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

NORTHERN AFRICAN WIRELESS COMMUNICATIONS

FEBRUARY/MARCH 2020 Volume 19 Number 1

- Key industry players discuss smart cities in Africa
- Connecting refugees within the continent
- The ATU's call to arms over Covid-19

Simon Fletcher, RealWireless CTO, offers advice to government and regulators

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Real Wireless is the world's leading independent wireless advisory rm. Our network of experts includes engineers, physicists, economists, security advisors, business strategists and deployment specialists. Our clients bene t from a comprehensive portfolio of specialists and custom tools that analyse radio network performance, techno-economic impact and the business model implications of wireless systems. With this unmatched resource we are able to advise the industry and all user groups, spanning businesses, governments, mobile operators, regulators and technology companies on every aspect of wireless technology.

We've applied this unique range of technical and strategic expertise to a wide range of wireless infrastructure projects – from major stadium connectivity to shopping malls and transport systems. We work with operators, vendors and regulators on all forms of wireless connectivity, advising governments and the European Union on the technical, social and economic implications of communications policy.

Turn to page 7 where Simon Fletcher, Real Wireless CTO, offers advice to regulators and governments.

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Balloons to access Kenya's airspace and enhance 4G network coverage

Kenya's Telkom and partner Google Loon have received permission from the Kenya Civil Aviation Authority to allow balloons to access airspace and enhance 4G network coverage across the country.

The approval will facilitate communication and satellite internet connectivity in remote areas of the country and enable Kenyans in these localities to retain and enhance remote access to their offices and enterprises, while ensuring universal 4G data coverage is available throughout the country.

According to the release, "this intervention will enable Kenya to retain her competitive advantage in ICT and innovation in the midst of the current crisis while at the same time laying foundations for greater expansion once the current health challenge is contained. The development will also enable Telkom Kenya and Google Loon to start the commercial rollout of a 4G data network in our country. These two companies have been testing this service for the last two years".

The balloons, which will be launched in the US and reach Kenya in weeks, will undergo network integration procedures to provide the country with the needed connectivity in the short term

The balloons, which will be launched in the US and reach Kenya in weeks, will undergo network integration procedures to provide the country with the needed connectivity in the short term.

"Once inaugurated, this service will extend Telkom Kenya's 4G network to areas that are not covered by any of our mobile network providers," the document said. "Therefore, all Kenyans, wherever they are in the country, will enjoy access to high speed and affordable internet services. I know the gesture by Google Loon and Telkom to offer their 4G to support our efforts in surveillance and management of coronavirus infections and this will go a long way to containing the present health challenge."

With government enforcing a curfew on movement and non-essential businesses and services as a move to mitigate the spread of coronavirus, there is more reliance on internet connectivity to carry out commercial activities from homes, thus these technologies come in handy in a time such as this.

Alastair Westgarth, the chief executive officer (CEO) at Google Loon said his team is working as fast as it can to deploy the Loon service in Kenya "to help in the short-term and establish sustainable operations that will continue to serve Kenyans for the long-term".

He added: "Like many businesses big and small, Loon's operations have seen some impacts as a result of the Covid-19 pandemic. With the groundwork we have already laid in Kenya, however, we're confident that we can address these challenges and begin providing meaningful service to Kenyans in the near future."

Orange gives extra €3m to help Africa

Orange has allocated an additional €3m to the Orange Foundation, a fund to support a variety of healthcare and preventive initiatives and to provide essential supplies in all countries in which the operator is present.

The fund supplements contributions of €5m already committed by Orange Foundations in countries in Europe and the Africa and Middle East region.

In Africa, each country in which Orange has a large presence will receive protective equipment (masks, hand sanitizer, gloves, glasses, overalls, etc.) as well as a specific allocation for sourcing medical equipment to support NGOs and local health authorities in their crisis actions.

A total fund of €2.5m will be made available for the Africa-Middle East region, in addition to the €3m already committed by the countries.

Through its Solidarity FabLabs1, the Orange Foundation will also support an initiative to use digital tools to manufacture reusable protective visors for healthcare staff in hospitals. This initiative was first launched by the six Solidarity FabLabs in Tunisia, in partnership with the health ministry, in order to meet high demand by local health services. The initiative is now being extended to other countries. Supplementary financial assistance will be provided the 40 FabLabs involved in this program to help them buy the raw materials necessary for the production of 20,000 certified visors. Production has started in France and Tunisia and the visors are distributed in local hospital structures.

The entire Orange Group, present in 26 countries, has mobilized itself in order to contribute in the best possible way to efforts to manage this global health crisis.

Moroccan telecom operators offer free internet to students

Morocco's telecom operators have offered the country's students free internet access to websites hosting online classes amid the coronavirus-induced school suspensions.

A joint press release issued on March 22 by the Ministries of Education and Trade announced that Inwi, Orange, and Maroc Telecom will afford free internet access to all online learning portals.

The move seeks to ensure the continuity of the pedagogic approach aiming to provide all students with the opportunity to benefit from remote learning in the best conditions.

The ministry replaced in-person lessons and classes with remote educational activities, allowing students to stay at home while continuing their studies.

In addition, the government launched the "Tilmid Tice" website to facilitate remote classes and the education ministry also broadcasts classes for primary, secondary and high school on the Arrabia television channel.

At the time of going to press, Morocco confirmed 109 cases of coronavirus, including three deaths and three recoveries.

MTN Benin gets AI managed services

MTN Benin has expanded its existing agreement with Swedish giant Ericsson to include network services based around analytics, artificial intelligence (AI) and automation.

The operator already uses managed charging systems from Ericsson and has now asked the vendor for additional network operations centre services and field services focused on core, radio and transmission technology.

Improved efficiencies from more intelligent, data-drive operations will allow the operator to manage its network more proactively via predictive operations, improving customer experience as well as network performance and quality of service.

"Network managed operations play a significant role in improving MTN customers' satisfaction and enhancing customer experience as well as enabling revenue growth and cost efficiency," Stephen Blewett, CEO of MTN Benin, said. "We expect advanced technologies like AI, automation and analytics to further accelerate operational transformation through this new managed services partnership."

Nicolas Blixell, vice president Middle East and Africa at Ericsson added: "We are strengthening our long-term partnership with MTN Benin and we look forward to leveraging the skills and know-how we have developed by managing networks around the world. We believe this contract will enable MTN to improve its focus on its core business."

Liquid ready to enter Eritrea, says CEO

Liquid Telecom announced plans to enter the telecom market in Eritrea, via a Facebook post by chief executive officer (CEO) Strive Masiyiwa, who heads parent company Econet Global.

In the Digital 2020 report, We Are Social and Hootsuite revealed that mobile penetration in this country is only 20%. That means out of the 3.52 million inhabitants, only 711,000 people have access to mobile service. Internet penetration rate is just 8.3%.

Despite several ongoing appeals from the World Bank for the need to liberalise the national telecom sector, in view of the definite impact on socio-economic development, the Eritrean government has been slow to open the market to competition.

Eritrea is currently, after Ethiopia, the last telecoms market in Africa operated solely by the public incumbent company, Eritrea Telecommunications Services Corporation (EriTel).

Eritrea is currently, after Ethiopia, the last telecoms market in Africa operated solely by the public incumbent company EriTel

Liquid Telecom officially launched its broadband service in Juba, South Sudan, February 20.

Hormuud Telecom becomes first private firm in Somalia to be ISO certified

Hormuud Telecom has become the first private corporation in Somalia to secure the ISO 9001:2015 certification, an international standard that acknowledges Hormuud's products meet all the relevant regulatory requirements.

Founded in 2002, Hormuud is the leading firm by market share in Somalia with over 12,000 shareholders and this award sees it join several other certified east African firms.

"I am delighted that Hormuud have achieved this ISO 9001:2015 certification as an effective quality management system," said Ahmed Yusuf chairman and chief executive officer (CEO). "We are the first Somali corporate entity to achieve this accolade. This certification is evidence of our natural progress as a telecommunications leader in Somalia and we will continue to provide exemplary products to our customers, widening financial inclusion throughout our country."

Yusuf said Hormuud would continue to expand its service offerings in order to accelerate ICT driven financial inclusion across Somalia through its EVC Plus mobile money platform. He added that by reaching new customers, "Hormuud is guided by its mission to widen access to finance for the most marginalised and vulnerable Somali communities".

Ahmed Yusuf, chairman and CEO at Hormuud said the company is "delighted" with the ISO ISO 9001:2015 certification

EXPERT AND INDEPENDENT ADVICE FOR GOVERNMENTS AND REGULATORS

Simon Fletcher, Real Wireless CTO

As the connectivity demands of business, industry and individuals ramps up, so must government and regulatory policy evolve. Spectrum demand, end user expectations and the transition to 5G are all presenting a new set of challenges; most of which weren't even considered a few years ago. Real Wireless provides informed, independent, up-to-date expert knowledge to enable regulators and governments not only make decisions but to do so quickly, fairly and effectively.

Today's regulatory challenges require a clear understanding of the changing wireless landscape and the ability to make quick decisions. We offer both.

Questions and challenges facing regulators include how to manage spectrum in a way that balances the often conflicting pressures from various sectors that want to use it – from mobile to satellite and fixed wireless to broadcasting; how do you ensure that there is a competitive landscape that can benefit all end users? Taking into account likely system deployment costs, and balancing a specific region's needs with international spectrum deployment plans is a complex equation.

Regulators – local, regional, national and international – are all required to answer these questions and more. How, and even if, to create the national frameworks for network and spectrum sharing? How to deliver a national digital strategy at a municipal level. How to balance the spectrum needs of the wireless industry and policy issues associated with the development and growth of private networks deployments?

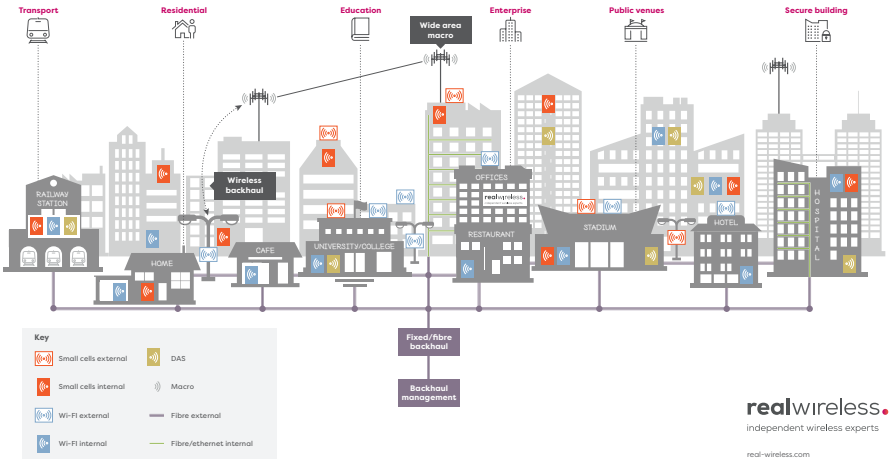
Regulators can't take years deciding; the slower the decision-making process the more delay will impact the time to market of technologies and the development of infrastructure that could boost economic growth. Understanding how to drive the development of robust and economically sustainable connectivity requires the ability to take into account a number of factors from radio propagation, in-building penetration, to reuse of spectrum and much more – a vast range of issues, requiring both technical knowledge and a global perspective.

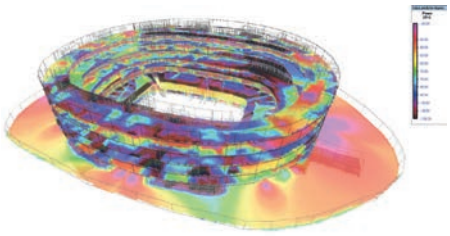
Which is what Real Wireless can bring to government and regulatory bodies of all sizes as they work through the immediate wireless needs of their cities, countries or regions and the connectivity needs of the very near future. Our experts offer genuine insights into all technology options involved and all associated concerns – from infrastructure costs to deployment costs, from device availability to spectrum management, from international spectrum harmonisation to international regulatory mechanisms. We have a strong understanding – technical and, of course, regulatory – of spectrum policy and the socio-economic implications of national and regional communications programmes, and have advised regulators and governments worldwide.

Decisions have to be made – and Real Wireless can assist in making those decisions. We can offer the global perspective of experts that have contributed to international radio conferences and chaired high-level committees as well as experts who have planned, costed and rolled out real networks from the early days of cellular to 4G and the dawn of 5G. We know how mechanisms work – both technological and regulatory – and we know how to get results.

At all levels of government there is a continuing need to understand what social and economic benefits wireless technologies such as Wi-Fi and LTE can offer, together with another requirement – to develop an awareness of how and at what cost these benefits can be realised. With 5G on the horizon, and legacy technologies maturing and coming to end of life at different times in different markets these needs are sure to grow.

Wireless strategy is not just a concern for consumers or industry. It matters more than ever to government. Grasping the concepts and implications of capacity management,





future license terms, network slicing, the value of spectrum, effective competition and new digital business models is essential to understanding the many new ways in which wireless can help government to address social and economic needs.

Is free Wi-Fi across key public areas of a major city viable? What are the policy implications of extending 4G coverage? How can spectrum allocation meet the essential needs of a nation or region's emergency and public safety users? How critical a role will local councils play in developing and delivering the densification of digital infrastructure? How should 'smart cities' happen? How will major mergers between operators affect future infrastructure and spectrum requirements?

These are questions we have researched; that we continue to research and have been instrumental in answering on behalf of authorities at local, regional, national and international level.

The list of those authorities is a long one, taking in regional UK councils, the UK Spectrum Policy Forum, the Scottish Government, Ofcom, the National Infrastructure Commission, the Austrian Regulator and the European Union among others.

And there will be many more questions as 5G offers both the potential for vastly improved public services and the challenge of making them work. We will continue to act as a key advisor to government and regulators on all these issues.

We will also question – and occasionally disagree with – policymakers. We are proud of our status as an independent, expert voice at a time of conflicting demands on government strategy and resources and believe such expertise has never been more necessary than it is today.

The processes and bespoke tools that Real Wireless has developed aid us in helping regulators, mobile operators, neutral hosts, road & rail operators, local authorities and landowners to understand better what the deployment options are to deliver mobile voice and data services to consumers – whether on a national, regional or local level If you think you could benefit from our support, get in touch.

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Tower operator's expansion plans frustrated by pandemic

Telecom tower manager Helios Towers is currently sitting on US$350m from its October 2019 fundraising on the London Stock Exchange, but cannot invest it on a planned African expansion because of the coronavirus pandemic which is currently hampering global economies.

According to Bloomberg, Kash Pandya, the chief executive officer of Helios Towers, revealed that the current environment does not favour acquisition operations. "It's not that the talks are stalled, because you can always have conference calls, but for real mergers and acquisitions to happen, you need things like field investigations [...] It will be slower for a few months, but the world will have to return to normal at some point, "said Pandya.

Helios, which is present in several markets on the continent, notably Nigeria, Tanzania and South Africa, has plans to enter Ethiopia. It also aims to buy 2,500 towers over the next five years while building a similar number.

Pandya said he wanted to reassure people about the ability of society to weather the current health crisis.

Helios is said to believe that the current environment does not favour an acquisition operation

He also said that he gained some experience in this kind of situation with regard to "comparable and difficult moments crossed in some of our markets before, as in the Democratic Republic of Congo with the Ebola epidemic".

OneWeb declares bankruptcy

OneWeb, the US firm that specialises in providing internet via satellite, has filed for bankruptcy.

In a press release issued on March 27, 2020, the company said it was forced to do so because it was unable to find sufficient funding to continue its investments.

An agreement for new funding was almost signed, but the advent of the coronavirus and the financial impact the disease had on the market had a negative impact.

OneWeb launched the Rwandan satellite "Icyerekezo" in February 2019 and had wanted to provide telecom services in several African countries, notably Angola and even Nigeria, where it had already obtained an operating licence.

Instead, OneWeb is now looking for a buyer able to continue this ambitious project of a constellation of nearly 600 telecom satellites in low orbit around the earth to provide internet to populations living in areas not covered.

Exactly one-year-ago, OneWeb successfully raised US$1.25bn from SoftBank, Grupo Salinas, Qualcomm Technologies and the government of Rwanda. This sum, which brought the funds raised by the company to US$3.4 billion, was intended to accelerate the development of its global satellite communication network by 2021.

Cameroon telecom watchdog asks operators to lower prices

Cameroon's telecom regulator has initiated negotiations with operators so that they can lower the prices of various services offered, because of the coronavirus health crisis. The watchdog made the announcement in a release signed on March 30, 2020, by Philémon Zo'o Zame, director-general of ART.

MTN and Orange have already announced the partial reduction and even suppression of fees on financial transactions conducted via their mobile money platforms.

However, to-date, the costs of phone calls and the internet are still the same. Operators do, however, offer a wide range of promotional offers and other packages, which provide customers with several choices making them spend less.

UNHCR concerned about Ethiopia's connectivity problems

The Office of the United Nations High Commissioner for Human Rights (UNHCR) has voiced its concern about ongoing interruption of internet and telephone lines in Ethiopia's Oromo region during the Covid-19 crisis.

It has urged the government to put an end to this blockage which has persisted since early January 2020 in the areas of Kellem Wellega, Oromia Occidental, Wellega Ouest and Horo Gudru Wellega.

"In the midst of the Covid-19 crisis, factual and relevant information about the disease and its spread must reach everyone, without exception," the UNHCR said. "It is also essential that information about the disease is readily available in understandable formats and languages, and that the information is tailored to people with specific needs."

This new service will use text messaging to provide information before and during major natural disasters, improving preparedness and response

The drag the current Internet blockage poses on the response to the Covid-19 aside, the situation in the Oromo region is also likely to result in financial losses. Last year, in a study on the financial losses caused by the restriction of Internet access, TOP10VPN had estimated the losses recorded by Ethiopia after 346 days of interruption of services at US$56.8m. As of March 30, 2020, the current internet outage in several areas of the Oromo region has continued for over 80 days.

The Ethiopian government has continued to defend its position.

Côte d'Ivoire to increase mobile banking usage

The government of Côte d'Ivoire wants to increase the usage of mobile banking in the west African nation by allowing interoperability between different digital financial services.

According to local reports, the government anticipates a boost to mobile money subscribers and transaction volumes if customers of different providers are able to transfer money between platforms.

The government will also open up the base level USSD (unstructured supplementary service data) standard to companies other than mobile operators, which have previously held an effective monopoly on the technology. It is hoped that this move will result in more players entering the financial services space.

In addition to encouraging money transfers between consumers, the government wants to expand digital access to its own services, with the object of allowing citizens to access 80% of its services via mobile devices.

The push towards financial inclusion forms part of a broader regional strategy from the Central Bank of West African States. The Côte d'Ivoire's government believes that around 44% of the population do not – or cannot – currently access mobile financial services.

According to local reports, the government anticipates a boost to mobile money subscribers and transaction volumes if customers of different providers are able to transfer money between platforms

Safaricom and Vodacom complete deal

Kenya's Safaricom and South Africa's Vodacom have completed the acquisition of popular mobile money platform M-Pesa from Britain's Vodafone for an undisclosed sum.

A deal was first announced in 2019 and completed via a newly-created joint venture, but last year Safaricom's then chief executive Bob Collymore, who passed away last year, said the agreement could be worth about US$13m.

"The transaction... will accelerate M-Pesa's growth in Africa by giving both Vodacom and Safaricom full control of the M-Pesa brand, product development and support services as well as the opportunity to expand M-Pesa into new African markets," the companies said in a statement.

M-Pesa, launched in Kenya more than a decade ago, has evolved from a basic mobile money transfer application into a fully-fledged financial service platform, offering loans and savings in partnership with local banks, plus merchant payment services.

It has grown to become the largest payments platform in Africa, with 40 million users and processes over a billion transactions every month.

Swiss firm to deploy telecom monitoring and control system in Niger

Swiss firm MGI Communications has been retained by the Nigerien government to set up a surveillance and control system for telecoms services in the country.

It is a system for monitoring and controlling telecom services, which is intended to be reliable and secure and whose implementation is financed by the National Agency for the Information Society (ANSI) and the Regulatory Authority for electronic communications and post office (ARCEP), up to 13.5bn CFA francs (US$ 23.5 million) excluding taxes. The lead time is five years, according to the release.

According to a government press release, this public service was awarded to MGI "by direct agreement without competition".

MTN Uganda makes Covid-19 donation

MTN, the largest telecom operator in Uganda, has donated USh500m towards the effort to fight against Covid-19 in the country.

Chairman Charles Mbire revealed that USh300m will be channelled through the Red Cross and USh200m via National Water and Sewage Corporation, as part of the costs for water distribution during the lockdown period.

Mbire said that MTN stands with Ugandans during these trying times and is committed to supporting government efforts to curb the spread of the disease.

In addition, the operator has zero-rated 18 educational websites to help pupils and students learn from home during the lockdown. MTN Uganda has also decided to offer free access to websites as a way of helping learners study from home.

The company, known for embracing and promoting vital technological innovations hopes to encourage more Ugandans to consider online learning options even after the defeat of the pandemic. MTN Uganda chief executive officer (CEO) applauded president Kaguta Museveni and his government for the Swift response they have given so far in the preventive fight against coronavirus.

"MTN is also complementing government's sanitisation drive by availing USh500m in cash and free media channel space (radio, TV, social media, SMS and call centre IVR platform) to promote the Ministry of Health's sanitisation messages," he said.

MTN Uganda has also slashed tariffs on its mobile money transactions for P2P (person-to-person). Vanhelleputte said the decision was based on the fact the virus can be transmitted via banknotes. Uganda was one of very few countries in Africa to register a case of a person testing positive for coronavirus at the time Northern African Wireless Communications went to press. MTN Uganda has witnessed exponential growth over the years.

CSS, Forsway continue to invest in west Africa

CSS, a west African communications services provider and Forsway have progressed to the next phase of their partnership in Mauritania to deliver affordable broadband in the region.

Leaning on CSS' local expertise, Arabsat's Xtend Africa managed service and Forsway's satellite broadband extension, the partners joined forces to provide emerging economies across the continent with access to affordable satellite internet services, as well as to help build a productive economy, business, education and provide access to health services and information.

"We have been trialing the Xtend Africa managed service from Arabsat/Forsway during a first assessment phase," said CSS' CEO and founder Houssein Cherif. "The results, boosting poorly performing mobile and VSAT links in an affordable and dynamic way, are very promising. Therefore, despite the uncertain times we live in, we committed to investing in additional equipment and expand our west African service offering. Now, more than ever, affordable broadband can make a difference in our local markets."

Tobias Forsell, CEO of Forsway, added: "We have teamed up with Arabsat who, using our Xtend satellite extension platform and BADR-7, provide managed, pan-African broadband services to local and regional communications service providers like CSS. With people restricted in their mobility, affordable broadband is more critical than ever. With over 3 billion people lacking reliable internet access, Forsway is working hard to do our part in making connectivity accessible to all."

Mauritania currently has three operators, the original monopoly, Mauritel (now owned by Maroc Telecom), Mattel (owned by Tunisie Telecom) and Chinguitel.

The nation only has around 1000 DSL subscribers and 3000 internet subscribers in total, out of a population of 2.5 million, according to most recent figures.

Nigeria rubbishes 5G-coronavirus link

The Nigeria Communications Commission (NCC) director of public affairs said there is no link between coronavirus, after conspiracy theories blaming 5G towers for the pandemic tore through the internet.

Henry Nkemadu rubbished the claims and instead said 5G technology will transform the world by connecting everything with everyone. "This will create millions of jobs; it will add billions of dollars to the economy and can solve some of our problems such as insecurity and improve governance and the efficiency of society," he added.

The telecom regulator, along with ALTON, wanted to refute the information that had appeared on social networks and which maintained that 5G is at the origin of the spread Covid-19 in Nigeria and worldwide

The telecom regulator, along with the Association of Licensed Telecommunications Operators of Nigeria (ALTON), wanted to refute the information that had appeared for several days on social networks and which maintained that 5G is at the origin of the spread Covid-19 in Nigeria and worldwide.

Gbenga Adebayo, the president of ALTON, said in turn "that there is not an ounce of truth that 5G technology is the cause of the coronavirus pandemic. The virus is also spreading in places without 5G networks like Nigeria".

Reacting to information that has aroused fear in the country and suspicion directed against telecom operators, Issa Ibrahim Pantami, the minister of communications and digital economy, said that "the National Frequency Management Council (NFMC), of which I am the president, has not deliberated nor published a spectrum of bulk frequencies for the deployment of 5G, no license has been issued for the deployment of 5G in the country".

Regarding 5G, the minister also explained that only MTN has already carried out 5G tests in the Nigerian cities of Abuja, Lagos and Calabar and the exercise was in fact carried out with the 4G spectrum.

Cape Verde boss calls for extra capacity

Cabo Verde Telecom has requested 10G of capacity from Altice Portugal to help restore the country's internet, which has been unstable since late January due to failures at its international provider.

The president of the state-run operator said the company asked Altice Portugal for 10 gigs of capacity to restore the internet in the country, unstable due to failures of international supplier, TATA Communications.

At a press conference in Praia, Santiago island, José Luís Livramento, began by clarifying that internet cuts in the country are not a problem for the operator, but for TATA.

"Unfortunately, TATA (internet service provider) had a cut in this Lisbon-Madrid route and no longer had access to the internet from Lisbon", said Livramento.

The president added that the loss of the internet in the country happened in late January and that since then TATA has been trying to repair the cable to restore the service.

"In view of this, we were not only in this dependency. We tried to solve it in other ways and we are counting on Altice to give us about 10 gigs of capacity to restore the service, " he said.

MTN's instant messaging app attracts two million users in first year

Ayoba is a communications app localised for African and Middle East consumer needs, under an independent Over the Top (OTT) brand with tailored features for MTN customers.

It has been integrated into 12 MTN markets including South Africa, and supports many local languages spoken across these markets including isiZulu, isiXhosa, Pidgin, Yoruba, Swahili, Hausa, French and English.

Speaking at the group's annual results presentation, outgoing MTN group president and chief executive officer, Rob Shuter said that the group aims to have 16 million users before the end of the year. He said that through the app, MTN wants to create an ecosystem for users, "a super-app for Africa".

He said that the next step would be the introduction of money transfers, with users being able to make and receive payments via Mobile Money.

EllaLink cable set for December

EllaLink's Europe-South America cable project is expected to go operational in December, according to CEO Philippe Dumont. Dumont said the cable, which is currently under construction in Calais, France, will see its maritime roll-out starting in July. The 10,000km cable will connect Brazil and Portugal, with stretches linking to Cape Verde. According to Dumont, several other branches will be built and later added to the system, including one to Mauritania.

MTN Ghana reviews services

MTN Ghana announced the temporary review of its service centre operations on April 2, 2020. The objective of the company through this operation is to protect its employees from the coronavirus and help curb the spread of the disease. While some physical branches of the company are closed until further notice, the operator said their activities will switch to digital to continue to meet the needs of consumers in the meantime.

Sub-Sahara is MoMo hotbed

Sub-Saharan Africa remains the region of the world where mobile money is the most dynamic. According to GSMA, 2019 saw the region record 23.8 billion transactions out of the 37.1 billion worldwide. That is 64.15% of the volume of global transactions, up 19.7%. Sub-Saharan Africa has also dominated the global mobile money market in terms of the financial value of transactions. The region recorded US$456.3bn in money sent, received or spent.

Talking satellite

Martin Jarrold, chief of international programme development, GVF

Terminal installation, qualification & testing in the field

As I write this column, more than 120 of the world's nations are experiencing the spread of the Coronavirus. To state the obvious, this public health emergency is impacting on all facets of life as well, of course, as very sadly causing so many deaths. There is evident a certain underlying irony in the consequent cancellation or postponement of trade events in the field of telecommunications. In February, MWC 2020 (Barcelona, Spain) – the Mobile World Congress – was cancelled. In March, CABSAT 2020 (Dubai, United Arab Emirates) – the Middle East & Africa's leading event for content creation, production & broadcast and satellite & distribution, and within which was to be embedded the GVF SATEXPO Summit 2020 – was postponed, now to take place at the end of October. If space permitted, this list would be much longer.

Despite all that telecommunications technologies (satellite, fixed and mobile terrestrial/wireless, cable/fibre) have facilitated in the creation of platforms to bring people together through exchange of data, over social media, via voice and video connectivity – therefore without the necessity of physical travel and face-to-face contact – the organisations that continue to deliver innovative advances on such solutions still attach a lot of significance to the traction to be achieved through personal interaction in exhibition halls and dialogue in conference rooms. My various work travels are testament to this.

The subject of conference calling or video conferencing, particularly over Internet Protocol – which has stimulated development of low-cost applications for multi-location and remote site personnel online gatherings – obviously points up the role of satellite solutions as those best suited to serve coverage of remote areas, both in terms of dedicated satellite network links, and in terms of the contribution of satellite to facilitating mobile/cellular networks through backhaul.

Satellite solutions serve everywhere, but, by definition, implicit in ubiquity and coverage of the remote is the need for some Earth stations/terminals – the ground segment – to be equally isolated and remote. This then introduces the related questions of the installation of type approved terminal equipment/antennas.

A long-term core feature of GVF's mission has been the development of a consensus-based framework to improve the efficiency of satellite operators' terminals type-approval procedures. To achieve this objective, the GVF Mutual Recognition Arrangement Working Group created procedures – now internationally recognised – defining a set of standard tests that an antenna or Earth station/terminal manufacturer should perform in order to apply for type approval from any satellite operator. Use of this procedure not only improves the quality and completeness of test data but helps reduce the time and cost required to bring new ground-segment technology to the market, thus advancing the competitiveness and enhancing the reliability of satellite communications services – reducing the factors that cause interference to primary and adjacent satellite services.

The GVF test procedures – in qualifying the performance of antennas/Earth stations/terminals leading to formal type approval by a satellite operator – enables manufacturers to supply antennas/Earth station/terminal equipment without the need for testing each terminal before it is deployed.

Working within this framework a group of satellite operators – AsiaSat, Eutelsat, Inmarsat, Intelsat and SES – have collaborated to develop updated guidance to antenna manufacturers regarding satellite operator expectations for new products, and how to demonstrate compliance with the Satellite Operator Minimum Antenna Performance specification requirements (SOMAP), which came into force in September 2019.

SOMAP was started to improve the Quality of Service (QoS) worldwide for the industry and to minimise interference. Quality products, compliant with satellite operator specifications, provide manufacturers with a valuable tool to differentiate their products. It does not replace the formal type approval procedures for each of the satellite operators, but rather establishes minimum performance that each of the operators expect when deploying equipment which has not been formally type approved.

Whilst the CABSAT-embedded GVF SATEXPO Summit has been postponed, the SATELLITE 2020 show in Washington DC did go ahead, albeit with substantially reduced attendance and a cut-short agenda as a result of Coronavirus concerns. GVF member QuadSAT was present at SATELLITE 2020, located in the exhibition's 'Start-Up' Pavilion. I mention QuadSAT specifically because they serve to illustrate two currently ongoing GVF initiatives/programmes (to which I shall return below), as well as providing an example of a further facet to conducting on-site antenna/Earth station/terminal verification, and also bringing an additional technique, or tool, for ensuring the accuracy of installations – using Unmanned Aerial Systems (UAS) or drones. The technology offers new ways to characterise the performance of ground terminals that have not been available to industry before, with accurate performance data being acquired for VSAT terminals in their deployed locations. Satellite operators have acknowledged the innovation as a valuable alternative to the traditional methods of testing.

Moreover, and returning to the ongoing GVF programme to which I referred above, the European Space Agency has recognised the potential value of this technology and awarded QuadSAT a contract to continue development and validation of the technology – with support from GVF as a contract partner, and with reference to SOMAP.

The UAS or drone equipment (actually a quadcopter) can easily be transported to any test antenna location where it functions as a portable test range providing high-precision antenna pattern measurements. It can be flown freely around the antenna under test at various far field distances and at various test angles, providing a flexible, cost-efficient method to verify antenna performance globally. This system allows for testing and verification of already operational antennas, without interrupting their services. The SOMAP recommendations will be used to compare performance data acquired by drone measurements with comparable test data acquired from a traditional far-field outdoor test range.

The ongoing GVF initiative to which I referred above is new. The example I cited of a start-up company is just one of many new entrepreneur-driven commercial enterprises, and academic spin-offs, comprising what is often called Space 2.0. To meet the needs of these enterprises GVF has introduced a new Membership grouping, extending the benefits of membership to such start-ups on especially favourable terms. Companies meeting the eligibility requirements for "NewSpace Membership" will be provided with Associate Membership and its benefits, at nil cost, for a period of one year provided there is a commitment to convert to paying the Associate Membership fee afterwards.

ATU's call to arms

Telecom regulators in Africa are being urged to come together to respond to the overwhelming spread of coronavirus across the continent. The unprecedented call to arms has been made by the African Telecommunications Union

African Telecommunications Union calls for harmonised action by telecommunications regulators and operators in Africa to combat coronavirus pandemic.

Regulators should implement the common alerting protocol (CAP) to enable authorities to effectively prevent and mitigate the spread of Covid-19.

The African Telecommunications Union (ATU), a specialised agency of the African Union in the field of telecommunications, has put together a set of guidelines to assist in combating the Coronavirus disease (COVID-19) pandemic, that every member state should consider.

Africa has so far recorded relatively few coronavirus cases compared to the rest of the world. Twenty-seven African countries have recorded over 357 coronavirus cases, according to the World Health Organization on Thursday 19th March 2020. Egypt leads in cumulated confirmed cases at 196, South Africa 116, Algeria 72, Morocco 49, and Senegal 36. Other countries with over ten cases include Tunisia, Burkina Faso, D.R. Congo, Rwanda and Cameroon.

However, heads of states and governments across the continent are taking no chances as they race to stop the spread of the virus by sensitising their citizens about the pandemic and the various ways to combat the disease.

Globally, telecoms/ICTs have become a pillar in the prevention, preparedness and response to the Covid-19 pandemic.

The ATU, through the secretary-general, Mr John Omo, is urging the ministries of ICT, through the telecommunications regulators and operators in the member states, to consider implementing the following recommendations/ guidelines to fight COVID-19 pandemic:

1. Activation of the common alerting protocol (CAP)
Regulators should implement the common alerting protocol (CAP) to enable authorities to effectively prevent and mitigate the spread of Covid-19. The CAP involves the use of multiple modes of communication to educate members of the public including vulnerable groups about the disease as well as the preventive measures. The CAP will make it possible for members of the public to receive CAP-originated information in many ways, such as through mobile and landline telephones, Internet (e-mail, Google, Facebook, Twitter, WhatsApp, smartphone apps, online advertising, Internet of Things (IoT) devices, in-home smart speakers, etc.), sirens (in-building or outdoor), broadcast radio and television, cable television, emergency radio, amateur radio, satellite direct broadcast, and digital signage networks (highway signs, billboards, automobile and rail traffic control), among others.

2. Collaborative practical measures
Regulators should adopt the following:
(a) Network Capacity
Fixed and mobile telephony providers should reserve some dedicated network capacity which should be made available free of charge to the authorities handling Covid-19.
(b) Emergency Numbers
Fixed and mobile telephony providers should implement and enable the emergency numbers, for example 119, for voice messaging and promote short message service (SMS) as an alternative to telephony communications during this period. Emergency agencies – such as police, ministries of health and hospitals should adequately size their network capacity, e.g. lines and access trunks, to offer an efficient service when call demand is high. Also, telecommunication providers and amateur radio operators need to perform periodic emergency drills together. The public should adequately be informed of the availability of the service free of charge.
(c) Guidelines for action during emergencies
Calls to emergency numbers should be free. Local and long-distance backbone providers must have redundancy networks to handle traffic from other providers that experience difficulties. Broadcasters should support communication and messaging strategies to the public in coordination with all the other agencies that are involved.
(d) Amateur radio operators and simplification of type-approval processes
Radio amateurs are community based and should be involved in the information dissemination mitigation processes for Covid-19. Any type-approval acceptance could be waived during the period of emergency for equipment to be used by amateur radio operators or those processes simplified in order to gain time, for example, not subjecting such equipment to taxation at all. Regulatory authorities should recognize foreign type approvals to expedite the process and rely on the guidelines of the ITU Telecommunication Standardization Sector (ITU-T).

3. Streamlined regulation processes

Rapid response in the wake of a disaster is critical. Consequently, regulators should streamline the process to allow telecom/ICT services to be available as soon as possible. The following strategies should be considered by regulators:

(a) Telecom/ICT services licensing

As the continents fight the Covid-19 pandemic, the telecom/ICT regulatory authority should urgently grant telecom/ICT service licenses necessary to support emergency telecom/ICT efforts. Therefore, exceptional expedited licensing procedures should be in place, free of charge, for use. These licenses should be temporary and valid only during this period of emergency response and recovery until the government has determined that there is no further need for the service being provided.

(b) Frequency allocation

Frequency planning and allocation are critical at this time for mitigation, preparedness, response and recovery. Governments should make the necessary spectrum available on a national basis to allow for multiple types of applications and services, from narrowband voice services up to broadband-intensive applications. A combination of spectrum bands should be available free of charge for emergency communications, allowing both terrestrial and satellite systems to be quickly deployed with limited interference.

(c) Priority call routing

During such times, networks could fail to provide service for different reasons, one of them being overload thus delaying or altogether preventing critical communication. Regulators should establish priority call routing on both mobile and fixed networks for people engaged in Covid-19 response as well as other entities and institutions involved in such activities.

(d) Network redundancy

Network redundancy is a critical element of a robust network that will minimise telecom/ICT outages during this period. Disaster networks need to consider redundancy and resilience in their design, as well as increase the number of terminals. Regulators need to ensure that telecom/ICT providers have networks with adequate redundancy and multiple connectivity options for the authorities involved in combating Covid-19.

(e) Importing telecom/ICT equipment

Major delays during the importation of telecom/ICT critical equipment have a negative impact on the response time to a disaster, and even impact the likely loss of lives. Delays can occur for several reasons, including duties or tariffs, restrictions based on local standards, extensive paperwork, disorganized processes, etc. Rules should be in place to expedite the importation process of critical telecom/ICT equipment that might be used for response and recovery: e.g. exemptions from duties and tariffs, clear expedited processes and streamlined paperwork. In addition, once the equipment needs to be returned to the place of origin, expedited processes should be in place to help streamline the return process.

4. Multi-stakeholder collaboration

There should be coordinated efforts during this period and clearly defined functions for different government institutions, e.g. ministries of foreign affairs, ICT and communications, customs, regulatory agencies and first responders such as hospitals among others. Also, there should be a collaboration with the private sector, including telecom/ICT operators, private networks, and amateur radio among others to give support and insights to the government on the collection of data and dissemination of information to the public. Regulators should, therefore, carry out a set of activities and procedures to connect all actors in the ecosystem at the local, national and international levels and ensure effective flow of information as the continent fights Covid-19. ■

Distributed by APO Group on behalf of African Telecommunications Union (ATU).

Orange Money arrives in Morocco

Orange Maroc has launched its popular mobile money service, Orange Money, in Morocco

The operator received approval for the service last summer from Morocco's Bank Al-Maghrib and Orange Money will now allow Moroccans to make payments, pay for phone recharges remotely and transfer money using their mobile phones.

Users will have access to a mobile wallet backed by their phone number and can withdraw money from the Orange Money wallet at approved points of sale.

Mobile users from any telecom operator can access the service by simply downloading the mobile application.

Orange Money first launched in 2008 in Côte d'Ivoire and it has since spread throughout the African continent, enabling 45 million customers in 17 countries access to financial services.

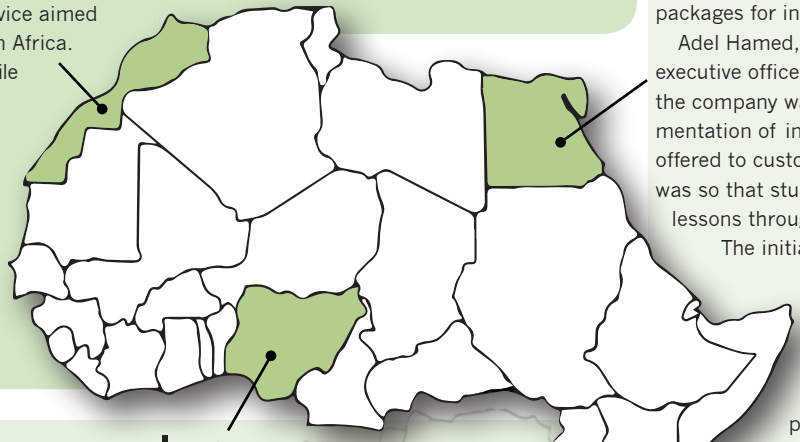
This new launch makes Morocco the 18th country to have access to the service aimed at increasing financial inclusion in Africa.

Orange Money is the second mobile money service to be launched in Morocco in less than a year.

Mobile operator Inwi launched its own mobile money service called Wana Money in September 2019 and the company claims more than 140,000 users since its launch.

Orange Maroc is the second-biggest telecom company in Morocco with a market share of 34.06%, while Inwi is third with a market share of 23.02%. Both trail behind Maroc Telecom, which has dominated the market for many years.

Users will have access to a mobile wallet backed by their phone number and can withdraw money from the Orange Money wallet at approved points of sale



Telecom Egypt boosts internet packages by 20%

Telecom Egypt has increased the capacities of landline internet packages by 20%, as part of the Ministry of Communications and Information Technology initiative to support students in the country.

The ministry said in a statement that this step coincided with the decision to suspend schools and universities for at least two weeks as part of the precautionary measures taken by the state to confront coronavirus.

Earlier, the ministry launched a number of initiatives to support the distance education process, most prominently the 20% increase of the download capacities of home internet packages for individuals.

Adel Hamed, managing director and chief executive officer (CEO) at Telecom Egypt, said the company was keen on the immediate implementation of increasing the internet packages offered to customers by 20%. The rationale was so that students could keep up with their lessons through the distance learning system.

The initiative started March 17 and customers have been receiving text messages to inform them of the increase in the capacities of their current packages by 20% and that these additional packages will be valid for 30 days.

Hamed confirmed that Telecom Egypt will provide a browsing service for the Knowledge Bank, educational platforms and sites free of charge for students, in order to support the distance education.

Telecom Egypt is the first in the sector to implement the initiative. Meanwhile, the operator announced distributing a cash dividend of E£0.25 per share, according to a statement sent to the Egyptian exchange.

The company said that the dividend will be payable on April 22nd to the shareholders recorded on April 15th. On March 23rd, the ordinary general meeting (OGM) approved distributing cash dividends of E£0.25 per share for the year 2019.

Airtel Africa completes spectrum acquisition from rival

Airtel Africa has completed the acquisition of 10 MHz of spectrum in the 900 MHz band in Nigeria from fellow operator Intercellular Nigeria.

This additional spectrum purchase, agreed in November 2019, is expected to reinforce the former's leading 4G position in its largest market by increasing the available capacity of the existing network and supporting the further roll-out of 4G.

It will also allow Airtel Africa to efficiently manage capex spend for its 4G network. The firm operates a single RAN network and the majority of its sites already support the activation of the additional 10 MHz spectrum in the 900 MHz band.

In addition, the acquisition will enable Airtel Africa to expand its fast-growing fixed wireless broadband offering.

In total the acquisition involved a payment of US$94m, including Nigerian Communications Commission (NCC) fees.

Airtel Africa's Nigerian division reported an increase in revenue last year of more than 23%, with data growth being the largest contributor.

Burkina Faso PM slams Orange price hike

The prime minster of Burkina Faso, Christophe Dabiré, has described Orange's proposed price hike as "unacceptable".

The French operator Orange notified its customers that it would increase tariffs by 2.04% from February 17. The increase follows the introduction of the government's 2020 Finance Act, which raises operator revenue tax from 5% to 7%.

However, in a post on Twitter, Dabiré expressed disappointment that Orange had acted without first airing its concerns to his administration: "Without a study proving the tax burden on the telecom sector is excessive, the government will not accept any increase linked to the adoption of the finance bill," he wrote.

Dasmané Traoré, head of the consumer interest group Ligue des Consommateurs du Burkina, urged customers to boycott Orange if the price hike was implemented.

"This increase is unjustified and shows contempt for consumers ... especially as we face issues with poor network quality," he said.

Burkina Faso became the 20th country to join Orange's footprint in Africa and the Middle East (MEA) in 2017.

Ethiopia to allow MoMo

Ethiopia said it will allow non-financial institutions to offer mobile money services in the country, effectively opening up the business to telecom operators, including state-run monopoly Ethio Telecom.

The central bank directive comes amid plans to liberalise the telecom sector by offering two new licences and selling a stake in Ethio Telecom. MTN, Vodacom and Orange SA have expressed an interest in entering the Horn of Africa nation.

Currently, only banks and other finance houses are allowed to provide mobile-money services to a population of 105 million people.

Licence requirements include minimum capital of 50 million birr (US$1.5m), ownership by Ethiopian nationals or people of Ethiopian origin and a minimum of 10 shareholders, the National Bank of Ethiopia said in a statement on its website.

The directive, effective April 1, allows maximum account balances of 30,000 birr and transaction limits of 8,000 birr daily and 60,000 birr monthly.

Companies that receive the mobile-money permits can also provide saving, credit, insurance and pension products. State-owned enterprises can also apply for permits, the central bank said.

Ethiopia's financial system is part of a raft of economic reforms by prime minister Abiy Ahmed's government aimed at opening the economy to more foreign investment. Meanwhile, Ethio Telecom has taken the unusual step of making smartphones available on credit. The state telecom monopoly will offer those who cannot afford a smartphone two types of options, intended to boost telecom penetration and smartphone usage. It is set to introduce a device financing model, where customers can get phones on a credit basis - and the scheme also aims at upgrading them from using feature phones to smartphones. With the new arrangement, the company hopes the number of smartphone users will grow to 60% from 33%.

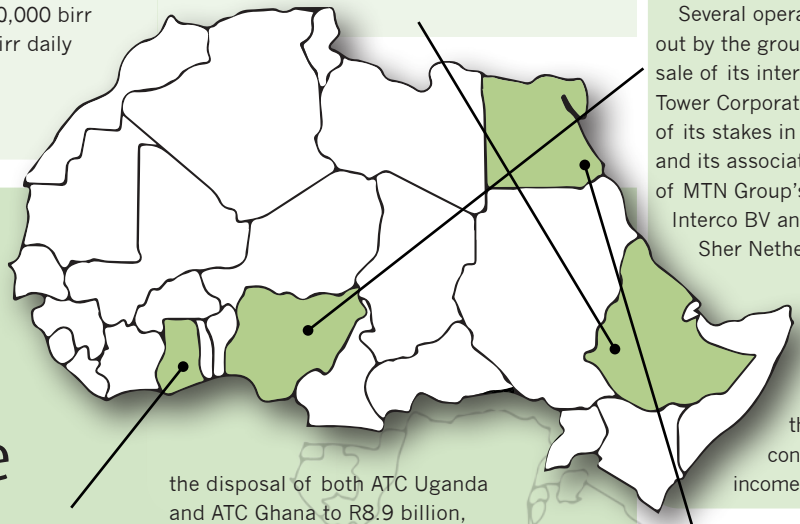
MTN to reduce Nigerian shares

MTN plans to reduce its shares in its Nigerian subsidiary, according to the group's chief financial officer. In an interview with Bloomberg, Ralph Mupita, revealed that the South African telecom giant, which holds 79% of, shares intends to sell 15%. This transaction, which will be aimed at local investors, will bring MTN Group's stake in MTN Nigeria to 64%, which has been listed on the Nigeria Stock Exchange (NSE) since last year.

The reduction in shares in MTN Nigeria is also part of the asset realisation program (ARP), launched in March 2019 by the group, whose objective is to reduce debt, simplify its portfolio, reduce risks, an improvement in its returns and the realisation of a capital of at least R15bn over three years.

Several operations have already been carried out by the group with this in mind, notably the sale of its interests in ATC Ghana to American Tower Corporation for 900 million rand, the sale of its stakes in the investment fund Amadeus and its associated stake in Travelstart, the sale of MTN Group's 49% stake in Ghana Tower Interco BV and Uganda Tower Interco BV to AT Sher Netherlands Cooperatief U.A.

MTN Nigeria currently represents an indispensable market for the group. At the end of the financial year ended December 31, 2019, the subsidiary represented a contribution of 30.77% to the group's income, which amounted to R151.5bn.



MTN gets clearance to sell ATC Ghana stake

Nigeria-based operator MTN has received regulatory approval for the sale of its 49% stake in ATC Ghana, with funds due to be transferred imminently. It follows the sale of the operator's 49% stake in ATC Uganda.

The divestment strategy is part of MTN's "asset realisation programme", initiated in March 2019 to "reduce debt, simplify our portfolio, reduce risk and improve returns".

"This takes the total proceeds received for the disposal of both ATC Uganda and ATC Ghana to R8.9 billion, which will be applied to paying down US-dollar debt and general corporate purposes," read a statement issued by MTN.

In its full year 2019 financial results, MTN saw revenue grow 9.7%, while service revenue increased 9.8% and subscriptions grew by 18.2 million to reach 251 million. The group's chief executive Rob Shuter, announced he will step down from his role at the end of his current contract, in 2021.

Egypt promotes online transactions amid outbreak

The National Telecom Regulatory Authority (NTRA) has agreed with mobile phone operators in Egypt to promote the buying and selling of goods or services online amid the coronavirus outbreak through offers on e-transaction services.

Using each company's web application, as well as through the use of e-payment services, customers will receive 30 times the charged balance as free minutes or units when using e-payment options under the offer, which extends for one month.

It forms part of the government's efforts to encourage Egyptians to stay at home as much as possible to contain the spread of covid-19. The offer can be extended further to allow customers to continue to recharge their mobile phone balances without the need to go out of the house, encouraging them to work remotely and stay indoors longer.

Ooredoo Tunisia hires Huawei for 5G

Ooredoo Group, the Qatar-based telecom firm operating in north Africa, has chosen Chinese giant Huawei for five 5G deployments in Tunisia and four other territories.

The five-year deal, according to the operator, involves a network upgrade that will provide customers with the latest 5G technologies and services. Ooredoo will leverage Huawei's 5G SingleRAN radio solution with advanced massive MIMO technology and 5G cloud core solution with a convergent platform, to achieve what it describes as a full digital transformation and modernization of its existing mobile networks.

These upgraded networks, Ooredoo said, will offer about 100 times faster download speed than 4G networks. In 2020, the operator will launch 5G commercial services in additional countries across the Ooredoo footprint.

Huawei will also cover Ooredoo's networks in Kuwait, Oman, Indonesia and the Maldives.

Connecting the African continent

Chris Mason, vice president of sales and marketing for EMEA at Rajant Corporation, discusses, how the wireless communications market will adapt and evolve and the challenges Africa will face over the next 12 months

Rajant has been consolidating its position as a key supplier of wireless systems to the mining industry in sub-Saharan Africa. For around 10 years, there have been increasing deployments in major open-pit mines, where users have experienced the resilience and reliability of Rajant's Kinetic Mesh Networks at the heart of operations.

One of the significant developments in the last 12 months is a move towards deployment in underground mines. Wireless networks in an underground environment have historically been achieved by the use of radiating cables, or "leaky feeders", co-axial cables with gaps in the insulation that allows some of the RF signal to "leak" out of the cable and allow communications.

Due to the "leakage" of signal, line amplifiers are required to be inserted at regular intervals, typically every 350 to 500 metres, to boost the signal back up to acceptable levels. There are some limitations to leaky feeder systems. If something severs the cable, communications stop beyond the break. Another problem is that multiple leaky feeder cables can sometimes cause interference within the system. Finally, the range from the cable is limited to around 100 meters.

Working with one of our technology partners in South Africa, Poynting Antennas, Rajant has helped with the development of some advanced wireless antennas. These antennas have transformed the ability to send and receive wireless signals in a tunnel and have achieved reliable distances of up to 1 km in an underground environment.

Along with the flexibility of deployment, this means the underground mines can enjoy the same kind of connectivity open-pit mines have enjoyed for years.

With the dominance of mining as the user of critical industrial wireless systems, this can be said to be influencing the industry regarding industrial wireless applications. Fleet automation and optimisation in the mining industry continue to drive the requirement for wireless networks that can support the key requirements of resilience and extremely low latency that characterise remote operation or automation systems.

Africa is a prime target for the manufacturers of cellular mobile networking equipment. It's no secret that unlike most of Europe, Africa is poorly served by landline infrastructure, so the operators have, for several years, focused on bringing these services to market in metropolitan areas. They are now viewing the rural areas as key growth markets.

The last five years have seen Africa experience the fastest telecoms growth worldwide, which has transformed fundamental aspects of social and business life. Mobile subscriber growth remains the fastest in the world, positively impacting telecom markets as well as African economies at large.

Africa is a prime target for the manufacturers of cellular mobile networking equipment

With such penetrations which have been seen and the development of possible new services based on 5G architecture, the operators have increasingly sought to expand their services on both public and private networks into less consumer or voice-based services, for data and commercial uses. The last 12 months have seen energetic efforts from particularly Chinese manufacturers to secure network deployments in a number of geographies in Sub-Saharan Africa where their significant existing investments in infrastructure demonstrate their focus on this geography.

It remains to be seen whether the cellular communications systems, such as LTE and the potential 5G services, can perform well in industrial environments such as mines or ports that require 100% connectivity, symmetric upload and download bandwidth, and ultra-low latency. Further, from an operational perspective, if it's not a private network solution, not owning the industrial network infrastructure means that access to make changes and ensure maintenance is performed at operationally appropriate times can be more problematic. Finally, there's also the question of full-life economics once the initially discounted tariffs are applied in full.

Still, there are more challenges facing Africa in the next 12 months. The continent's

GDP growth, estimated at 3.4% for 2019, was projected to accelerate to 3.9% in 2020 and to 4.1% in 2021. Leading the way are six economies among the world's 10 fastest growers: Rwanda, Ethiopia, Côte d'Ivoire, Ghana, Tanzania, and Benin.

This projected growth, however, was not to be driven by the continent's big five countries —Algeria, Egypt, Morocco, Nigeria and South Africa, which jointly grew at an average rate of 3.1%, compared with the average of 4.0% for the rest of the continent. Growth had been forecast to pick up to 3.9% in 2020 and 4.1% in 2021.

One of the world's key markets for natural resources, China, has been at the epi-centre of the COVID-19 virus' effects, with a tangible impact on its economic consumption of the raw materials from mining operations. The oil industry on which Nigeria has significant dependencies is suffering from a perfect storm of increased output, and massively reduced consumption as global transport is reduced.

A slowdown in the No. 2 economy and a 5% drop in oil prices over one year could mean $4 billion in lost export revenue for sub-Saharan Africa, or the equivalent to 0.3% of its gross domestic product - more than any other continent outside of Asia, according to a study by the Overseas Development Institute.

However, at the time of writing, the world is suffering the effects of the coronavirus; the social and economic effects of which cannot yet be quantified. From an African domestic perspective, it appears that as of the end of March 2020, infections do not thankfully appear to have accelerated again to the levels seen in China, Europe, and the United States. How this will play out is unpredictable.

Rajant has a strategy in Africa to build out from incredibly successful activities in open-pit mining into, as previously identified, underground mining. Beyond that, ports logistics and public safety/municipality use are key target markets.

Despite the challenges faced by all organisations, Rajant sees the next 12 months as a growth opportunity. As nations and organisations adapt to new working practices, people need to be taken out of the equation. Doing more with less people, will see automation and remote operation systems accelerate, along with the associated requirement for resilient, flexible, and easily deployable wireless networks.

We plan to continue our historical growth by ensuring our existing customers receive the latest technologies and by expanding into the growth countries identified previously: Rwanda, Ethiopia, Côte d'Ivoire, Ghana, Tanzania, and Benin. To do so, we'll be recruiting new personnel and partners to ensure we can provide global market-leading technology with a local presence.

Rajant enables companies and organisations to build private wireless networks that support the IIoT. We refer to those very networks as "Living Networks" because they thrive in dynamic network environments where everything in the network can move and evolve as connectivity demands change. With our Kinetic Mesh technology, network infrastructures can be built with the ruggedness, mobility, and autonomous application support required in today's demanding business environments. ■

MobileMark
antenna solutions

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

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

See us at Electra Mining Africa 2020, Johannesburg, South Africa,
Sept 7 – 11 2020, Stand E14, Hall 9

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ROUNDTABLE: AFRICA & SMART CITIES

Smart cities

For 'smart cities' to thrive on any continent, there's a need to establish sustainable commerce models that facilitate the success of all ecosystem players. Four key industry players give us the latest on Africa's journey

David Sumi, VP of marketing, Siklu Communications

Keith Matthews, country manager for SA & sales director, sub-Saharan Africa, Orange Business Services

Murat Sahinoglu, head of solution area business support systems, Ericsson Middle East and Africa

Justin Farnell, CEO and founder, WiFiontheMove

In your opinion, what makes a city 'smart'?

David Sumi: "There is a difference between a smart city and a connected city. Smart cities, where systems self-monitor, take corrective action and notify authorities and citizens, require gigabit level connectivity as a start. What we see in the future are networks capable of supporting gigabits of traffic to address all the applications."

Keith Matthews: "The smart city is more than just a concept. It's a connected, agile and innovative city that uses IT and digital technology extensively to improve the quality of life of citizens and to boost the economic attractiveness and tourism potential for local authorities and companies. In the smart city, the search for innovation never stops, but it is the integration of services across the ecosystem that creates the real 'smartness'. This could be anything from enhancing customer experience, to generating new revenue streams, or being more cost-efficient. Smart cities improve the lives of citizens and residents, through everything from mobility solutions to sustainable energy and smart grids. However, they are dependent on the free, frictionless and efficient flows of data – this is what really makes cities 'smart' – supported by embedding and integrating six key sophisticated technologies into the core of the city. However, smart cities should essentially be designed around human needs (human-centricity) and built on a foundation of trust."

Justin Farnell: "The city needs to have an integrated digital platform or 'brain' that can help manage all the key municipal departments (utilities, transport, tax, etc) and offer services to its citizens, through an easy to access online portal. Sounds great in theory, but much harder to deliver in practice!"

Murat Sahinoglu: "The term 'smart city' is increasingly used, and often implies a usage of information and communication technologies (ICT) solutions in the city. The smart city is framed by three dimensions: technology, people and community (we usually use businesses or environment). The smart city includes various smart functions like smart transport, smart healthcare and smart education. Today, the majority of the world's population lives in cities, and urban concentration is accelerating. Such rapid urbanisation boosts the global influence of cities, elevating them above nations as significant incubators of innovation, enterprise and social progress. And this calls for development of smart and sustainable cities. As 4G/ 5G, Internet of Things (IoT) and big data technologies become widespread, potential for ICT to solve the problems of cities will grow immensely. A city can be smarter when it gets benefits from ICT to enhance people's lives, effectively manage and use natural resources and achieve a business growth from efficiency."

Why do African cities need to become faster and smarter when there are far more social and political problems to overcome?

Justin Farnell: "One of the key benefits to implementing a smart city solution are the productivity and operational cost savings that should come with it. South Africa is a prime example, where it's much more a case of the mismanagement of resources, rather than the lack of. Many pressing issues, regarding medical treatment, education, transport, and safety can be radically improved through technical innovation. The recent outbreak of the Covid-19 virus and the ensuing lock down, whilst putting a huge strain on public services, is also a fantastic opportunity for cities to really embrace cloud tech. Remote working is nothing new, but innovations in fin and ed tech in particular, should now play a central part in connecting teachers online with their school pupils, business people with their customers, medical consultants with their patients and politicians with their electors."

Murat Sahinoglu: "According to Mega Trends 2018, two thirds of the world's population is projected to be living in cities by 2050. That's a startling figure given that by 2050 the world will be home to almost 10 billion people based on the report by the United Nation titled "World Population Prospects 2019". With this avid growth, the need for smarter urbanization is becoming a key topic as the globe's cities gear up for rapid digital transformation and societal change. The vision for smarter, seamless connectivity in future cityscapes is coming to life across the world's main centres. Most African countries have commendable objectives of promoting technology development and creating ICT infrastructure, capability and skills to connect the unconnected and usher in the era of the internet of things. Their focus is on creating sustainable and smart cities, countries – and ultimately, continent. This is aligned to Goal 11 of the UN Sustainable Development Goals, which specifically relates to sustainable cities and communities. As drivers of change, cities now have more and better technological tools at their disposal than ever before. Becoming smart and sustainable is not a one-off achievement, but rather a continuous journey requiring ongoing engagement, innovation and progress. By developing smart cities across Africa, you can introduce government e-services: cutting through bureaucracy and reducing human interference, mobile money: empowering farmers/entrepreneurs to have access and sell directly to big companies and smart utility and transport solutions: improving city lives and save the valuable resources.

Keith Matthews: "The growth of the mobile and especially the smartphone market creates new opportunities, allowing markets to respond to the demand for local data. Once the basics are laid out for an urban digital ecosystem, various social, medical and societal issues may also be addressed through these infrastructures and IT networks."

David Sumi: "One needs to be aware that smart cities often times set a foundation for economic growth. By making high speed internet available, improving school access and online education, smart roads and vehicles, improving efficiency by reducing traffic, giving first responders access to critical data anytime, anywhere, all of this draws people and companies to live there. It's not investing in fancy gadgets, it's investing in core infrastructure that will pay off in the future."

Are smart cities a solution to the booming urbanisation in the continent?

Justin Farnell: "There is no simple answer to addressing the mass movement of people from the countryside to the cities. IoT and AI technology can certainly make a huge difference in measuring levels of water sanitation and air quality, whilst improving transport networks to make the city a healthier, safer and more productive place to live. One major area of contention for a gateway metropolis like Johannesburg is the large number of undocumented migrants that have moved there in the past 20 years. Lack of effective tax revenue collection and the consequent deterioration of public service delivery are at the heart of the city's problems. The emergence of a digital ID may have it's "big brother" opponents, but certainly, it's going to be one of the big drivers for cities to effectively allocate resources and services to those citizens who need them most, and who are legally entitled to benefit."

Murat Sahinoglu: "Cities are made up of a complex ecosystem of stakeholders. The key is to ensure governance structures, stakeholder groups, city departments, local government, public and private enterprises work together to drive the common smart-city agenda. Leadership structures must be capable of retaining the holistic, macro view of the city's needs, and enable all projects to follow the common vision, integrating both ICT and environmental priorities. In this way, common platforms, data formats and monitoring systems are ensured, which will enable the sharing of information for mutual benefit between departments – something that was impossible previously."

David Sumi: "They are 100% part of the solution. The UN estimates that by 2050 68% of the world's population will be living in a city, up from 55% today. Smart cities are going to be required to provide services in a cost effective and efficient mode to address this massive increase in population."

Keith Matthews: "The growing challenge to smart city developers and the wider city ecosystem is the rapid increase of urbanisation driven by rising populations. Current global population growth means we will have an additional 2.5 billion people on the planet and an urbanisation rate of 70%, by 2050. There will be the inevitable increase in global energy demand – predicted to rise by 35% between 2008 and 2035. Our cities already account for around 80% of greenhouse gases, and water shortages are affecting around one-third of people worldwide, as we struggle to manage the challenge.Smart cities allow implementation of solutions and services that help to make daily life more adaptive and efficient, reduce or control traffic, manage energy, give better access to healthcare and so on."

Many African countries suffer from lack of constant power supply. How do you navigate that?

Murat Sahinoglu: "I can answer this question from two different angles: how we can manage the power supply in a smarter way, and how we can reduce the power consumption. Cellular network connectivity combined with IOT applications can provide several solutions to get real time consumption data that will enable power companies to do power distribution balance, perform predictivities maintenance for the power outages, detect leakage. This can contribute significantly to improving power issues without big investment in building new power generators. IoT devices will mostly be powered with batteries, and 5G minimizes the energy consumption for IoT. 5G will not only increase the network capacity and provide faster data speeds, but also will enable service providers provide fixed wireless access (FWA) capabilities to the market, to offer broadband services using a mobile battery-powered pocket router device."

David Sumi: "Obviously reliable power is a milestone all countries are trying to achieve as a core foundation for growth. However, for those areas that are still working towards that goal, there are numerous solar and battery powered solutions available."

Keith Matthews: "Having access to energy is indeed a prerequisite to allow telecom and IT infrastructures to work efficiently. At Orange Business Services, we are used to managing large international networks and have put in place, where needed, power generators to take over in case of power supply failure."

Justin Farnell: "Stability of power in Africa is a huge problem across the Continent. From a South African perspective, efforts to open up the market to independent power producers (IPP's) is still in its infancy, but the city of Cape Town has made this a high profile objective to lessen its reliance on ESKOM. The adoption of renewable and sustainable energy solutions is obviously a prime strategy for any smart city. Energy-efficient municipal buildings, solar-powered street lighting, schools, and essential infrastructure will be needed for a sustainable carbon-neutral ecosystem."

Which sectors would benefit most from smart cities?

Murat Sahinoglu: "Collaboration, digitalisation, automation, IoT and virtualisation are some key concepts that come with the continued development of ICT. Smart cities—be it smart grids, public safety or intelligent transportation—rely on these ICT concepts. Companies such as Ericsson help public safety and security authorities leverage the power of new technological solutions in order to transform and enhance the services they provide to their citizens and governments. Growing communication networks are laying the critical foundation for an upcoming innovation boom across Africa. The development of LTE and 5G digital infrastructure is an integral part of Africa's growing economy and has proved to be an essential driver of an inclusive information society that integrates digitisation in all critical aspects of life, such as education, transport, health, energy and even homeland security."

Justin Farnell: "Transport, health & safety and SMEs."

Keith Matthews: "A smart city is a complex ecosystem with an array of vertical activities, including digital solutions to improve access to health, facilitate mobility, enhance security… all coordinated by the smart city integrated operations and security centre, providing safe city and digital living services and experiences. Every smart city is a unique network of integrated services that may grow and develop organically over time as new use cases emerge and then evolve, supported by new bursts of innovation.The key to success is embedding intelligence, integrating sophisticated technologies including IoT and Artificial Intelligence (AI) to make use out of the massive amount of data generated across the smart city."

David Sumi: "Right off the bat cities with a communications backbone can provide video security, offer public Wi-Fi access, connection intersections and roads, and give police and firefighters connectivity to a gigabit network. From there with multi-gigabits available cities can continue to add new applications in the future on the wireless network they install today."

How could international standards support the growth of smart cities?

David Sumi: "The value in standards typically is that it increases the manufacturing volume of components, modules and systems on a mass scale as the entire (hopefully) industry follows guidelines. As standards for smart cities emerge, the same will happen here – rapid decline in cost and ease of operation."

Murat Sahinoglu: "The technology landscape is evolving rapidly, so it is important to develop a continuous ICT learning culture among the city's transformation drivers, sharing new developments and exploring emerging possibilities and approaches. Bodies such as the Smart Africa Alliance create platforms to share best practices.There are many opportunities for smart solutions within cities. The challenge is to prioritize these options to three or four key focus areas and to then successfully deliver on them. Stakeholders need shared goals and a clear idea of how to achieve them."

Justin Farnell: "Certainly, in the areas of water and air quality, global standards could help. The rollout of 5G is well documented but it's expensive, so of even greater importance for Africa will be the FCC's ruling on the new WiFi 6GHz standard, since this will give a huge boost to cost-effective (unlicensed) wireless communication."

Keith Matthews: "Global cities are becoming the branded destinations and drivers of innovation and entrepreneurship, culture and talent hubs. The Global Talent Competitiveness Index highlights this by attributing the growing importance of cities to their greater flexibility, and adaptability to new trends and patterns. Cities are nimble economic units where policy can be changed faster, making them more attractive for talent, especially entrepreneurial talent. By making a city smart, the urban digital ecosystem will bring new opportunities for creation of new jobs and small businesses, and also for existing companies to develop their business – creating added value for urban populations."

What is your company doing right now to help build smart cities?

Keith Matthews: "In the smart city, the search for innovation never stops but it is the integration of services across the ecosystem that creates the real 'smartness', whether this is to enhance customer experience, generate new revenue streams, or create new operating cost efficiencies.All smart services do one (or more) of three things - improve customer experience, lower operating costs, and generate revenues. A business case should be made for each service to determine the return on investment. As these are new concepts and services, it may not be clear beforehand what services should be prioritised or developed. This can create opportunities to co-innovate, a process where the developer and ICT partner brainstorm and develop a prospective catalogue of smart services and even bespoke services. Innovation doesn't happen in a vacuum or without collaboration and the developer and ICT partner need to collaborate to innovate; this is an essential component of the smart city which itself develops into an incubator of new solutions and applications.smart cities developers need the trusted advisor who can help in guiding and developing the ICT master plan that articulates clearly how the technology could enable and contribute to building the required 'smartness' from day zero, by developing a vision and strategy, infrastructure design guidelines, and building the blueprint for the ICT model. Then, it's the challenge of securing the partner who can manage the inter-connection between multiple service providers, handling the vendor management process for the ICT streams on top of setting up the right governance model for successful implementation.Innovation never stops in a smart city as new use cases and possibilities arise. Dubai's innovation leadership is influencing the entire region – we opened a new Middle East 'innovation hub' and regional business headquarters in Dubai Silicon Oasis (DSO), aimed at encouraging collaboration and innovation; the hub is also our regional centre of excellence for smart cities.Co-innovation programs are playing a leading role in meeting the demands of smart cities and supporting enterprise digital transformation by applying the essential 'intelligence' required through new IoT Apps and solutions."

Murat Sahinoglu: "Connectivity is a critical enabler of social and economic change. Its dynamism constantly offers us new ways to overcome both global and regional development challenges. If leveraged for good, the introduction of 5G and expansion of LTE networks across Africa can accelerate this process exponentially. As we continue toward a more urbanised world and the impacts of climate change grow progressively dire, the need for sustainable technologies which support the SDGs will become truly paramount. It's still early, but the use cases which we have been deploying across the continent are already delivering on their potential. Together with UN-Habitat, we are exploring visualisation technologies that have the potential to revolutionise how we approach urban design. This new visually realistic blending of reality with virtual imagination can create a more intuitive space for planners, architects, residents and other stakeholders to experience and re-imagine future environments. In Rwanda, the Ericsson Weather Data initiative is a new innovative solution which helps in measurement of rainfall in real time utilising signal disturbances in microwave links used as backhaul in cellular networks. As 2/3 of the adult population in Africa is unbanked, and Fintech has a real meaning and value add to the societies in Africa. The Ericsson Converged Wallet m-commerce solution is a new innovation which contributes to a more open, easy and accessible mobile money network in Africa.Since its inception in Africa in 2010, the Connect to Learn program has been leveraging the

power of mobility, broadband and cloud solutions to enhance the quality and access to teaching and learning resources in a safe, cost effective, and user-friendly way. Together with the Whitaker Peace and Development Initiative (WPDI), Ericsson provides ICT equipment, training and connectivity to young victims of conflict in South Sudan and northern Uganda. We joined the Millennium Villages Project (MVP) as a technology partner in 2007 and committed to support the MVP along with our partners by bringing voice and internet communications to approximately 500,000 people living in the village clusters, with the intention of improving social and economic conditions."

Justin Farnell: "I'm focusing on WiFi enabling the major metro commuter buses, intercity coaches and trains in the southern African region."

David Sumi: "We have over 250 cities worldwide using Siklu gear to connect. We continue to innovate and are working closely with the smart pole industry to build these wireless networks directly into light poles. We are also a key member of the Terragraph program launched by Facebook. Terragraph is an excellent example of a new industry consortium that centres around a standard that all vendors who join will use. This will yield more powerful systems that are all interoperable and will bring down prices. Indeed, there is an entire work group n Terragraph dedicated to smart cities."

Is there any red tape making it difficult to create smart cities in Africa?

Murat Sahinoglu: "As we look ahead, it's clear that Africa shows significant promise by way of economic, technological and infrastructural growth over the coming years. Yet, there are still many challenges we must overcome if we are to deliver real sustainable change for all. While there are parts of the continent on the cusp of 5G roll-out, there remains other parts where 3G and 4G are still in infancy. More than just a business opportunity, digitalization is fundamental to achieving all 17 of the Sustainable Development Goals (SDGs) set by UN and a powerful way to make a positive impact on society. To truly leverage the full potential which this offers, it's important we reach out to all stakeholders across government, and public and private enterprise. This is how we make positive, sustainable impact in areas such as climate change, education, human rights and humanitarian response."

Keith Matthews: "Every country has its own regulations; there is no general answer for Africa."

Justin Farnell: "Competing national and local government agendas are a constant obstacle. In terms of legislation, I'm not an expert in this field, but from an SA perspective, the opening up of more GSM spectrum is the most pressing legislative issue, to enable the rollout of 5G in the cities, and bring the cost of mobile data right down."

David Sumi: "Primarily working with regulators as noted above. No one is preventing the release of these frequencies, it just takes time."

Which African nations are leading the way and which ones do you see struggling to keep apace?

David Sumi: "Where we see the most activity is in South Africa and Nigeria. For us operating in the 60 and 70/80GHz bands, we often times have to work with regulators to allow operation. These frequencies are somewhat new to many countries so we help them understand how mmWave works and the value of opening up these bands."

Keith Matthews: "Every country has its own regulations and unique challenges; there is no general answer for Africa."

Justin Farnell: "Rwanda and Kenya stand out as leaders in digitising their economies in east Africa. Nigeria and Ghana in the west, and Egypt in the north, are attracting major inward investment most notably into Lagos, Accra and Cairo respectively. Those countries still racked by military conflict and political corruption such as the Congo, South Sudan, and Zimbabwe are falling further behind. South Africa has in many ways still the most potential, with its sophisticated banking and developed transport and telecoms infrastructure, but is still grappling with years of graft at the heart of it's state-owned entities."

Murat Sahinoglu: "It is not about being the first or the last but to cooperate with service providers across the continent to enable the full value of connectivity by creating game-changing technology and services that are easy to use, adopt, and scale. Our vision is to realise a fully connected world for all end users." ■

First-time internet users in Nigeria use the internet in a unique way: Here's why that matters

Many people fuelling the rapid growth in mobile phone usage in Nigeria are not fully utilising all the content and services available to them. Sebastien Codeville, CEO, KaiOS Technologies explains what their concerns are – and how they can be overcome

Nigeria is one of the most exciting frontiers for emerging technology usage. The country, known as the "giant of Africa," shows up in headlines calling it "Africa's unofficial tech capital," and "the new economy of Africa."

However, many Nigerians fueling this rapid growth in the tech space actually under-utilize their technology. While these Nigerians show great interest in mobile devices and the internet, our research shows that they aren't aware of the ways they can leverage technology to their advantage.

There's a huge opportunity to help new users engage with technology and the internet in new ways, proving beneficial to both newly connected consumers and the key industry players that facilitate that connection.

KaiOS recently completed a study to better understand how the average Nigerian currently uses and perceives mobile phones and the internet.

Research overview

We surveyed 819 individuals and 48 retailers and phone sellers from seven Nigerian states. Overall, respondents were interested in owning a phone and having mobile internet, but were not fully aware of all the benefits and ways to use the internet.

We found that first-time internet users enjoy reading and surfing the web, but many have yet to discover how the internet can be beneficial to their entire community. New users tend to learn

about the internet from members of their local communities in an offline setting, which often leads to a narrow view of what the internet has to offer. For example, they might only hear about a few specific apps and have misconceptions about both the internet and how to access it.

A large portion of respondents work informal jobs such as petty trading, farming, and artisan work. Although they spend most of their income on food, shelter, and clothing, they are still willing to invest in things that make their lives more fun and allow them to connect with others.

Who was included in our study?

We designed our study to provide an accurate depiction of newly connected consumers in Nigeria. As such, we structured our respondent pool to include specific age ranges, income levels, and geographic locations. Our interviewees can be segmented as follows:

40% rural, 35% semi-urban, and 25% urban. This split provides an accurate picture of Nigeria's urbanization status.

A significant portion works in informal and/or unstable jobs such as farming (15%), petty trading (31%), or artisan work (21%).

All respondents earn less than NGN 360,000 (USD 990) annually.

Our sample was slightly skewed toward a younger population because 54% of the entire Nigerian population is under 20 years of age. Ages 16-50 were included in the study.

Internet perception

Our study shows that respondents have a specific perception of internet content that is very different from that of the developed world. For example, using Opera, a major web browser app, is seen as synonymous with "browsing the internet." This leads to the unintended consequence of users not discovering the browser app that comes with their mobile device if the app icon does not look similar to the Opera icon. We found a number of similar misconceptions of the internet and device capabilities throughout the study.

Finding: Internet is a status symbol, but not widely understood

The majority of the respondents claim they need an internet-enabled phone, but their reasoning is based more on social status and perception than the actual benefits.

"Well, this world right now is a global or internet world; everything is all about internet, so that is why everybody needs an internet-enabled device." Male, 21-30 years, Anambra state, semi-urban

"In our time now, if you don't have an internet-enabled mobile phone, it's like you are nothing, and you must let people know you have it." Female, 21-30 years, Abuja city, urban.

From these responses (and others), we discovered that the need for internet access did not tie back to what respondents actually do online. Instead, their reasoning was based on how other people view them.

Recommendation: Market to communities, not individuals

New users need to be persuaded to adopt mobile internet and will turn to their social circle for guidance. To convince an individual, start with the community.

Urban residents tend to use the internet for a wider range of activities because they have more exposure to mobile internet through friends, family, school, and work.

Rural residents, on the other hand, do not have the same level of access, which means they have fewer real-world examples of how the internet can be used in their communities.

Both urban and rural first-time users generally look for ways to use the internet in a way that benefits the community as a whole.

To reach a wider audience, advertisers can focus on promoting the internet not to the individual, but to the entire community. For example, newly connected Nigerians are more likely to respond to a pitch that presents WhatsApp as a tool for organizing church gatherings and sharing study materials as opposed to an app for chatting with friends.

Finding: New users are unaware of how the internet can benefit them

Nigerians have heard good things about the internet, yet have yet to discover how to take advantage of all the benefits.

As in most other markets around the world, we found that new users generally use phones for communication and entertainment. The most impactful uses—career development, personal health management, and business applications—are the least popular.

Nigerians in rural areas are even less likely to understand how mobile internet can benefit them personally. One rural interviewee said, "It doesn't help my business. I farm, it's just me, my hoe, and the farm..."

Recommendation: Educate users about how they can use the internet to their advantage

Mobile internet can provide support in areas like health, education, and business. However, these uses are the least popular because new users are unaware of their potential value.

Industry players can engage new users by clearly stating how they can gain practical advantages from mobile internet. Some examples:

- Promote your products to customers beyond your town by sharing photos on Facebook.
- Are you a farmer looking to get a competitive advantage in the market? Use farming apps to access the latest crop prices.
- Do you live in an area where clean water is difficult to access? Use Google to search "how to kill bacteria in water at home."
- Save $1-$2 a month by using WhatsApp instead of SMS to stay in touch with friends and relatives in other towns.
- Let your child learn English for free by watching educational videos on YouTube.
- Have you heard of Sudoku? It's a free game that can train your logical thinking skills.

In Nigeria, as well as other emerging markets, new consumers responded best to visual marketing as opposed to text-heavy promotions. However, new users are reluctant to use data to play videos or download images, especially if they do not know how doing so will benefit them. Industry players should consider making onboarding content available without data charges. This small up-front investment is likely to pay off by converting text-only users to data consumers.

Finding: Nigerians fear misinformation and lack of privacy

For some Nigerians, negative perceptions of the internet have kept them offline. Many new users struggle to differentiate between truthful and false news sites, so they stay away from online news altogether. Financial scams, mainly through WhatsApp, are also a major concern.

First-time internet users are often unaware of privacy settings, so they fear that having a phone will allow them to be tracked and easily found. This is especially dangerous for women, who worry that online harassers will be able to discover their location.

Recommendation: Help customers filter content and configure privacy settings

Mobile carriers and shop owners can start at the source by helping customers set up privacy settings before they leave the store. Showing users how to block unwanted messages and remove explicit content from their social feeds helps them feel safer online.

By promoting educational resources such as Free Basics or the Life app by KaiOS, industry players can combat negative views of the internet. It's also important to design—or encourage others to design—user-friendly products for consumers with lower digital literacy levels. For example, limiting the use of technology jargon while prioritizing visual content over text can make devices more accessible for new users. Features such as simplified websites, content in local languages, and easy-to-use menus allow new users to feel more confident using mobile phones.

Purchasing devices and data

Overall, participants responded positively to the idea of buying their first internet-enabled phone or replacing existing mobile phones with superior models. Where and how they purchase devices, however, depended heavily on their sometimes inaccurate perceptions of security, the availability of warranties, and the affordability of the device.

Finding: Nigerians prefer to pay in cash and make purchases at phone shops

Mistrust in online payment systems, fear of fraud, and difficulty setting up payment plans result in 80% of respondents using cash to purchase phones. Mobile money usage in Nigeria has increased in recent years, but for big-ticket items like phones, people stick with

cash because it's the most familiar method.

Nigerians purchase devices through three main avenues: phone shops, authorized dealer shops, and open markets.

Our study shows that phone shops were the preferred avenue because respondents believed phone shops offered original phones (as opposed to knock-offs sometimes sold in markets), more choices, competitive prices, and warranties.

"People now prefer going to stores where you get exactly what you want, you know that these people are not scamming you, this is a company, you know that this is their branch, so whatever happens to your phone at the time of guarantee you can always come back and complain and they will now follow up."

Authorized dealers suffer the incorrect perceptions that they offer fewer options and no warranties. Open markets are the least trusted due to the perceived risk of fake phones.

Recommendation: Advertise the availability of warranties and original devices

Nigerians often incorrectly assume only manufacturers can offer original devices and warranties. To encourage purchases through other avenues, mobile shops and carriers should leverage visual ads that show off a variety of phone options and clearly display warranty offers.

Accountability is key. Retail staff should be trained to fully explain warranties and the types of follow-up services the shop offers. When new users know that they can come back to the seller with any issues or questions, they are more likely to make a purchase.

Finding: New users tend to buy small data packages even if the cost per MB is higher

New users often have low and/or unstable income, so they rely on friends and family to purchase phones and data bundles for them. These purchases are either given as gifts or meant to be repaid with money or bartering.

Phones and data are also sometimes seen as communal. It's not uncommon for families to share devices or for people to borrow phones to check social media or get online.

Regardless of who pays for the data, Nigerians generally prefer to buy smaller data bundles, despite the higher cost per MB. First-time users often have a limited understanding of how data packages are priced and how data is consumed, so they struggle to maintain consistent data usage.

As a result, small data packages are purchased early in the month and quickly depleted. As many new consumers live paycheck to paycheck and do not yet recognize the internet as a necessity, replenishing data is not a priority.

This may also be why Nigerians use the internet "on demand," meaning they do not let apps run in the background or keep data turned on when they are not actively using the internet.

Recommendation: Use simpler language and clearly explain bundle options

First-time internet users prefer simple explanations of what they are paying for. Carriers that introduce more creative pricing models that appeal to these new consumers will have more success in selling data packages.

For example, offering pricing based on time or a specific service rather than volume (MB/GB) makes the internet seem more accessible and user-friendly. Nigerians may be more willing to buy data in forms such as one hour of unlimited browsing per day or unlimited WhatsApp usage for a flat rate. Globe Telecom had great success with this strategy – its data service revenue went up 17% two years after introducing data-free YouTube videos.

Industry players should also consider leveraging free data to build data usage habits. Telecommunications company, MTN, uses this tactic by surprising users with free bonus data. Not only do these freebies generate excitement, they encourage users to explore the internet without the fear of overspending.

Providing free data promotions along with pricing transparency is a great way to build trust in new markets. New users worry about their data consumption and how much it will cost them, so services such as daily spend limits or warnings when data is running out will be well-received.

Internet and device usage

Limited experience with the internet often results in a narrow view of all it has to offer. We found that both urban and rural respondents who claimed to use the internet regularly still stuck to very basic online activities.

New users learn from their social circle, which leads to a limited view of the internet

While 82% of respondents claimed to have experience using an internet-enabled phone, only 32% mentioned surfing the internet or using instant messaging apps as one of their top three phone uses. This suggests that internet usage is not yet a core daily activity in Nigerian households.

Experienced internet users in developed markets are quick to Google how to do something, but new users turn to people they know personally and feel they can trust. Unfortunately, this means new users only learn what their communities can teach them.

Lack of knowledge causes Nigerians to use their internet-enabled phones in a limited way. Without exposure to activities like downloading apps, setting up online accounts, using web browsers, or making video calls, new users never learn all the internet has to offer them.

Improve digital literacy with welcome packs and in-store training

New users need ways to build their digital skills and expand their understanding of their phones and mobile internet. Creating "welcome packs" that include bite-sized content such as video guides and walk-throughs can enable consumers to learn, both before and after they make a purchase.

Digital skills welcome packs should come pre-loaded on consumer phones and be available on demo devices in-store. Pre-loaded video content appeals both to users with low literacy levels and to the data-conscious who may hesitate to use their data to look up guides.

Retail staff play an important role as well. Staff should be trained and incentivized to teach new users the basic capabilities of internet-enabled phones and the internet in general. When members of the community become well-trained employees, they can become a trusted source for all tech-related questions and issues.

While educating customers may lengthen the sales process, the time investment will pay off. When new customers have a better understanding of what mobile internet can do, they will use more data.

Internet access challenges

Limited network coverage and access to electricity are serious concerns for Nigerian consumers.

Nigerians practice "SIM Swapping" to work around poor network coverage

Many Nigerians have multiple SIM cards and practice "SIM swapping." Switching out SIM cards allows users to access different networks so they can shop around for the best coverage. It also helps them take advantage of limited-time promotions from various carriers.

Increase network coverage and stability

If mobile carriers invest in increasing network coverage and migrating 2G connections to 3G and 4G, they can gain a loyal customer base.

Reliable 3G and 4G coverage would prevent SIM swapping and keep users on the preferred network. Mobile carriers with a reputation for great network stability and coverage can benefit from higher revenue generated from voice and data usage as well.

Only 54% of the Nigerian population has electricity in the home

Battery life is a significant concern and charging phones can be an issue. Some users own multiple devices so they can switch phones when one runs out of battery power. Similarly, smartphone owners often use basic phones for calls and texts so they can preserve their smartphone battery for internet access.

Teach consumers about battery life and power-saving options

In Nigeria, long battery life should be prioritized as a key selling point. Many new consumers could be persuaded to purchase a smart feature phone if they knew certain models boast a battery life of several days, whereas smartphone batteries hardly make it to the end of the day.

Mobile carriers and shops should also educate new users about power-saving tips like adjusting screen brightness, and introduce them to power banks that can be used as backup power sources.

In conclusion, Nigeria is poised for increased mobile connectivity, but much work is still needed in user education to ensure people make the most of their internet access. ■

THE 5G DEPLOYMENT BALANCING ACT

Attaining Right-sized, Reliable Fiber Fronthaul

VIAVI Solutions

Deploying a 5G network is complex—it is not simply upgrading the RAN and the core, rather 5G deployment brings layers of complexity, each intertwined with the next. To overcome the myriad challenges a successful 5G deployment encompasses, it is essential to understand the cause and effect implications of every decision. Each choice can impact the cost and the strength of a service provider's business case.

5G has three core use cases: enhanced Mobile Broadband (eMBB), ultra-reliable low latency communication (URLLC), and massive machine type communications (mMTC). And, initially not all use cases will be implemented. For example, URLLC applications require certain network enhancements that early 5G deployments may not be able to deliver, but from the SP perspective, planning for those requirements is essential for a future-proof 5G network. Building the best network infrastructure to support 5G use cases is the top priority for all major SPs and to achieve that goal upgrading the underlying fiber network that connects the radios to the core is the critical first step to success.

While deploying fiber is costly, the benefits undeniably outweigh the deployment challenges. Fiber offers higher bandwidths (required for eMBB) with less attenuation, resists electromagnetic interference, offers lower latency (URLLC), and with improving multiplexing technologies, can accommodate capacity growth on the same fiber infrastructure.

HOW MUCH FIBER IS ENOUGH?

Still, SPs grapple with fundamental questions: How much fiber is enough? How can fiber infrastructure investments today be leveraged for success as 5G matures? and they face the reality that without high capacity backhaul, mid-haul and fronthaul, their customers' 5G experiences will not be any better than 4G. Moreover, unaddressed latency issues introduce the same risk to the 5G business case. Applications including virtual reality and connected cars demand a delay-proof fronthaul.

The Balancing Act

Identifying the right fiber topology for deploying a 5G network is the key to making the business case pay off. A variety of fiber fronthaul network topologies and technologies can be planned and implemented based on correct understanding of the requirements and goals of the network and getting fronthaul right. What does that mean?

1. **It must be cost efficient.** Deploying fiber is expensive. If dark (unlit) fiber is available, it should be used initially and as capacity demand increases deployment of a next level of multiplexing (WDM) system and future planning can increase network capacity.

2. **It must be flexible.** Fronthaul must allow different applications with different latency and jitter budgets to work on the same fiber infrastructure.

3. **It must be transparent.** Fronthaul should allow multiple services with varying quality of service (QoS) to be implemented.

4. **It must be agile.** Agility will enable quick delivery of new services, allowing for dynamic allocation and release of network resources required by different services. The ability to dynamically optimize network connectivity also will be a key component of 5G fronthaul.

5. **It must have perfect timing and synchronization.** Latency and jitter cannot be present, especially for mobility and URLLC applications.

6. **It must be easy to manage and maintain.** Network failures in fiber fronthaul have to be quickly resolved and high reliability for time sensitive applications must be achieved.

And, for SPs with multiple service offerings, a scalable access fiber architecture that can easily support residential, business, enterprise, and 5G midhaul/fronthaul on the same platform is essential.

Testing the 5G Network

5G's massively larger bandwidth demands a much denser fiber fronthaul, midhaul and backhaul network. This means not only more fiber cables and end points, but also a higher order of multiplexing which in turn increases the complexity and scale of fiber testing. Previously we had a pair of fiber cable connected to a radio. Now, this has evolved to upwards of twelve or more fiber pairs per radios. As a result, a visual fault location tool will not suffice to validate fiber signal integrity. Technicians may see light at the other end but will have no way to validate a specific wavelength path is correct.

Further, in a WDM system, testing for correct power levels will require different set of instruments. Many fibers will drive more MPO connector deployments, which will require an MPO light source and an MPO tester. Ultimately, fiber field installations will be more complex with significantly more MPO and xWDM deployments.

This increase in the number of fibers and the types of connections will drive the need for SPs and their contractors to have easy-to-use fiber test instruments with integrated test process automation to scale 5G deployments.

Conclusion

The optical infrastructure serving fronthaul, mid-haul and backhaul must be flexible, agile and futureproof to meet 5G high bandwidth demands and significantly higher cell-site density. Topology of the fiber infrastructure chosen must be considered to maximize return on investment from short-term deployment to long-term network growth models. Managing and maintaining fiber infrastructure will be a constant operational expense that must be considered at the time of deployment. Having the right test solutions for maintaining fiber networks will be key in delivering high quality of service at low OPEX.

With a fully integrated portfolio of cloud-enabled instruments and systems, software test automation, and services for network testing, performance optimization, and service assurance, VIAVI is positioned to assure operators and their partners a smooth 5G network roll-out and sustainable network lifecycle.

For more information, contact local partner Comtinu on info@comtinu.com or call +971 4 445 6799.
Visit viavisolutions.com/5g

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By Kashif Hussain

Kashif is the Director of Solutions Marketing with VIAVI Solutions and has more than 20 years of experience in mobile networking and wireless technology.

Viavi launches OneAdvisor ONA-800

Viavi Solutions has launched OneAdvisor ONA-800, an instrument platform it says will address the evolving requirements of communication service providers, their field technicians and contractors. "As 5G becomes more ubiquitous in 2020 and beyond, network operators are aggressively scaling and commercialising this technology using large workforces of technicians or contractors to install and activate tens of thousands of cell sites," Viavi claims. Viavi says the first OneAdvisor solution ONA-800 provides technology coverage, test features and test process automation to facilitate this aggressive network deployment.

What's more, the product supposedly allows cell site technicians to test fibre, RF, and CPRI/Ethernet from a single instrument, "replacing multiple independent tools (OTDR, CAA, Fiber Scope) and significantly reducing the total cost of ownership for service providers and contractors".

Kevin Oliver, vice president and general manager, converged instruments and virtual test, Viavi adds: "5G represents a quantum leap in network complexity, from the frequency bands used, to diversity of the x-haul technologies, to the possibility of multiple radio vendors." *www.viavisolutions.com*

Mist Systems expands vision

Mist Systems, a Juniper Networks company, announces a new ecosystem partner integration that leverage ultra-wideband, Wi-Fi radar (sensing), LiDAR, Electronic Shelf Labels (ESL) and battery-less Bluetooth LE tags to deliver use cases for indoor location with accuracy and "exceptional" scale.

Ultra-wideband (UWB) has the promise of becoming a standards-based technology that can be the cornerstone of a real-time location system (RTLS). It supposedly delivers higher-accuracy location to address additional location use cases for customers, including those for Industrial IoT (IIoT), healthcare, enterprise, logistics and retail environments.

Mist has been working with Inpixon, Quarion and Sewio, three location and positioning technology providers and is integrating their UWB anchors and tags within the Mist AI-driven enterprise solution. The firm reckons UWB can enable sub 1-foot accuracy when properly deployed and will enable Mist to address new use cases in the safety and high-value asset tracking areas.

"Sewio is excited to work with Juniper and Mist in order to extend our UWB technology to our common customers and integrate our real-time location system with Mist's innovative AI-driven platform to achieve greater efficiency, profitability and safety within facilities across the many verticals and use cases we serve," said Milan Simek, CEO and Co-founder at Sewio.

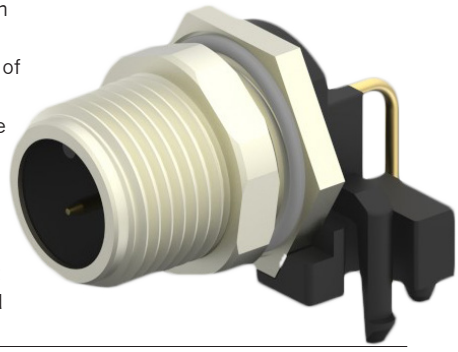
Bob Friday, CTO of Mist Systems, adds: "We are excited to build on the previous success of our location solution, including placement as a visionary in the recently announced 2020 Gartner Magic Quadrant for Indoor Location Services, with new use cases that leverage state-of-the-art ultra-wideband, Wi-Fi, LiDAR, ESL and Bluetooth LE technologies. It takes a robust ecosystem to bring indoor location to stores, hotels, hospitals, campuses and other AI-driven enterprises, so we are excited to be working with the best vendors in the industry to make this a reality." *www.mist.com*

TE Connectivity extends M12 range with right-angle connectors for PCBs and panels

The TE Connectivity M12 Range has again been extended with A-, B- and D-coded versions of the right-angle connector for PCBs and panels. The latest M12 PCB right-angle offering comes with two, five and eight position configurations for direct mounting to PCBs and panels. They have an integrated plastic mounting snap feature that facilitates strong mechanical and electrical connections, saving valuable PCB space and leading to reduced installation costs and increased productivity.

"These latest connectors are easy to install and help to increase production efficiency and decrease installation cost in digital factories," said Ted Szarkowski, product manager at TE Connectivity.

UL certified, the M12 connectors meet IEC specification with an industry-standard interface compatible with a broad range of sensors, switches and other industrial devices. They reach the IP67-level protection for industrial-grade sealing against ingress of dust and water at up to depths of one meter. What's more, they complement field-installable connectors and cable assembly solutions already available from TE, "with efficient, high-quality and reliable signal transmission". *www.te.com*



Rohde & Schwarz extends 5G analysis portfolio

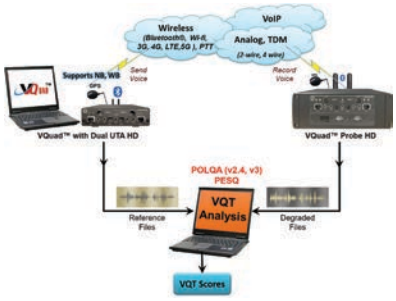
For over-the-air (OTA) tests on 5G base stations in the FR2 range, there's a solution based on the FE44 front-end modules, which support signal generation and analysis in the lower-frequency intermediate frequency (IF) band. This enables low-loss transmission of 5G signals and the use of cost-effective T&M instruments by avoiding the need for equipment designed for the mmWave range. The SMW200A vector signal generator generates the 5G signals and the FSVA3000 provides the right analysis functions.

In the transmit direction, the 5G signals generated in the IF band by the R&S SMW200A are up-converted to the FR2 range up to 44 GHz. This ensures that the high output power is generated exactly where it is needed. On the receive side, the FE44A converts the FR2 signal at the antenna inputs down to the IF band and sends it with low attenuation losses to the R&S FSVA3000 for analysis. This solution is suitable for test systems in production.

For speed-optimized production tests of 5G base stations, Rohde & Schwarz has developed a scalable, high-performance server based testing analysis platform. The SMBV100B vector signal generator and the FSVA3000 spectrum analyser are used as RF test solutions. The QuickStep test executive software is used to automatically control the test setup and verify test results. The solution is using a 10 gigabit ethernet network, where the combination of the server based approach and parallel processing is said to enable high measurement speeds. The infrastructure consists of commercially available components.

Last but by no means least, there's a new test solution for base stations and small cells that enables cross-channel measurements up to 4x4 MIMO on 5G transmissions in the FR1 range. *www.rohde-schwarz.com*

GL says new enhanced Voice Quality Analysers now support POLQA v3



GL Communications says its Voice Quality Analysers are now enhanced to support Perceptual Objective Listening Quality Analysis (POLQA) version 3.0.

"POLQA, the successor of Perceptual Evaluation of Speech Quality (PESQ) (ITU-T P.862) analysis, is the next generation voice quality testing standard for fixed, mobile and IP-based networks," says Robert Bichefsky, director of engineering at GL Communications." Based on ITU-T P.863 standard, POLQA supports the HD-quality speech coding and network transport technology, with higher accuracy for 3G, 4G/LTE and VoIP networks. Upgrading to the 3rd edition of ITU-T P.863, POLQA extends its scope and applicability towards 5G telephony and OTT codecs"

He further adds: "The latest version of GL's Voice Quality Analysers support the optional POLQA v3 upgrade from POLQA v2.4. POLQA v3 supports full band audio analysis which provides improved scoring for mobile-based VoLTE, 5G and OTT applications using EVS and OPUS codecs. POLQA v3 is more sensitive to distortions across the entire audio spectrum. In addition, POLQA v3 supports less harsh analysis of micropauses within the speech, reacts with less sensitivity to linear frequency distortions and includes a significantly improved and streamlined perceptual model". *www.gl.com*

Anritsu introduces 'industry's first'

Anritsu Corporation introduces the ShockLine MS46131A USB vector network analyser (VNA), which it claims is the industry's first modular 1-port VNA that supports measurement frequencies up to 43.5 GHz. With 8 GHz and 20 GHz models also available in the series, the MS46131A brings, Anritsu claims, cost and efficiency advantages to measuring antennas and other 1-port 5G devices at sub-6 GHz, as well as in the 28 GHz and 39 GHz millimetre wave (mmWave) bands. "Lightweight and compact", the MS46131A can be directly connected to the device under test (DUT), eliminating the need for interconnect cables. It results in reduced test costs and improved measurement stability. The MS46131A is a modular VNA that can be configured for each user session on a port-by-port basis.

A single PC can control up to two 1-port instruments for convenient dual site testing. Units can be easily moved between test setups, depending on the required port count. Production uptime is also enhanced, as 1-port VNAs can be easily replaced, if needed, to keep test stations operational. Beyond the USB connection to the external control PC running ShockLine software, the MS46131A requires a 12V power supply. *www. anritsu.com*

Doodle Labs releases 'most advanced broadband radio platform in the industry'

Doodle Labs starts 2020 with the release of the latest member in its expanding Smart Radio Platform, which it claims is "the most advanced, long-range, high-bandwidth broadband radio platform in the industry".

The RM-5800 Smart Radio is designed for the 5725-5875 MHz licence free ISM band. The RM-5800 radio is available in the both the Embedded (-XM) and the IP67-rated External (-XE) form factors.

Due to its globally unlicensed nature, Doodle Labs reckons the 5.8 GHz ISM band is popular for establishing wireless data links for industrial IoT use cases. The RM-5800 supposedly enables a variety of applications in this band, including point-to-point communications, video surveillance, control of robotic systems and the exchange of sensor data across data links in unmanned aerial vehicles.

Doodle Labs has leveraged its patented BII technology to develop the RM-5800 radio to simplify the development of new IP communication equipment for high throughput, long-range mobile wireless mesh networks. Apparently compact and lightweight, the radio enables development of advanced communication capabilities for unmanned aerial vehicles (UAVs), vehicular, rapidly deployable MANET networks, ground robots, as well as handheld, wearable and small form fit radios. *www. doodlelabs.com*

Look out for...

WBA completes phase one trial of Wi-Fi 6 infrastructure

The Wireless Broadband Alliance (WBA), the body developing of next generation Wi-Fi services, successfully completed its phase one trial of Wi-Fi 6 infrastructure and services at the Mettis Aerospace factory in the UK.

It claims that the trial was the first of its kind in the world and an important part of the WBA's Wi-Fi 6 test and development program. The body says tests included applications of 4K video streaming, large scale file transfers, messaging and voice/video communications as well as the first stage of IoT sensor and mixed reality testing. Previous implementation tests with Wi-Fi failed to work in Mettis' factory environment. During the trial, the WBA says speeds of 700 Mbps using 80 MHz channels were achieved and low latency applications, such as video calling and video streaming, performed well with results below 6ms. These results prove, the WBA claims, that Wi-Fi 6 infrastructure can operate well in the presence of interference and noise in a complex and challenging factory environment as well as deliver high quality services for monitoring and maximizing machinery performance, minimizing downtime, and improving communications on the factory floor.

"The completion of this initial phase marks a significant milestone for the adoption of Wi-Fi 6," said WBA CEO, Tiago Rodrigues. "The Mettis facility is an especially challenging environment for wireless communications with furnaces, presses and heat, a lot of moving heavy machinery and the presence of dust and in-air particulates. Nevertheless, the field tests in this highly-charged atmosphere have proven that Wi-Fi 6 technology works well and can play a vital role within the industrial enterprise and IoT ecosystem. If Wi-Fi 6 can deliver highly reliable, high quality and high bandwidth communications in this type of factory environment, then it can deliver it almost anywhere," he adds.

Avanti's commitment to connecting rural east Africa

As part of its corporate social responsibility, Avanti is donating solar satellite broadband connectivity and laptops to refugee settlements in east Africa

East Africa, and Uganda in particular, hosts some of the largest refugee populations in the world. Avanti is committed to mobilising its satellite technology to support refugees, host communities and humanitarian organisations in the region through providing access to connectivity in the remotest of locations.

Avanti's first project is now live in Bidi Bidi refugee settlement, based in northern Uganda. Bidi Bidi hosts over 270,000 displaced people predominantly from the neighbouring conflict in South Sudan, putting immense strain on host communities and local resources.

In July 2019, Avanti donated solar powered satellite broadband to The Social Innovation Academy (SINA)'s Bidi Bidi site, the first of three installations Avanti 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 tackles failing education and resulting unemployment in East Africa through creating self-organised learning spaces, where disadvantaged youth and refugees unleash their potential for positive change as social entrepreneurs. A "freesponsible" approach lets scholars learn the skills needed for their own enterprises by taking up responsibilities within a SINA community. Scholars start to understand their past as a strength, rather than a subject of shame and create solutions to local problems themselves.

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.

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.

"Since knowledge is power, the internet has allowed refugees and the host community to gain access to information essential for self-determination, self-learning, and personal development through education. Social enterprises have emerged, which are solving local challenges while providing a dignified income", says SINA founder Etienne Salborn.

Following the success of the donation to SINA, Avanti's corporate social responsibility programme is expanding its impact in East Africa and connecting further sites in refugee settlements. Through 2020, Avanti is working with UNHCR, The UN Refugee Agency, as a corporate partner donating solar powered satellite broadband connectivity and laptops to seven UNHCR sites in remote refugee settlements in Uganda.

Avanti will be connecting sites in Palabek, Imvepi, Bidi Bidi, Kiryandongo, Maaji II and Rhino Camp refugee settlements throughout this project. The settlements, predominantly hosting refugees from ongoing conflicts in the Democratic Republic of the Congo and South Sudan, are remote and off grid.

The donation comprises of solar connectivity equipment, installation, laptops for each site, free bandwidth, maintenance and customer support. The connectivity will enable refugees and their host communities to access information, humanitarian and livelihood services; working to create revenue generating opportunities, increase refugee self-reliance and ease the pressure on host countries.

Avanti announced this contribution at the first UN Global Refugee Forum in Geneva in December 2019 and is committed to supporting UNHCR's work through the provision of connectivity, bridging the digital divide and increasing opportunities for people in some of the most disconnected locations.

"This is a big step for Avanti in terms of our commitment to Africa and the opportunity we can provide the developing regions in our network. Given the magnitude of refugees living across Africa, our work with UNHCR will allow us to increase our efforts in connecting the world, enabling people to build themselves a better future', says Avanti Communications CEO, Kyle Whitehill.

The satellite VSAT equipment donated by Avanti to UNHCR was developed as part of the Every Community Online (ECO) project. The ECO project is led by Avanti and co-funded by the European Space Agency (ESA), as part of its Advanced Research in Telecommunications Systems programme. The primary objective of the ECO project is to ensure that no community in sub-Saharan Africa, no matter how rural or remote, is left without access to reliable high-speed broadband connectivity.

The ECO project team researched and developed satellite Gateway Earth Station (GES) equipment and Customer Premises Equipment (CPE). The equipment is specifically designed to meet the reliability, performance and affordability requirements of the sub-Saharan Africa environment where telecommunications infrastructure is usually limited, completely unavailable or unaffordable to the majority of the population. The CPE is available in two variants with both enabling multiple concurrent users to access reliable satellite based high-speed broadband and digital services using any Wi-Fi enabled device.

The ECO service integrates a solution for affordable micro-data purchases on smartphones via Pay As You Go (PAYG). The ECO service is suitable for the following sectors:

Commercial community markets where local resellers or entrepreneurs can sell the service in return for a share of revenues generated.

National governments and governmental agencies committed to reducing the digital divide in sub-Saharan Africa.

International development initiatives where the affordability of the micro-data purchase via PAYG model can be used to support financially viable and sustainable access to digital services in under-resourced rural communities.

The ECO project is led by Avanti Communications Ltd in the UK. The project has successfully demonstrated the technical and financial viability of delivering an affordable satellite-based Wi-Fi solution through deployment of advanced and specialised equipment across Avanti's HYLAS 4 satellite footprint in sub-Saharan Africa. ■

Opportunities and barrier to using mobile technology and the internet in Kakuma refugee camp and Nakivale refugee settlement – a case study by global charity

Kakuma refugee camp in northern Kenya and Nakivale refugee settlement in south western Uganda host a diverse range of nationalities from across the region, including Somalia in the east, to the Democratic Republic of Congo in the west. Diversity helps to better understand the role mobile technology plays in refugees' travel around the region and how it can support their lives once they reach settlements.

Refugees were purposefully selected based on nationality, age, gender and population distribution in each location. The primary data collected represents the first dataset of its kind to focus on understanding the use of mobile technology and the internet within refugee populations in Kenya and Uganda.

KEY TRENDS

Although Kakuma and Nakivale have very different geographic, urban and infrastructural differences, there are many similarities in the way refugees access and use mobile technology and the internet, as well as the challenges they face. Furthermore, there are close similarities in refugee needs across both locations, as well as in the role mobile phone technology can play in addressing these needs. Based on analysis of the data collected, eight key trends have been identified that are common to both Kakuma camp and Nakivale settlement. The close correlation of the eight trends identified in Nakivale and Kakuma suggest a broader relationship between; (1) refugee needs that can be addressed through mobile; (2) barriers to mobile phone and internet access and; (3) mobile phone usage across settlements and between countries in east Africa.

When taken as indicators for the potential adoption of mobile and internet-based solutions, these trends have important programming and policy implications for those working with refugee communities and should be considered as part of future programme designs.

KEY INDICATORS

Although access to any type of mobile device provides a channel (voice/text) through which humanitarian organisations and others can deliver services to refugees, smartphones clearly offer the most effective way to connect to social media through the internet and, in turn, with refugee communities to address a diverse array of needs.

Based on the key trends identified in this report, the strongest indicators of access to mobile technology and related services are connectivity, education and age.

CONNECTIVITY

Access to internet enabled devices such as smartphones is only part of the challenge. Connectivity, defined here as reliable access to 3G/4G data services, is the keystone for accessing services beyond voice and text. It is therefore one of the biggest determinants in how practitioners can target mobile and internet based services in refugee communities.

EDUCATION AND AGE

This study has shown that age and education are strong influencers of smartphone ownership and increased use of mobile-based applications and services. Younger refugees are more likely to own a smartphone, with the average age of an owner being 28 in Kakuma and 30 in Nakivale. Increases in levels of education also affect smartphone ownership, with University graduates the most likely to own a smartphone, followed by those who completed secondary education.Lamu patients now have access to earlier, cheaper and better diagnosis and treatment as well as better follow-up care through remote specialized consultations, medical education, and monitoring. ■

Changing the landscape of the cellular backhaul market in Africa and beyond

As connectivity demands continue to reach unprecedented levels year on year, MNOs operating in Africa need to ensure they are ready to meet the demands of future. Semir Hassanaly from ST Engineering iDirect explains why satellite is the ideal solution to deploy this connectivity quickly and cost-effectively

The demand for data is exploding across the globe, and Mobile Network Operators (MNOs) are poised to become the primary way in which we connect. This is particularly the case as 5G comes to fruition, opening up new innovative use cases. To support this, and the tremendous surge in demand for data it will bring, MNOs will need the help of satellite and its inherent capabilities, especially in rural areas in continents such as Africa.

Satellite has the ability to enable cellular backhaul in even the most remote corners of Africa, which is historically underserved by connectivity. By combining the rapid drop in space segment prices with sophisticated and highly capable ground equipment, the cellular backhaul landscape in Africa is changing radically – and this is all at the hands of reliable, efficient satellite connectivity.

A solution in satellite

In continents such as Africa, access to high-speed, reliable broadband connectivity can significantly impact the quality of life and the economy. Connectivity has the power to stimulate socio-economic activity throughout the region, providing access to high demand applications, such as community Internet access and mobile backhaul. This includes public institutions which will also significantly benefit from dedicated services including education, healthcare and civil defense.

Satellite is the ideal solution to provide backbone connectivity to regions – such as Africa - that have no access to a fiber or undersea cable infrastructure, or when the backbone link needs to cross regions that cannot be secured. Furthermore, it is also the fastest method to recover from a loss of connectivity due to a cable failure or natural disaster. Therefore, in underserved areas of Africa, satellite has the ability to bridge digital divides and in some cases, fill Universal Service Obligations (USOs).

In Sub-Saharan Africa, there has been a significant growth of mobile phone usage over the past few years. According to a recent report by the GSMA, it is currently the fastest growing region in terms of smartphone usage, with a CAGR of 4.6% and an additional 167 million subscribers over the period to 2025. This will take the total subscriber base to just over 600 million, representing around half the population.

As a result, we are seeing more demand for satellite-based cellular backhaul in Africa and we see this as a major area for growth in the future.

Opening up new opportunities

Across the globe, satellite is attracting significantly large deployments and is considered a very flexible and capable solution in the backhaul technologies mix. As a result, new use cases are being opened up for satellite backhaul. From offloading traffic in congested areas, postponing or avoiding ground network upgrades to sporadic use cases like railroads or sporting events; even first-responder networks requiring ubiquitous and reliable coverage are becoming profitable applications for the satellite industry.

While satellite backhaul may sound very promising for the industry, it is very much still in its infancy – with half of the world's population still not connected to the internet. However, the opportunity for expansion of the number of sites – particularly in continents such as Africa - that could be economically served using satellite backhaul from current levels of coverage is huge, totaling 507K new broadband base stations.

Cellular backhaul

Satellite backhaul not only provides reliability and quick service roll-out, it also brings increased latency and operational costs which must be mitigated with the right solutions.

When it comes to this, MNOs are looking for a reliable solution which can provide enhanced Quality of Service (QoS) and Quality of Experience (QoE) to easily extend connectivity to rural sites and integrate seamlessly within their terrestrial network. They are also looking for multiservice capabilities, which allow access to multiple market verticals to increase revenue, and scalable solutions for large point-to-multipoint networks and for demanding high-speed trunks.

And cellular backhaul over satellite is proving to be the best in efficiency, scalability and flexibility to bridge the digital divide in Africa and satisfy this growing demand.

Joining forces

Newtec and ST Engineering iDirect – who are both specialists in the designing, developing and manufacturing of equipment and technologies for satellite communications - have recently joined forces to combine Newtec's innovations in performance and efficiency with iDirect's innovations in networking and mobility.

The company's Dialog® platform, which is a single-service and multiservice VSAT solution provides a solution which can enable operators and service providers to build and adapt their infrastructure and satellite networking according to business or missions at hand.

Dialog also provides revolutionary Mx-DMA® technology, which can combine the benefits of SCPC and TDMA, ensuring that all the traffic is accommodated at each remote base station while multiplexing the bandwidth very efficiently between these remotes to decrease the backhaul operating costs. Additionally, Dialog is designed to overcome challenges in cellular backhaul connectivity, such as layer 2 and layer 3 bridging, as well as to provide mobility support, which is proving to be a critical area of our work.

Dialog and Mx-DMA have been successfully deployed commercially for mobile networks in Asia, Africa and Latin America and is currently empowering one of the world's highest capacity mobile backhaul over satellite projects. There are currently more than 20 mobile backhaul networks deployed over Dialog in the world.

In particular, Dialog was successfully installed for Mattel, Mauritania's leading mobile operator to provide cellular backhaul to several remote sites across the region.

Hybrid approach

However, bridging the digital divide in the outmost rural corners of Africa requires more than technology. A continued partnership between satellite and MNOs is also key and can create opportunities for both and can change the landscape of the cellular connectivity market for the better. With satellite in their network mix, MNOs have more room to extend the reach of their service and address new use cases, such as traffic offload for congested urban networks, Over-the-Top (OTT) content distribution, and critical connectivity for disaster response efforts.

High Throughput Satellites (HTS) and ground equipment with the ability to support hundreds of Mbps of capacity for backhaul, along with attractive price points, will also be crucial in enabling service providers, telcos and MNOs to not only "connect the unconnected" but also bridge the bandwidth gap between urban and unserved and underserved areas across Africa.

This is particularly crucial as we enter the next stage of the evolution for MNOs - 5G, which calls for a total integration of satellite connectivity with the 5G network model. In fact, NSR estimates that 5G-differentiated applications — such as 5G backhaul and hybrid networks — will generate close to one-third of net satellite capacity revenue growth in backhaul over the next 10 years. This is due, in part, to the fact that 5G backhaul capacity demand will consume four to five times the bandwidth of a 4G site, according to NSR.

Looking ahead

Cellular backhaul over satellite has a rich history in enabling MNOs to expand their service to remote and rural markets, particularly in Africa. From an initial 2G voice solution to a 4G/LTE data solution, the role of satellite connectivity has changed along with the profile of the mobile end-user – and we have no doubt that this will remain, as mobile usage across Africa continues to explode and 5G networks begin to be rolled-out across the globe. ■

Cellular backhaul over satellite is proving to be the best in efficiency, scalability and flexibility to bridge the digital divide in Africa and satisfy this growing demand

Dare1 lands in La Siesta, Djibouti

Djibouti Telecom, Somalia's Somtel and Telkom Kenya, along with cable manufacturer SubCom, said the Djibouti Africa Regional Express 1 (DARE1) submarine cable system has landed in La Siesta Beach, Djibouti and marine installation is underway.

This follows the announcement in early December 2019 that all manufacturing aspects for the DARE1 system had been completed.

In addition to the installation of the trunk, the installation of the two branch legs to the system's four landing stations has also commenced. The landing stations, located in Djibouti (Djibouti's capital city), Bosaso (Somalia), Mogadishu (Somalia) and Mombasa (Kenya), will help enhance connectivity in the east African region and will also help enable more efficient communications, say the partners.

The two installation vessels are progressing on schedule and marine operations are scheduled to be complete in March 2020.

MWC to offer refunds for cancelled Barcelona event

Mobile World Congress (MWC) has offered to reimburse anyone who paid to attend the cancelled conference, in a move that could "lay down the gauntlet" for other events cancelled due to the coronavirus pandemic.

Organiser GSMA — the trade body for the mobile industry – scrapped the telecom event in February following a string of high-profile withdrawals, saying health concerns made it "impossible" for the event to go ahead.

The Barcelona showcase was one of the first major events to be called off as a result of the pandemic.

However, GSMA said it will refund the full price of the ticket, which costs €799 for a basic exhibition pass.

Clients that spent larger sums of money on the conference can claim a refund, or have been offered credits as an incentive to attend future events.

Under GSMA's financial package, companies that spent up to €5,600 on MWC 2020 can claim either a full refund or credit worth 125% of what they paid. This would be applied as a discount on the cost of attending MWC over the next three years.

Clients with spend over €5,600 are entitled to the same credits, or can claim 50% of this year's fees as a refund, up to a maximum of €168,000.

Companies that withdrew before the conference was officially cancelled – including BT, Vodafone, Amazon and Facebook – are entitled to the credits but not the refunds.

"The GSMA values the loyalty and support of our members and partners in the mobile ecosystem worldwide," said chief executive John Hoffman.

GSMA said it already has formal support for MWC 2021 from O2 owner Telefónica, Vodafone and Orange.

Inmarsat launches new services in Saudi

Inmarsat will bring its maritime, aviation and enterprise connectivity solutions to customers based in Saudi Arabia through new partner agreements. It has also secured new spectrum licenses to deliver both its narrow-band (L-band) and high-capacity broadband (Ka-band), Global Xpress (GX), services in Saudi Arabia, enabling Saudi-based businesses to deploy these services for the first time. Fixed and mobile satellite telecommunications distributor Sada Al Ammah and Global Beam Telecom have been appointed as the company's first distribution partners in Saudi Arabia and the region and they will work closely with Inmarsat's Maritime, Aviation and Enterprise businesses to roll-out services in the region. They will work with Inmarsat's Enterprise business to bring the benefits of its award-winning connectivity services to land-based users in the Middle East.

Bladon sign US$36m deal to supply Alkan CIT

Bladon Micro Turbine, the manufacturer of micro turbine gensets, has signed a three-year distribution partnership contract with Alkan CIT worth over US$36m.

Under the terms of the deal, Bladon will provide its microturbine powered generators to Alkan for use at telecom tower sites across Africa and the Middle East. Alkan currently covers 18 countries in the region and this partnership will provide Alkan customers with access to efficient and reliable telecom tower power.

"Having worked with key telecom operators all around the region and having rendered services for more than 30,000 telecom sites over that past two decades; I can confidently say that our collaboration with Bladon will definitely enrich the market and help operators resolve key challenges that used to cause lots of pain," said Ahmed Galal, managing director, Alkan Communication Networks. "Alkan expertise and Bladon technologies are the perfect match to empower the telecom industry and we're very happy to present Bladon advanced technologies and Micro Turbines to the market."

In addition to a total cost of ownership up to 30% lower than conventional diesel gensets, the Bladon MTG offers up to 8,000-hour service intervals, which translates to 90% fewer site visits than required for conventional diesel gensets.

Paraguayan network to be completed by February

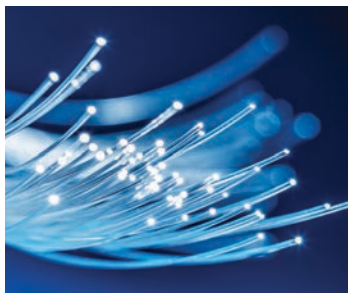
Paraguay's national fibre-optic network (Red Nacional de Fibra Optica, or RNFO) is expected to be completed by February.

The RNFO initiative is aimed at unifying the fibre networks of state operator Copaco, utilities company Administración Nacional de Electricidad (ANDE) as well as the Ministries of Interior and Finance. Copaco operates around 180,000km of fibre, while ANDE has around 120,000km. The ministries have approximately 200km and 74km of fibre respectively.

Paraguay's Ministerio de Tecnologías de la Información y Comunicación (MITIC) made this announcement despite the fact that just 14,000km of infrastructure had been integrated at the end of 2019.

The convergence contract was awarded in February 2019 to domestic firm Celexx, which is believed to have a close working relationship with China's Huawei.

Copaco operates around 180,000km of fibre, while ANDE has around 120,000km



Broadband growth predicted for Argentina

Argentina will see strong growth in the rollout of fixed broadband lines in the next four years, according to new research.

Data and analytics company GlobalData said fixed broadband lines in the South American nation will rise from 8.4 million recorded in 2019 to 9.9 million by the close of 2024, led by operator investment in fixed infrastructure.

The report says that growing demand for high-speed data services on fixed lines among residential and business customers, along with government initiatives to expand broadband services to rural and underserved areas, have led to the investment. It estimates that fixed broadband penetration will increase from an estimated 18.6% in 2019 to 21.0% by 2024.

Cable will represent 42.2% of total fixed broadband lines in 2019 and will remain the leading broadband technology through to 2024. Fibre lines will grow at the fastest compound annual growth rate (CAGR) – 13.1% over 2019-2024 – mainly supported by rising demand for high-speed broadband connectivity and ongoing fibre network roll-outs by operators like Movistar Argentina.

State-owned satellite company ARSAT will also receive US$154m from a universal service fund (USF) by 2020 to help complete the Federal Fibre Optic Network, which is a federal backbone network made up of 13 geographic regions, as well as provincial networks interconnected to the backbone.

The report estimates that fixed broadband penetration will increase from an estimated 18.6% in 2019 to 21.0% by 2024

Spanish firm Sateliot partners with IEEC

Spanish 5G Internet of Things satellite specialist Sateliot has signed a deal with the Institute of Space Studies of Catalonia (IEEC) ahead of its inaugural nanosatellite launch.

The company said a team of experts from the institute will advise it on the correct functioning and development of its first 'CubeSat' before it launches later in 2020, including detailed risk assessment of the mission's technical aspects.

Under the terms of the deal, IEEC will also support Sateliot's planned follow-up launch of a constellation of up to 100 nanosatellites designed to extend the IoT reach of existing 5G terrestrial networks via operator wholesale deals.

Sateliot also has similar agreements in place with the European Space Agency (ESA), UK firm Open Cosmos for the manufacture of the nanosatellites and Spain's Alen Space for the payload design.

Comtech acquires Gilat Satellite Networks

Comtech Telecommunications has agreed to acquire Israel's Gilat Satellite Networks for approximately $532.5m.

The former will pay US$10.25 per ordinary share in cash for 70% of Gilat's stock and 30% in Comtech common stock.

"I am excited to have reached this agreement with Gilat and believe this combination is beneficial to the stakeholders of both companies," said Fred Kornberg, chairman and chief executive (CEO) of Comtech. "The acquisition better positions Comtech to take advantage of key marketplace trends, particularly the growing demand for satellite connectivity and the enormous long-term opportunity set that is emerging in the secure wireless communications market."

Founded in 1987, Gilat offers broadband satellite communication and networking services

Dov Baharav, chairman of Gilat added: "I have long admired Comtech's commitment to technology leadership and I firmly believe that employees will have expanded opportunities for career development. No doubt, the future will be very bright for Comtech and Gilat and all of our stakeholders."

Founded in 1987, Gilat offers broadband satellite communication and networking services. The company's largest shareholder is Israel-based private equity firm FIMI Opportunity Funds, which holds a 34% stake, followed by Mivtach-Shamir Holdings with 9.7%.

HYLA Mobile partners with Admin Plus

HYLA, the mobile device repurposing vendor, has partnered with South African insurance firm Admin Plus to deploy its latest machine learning technology, which allows the latter to see the state of the device remotely. Admin will be able to see things like cracks and water damage from afar to help it issue short-term policies quickly. This helps to significantly reduce its risk exposure to fraud.

Cellnex buys out OMTEL

Spanish wireless infrastructure operator Cellnex has reached an agreement with Altice Europe and Belmont Infra Holdings, to acquire 100% of Portuguese telecom towers and sites operator Omtel for a fee of €800m. The acquisition also covers the rollout of 400 sites within the next four years. Cellnex said this build-to-suit (BTS) programme could be enhanced with up to 350 additional sites through 2027. Omtel currently operates 3,000 sites in Portugal, which represents around a quarter of the telecommunications towers in the country.

Rajant steps up amid crisis

Rajant Corporation and its global distribution and integration partners have made a private wireless network for mobile field hospitals and pop-up health treatment shelters immediately available, in light of the Covid-19 worldwide health crisis. The US-based firm's "Emergency Response Rapid Deployment Kit" is the connectivity solution for facility-strapped healthcare, running out of medical space and patient beds to care for the seriously ill, to expand operations.

Q&A

Shanks Kulam co-founder x-Mobility

Who did you want to be when you were going up?

Having tried to make money since the age of five (unsuccessfully in the early days as my older brother insisted on lending me working capital at rates that make Wonga.com seem charitable), I always knew I wanted to be in business. In what business I had no idea and to be honest it didn't really matter in the early days.

In primary school I'd buy, do up, and sell skateboards, then I moved onto radio-controlled cars when entering secondary school. In fact I was making around £100/week (back in 1984) buying, building (they were all kits) and selling radio-controlled cars to the rich kids at the private school I had managed to scrape my way into... to the detriment of my studies of course! Back then what we now consider an entrepreneurial spark was considered hustling... in a bad way.

What was your first job after leaving school?

Telecoms engineer, helping build and install the world's first digital mobile network (One2One now EE) initially only active within the M25/Greater London!

When was your big career break?

After graduating with an engineering degree in London, I really got my teeth into technical sales, becoming a product manager selling early internet hardware (high speed modems pre-Cisco/IP days). That firmly put me on the path to commercial sales with a technical understanding.

What is the best thing about your job?

Working with entrepreneurial founders and applying telecoms to new vertical markets that personally I would never have considered before. I love to see their drive and vision and I love that we at x-Mobility can support that.

> "If I had to work outside of telecoms, then it would definitely be in the internet industry still helping people to communicate in new and disruptive ways"

What is the hardest thing about your job?

Saying no to customers. Unfortunately, it is something that you just need to do sometimes. We work with customers that are the right fit for us – in this way we know that we can better support them and help them to grow. But from time to time, when it's not the right fit, we have to say no, so that we don't distract from our, and their, goals and focus.

> "I don't ever want to retire. This is a lifestyle choice, not a job!"

What has been your career low to date?

Launching a telecoms company during the 2008 financial crisis. The world I had known my whole career (which we didn't realise at the time had been a long bull run) just stopped. Investments suffered, there was a sharp increase in bad debt, previously 'closed' deals were put on the back burner. It was tough.

What has been your career high to date?

Coming out of the 2008 crisis intact, albeit with some business scars, to successfully help scale many brands and companies into the telco space. Initially it was locally via a SIM MVNO and more recently globally via our telco-OTT app.

Who has been your biggest inspiration?

My long-time business partner, Wayne Myers, who's the most creative deal maker I've ever come across. He helps keep our product and service offering technically ahead of the curve, which enables me to sell the next new thing!

What is your biggest regret?

Not co-founding a telecoms business earlier. We started x-Mobility in 2008, but I've loved every minute of it, so I wish we'd been going for longer.

> "My older brother insisting on lending me working capital at rates that make Wonga.com seem charitable"

What is the best business lesson you have learned?

Risk mitigation. In telecoms most companies I've seen fail do so due to bad debts, which is a function of not managing one's risk. Fortunately, I learned this (the hard way) on someone else's time and dime early in my career.

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

Telecoms today is really a function of technology and internet/cloud-based services that can reach billions of users at a relatively low cost. If I had to work outside of telecoms, then it would definitely be in the internet industry still helping people to communicate in new and disruptive ways.

What do you want to do when you retire?

I don't ever want to retire. This is a lifestyle choice, not a job! I've always found communications sector interesting and perpetually evolving, from mobile phone hardware, to software based services such as Skype, to mobile telecoms apps like Vyke.com

What would you say has been the best technological advancement in your lifetime?

The internet. Period. It's levelled the playing field for all, regardless of race, location or wealth. We all have equal access to the world's information. What we do with it is what sets certain folks apart. What can be more disruptive than that?

Which competitor do you most admire and why?

We consider the likes of Twilio.com a competitor. In such a short-time they've democratised telecoms by making it available to the masses via any website or app just by adding a few lines of code.

Which areas of Africa to do work in?

We work across the continent and also with brands servicing the African diaspora. We've recently helped Gist Mobile launch its solution. Founded by two Nigerians, it targets the African diaspora in Europe and North America. We've also got announcements to follow shortly with African operators and banks.

New services, such as the Gist Mobile one, allow users in Africa to have a UK or US mobile number on their device, meaning they can make super low cost calls and texts as if they we're in the UK or US at a local rates. For the first time, someone in Africa can 'be local' in another country such as the UK, all without the need for any physical SIM or high cost mobile plan. ■

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