locations requiring higher levels of network reliability.

The satellite communication sector has coordinated its ongoing work within 3GPP that to date has described the architecture aspects for satellite in 5G and there is wide ranging support for satellite involvement in 5G beyond the satellite sector. This work is ongoing and is supported by complimentary actions in other bodies such as the European Telecommunications Standards Institute (ETSI) and the Internet Engineering Task Force (IETF) covering related issues. As already mentioned, projects such as EC H2020 SaT5G, within ESA's satellite for 5G Initiative has allowed the satcom industry to work within 3GPP to develop the successful integration of satellite communications into the 5G standards.

The 3GPP identified many end users' services many of which work adequately over satellite. The SaT5G demonstrated the delivery of Ultra HD video content to handheld devices using Avanti's HYLAS satellite capacity. Using multicast to stream live action events to multiple locations and to preposition popular content in caches close to edge is an area that satellites will be able to support well. Likewise, providing backhaul capacity for enhanced mobile broadband delivered by 5G in rural, remote and moving locations will require satellites. This capacity may be the only connection; it may also provide both top-up or backup capacity where an alternative backhaul solution is employed.

Satellite already provides some services to connected vehicles, for example satellite radio in North America and emergency connections for very remote locations. Extending this so that satellite communications is used for critical applications such as ambulances in remote areas to provide better initial treatment will be something that develops over time. This may well, in time, extend to provide infotainment to passengers.

We are constantly working to increase and extend its service to the carrier market and the incorporation of 5G services based on its active role in projects such as SaT5G is a natural development and are interested in following the progress being made regarding standards and interoperability.

Looking at other advancements in the world today telemedicine has never been more topical or relevant, given the ongoing pandemic.

There are learnings every industry will take from this experience and we've seen how technology can really aid the healthcare industry and help ease some of the stress experienced by medical professionals. The concern for many has been how people can continue to safely access healthcare services, given social distancing measures and the closure of GP surgeries. Technology has been adapting to this change and we are seeing the introduction of video consultations. Satellite operators are able to assist in this process by providing quick, reliable and effective connectivity for patients to access doctors, nurses, pharmacists remotely.

This is particularly true for remote and rural areas that often do not have access to a formal healthcare system and often rely on small, underequipped medical clinics. Satellite connectivity can enable those rural clinics to have access to more sophisticated facilities and looking ahead, this technology will be important in providing face to face consultations with medical professionals for people outside urban centres and cities.

Technology will be able to connect individuals to more healthcare professionals from remote locations which would positively impact the decision process in a medical situation, for example two groups of people looking at an x-ray in real time will enable a quicker diagnosis than it would be to get these groups of people in the same room physically. This would enable the advice of medical professionals around the world tapping into their own individual experience. Ultimately, being able to rapidly connect healthcare professionals to individuals particularly in developing countries through technology will have profound effects.

Avanti is committed to mobilising satellite technology to support refugees, host communities and humanitarian organisations, specifically in Africa, providing access to connectivity in the remotest of locations and when faced with challenges that a pandemic puts forward satellite technology has a vital role to play in connecting communities and individuals where ever they are based.

In one such example, we donated solar satellite broadband connectivity and laptops to refugee settlements in east Africa. In July 2019, we donated solar powered satellite broadband to The Social Innovation Academy (SINA)'s Bidi Bidi site. This is the first of three installations we will be donating to the refugee settlement. SINA's site is off grid, in a very remote location and is now able to provide its beneficiaries with access to the internet and an ICT lab. SINA provides refugees and members of the host community with access to connectivity where alternatives do not exist due to the lack of electricity and financial means in the settlement.

SINA's connected centre is being used by over 70 people on a daily basis including SINA members as well as teachers and youth from the surrounding area. Refugees and the host communities are using their smartphones as well as laptops provided by Avanti to get online. The satellite broadband Avanti has donated is being used by SINA's beneficiaries for access to job and grant applications, self-learning websites, researching project and enterprise ideas, online mentorship, independent news, reconnecting with relatives and the creation of social media pages for start-ups.

The satellite communications sector is experiencing unprecedented change with new entrants, new technology, old markets changing and new markets opening up. Senior executives of satellite operators must embrace these changes, be flexible and adapt and certainly at Avanti we have done that. For the past 40 years, satellite has been connecting people across the world, carried information that has enlightened, educated and informed people, provided connectivity to remote regions, bridged the economic divides, while providing communications to protect us. Satellite will continue to do so for the next 40 years. ■
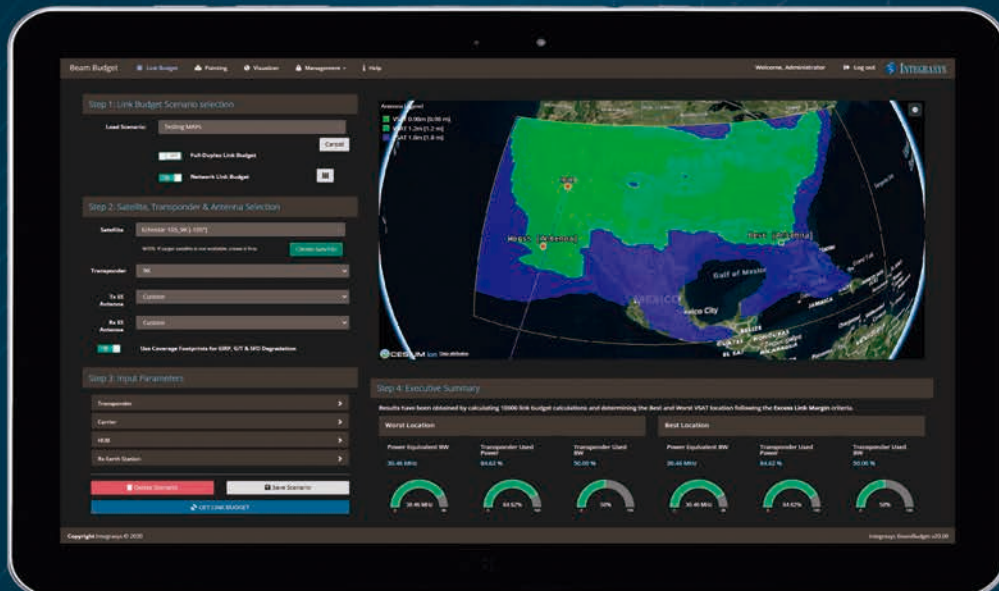
Ericsson launches graduate program in Africa to help innovate the future

Ericsson has announced the launch of its 2020 edition of the Graduate Program in Africa, which aims to grow the technical skills of the recruits, train them in the Ericsson technology, solutions and their delivery and understanding our processes, methods and tools.

It also helps Ericsson "to move the needle on gender equality" within the field of technology as half of the graduates hired are women. This is in alignment with Ericsson Educate and local Connect to Learn projects which empower women in STEM (Science, Technology, Engineering and Math) fields and leverage connectivity to increase access to education for children, especially girls.

"The Fresh Graduate Program in Africa is designed to give graduates' career an added momentum at just the right time – maximising the skills they have gained in the course of their degree, adding more to their repertoire and equipping them to make a positive impact on the continent," said Caroline Berns, head of talent acquisition at Ericsson Middle East and Africa. "Aiming to attract and guide the most talented, innovative and creative technology minds, the programs offers graduates an opportunity

Caroline Berns, head of talent acquisition at Ericsson Middle East and Africa says the program "is designed to give graduates' career an added momentum at just the right time"

to engage with the most exciting technology on the planet and the challenges it brings."

Due to the sudden and unprecedented disruption of the Covid-19 pandemic, the Graduate Program will run virtually for the time being, and will focus on graduates in Kenya, Nigeria, Sudan and Angola.

Huawei commits to 5G handsets by year-end

Huawei has confirmed plans to help supply the continent with 5G handsets, at an average baseline price of US$150, by the end of 2020.

The Chinese company said it will join various manufacturers to ready at least 400 types of 5G smartphones for the African market by the end of this year. However, it did not mention which manufacturers were on board.

Several African countries, including Kenya, Namibia, Nigeria and Zambia, are planning to roll out 5G networks, but acknowledge the cost of the handsets remains a challenge.

It is understood that the company has realised that the adoption and making of 5G networks more accessible in Africa will rely on the number of devices available.

Speaking to the media during a Huawei virtual exhibition, hosted by Galileo Hall, a 5G exhibition area in China in October, Maggie Cai, senior public relations manager at Huawei confirmed the African market will have US$150 5G handsets by year-end this year.

Regarding concerns over the safety of 5G technology and any potential impact that this could have on adoption, Cai said, "People are concerned about the safety of 5G technology. It's an allegation that has been politicised."

Louis Katongo Mwape from Huawei Zambia's public relations department said that it is not necessarily so that Huawei would make all the smartphones and added: "We mean that the four hundred is a composition of various phone manufacturers and that is the projection."

Mwape said just like any corporate organisation, Huawei will continue to work with policymakers in the region, partners and financial institutions to drive digital inclusivity and make smartphones more affordable to different African communities.

"In as much as some handsets may cost as low as US$150, others may cost less while others may cost more than that," Mwape added.

CNSS contributions by phone

Orange Tunisia customers are now able to securely view and pay their CNSS contributions from their mobile phones, courtesy of the Orange Money service.

Orange Tunisia subscribers, without travelling, can now pay their CNSS contributions in full or in installments, in a simple and secure way.

All Orange mobile subscribers and bank card holders can benefit from the orange money service by dialing the command USSD * 139 #. Once the payment transaction has been made, the customer will receive an SMS to notify him of the actual payment of the CNSS contribution.

Note that with the current context of the Covid-19 epidemic in Tunisia, Orange Tunisia protects you and your loved ones, by offering citizens via the Orange Money service a multitude of remote payment services with the mobile phone and without moving.

These mobile payment services, in partnership with the Société Monétique de Tunisie, allow Orange customers to perform several payment transactions through their mobile phone: top up a mobile line, pay an Orange bill, pay radar fines and recharge their Tunisia highways subscriptions.

Togo: Michel Yaovi Galley named new regulatory boss

Michel Yaovi Galley has been appointed director general of ARCEP (Regulatory Authority for Electronic Communications and Posts).

Formerly technical advisor in charge of digital transition projects, Galley, will take the head of the structure, following a decree dated October 15, 2020.

The regulator is the institution responsible for regulating the electronic and postal

communications sector in Togo. Its prerogatives include managing and controlling state-approved telephone operators, issuing licences for independent networks and managing radio-electronic frequencies.

Set up in 2015 the entity replaces the ART & P (Regulatory Authority for the Post and Telecommunications sectors).

Earlier this year, ARCEP appointed a raft of members of the management committee. They were Haringa Yaou, telecom engineer, chairman of this committee, Colonel Cossi Sogoyou, senior officer of the Togolese Armed Forces, Messan Awoh Dedji, divisional commissioner and Djahlin Broohm, economist. It is understood that a fifth member has yet to be appointed.

Liquid gets $US40m shot in the arm

Liquid Telecom has received a US$ 40m cash injection from the Commonwealth Development Corporation (CDC), the UK's private sector finance institution in developing countries.

The investment is part of a larger transaction that has already enabled the company to raise US$307m through a capital increase intended for its shareholders. It will support Liquid Telecom's plan to further expand its pan-African data centre operations.

"We remain committed to improving digital infrastructure in Africa and helping governments, businesses and citizens across the continent to access quality online services," said Nick O'Donohoe, CEO of CDC Group. "Our overall investment in Liquid Telecom now stands at US$ 220m; which will play

an important role in meeting the growing demand for digital services and helping to bridge the digital divide between Africa and other regions."

Meanwhile, Liquid Telecom is proposing to buy back Botswana Power Corporation's (BPC's) stake in Liquid Telecom Botswana, according to reports.

The firm has a controlling 57.5% in Liquid Telecom Botswana and the Competition and Consumer Authority is considering its proposal to acquire the other 42.5% currently held by BPC.

The government has, to date, blocked plans by BPC and Liquid Telecom to become a major internet service provider in Botswana. The deal was backed by Econet Global Limited, which is the majority shareholder in Liquid Telecom Group.

Hello Paisa halves remittance fees

Money transfer service Hello Paisa has dropped remittance fees by half on every transaction to Zimbabwe, the company said.

It is also offering digital banking accounts with zero transaction fees, to assist migrants impacted by the Covid-19 pandemic. The firm said cost-effective remittances are an essential service as they are a lifeline for the migrants and those they support across borders.

According to Hello Paisa, migrants resident in SA have found it more difficult than ever to send money back home due to the pandemic, which is devastating, as those who depend on receiving the funds are unable to buy basic goods and cover household expenses.

Earlier this year, the World Bank forecast that in the wake of the Covid-19 economic crisis, remittance flows to Sub-Saharan Africa would fall by 23.1%.
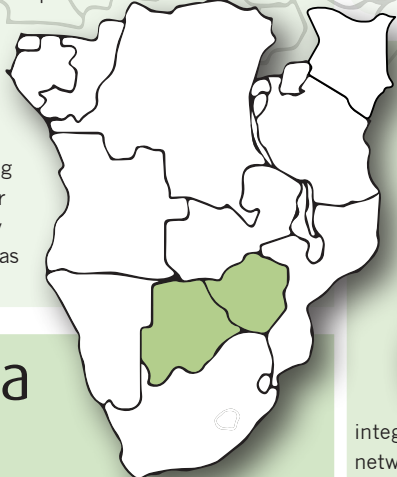
"A substantial amount of Zimbabwean migrants call South Africa home and their earnings are a vital source of income for their families," said Sayjil Magan, MD of Hello Paisa. "The inability to send money home is a catastrophic circumstance for both our

residents and their loved ones. As expenses are a major pain point for all South African residents it is our mandate to create access to the most cost-effective remittance service."

Hello Paisa said it has also taken steps to broaden digital remittance networks to make it easy to send funds by offering a free digital banking solution to its subscribers.

"Not only are migrants offered a leading money and goods remittance service, but now also a free bank account to save their hard-earned money," added Magan. "Zimbabwe is currently facing its own unique hardships economically, and Zimbabweans residing in South Africa are very cognisant of getting support to their family as safely and affordably as possible."

MTN officials visit Ghana in hope of peace talks

Senior MTN Group officials are on a "calming mission in Ghana", following tensions between the Ghanaian subsidiary and the telecom regulator.

Ralph Mupita, chairman and CEO of South African telecom group MTN and Mcebisi Jonas, chairman of the board, have been in the west African country since October 27, 2020. It is as part of a tour of priority markets.

In a statement, MTN Ghana said that during the two-day trip, representatives of MTN Group who have already met with Vice-president Mahamudu Bawumia and former President John Kufuor, member of MTN Group's international

advisory board, will also hold meetings with minister of communications, Ursula Owusu-Ekuful and minister of finance, Ken Ofori-Atta.

During these various exchanges, the MTN Group delegation said it wanted to "align itself with certain key stakeholders on important issues of common interest".

MTN Ghana, which appealed to Ghanaian courts last June to overturn the decision of the state, represented by the Communications Authority (NCA), finally ended the action in mid-October. The company stressed its willingness to settle this dispute amicably.

Orange sees return to growth in third quarter

Orange Group noted a return to revenue growth in its Q3 financial results, despite witnessing declines in roaming revenue and equipment sales.

MEA saw growth of 5.1% compared to growth of 1.3% in the second quarter.

"From the beginning of the year the Orange Group has demonstrated its resilience in all its markets in the face of an unprecedented health and economic crisis," said chairman and CEO Stéphane Richard. "Our networks have proven their robustness, our commercial performance has been very positive and we're in line with all our financial objectives for the year. "We returned to top-line growth in the third quarter (+0.8%) with EBITDA on a more favourable trend than in the previous quarter (-0.4%), giving us added confidence in terms of the delivery of our guidance. Finally, after difficult first half for B2B services, the recovery at Orange Business Services (OBS) is well under way, in particular due to the momentum in IT services."

Linking the trends to the Covid-19 pandemic, Orange Group reported a "moderate" decline in EBITDA in the first nine months of the year, down 0.6%. The loss was minimised by the co-financing of the fibre network in France yet remained adversely impacted by the decline in roaming and the cost of health measures.

Telecel names Shalak CEO

Telecel Group named Ramzi Shalak as its new chief executive officer (CEO) effective October 2020.

As a B2B/B2G provider, Telecel Global Services provides voice, data, SMS, SMS firewall and integrated cyber security solutions serving network operators, OTT's and wholesale Carriers with a global footprint.

"I am excited to be joining the Telecel Global team as CEO. Telecel is an iconic brand with a long history working in the African telecommunications space," said Shalak. "This team has built an excellent reputation by being innovative to consistently deliver strong results in the mobile and wholesale sectors."

In 2005, Shalak joined pan-African telecom operator Liquid Telecom and quickly rose to be part of the core team who oversaw the rapid rise of the company from a small startup to a major operator with a reach that serviced both large operators and enterprise customers.

Connecting the unconnected

There is no shortage of talk regarding the benefits of 5G, and barely a day passes without hearing about the latest 5G network deployment. But - while we all sign up to the ambition of gigabit connectivity and a generation of new innovative services, from mobile streaming 8K video to untethered, augmented reality it's important to appreciate there's a difference between creating a demand and fulfilling a need.

For Africa that need is to connect the unconnected.

Smartphone ownership in recent years has rapidly increased in the region to around 45%, driven by a demand for OTT services and mobile banking which has provided the opportunity for Africans in the lower income bracket to participate in the global economy. Despite the appetite illustrated by success stories such as mobile payments provider M-Pesa, who grew financial inclusion amongst Kenya's poorest from 21% to 63% in just three years, basic connectivity still remains a barrier for many on the continent at large.

Globally 5G deployments continue to be announced with the majority, around 85% being in Europe and North America, regions with mature telecommunications infrastructure. Despite many of the behemoths of the industry pronouncing how '5G will unleash the huge potential of digital technologies and make industrial transformation and digitalization a reality', 5G in most parts of the African continent with the exception of large urban conurbations is hard to justify, not least due to the prohibitive cost of handsets. Rather than negotiating with self assured and overly enthusiastic technology companies singing the praises of 5G, policymakers in the region should remember that only 24% of Sub-Saharan Africans have access to mobile internet.

The reality on the ground is that any kind of 5G future requires technology enabling infrastructure, and Africa has its challenges in terms of this. From prolonged underinvestment in pre-IMS networks, to underinvestment in other areas such as power grids that regularly fail in the region - much more needs to be demanded of those that provide critical infrastructure.

While challenges remain in terms of chasing gigabit connectivity, operators have much

45%

45% Mobile Subscriber Penetration in Africa

88%

88% Mobile Subscriber Penetration in India
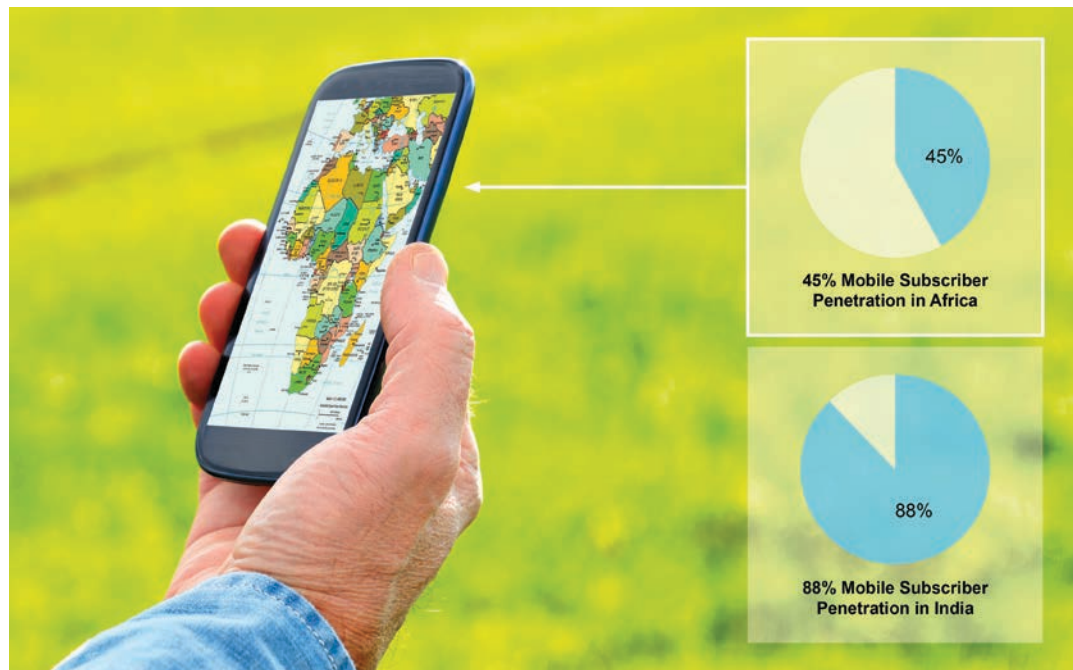
to gain in making their existing networks infrastructure agile. 3G connectivity enabled the rapid growth of M-Pesa mobile payments, and a young ambitious population is quick to take up the benefits of connectivity.

African telcos should look at investment in their pre-IMS infrastructure as not just an opportunity to prepare for a bright future of 5G connectivity when it becomes widely available, but to benefit from continued growth in mobile subscribers and smartphone adoption, accounting now for 50% of total connections. The smart approach for now is for telcos to optimise their

network core and reduce network complexity where possible.

With or without 5G today's telecoms infrastructure is a hybrid mix of multi-generation, multi-protocol, multi-vendor networks, where operators demand network flexibility and agility to give them the edge over their competitors.

Interoperability between access technologies and the need for flexible future proof core network solutions that provide the agility to rapidly deploy new innovative services, and provide seamless paths to network evolution while maintaining existing value is the order of the day.

For now 5G deployment on the continent is likely to be

resigned to urban deployments, a combination of geography and infrastructure conditions will restrict any meaningful penetration in rural areas. What's important for policymakers and resident telcos is not to lose sight of the goal of connecting the unconnected.

Squire Technologies has spent over 20 years providing **core network solutions** to the industry. Our experience working with operators in over 160 countries has provided the insight that what our customers benefit from the most is agility in their core network. ■

By Sanjeev Verma, CEO, Squire Technologies Ltd

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

I remember walking through the halls of GITEX 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 in-evitable 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 avail-ability of utilities and the low population densi-ties 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, advanc-es 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 Kraiemthat 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, high-er 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-

General Trend: Narrowband & Broadband Convergence

Today, PMR networks provide critical communications for a wide range of organisations within a number of vertical markets such as public safety, public transport, utilities, oil and gas and mining, etc, with reliable, secure and highly available mission critical voice and low bandwidth data communications, based on instant push-to-talk technology. However, many organisations are increasingly dependent on the reliability of broadband data to help them run their businesses more efficiently and to increase productivity.

In comparison to narrowband networks, the investment in private broadband networks is huge. In some situations the investment cost are even 10 times higher.

Based on the continuous increased demand of private networks as well as the increase of big data, critical applications and the need for real time video, we believe that the narrowband and broadband convergence within the PMR industry, which will be a long-term coexistence, is the future trend.

Hytera Multi-mode Advanced Radio

As a pioneer in PMR communications, Hytera developed the multi-mode advanced smart radio. Through this device end-users are now able to get the best of two worlds - narrowband and broadband communications on a single device. Through the adoption of the multi-mode advanced radio, organisations are now able to retain their mission or business critical narrowband networks for as long as they want. This ensures a full return on their investment.

We believe that before the development of broadband networks and services enters the mature stage, end-users heavily rely on narrowband for critical voice communications and broadband for data applications. During this long transition period, we are convinced that multi-mode devices can meet the demanding requirements of these demanding end users globally.

- The convergent multimode radio delivers critical voice and broadband data applications
- Extend network footprint with complementary PMR and LTE networks
- Interoperability between various device types and vendors

Hytera Hybrid Mission Critical Service Platforms

To go with the stream and make multi-mode radios better serve industrial users, Hytera has developed three Hybrid platforms, Hytalk, Hytalk Pro and Hyteralk MC, which help users easily carry out daily administrative tasks, supporting enhanced security. The platforms provide trunking voice and video communication, converged command and dispatching, high speed multimedia data transmission service based on commercial network as well.

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

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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

**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"

"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 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%.

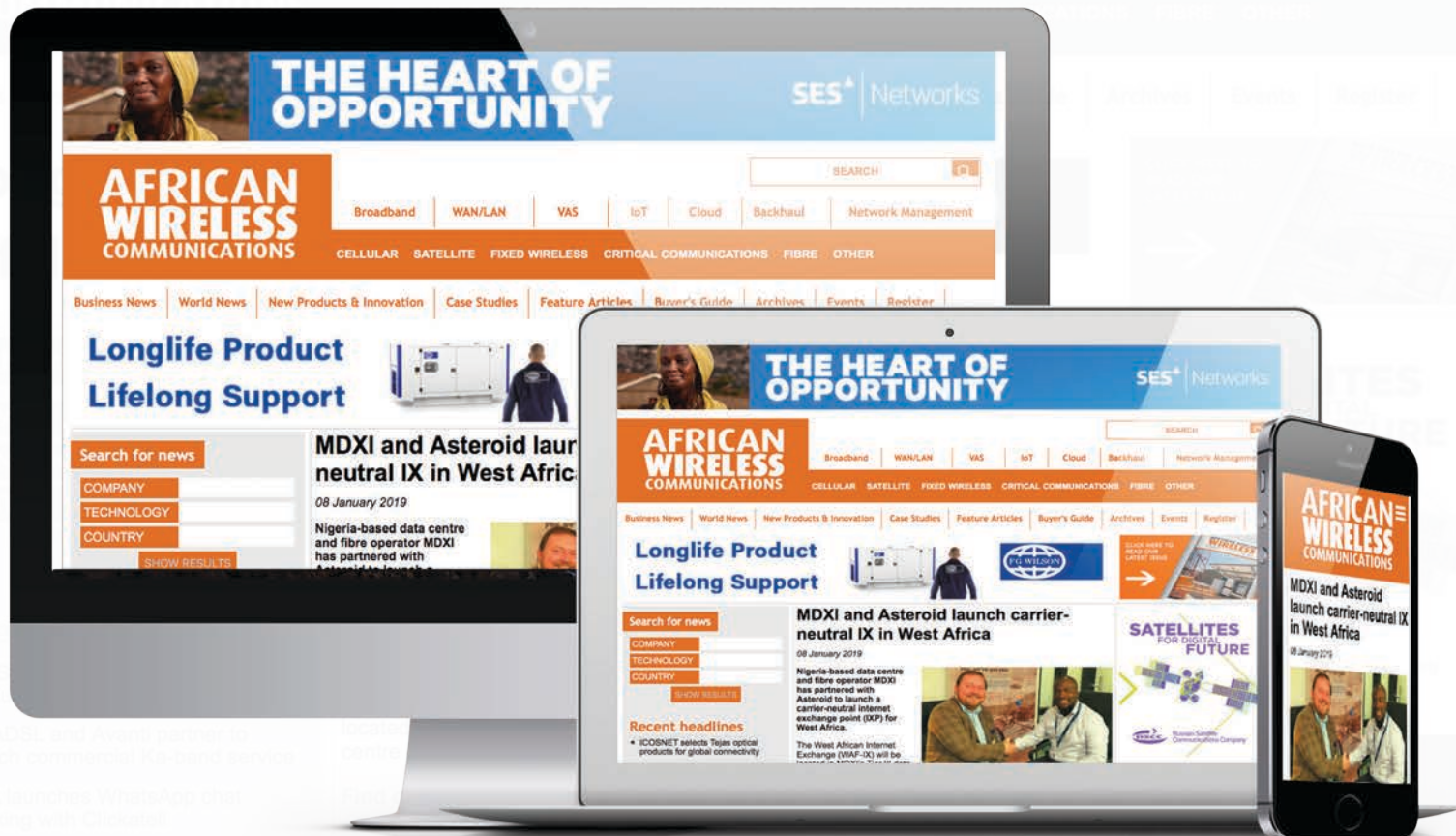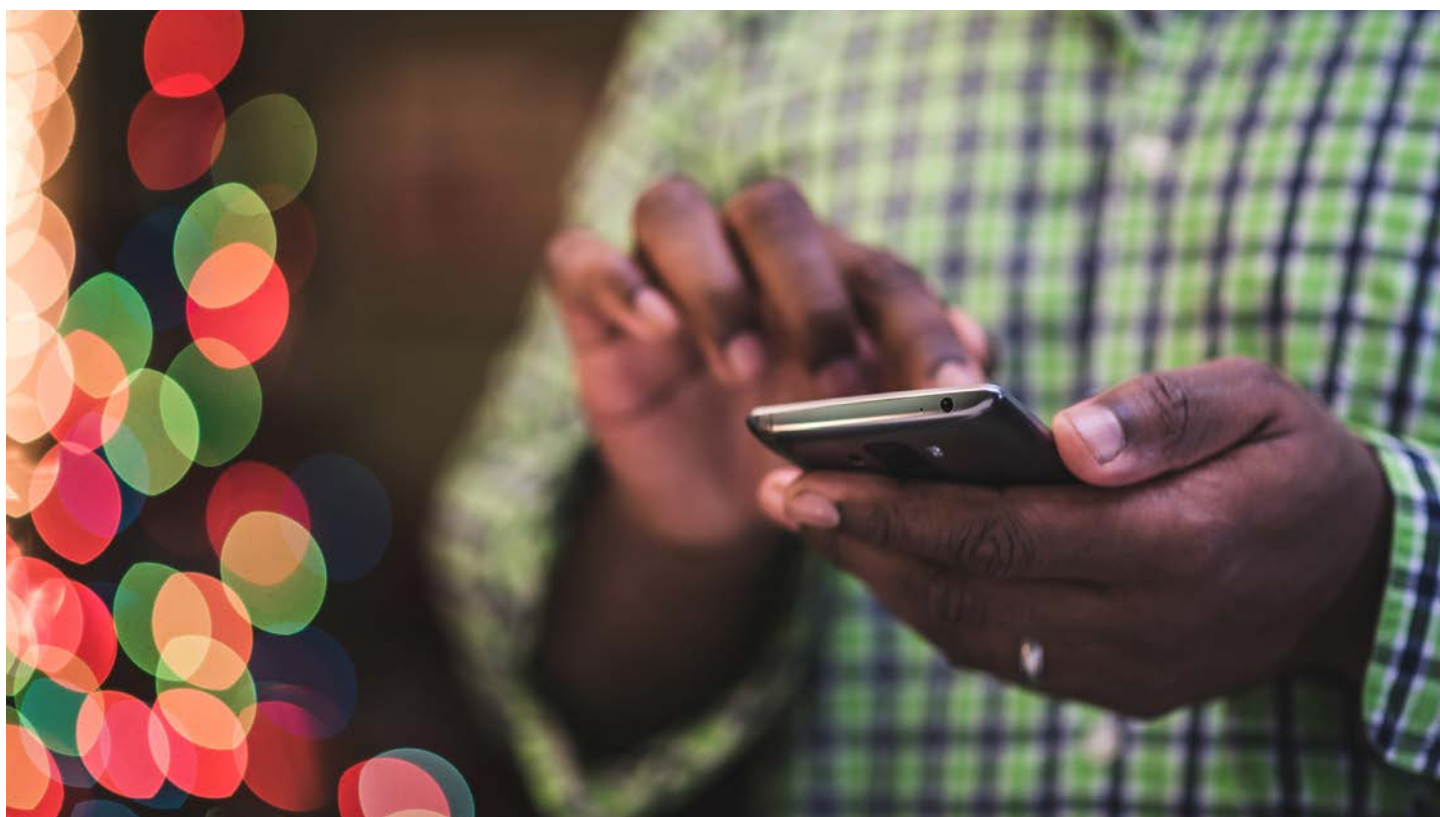Africa definitely has the appetite for 5G. It might just need to be more realistic re timings. ∎

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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

Evina, as a leading cybersecurity company specialized 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

INDUSTRY VIEW: MOBILE FRAUD

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
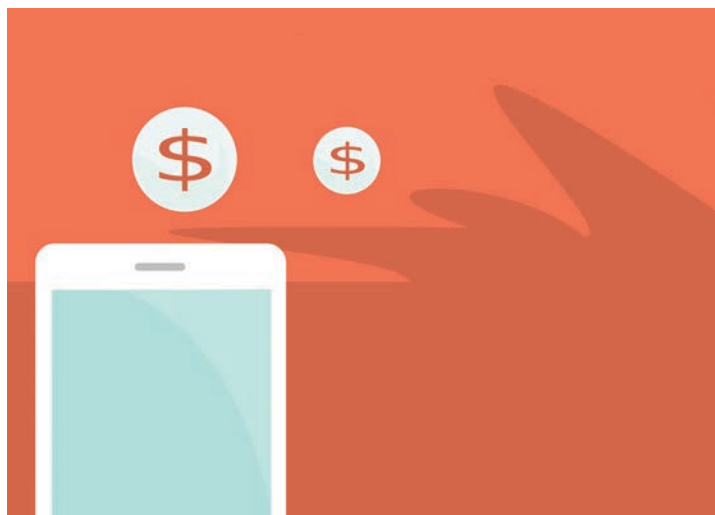
payment method and overall brand image, they will also encourage merchants and online aggregators to follow. Securing all the payment flow chain indubitably also protects the most vulnerable of the lot: the end-user. We cannot talk about an eventual secure mobile payment industry in Africa if each of 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 behaviuor 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. ■

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

Uniting critical communications and command & control professionals at Africa's critical connectivity event – Mission Critical Technologies Africa

Mission Critical Technologies Africa, the continent's dedicated critical connectivity event, will be hosted virtually on 10 November 2020, attracting over 1000 business and mission critical professionals from across Africa.

This event will take place as part of the Africa Tech Festival (9 -12 November 2020) - a week-long series of world-class tech events aimed at uniting tech and talent to drive socio-economic development across the continent. These events include Mission Critical Technologies Africa, AfricaCom and AfricaTech.

Who will you meet?

Going virtual, Mission Critical Technologies Africa has never been more accessible for the global business and mission critical community to engage, network and do business with one another. From CEOs and CTOs to senior engineers, government officials and industry pioneers, there's no doubt you will meet everybody who is anybody within the African critical communications and command & control space.

Key attending companies include:
- Airbus
- City of Cape Town
- Distributed Risk Corporation/ JM3W Group
- Eskom
- Google
- Huawei
- MTN
- Orange
- SA Police Force
- Transnet
- Vodacom

Why attend?

You visitor pass provides you with access to the virtual exhibitor booth where leading companies such as **Huawei, Orange, Facebook** and **IBM** will showcase their latest products and services and demonstrate how their solutions will drive digital transformation and positive socio-economic impact across the continent.

As an attendee will also be able to listen to our esteemed industry thought leaders including **Dr Amanat Hussain** (Executive Chairman, **Issured**), **Pierre DeWet** (Contractor managing the Transport

Information Centre for the City of Cape Town - Group Health and Safety Officer, **Digicall Group**) and **Muhumbulo Mmbwenga** (General Manager, Digital Radio, **Transnet Freight Rail**). These experts will provide insight and expertise into wearable tech and the access to real-time information, the opportunities and challenges of 5G, use cases into an organisation of connected devices and the drivers behind drones and their future. You will also be able to engage in live discussions around these topics and put your questions to these authoritative figures.

PLUS, by securing your free access pass today, you will be able to hear from other well-known thought leaders including:
- **Siya Kolisi** – Co-founder, **The Kolisi Foundation & Springbok Captain**
- **Cherie Blair QC** – Founder, **Cherie Blair Foundation for Women**
- **Ian Schnetler** – Chief Fire Officer, **City of Cape Town**
- **Unathi Mtya** – Chief Technology Officer, **Grinrod bank**
- **Kojo Boakye** – Director, Africa Public Policy, **Facebook**
- **Karen Smit** – Principal Specialist: Specific Needs, **Vodacom**

In addition to hearing from our thought leaders and venturing through the virtual expo, there are also numerous networking opportunities to take advantage of during the event. These include, 1-2-1 meetings, roundtables, networking breaks and discussion around live events.

To learn more about the event and secure your free access pass, visit *https://tmt.knect365. com/africacom/mission-critical-technologies-africa/*

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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 mtn.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 system-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*

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*

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."

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.

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. ∎

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

Camilleri named non-exec chairman, Vodafone Malta

Industry veteran Juanito Camilleri has returned to the telecom sector as non-executive chairperson of Vodafone Malta, the company's new shareholder has announced.

Vodafone Malta was acquired by Monaco Telecom earlier this year and the company will continue operating under the Vodafone brand for a transition period.

Camilleri, a former rector at the University of Malta, served as founding CEO at Go Mobile and later group CEO at Melita Cable.

He is currently chairperson and resident professor at the Centre for Entrepreneurship and Business Incubation at the University of Malta and is a director on various boards.

"I am very excited about Monaco Telecom's vision for the Malta operation, which seeks to retain the company's great strengths while heralding innovative digital services beyond mobile communication," Camilleri said.

He added that Monaco Telecom formed part of a greater network of operators which are not only well rooted in Europe but also have extensive experience in providing state-of-the-art and innovative services in small states. "They will be an asset to Malta and I am very pleased to be invited back to make a contribution to the telecommunications sector," he said.

Camilleri forms part of a new board at Vodafone Malta made up of representatives of the shareholders of Monaco Telecom, which completed the €250m acquisition of Vodafone on April 1 after receiving regulatory approval from the Maltese authorities.

Huawei issues legal threat to Europeans

Huawei has told top European lawmakers that Warsaw and Bucharest risk violating EU law with new 5G security rules, offering a glimpse into possible court battles over new telecom security policies.

In a letter sent to EU competition chief Margrethe Vestager on September 11, the Chinese tech giant said proposed 5G security rules in Poland and Romania — two countries that have taken a hawkish approach to Chinese technology over the past year — "are predicated on several violations of EU law." The company also took aim at bilateral "joint declarations" that Warsaw and Bucharest signed with the US administration.

Any legal challenge to national 5G security legislation in Europe would be a test case for Europe's nascent "technological sovereignty," the notion that Europe should be autonomous in the digital sector and not rely on foreign companies or governments.

SpaceX adds 60 satellites to Starlink

SpaceX, the company founded by South African billionaire Elon Musk, deployed an additional set of 60 satellites to orbit for the company's broadband internet service, two days later than originally scheduled in order to ensure mission assurance.

The October 24 launch marked the third batch of Starlink satellite batch sent to space this month and the 15th mission to support the global broadband system.

The company is establishing ground stations in Texas, North Carolina and California, which bring the number of filed US gateway locations to 42.

International Starlink partners include New Zealand, Austria, Australia, South Africa and Japan.

SpaceX teamed up with Microsoft to bring satellite-powered connectivity on the latter's Azure cloud platform for public and private sector customers via the mobile data center offering.

Cambodia's watchdog goes after 17 operators

Cambodia's Ministry of Post and Telecommunications (MPTC) has suspended or revoked the licences of 17 operators, in a dramatic response to apparently unacceptable business practices.

The move came after a number of operators (both ISPs and MNOs) failed to pay their revenue shares to the government. It appears that some were inactive and some had been reporting false revenue figures.

This was apparently revealed when the MPTC's inspection team was asked to monitor and audit some of the country's operators to gather information on, amongst other things, the status of their business operations, technical capacities and financial conditions.

A statement from the ministry said that inspection findings showed that the 17 operators were "operationally inactive, had no employees or were non-compliant regarding their revenue shares and other obligations as required in their licences or that they failed to provide the necessary technical documents".

CadComms, which had its licence and spectrum revoked in June, has been joined by another mobile operator, Emaxx Telecom. CN Xinyuan Interconnect, XNET, Saturn Holdings, ATA Telecom, PPIN Internet, HT Networks, DG Communications, DTV Star and Cambodia Broadband Technologies have all lost their ISP licences. Aerospace Information Cambodia, Lim Heng Group and TPLC Holdings have had their ISP and voice over IP licences revoked. Kingtel Communications still has an ISP licence but is no longer permitted to provide voice over IP. Finally, the ISP licence of BDKtel has been suspended and the 'position and navigation licence' of Asia Star Resources Investment Holding has been revoked.

All these companies have been ordered to settle any outstanding debts to the MPTC and the country's regulator as well as public debts, private debts and other tax obligations.

A statement from the ministry said that findings showed 17 operators were ''operationally inactive, had no employees or were non-compliant regarding their revenue shares and other obligations as required in their licences or that they failed to provide the necessary technical documents''

Japan's PM orders operators to cut prices

New Japanese prime minister Yoshihide Suga is moving to drive down prices more in line with the rest of the West.

The Japanese Ministry of Internal Affairs and Communications announced plans to reduce the cost of mobile data packages, which the government have previously noted are 40% steeper than similar plans in other Western countries.

Operators recently begun to take notice, with KDDI and SoftBank both announcing new lower-cost plans for their customers that are more in line with Western averages. However, these discounted plans have received immediate criticism for not affecting the vast majority of the telcos' customers; the plans are for the companies' sub-brands (SoftBank's Y! Mobile and KDDI's UQ) that already have low-cost plans and thus will not affect between 80–90% of the telcos' customers who use their au or SoftBank branded plans.

Meanwhile, NTT DoCoMo is seemingly lining up price cuts of its own, saying today during an earnings call that it was weighing its options in response government pressure.

NTT DoCoMo is currently undergoing the process of being reabsorbed by NTT in a US$40bn deal announced at the end of September. The deal is expected to give DoCoMo a more stable financial position from which it could consider further price cuts. The deal is expected to close in November.

For the Japanese customers themselves, who currently pay some of the highest mobile fees in the world, any reduction in prices will be welcomed. However, one player likely to be less excited by this prospective price war is new entrant Rakuten. The disruptive, open RAN-based telco launched 4G services back in April, boasting far cheaper mobile rates than their rivals, even making the initial three million subscriptions free for one year. If the major players do ultimately commit to a significant reduction in plan prices, some of Rakuten's initial appeal could rapidly dwindle.

Batelco claims 5G first

Batelco, the principal operator in Bahrain, claimed to have successfully activated 5G coverage across the kingdom.

The 5G coverage is available in all four governorates covering 95 percent of the nation's population. Batelco said this makes it the first operator to have national 5G coverage in Bahrain – and positions Batelco among the leading operators in the Gulf Cooperation Council (GCC), a political and economic alliance of six countries in the Arabian Peninsula: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

It was in March last year that Batelco signed a partnership agreement with Ericsson to build a national 5G mobile network over a period of two years.

In June 2019, the former announced that it was the first operator in Bahrain and among the first in the region to deliver commercial 5G network services for its customers.

"Covering Bahrain with 5G is a key strategic goal for Batelco, both at the corporate and national level. It's is a technology that will change the telecom industry as we know it today and will open up endless possibilities in the digital space," Batelco CEO Mikkel Vinter previously said. "The entire Batelco team are very proud of the national 5G coverage that is in line with Bahrain's economic vision for 2030."

The Economic Vision 2030 is described as a comprehensive economic vision for Bahrain, providing a clear direction for the continued development of the Kingdom's economy.

In June 2019, the former announced that it was the first operator in Bahrain and among the first in the region to deliver commercial 5G network services for its customers

Vodafone Spain 'first' to offer Alexa-based calls via Echo speakers

Vodafone Spain has integrated its 'OneNumber' calling service with the Alexa voice assistant, becoming the first Spanish operator to offer its customers the possibility of making and receiving phone calls via their Amazon Echo smart speakers and displays.

To use the service, customers simply have to link their existing mobile phone number to their Alexa account via the Alexa app to receive hands-free calls directly on their Echo devices just as they'd use their regular phones, said the company.

OneNumber was launched in Spain back in 2018 and allows customers to share their number and contracted tariff among multiple devices including smartwatches, tablets and smartphones. The OneNumber with Alexa service will cost an additional €1 a month but will be offered for free until the end of the year.

'Namibia to assess long-term environmental impact of 5G' – report

The Namibian government is reportedly undertaking an assessment of the environmental impact of 5G before introducing the technology to the market.

According to outlet The Namibian, the country's Ministry of Environment, Forestry and Tourism was ordered to conduct the review just weeks after the Windhoek municipality revealed that it was upgrading the city's mobile network to prepare it for 5G.

It has also been reported that the city received Class Comprehensive Electronic Communication Network Services and Electronic Communications Services licences from regulator CRAN (Communications Regulatory Authority of Namibia) in March 2020.

The environmental assessment was likely announced as a follow-up to the government instructing CRAN to prepare a 5G strategy for Namibia. The country's information minister Peya Mushelenga has stated that environmental considerations should be accounted for before the introduction of 5G.

SIM re-registration hits Telenor subs figures

Telenor Myanmar has lost over six million customers in the third quarter of this year, which for parent company Telenor of Norway is related to SIM deactivation.

However, the Myanmar unit did not lose money. Figures released by Telenor suggest that total third-quarter revenues of kr1.62bn were up from kr1.39bn a year earlier. Subscription and traffic revenues amounted to kr1.43bn, up from kr1.20bn. Mobile ARPU and EBITDA were also up.

The number of subscriptions decreased by 6.3 million as Telenor Myanmar deactivated SIMs following the SIM re-registration process to comply with new directives from the authorities. There was an underlying increase of more than four million subscribers but the overall effect was a 2.1 million reduction in the group's subscriber base.

The inherent demand for telecommunications services, however, is growing. In fact the increase in subscription and traffic revenues was apparently driven by strong growth in data usage, more than offsetting the impact of price pressure.

The Telenor report also noted that operations in Asia and roaming revenues remained impacted by the Covid-19 situation. Lockdowns have eased in some places, but the report says, the number of new daily Covid-19 cases has been increasing in Myanmar, and local movement restrictions and lockdowns have been implemented.

Sparkle and Mobileum provide enhanced connectivity and roaming solutions

Sparkle, the first international service provider in Italy, has partnered with Mobileum, a provider of analytics solutions for roaming, telco security, risk management and end-to-end testing, to provide integrated roaming and security services to mobile operators worldwide.

Under the terms of the deal, the partners are able to offer mobile network operators (MNOs) and mobile virtual network operators (MVNOs) "a unique intelligence infrastructure" to support secure roaming services such as end-to-end IPX connectivity, data roaming, signaling security services for SS7, Diameter and GTP, and analytics-based roaming solutions. Services are delivered through an integrated next-generation platform that covers a broad range of connectivity scenarios, from VoLTE to IoT to 5G.

"This partnership represents a new era in the relationship between Sparkle and Mobileum," said Michele Campriani, chief sales officer of Mobileum. "Sparkle's global connectivity and service portfolio and Mobileum's proven Active Intelligence platform are complementary solutions that, when paired together, create a unique intelligence infrastructure that supports a rich set of secure roaming services."

Mario Pastore, chief revenue officer of Sparkle, added: "By partnering with Mobileum, we enhance our service portfolio and act as a real solution provider on top of providing pure connectivity. We are confident that this will be a fruitful and successful new page in the history of Sparkle as a supplier for mobile operators globally."

Pure Telecom agrees €10m deal with BT

Irish broadband and telecoms provider Pure Telecom has penned a €10m deal with BT Ireland that will provide it with access to SIRO's nationwide high-speed fibre broadband network.

The network consists of 338,000 homes and businesses in 45 towns around Ireland so far.

As SIRO continues to connect urban and regional premises with Gigabit broadband, the BT deal will allow Pure Telecom to expand its reach countrywide.

Under the terms of the deal, BT will provide Pure Telecom with a comprehensive managed service which will help bring its broadband "Fibre to the Premises" product offering to the market.

The service will be made available across Ireland at every location where there are FTTP services are available.

Paul Connell, CEO at Pure Telecom, said the company is consistently striving to get more people and businesses access to high-speed broadband.

"Too many homes and businesses in Ireland still don't have fast internet access and it is detrimental to our society and economy - particularly at a time when everyone has been advised to work from home where possible," Connell said.

Thousands of Yemenis could lose telecom services

Thousands of Yemenis could soon lose access to telecom and internet services in the capital, Sanaa, due to a lack of fuel needed to operate the corporation's facilities.

Local media quoted a corporation source saying that the telecom corporation's stock of fuel is about to run out which could cause the switchboards and other stations to stop operating.

"Large segments of Yemenis will be deprived of communication and internet service, and most economic and banking activities that depend on telecommunications services and the internet to conduct their business will cease," the source said, adding that the activities of vital sectors that depend on fuel to produce energy and operate their equipment as well as transportation could also stop.

The Houthis, an Islamic political and armed movement that emerged from Sa'dah in northern Yemen in the 1990s, have recently closed Sanaa International Airport to the UN and other humanitarian aid flights claiming that the internally recognised Yemeni government and Arab coalition have prevented the entry of oil derivatives needed to operate the airport.

However, the internationally-recognised Yemeni government accuses the Houthis of taking advantage of the suffering of civilians to cover up their theft of more than 50 billion riyals (US$0.2 billion) of oil derivatives revenues from Hudaydah port, designated to pay the salaries of public sector employees.

Moreover, the government says the fuel crisis in the Houthi-controlled areas is "fabricated", explaining that the country has received fuel that covers the Yemeni people's needs for at least seven months.

Local media quoted a source saying that the telecom corporation's stock of fuel running out which could cause the switchboards and other stations to stop operating

KaiOS, E. B. Solutions launch phone with built-in infrared thermometer

KaiOS Technologies, maker of the leading mobile operating system for smart feature phones and E. B. Solutions, a Bangladeshi technology services provider, have brought to market the geo phone T15.

Available for BDT3,500 (US$41), the KaiOS-enabled device includes an infrared thermometer developed by FISE. KaiOS says the T15 combines feature phone hardware with KaiOS, giving users access to WhatsApp, YouTube, Facebook apps, as well as the Google Assistant through the KaiStore.

"This combination of high-speed internet, on-the-go temperature monitoring, and affordability are perfect for Bangladesh," said Sebastien Codeville, CEO of KaiOS Technologies. "Popular apps and other vital digital resources are more accessible than ever via the T15, alongside the potentially life-saving power of contactless temperature readings. With E. B. Solutions Ltd., we're taking a crucial step towards closing the digital divide in South Asia and helping stop the spread of

Available for BDT3,500 (US$41), the KaiOS-enabled device includes an infrared thermometer developed by FISE

COVID-19 through an affordable, innovative device."

Rafiur Rahman Khan Yusufzai, managing director of E. B. Solutions added: "Geo Phone T-15 will be an affordable device which can narrow this digital divide for rural populations. Geo Phone T15, powered by KaiOS, is a 4G VoLTE-enabled device with necessary apps for your digital lifestyle."

Accurate down to 0.2 degrees

Celsius, the T15's IR thermometer is located next to the smart feature phone's rear-facing camera. Users can point it at the subject's forehead for an instant temperature reading. The Geo Phone T15 also provides access to educational resources such as Kai's in-house app Life, which features lessons and self-help articles related to Covid-19, general health, digital literacy, agriculture and more.

Quortus partners with TLC for private 5G network radio solution

Quortus, the UK-based provider of private edge, LTE and 5G network solutions, has partnered with Florida-based TLC Solutions, a provider of wireless network solutions for remote, rural, tactical and emergency deployments, to deliver 5G radios for private network deployment.

The former has been working with the US firm to provide its ECX Pack, ECX Access and ECX Core products as an integrated part of TLC Solutions' wireless network systems. The combined offering is said to deliver "greater flexibility for private network deployments", particularly with regards to radio range and spectrum optimisation.

TLC is currently integrating the Quortus' packet core and its access management system as part of its 5G New Radio (NR) solution.

"We are extremely proud of the longstanding partnership we have formed with Quortus," said Lee Sanders, president at TLC Solutions. "Its innovative products ensure that we continue to meet the very specific needs of our customers. We are excited to continue to see our partnership develop as we enter the next generation of wireless technology and see Quortus help TLC bring to market its private 5G network solutions and products."

Mark Bole, CEO at Quortus added:

"There is tremendous interest in the potential of private 5G networks as enterprises across multiple vertical markets evaluate the new levels of efficiency and productivity they offer. We're delighted to be extending our valued partnership with TLC to include private 5G networks, as we help organisations either migrate from private LTE networks or build bespoke 5G infrastructure for the first time."

This latest announcement builds on an 11-year partnership between the two companies, which has seen Quortus provide software-defined core network solutions to TLC Solutions for its 2G, 3G and LTE network systems.

The combined solution is targeted to be available later this year.

Talking on the moon

Nokia has been chosen by the American space agency NASA to build the first mobile phone network on the moon.

The Finnish gear-maker recently announced that its Nokia Bell Labs division will build the lunar communications system. It said NASA will put the equipment on a lunar lander. The spacecraft is expected to reach the moon's surface in late 2022.

Nokia's announcement comes as the space agency continues preparations for sending astronauts to the moon by 2024. NASA's Artemis program aims to establish a long-term human presence on the moon as a "warm-up" for future missions to the planet Mars.

NASA also recently announced it had awarded US$370m to 14 companies to provide technology for the moon-landing program. The money will support studies of cryogenic fluid management and technologies related to energy storage and power production on the moon's surface.

The Nokia agreement was included in NASA's latest awards to private companies. The space agency said it is paying the company US$14.1m to build the mobile network.

Nokia said its network will provide critical communications for work astronauts will need to perform on the moon. This will include remote control of lunar vehicles and other equipment, real-time navigation activities and high-quality video streaming.

The equipment includes a base station, antennas and computer software programs. All the equipment will be designed to survive difficult launches, lunar landings and extreme conditions in space.

Nokia also said the equipment is designed to configure, or set up, the 4G/LTE communications network on its own. Marcus Weldon is Nokia's chief technology officer. Weldon said he sees the 4G/LTE system as a necessity to support "a sustainable human presence on the lunar surface."

The company decided to use 4G instead of 5G, the latest mobile technology, because 4G has been available longer and proven its reliability.

Q&A

Olivier de Boisset
founder and general manager
Liptinfor

What was your big career break?
My biggest career break came in 2005 when I decided to start an ISP in Niger, Liptinfor. had previously been working in Angola for an Italian food distributor but wanted to be in charge of my own destiny and work in technology. I asked for a credit at the bank and started looking for opportunities not so far from my family in the IT and telco sectors. Securing a license in Niger was just the start.

To begin with we provided 1024 kbps down and 120 Kbps up using VSAT. With this small capacity I served 11 customers with a wireless solution. Now we are buying 2.5 Gibabits and have about 1500 customers all over Niger.

Who did you most admire growing up?
I grew up in Gabon, Senegal and, for the most part, Burkina Faso. My father worked in IT mostly selling computers and connectivity including, at the very beginning, internet dial up connections. I got my taste of entrepreneurship from both my parents who inspired me - and still consult them regularly on important strategic decision for Liptinfor.

Niger is very similar to Burkina, same environment, same friendly people. After 15 years living and working here, I am still loving it.

What has been the greatest technological innovation in your lifetime?
For me the greatest technological change during my lifetime are smartphones. They enable us to do everything from anywhere as long as we have connectivity.

For my business, in recent times the use of SD-WAN technology from Gilat Telecom has really made a difference and enabled us to maximise our satellite and fiber bandwidth. Niger is far from the sea with unstable fibre paths. SD-WAN has enabled us to provide a continuous stable service with improved QoS even when some paths have issues or are totally down. Both our retail and enterprise customers have commented on the improved speeds and higher up-time, and our network managers are thrilled to have greater control over capacity.

Did Covid affect your business?
Globally, Niger was not affected too much by Covid. By September 1,182 cases had been reported with 69 deaths. However, our business to business market was affected (especially airline companies and hotels) but we manage to load balance this loss with increased demand from residential customers. Lots of the NGOs and commercial businesses started to work from home and needed fast and reliable connectivity. As across the world, reliable Internet in Niger is becoming as important as electricity or water.

What are your plans for 2021?
We are growing quickly and remain nimble in our approach. We are going to expand our network, make our link more redundant, get more international capacity and improve our SDWAN usage.

Tell us about the telecom market in Niger
Niger is the largest country in West Africa with a population of around 23.8 million, 57% of whom are less than 18 years old. The state-owned operator is Niger Telecoms and there are three other MNOs: Bharti Airtel , Zamani Com (ex Orange) and Moov.

Niger is a challenging market for all operators for a number of reasons: very high temperatures, vast distances between populated areas, security issues and energy supply shortages.

About half of the population is not covered by mobile broadband, and there are huge gaps in coverage between urban and rural areas where most of the population live.

The Digital 2020 report for Niger found that there were 11.1 million mobile connections (equivalent to 47% of the total population) in Niger and 2.78 million internet users in January 2020 which is 12% penetration.

The completion of the Trans-Saharan Dorsal optical fibre network has increased international capacity into Niger. This connects six countries: Algeria, Chad, Mali, Niger, Nigeria and Tunisia.

In December 2016, the Niger government obtained a €31.4m loan and a gift of €12.5m from the The African Development bank to build the national leg of the network. Hopes are high that this may act as a catalyst for further investment in fibre.

In July 2020 The World Bank announced that it had set aside $100 million to help Niger implement an ambitious program to use digital infrastructure and services to modernize its economy and strengthen access to basic services.

The Smart Villages for Rural Growth and Digital Inclusion project aims to increase access to cellphone and broadband services in rural areas and to bring digital financial services to selected underserved areas in Niger.

Most specifically, the SmartVillages project will increase digital connectivity by supporting reforms that would help create an enabling environment for private investments in the telecoms sector. It will promote women's access to telecommunications and financial services by helping develop a national digital equity strategy.

What does Liptinfor provide?
Liptinfor has been operational in Niger for 16 years providing Internet services across the country. As well as the state-owned operator and three MNOs there are two other ISPs (SANCFIS, Atlantique Futur technology) in the country and our differentiation is clear: excellent customer service whilst always exceeding expectations. We never overpromise and we always over deliver.

We use the O3b and IS14 satellites, wireless broadband - and the country's fiber backbone owned by Niger Telecoms and mostly in the capital, Niamey, and the northern city of Agadez.

What are the greatest opportunities and threats for your business?
The opportunities are in the fact that Niger still needs a lot of telecom infrastructure to be built, the population is young and fast-growing and hungry for voice and data.

The threats are the stability of the region; we recently have had a big terrorist attack and there was also a coup in Mali which is threatening the stability of neighboring countries including Niger. However, we have elections in Niger in a few months and are hoping that this will bring stability and peace.

Who is your musical hero?
I have many but my choice will go to Julio Iglesias because of my Spanish roots and because he is an amazingly talented musician/songwriter who is able to sing in so many different languages.

If you had to work in another industry, which would it be?
I love my job even if it is very stressful having to provide a 24/7 service no matter what in such a difficult environment. I think I would stay in the technology industry as in the past decade we have seen so much progress that has made our lives better with robotics communication, mobile health etc.. and all this progress is possible because people think of new ideas and make them come true.

What would you do with $1m?
Well I don't think I have even won a single dollar in my life without working for it but if this does happen one day then I would reinvest it for my kids to make sure their future is guaranteed and they don't miss anything.

Which business person do you most admire?
There are so many that it is difficult to choose. There is one specific person who is also a good friend named Abdoul Dia, the CEO of VTS Burkina Faso. It took him just a few years to build the biggest ISP in Burkina. ∎