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SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

SEPTEMBER/OCTOBER 2019 Volume 24 Number 3

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Zimbabwe uses Tesla batteries to fight electricity shortages

Econet Wireless, Zimbabwe's largest telecom player, is installing Tesla batteries at base stations around the country as a backup due to electricity shortages hampering the country.

Earlier this year, power utility company, Zesa (Zimbabwe Electricity Supply Authority), introduced 18-hour long load shedding schedules to manage the situation because it is producing less electricity due to low water levels in Lake Kariba, the country's largest power source.

Furthermore, Zesa, which also relies on importing power from neighbouring countries, owes South Africa's Eskom a reported US$23 million in unpaid bills. Zimbabwe has suffered from cash shortages as its economy continues to fall and mobile money has become essential for most daily transactions by Zimbabweans. Large chunks of the country's economy runs through electronic systems and mobile money, which is dominated by Econet's Ecocash, which has a 95% market share.

Zesa introduced 18-hour long load shedding schedules to manage the situation because it is producing less electricity due to low water levels in Lake Kariba (pictured), the country's largest power source

Such activity has made the country reliant on local mobile network base stations providing power regardless of electricity shortages. In July this year, Econet generators failed after a power outage forced a day-long mobile money blackout. Economists estimated the country lost millions of dollars as a result. The lithium-ion batteries stores energy and can stand up to 10 hours, providing enough time to power up a station until electricity supplies are restored in some parts of the country. Econet-owned solar specialist Distribution Power Africa (DPA) is currently carrying out the installations.

Francistown, Botswana, targets next Huawei CCTV rollout

The mayor of Francistown in Botswana has confirmed that the Huawei CCTV project, the country's second, will be completed before the end of the year.

In November 2017 Botswana's police service and the Chinese tech giant entered into a contract to establish a video surveillance project.

Law enforcement initiate "on-the-ground intervention" and the footage is assimilated to contribute towards investigations.

Police Commissioner Keabetswe Makgophe said the project was necessary to maintain effective policing.

It was first rolled out in the capital Gaborone, 430km from Francistown and has now been confirmed for the country's second biggest region.

"The project is designed to make the city safer and it entails the instalment of CCTV cameras in highly frequented public places that have been identified as risky areas that are favourable to criminals," said Mayor Sylvia Muzila.

In a statement, Huawei said the project will make the two cities (which it describes as key drivers of development and economy in Botswana) safer.

The full cost of the project currently remains undisclosed.

In 2017 Botswana's police service and Huawei entered into a contract to establish a video surveillance project

ZICTA cancels Vodafone licence due to lack of capacity

The Zambia Information and Communications Technology Authority (ZICTA), the southern African country's watchdog, said it had cancelled the licence for Vodafone's local franchise holder, citing a lack of technical and financial capacity.

In 2016, Vodafone licensed Afrimax, a telecom service provider in sub-Saharan Africa to offer customers high speed 4G data services using the Vodafone Zambia brand.

The company, registered as Mobile Broadband Ltd, has of late been experiencing operational problems and issued a statement in July saying its shareholders had failed to recapitalise it (*see page 15 Wireless Business*)

"The Zambia Information and Communications Technology Authority has cancelled network and service licences issued to Mobile Broadband Limited trading as Vodafone Zambia Limited," it said in a statement. "The cancellation is on the grounds that Mobile Broadband Limited has ceased to fulfil the eligibility requirements... by not being technically and financially capable of meeting the obligations and terms and conditions of the licence."

ZICTA said in a statement Vodafone Zambia would cease to operate from October 20th.

Tanzanian watchdog threatens 40 million with disconnection

The Tanzania Communications Regulatory Authority (TCRA) has warned it will disconnect nearly 40 million mobile phone subscribers who fail to register their SIM cards via the nation's compulsory biometric system by the end of the year.

Only 5.2 million users (12%) have so far complied with a deadline of December 31st looming, the watchdog said.

Fredrick Ntobi, head of TCRA's communication department warned that the deadline would not be extended to accommodate late registrations.

According TCRA statistics, Vodacom Tanzania is the country's largest operator with 32% market share followed by Tigo with 29% and Airtel Tanzania with 25%.

Only 5.2 million users (12%) have so far complied with a deadline of December 31st looming, the watchdog said

Vodacom Tanzania managing director Hisham Hendi has warned that the directive could negatively impact the company's operations, with the company so far having managed to register two million of the 14 million customers currently on its network.

"This directive has significant implications for costs and could potentially lower our customer base growth next year," Hendi was quoted as saying via newswire Bloomberg.

Neighbouring Zambia implemented biometric SIM card registration in May this year to curb crime that law enforcement officials believe is linked to fraudulent SIM cards.

Airtel faces DRC protests

The Congolese subsidiary of Indian telecom giant Bharti Airtel was targeted by activists in September, which ended in 36 arrests.

A sit-in protest was staged by the civil group, Lutte pour le Changement (LUCHA) – translated into English as fight for change – in Goma, located in the eastern part of the Democratic Republic of Congo (DRC).

Steward Muhindo, a LUCHA spokesman, said the arrested activists will be sued for making "defamatory statements" against the telecom company. He added that 13 were transferred to the central prison and 23 to the prosecutor's office.

The protest in front of Airtel's office was for better services at lower prices from one of the three main telecom operators in the country. In the DRC, the average income is below US$2 a day.

"It is deplorable that the young people who remind Airtel of its obligations are physically attacked, arrested and tortured each time, with the culpable silence of leadership," the group said in a statement.

The pro-democracy group has also received support from 36 Congolese human rights organisations, which condemned the arrests.

Nimbus gets renamed to Paratus Namibia

The shareholders of sub-Saharan infrastructure specialist Nimbus Infrastructure have agreed to rename the business to Paratus Namibia.

It was announced on the Namibian Stock Exchange (NSE) news platform following Nimbus' annual general meeting in late September.

The NSE said all resolutions that were tabled at the meeting were also passed by the majority of Nimbus shareholders. They include the maintenance of PriceWaterhouseCoopers as the company's external auditors.

In addition, the shareholders approved a share swap whereby Nimbus will acquire the remaining Paratus Telecommunications shares from the Paratus Africa Group which will see Nimbus become the 100% shareholder in Paratus Telecommunications.

As a result, Paratus Africa Group will become a shareholder in Nimbus, alongside the Capricorn Investment Group, Standard Bank Nominees, CBN Nominees and First National Bank Nominees (Namibia).

According to the 2019 financial statements, Nimbus' investment in Paratus amounted to around N$195 million, with around N$103 million raised in 2018. The company said it would be used for the sub-Saharan Africa information and technology sector.

Paratus has a presence in about 20 African countries including Angola, Botswana, Mozambique, South Africa and Zambia.

Zambia to import electricity from SA

Zambia is set to import electricity from South Africa starting in October to help plug a severe deficit that's causing daily power cuts lasting about eight hours, which is having a major impact on the telecom sector.

State-owned Zesco, the power utility in Africa's second-biggest copper producer, concluded talks with South Africa's Eskom Holdings SOC in mid-September to buy as much as 300 megawatts for six months, managing director Webster Musonda recently told reporters in the capital, Lusaka.

Currently, the southern African country is experiencing a shortfall of 700 megawatts, which equates to about a third of peak demand. This was exacerbated by the drought that curbed output at the hydropower stations that it depends on for 80% of generation.

Zambia has a shortfall of 700 megawatts, after drought curbed output at the hydropower stations that it depends on for 80% of generation

Rain becomes pioneer in commercial 5G wireless home space

South African telecom operator Rain has launched a commercial 5G wireless home broadband service, becoming the first in the country to do so.

The mobile data-only provider has started rolling out the service, offering uncapped internet usage for R1,000/month, to selected areas where the company has network coverage.

The fixed-wireless 5G service is aimed at home broadband and is currently only available in parts of Johannesburg and Pretoria for now.

"During 2019 and 2020, coverage will expand to Cape Town, Durban and other major metros," said Rain chief marketing officer Khaya Dlanga. "Selected customers in Rain's 5G coverage area have been invited to be the first to purchase ultra-fast 5G".

The service has been promoted as an alternative to ADSL, fibre and fixed-LTE offerings. "In the next couple of weeks, Rain will open up the offer to all homes and small businesses within the coverage area of Johannesburg and Tshwane," Dlanga added.

Rain has built its 5G network using technology from China's Huawei atop its spectrum allocation in the 3.6GHz radio frequency spectrum band.

South Africa's bigger and more established mobile operators are still unable to launch 5G services until they get access to more spectrum from the regulator.

Zamtel acts to keep regulator happy

Zambian mobile operator Zamtel, the country's third largest player, has embarked on a network modernisation project in the capital Lusaka to improve the quality of service and navigate punishment by the Zambia Information and Communication Authority (ZICTA).

The watchdog has been unhappy with the service currently on offer from the state-run business and has already imposed substantial fines on it as well as competitors MTN Zambia and Airtel Zambia on two separate occasions.

Jason Mwanza, acting chief technical officer at Zamtel, said the project involves replacing low capacity 2G/3G and 4G sites with high capacity sites and will take one month to complete.

"We are confident that the heavy investment Zamtel is making in the network will ensure that our customers receive an always available service," he added. "Once the upgrade project is complete, our customers will greatly benefit as they will have access to much faster data speed and a reliable quality network."

Zamtel has commissioned two communication towers in Petauke and Lusangazi districts in the eastern province as part of the goal to achieve universal coverage. An additional nine have been slated, which will bring the total number of towers in the area to 17.

SATA launches digital sharing platform

The Southern Africa Telecommunications Association (SATA) has launched its sharing digital platform, SATA Connect, established to help build stronger identity and relationships within its community through the sharing of information.

It took place at the offices of ICT services and solutions provider Mauritius Telecom (MT).

The operator has been at the forefront of innovation in the field of ICT, breaking new ground and opening up new opportunities for the Mauritian people.

Speaking at the launch, SATA chairman and MT chief executive officer Sherry Singh said the platform was for overcoming challenges and knowledge sharing.

"One challenge we found was that there was no knowledge database among the 16 member countries of SATA," said Singh. "We each in our own countries have a lot of information. But when we collaborate we don't have a common place where we can meet and share our data and update our knowledge. Another challenge was with collaboration. It is not always easy to connect. Different countries, sometimes different time zones. It is not easy always to chat on email or just one on one basis." Singh added that engagement was an issue. "When we meet as members we are enthusiastic, but when we get back to our situations the routine takes over and sometimes the regional agenda takes a back seat," said Singh. "So we needed to find ways to make the engagement better."

In April, when Singh was appointed as chairman, he committed to deliver a higher level of sharing and interaction to SATA members.

The website will aim to deliver in this commitment by helping to build a stronger identity and relationships within the SATA community through sharing information among the members and the general public.

Minister of technology, communication and innovation for the republic, Yogida Sawmynaden also attended the launch.

Mozambique boosted by increased telecom reach

The proportion of Mozambique's population reached by telecom services has expanded from 65% in 2014 to 85%, according to Pedro Ingles, the country's permanent secretary in the ministry of transport and communications.

Speaking during the opening session of the third National Telecommunications Conference, a two-day themed "Telecommunications in Mozambique, Readiness for the Fourth Industrial Revolution", Ingles said telecoms had reached 86% of the country's administrative posts and 60% of its localities by June 2019.

He also noted that the telecom access rate surpassed the targets set by the government.

"The country and the world are undergoing a revolution in telecommunications. Productive processes and trade are intimately dependent on the evolution of communication technologies, which poses an enormous challenge for the providers and regulators of this service, " Ingles said.

The Mozambican government has been committed to expanding the telecom sector as it has continuously injected capital to the sector through the Universal Access Fund (FSAU), which was created to finance telecom programmes and projects to ensure universal access to telecommunication services.

Ingles reiterated the government's support as the communications sector continues to expand the 4G services to ensure 100% of the population is reached. He added that the government also planned to soon implement 5G services in parts of the country.

The Mozambican government has been committed to expanding the telecom sector

'Africa sees major fall in mobile data costs, but millions still offline'

Africa has witnessed a particularly steep decline in the cost of mobile data, according to new research.

Data from the Alliance for Affordable Internet (A4AI), an initiative of the Web Foundation found that across the continent, where internet data remains unaffordable for millions, particularly women, the cost of 1GB data dropped from 9% to 7.1% of average monthly income. The fall in cost brings internet access within reach of millions more people.

The report also said falling broadband prices drove affordability in certain African countries. In Sierra Leone, the relative cost of 1GB data tumbled from 25.9% to 9.9% after the introduction of more affordable data plans by the largest operator.

In Burkina Faso, reduced prices halved the cost of 1GB from 14% to 7.8% of monthly income. Meanwhile in Zimbabwe, a rise in incomes made broadband data more affordable, dropping relative cost from 19.8 % to 10.1% of monthly income.

The study said declining costs meant seven new countries reached the international threshold of affordability for the first time in 2019, making internet affordable for most people, including those at below average income levels in Algeria, Cape Verde and Namibia.

Due to the high costs keeping people offline, the countries and regions with the least affordable data are also those with the fewest people connected to the internet. In Africa, where data is the least affordable at 7.1% of average monthly income, just 24% of the population is online compared with 51% globally.

"Access to a meaningful internet connection means access to transformational and life-changing tools," said Dhanaraj Thakur, research director of A4AI and Web Foundation. "This notable drop in costs, especially across Africa, will make it easier for millions around the world to benefit from internet access. While we welcome this progress, millions remain offline because they cannot afford the cost of data. Urgent action is required - failure to deliver affordable internet access will drive inequality as those offline are further pushed to the margins of society."

The A4AI added that while each region will differ from the next and the range of policy decisions will continue to impact the price of the internet, there is evidence that countries that prioritise a clear national broadband plan, invest heavily in universal and public access and effectively and transparently allocate spectrum experience the greatest gains in internet affordability.

Fibre-optic cables vandalised in Angola

More than two kilometres of fibre-optic cables were vandalised on September 23rd outside Sassa Povoação /Vila de Caxito in Bengo, Angola, according to Angola Telecom's provincial director.

Ledna de Oliveira said that when fibre optic cable is cut in the region, the operator's signal loss also affects the provinces of Uige, Malanje and Zaire.

The provincial director said the Angola Telecom first heard about the problems from Sassa Povoação residents, who were concerned about the signal breaking. De Oliveira added that according to the information obtained, some young people climb the poles and pull the copper from the cables to sell to Malians.

"You have to do some serious work to find out how much copper has been stolen so we can replace the service," de Oliveira said and added that a report was made to the police, because the company suffers other types of vandalisation, such as burning and cutting the fibre optic cable. "We have information that shows that the population knows the miscreants, which will be easier to act," the official said.

Vodacom partner up to introduce first smartphone-only town in South Africa

Vodacom South Africa has partnered with a farming business to introduce the first smartphone-only town in the country powered by the operator.

BPG Langfontein employs the majority of the people living in Wakkerstroom and Vodacom moved all farm workers using 2G feature phones to 3G devices. As a result, the second oldest town in Mpumalanga province, is now the first smartphone-only town in South Africa connected by Vodacom.

The operator said it would like to replicate the smartphone-only model across the country as part of its mission to connect people who live in deep rural areas and are still dependent on 2G networks.

In the next phase, Vodacom said it would educate the farm workers about data and the benefits of the internet. It will also look at various ways in which it can help empower members of this community with its CSI tools in education, gender-based violence and health.

BPG Langfontein employs the majority of the people living in Wakkerstroom (pictured) and Vodacom moved all farm workers using 2G feature phones to 3G devices

Mozambique Telecom plans 4G launch

Mozambique Telecom, born from the merger of the public companies Telecomunicações de Moçambique and Moçambique Celular, said it plans to launch 4G in the country by the end of 2019.

The service will first be accessible in the capital Maputo and its surroundings, before being extended to the rest of the country. This transition to high speed mobile broadband will be with the technical and financial support of controversial Chinese technology company, Huawei.

The operator said the investment in 4G meets the ambitions of modernizing its network to offer consumers high-quality mobile phone services.

After the mobile network, Mozambique Telecom plans to modernise its fixed network to meet demand

Furthermore, by investing in mobile broadband, Mozambique Telecom will compete with Vodacom and Movitel.

Telma signs deal with Ericsson

Telecom Malagasy (Telma) chief executive officer Patrick Pisal-Hamida announced to the press the signing of a US$100m commercial contract with Ericsson, spanning the 2019-2023 period.

Under the agreement signed last July, the Swedish technology company will provide Telma with extension, optimisation and software upgrade services for its main network and radio access network to increase capacity and peak throughput.

Signed by Patrick Pisal-Hamida and Nora Wahby, customer unit head of Morocco and West Africa at Ericsson, the four-year agreement provides for the deployment of 2,000 mobile sites that will enable Telma to complete its network coverage of the country. There are also plans to deploy 4.5G then 5G sites in high density areas.

With increased capacity, higher data rates and lower latency, Telma customers will benefit from high quality online services, including HD video games and network games.

Pisal-Hamida said the investment is in line with Telma's ambition to "provide all users in Madagascar with affordable, high-quality and easy-to-use broadband internet access and communication services.

"Telma is focused on creating a network for people on the move who can now be assured of a good connection on their phones, tablets and laptops across Madagascar," he added.

Nora Wahby, customer unit head of Morocco and West Africa at Ericsson

'SA's gov pension fund looks at Liquid stake'

South Africa's pension fund for government workers is tipped to buy a stake in pan-African fibre company Liquid Telecom if the latter goes ahead with a planned initial public offering, according to reports.

News wire Bloomberg reported three "people familiar with the situation" said the Public Investment Corporation (PIC) agreed to set aside funds to guarantee a $375m loan to Liquid parent Econet Global from Deutsche Bank AG. The story has since been picked up by other news outlets.

It would then buy stock in Liquid when it lists at a discount and that money will be used to repay Deutsche, according to the sources.

However, if the plans to list are shelved, the PIC will not be required to spend any money. Another source said it also would not necessarily invest all of the US$375m million as the size of the share sale has yet to be decided and agreed upon.

If the deal goes ahead, the sum will dwarf the US$180m stake acquired in 2018 by UK-based development-and government-backed investment group CDC.

In 2017, Liquid said it planned to raise $600m in a bond issue to pursue further acquisitions and expand its superfast broadband network across Africa, in a bid to service the continent's densely populated and fast-growing cities.

Vodacom offers free internet to customers

Vodacom has offered free internet essentials to more than 25 million mobile phone users in South Africa.

The service is powered by Upstream's Zero-D connectivity platform and one of the country's largest telecom operators has seen a massive uptake with 55% of its phone subscriber base already engaging with the portal branded Vodacom Flex.

Users are currently averaging sessions of nearly six minutes as they use the free digital content available in the platform.

Now Vodacom subscribers that have run out of data are automatically redirected to the Zero-D portal, where they can access essential internet services. These include web search, local and international news as well as weather reports.

Furthermore, the portal gives subscribers the option of digitally topping up their service for increased airtime or data.

"Millions of people cannot do topping up when they run out of credit. Vodacom has taken a leading step to address that shortfall in South Africa with its Vodacom Flex service," said Kostas Kastanis, head of Zero-D at Upstream. "There is a lot of talk about "crossing the digital divide" in emerging markets, but together Vodacom and Upstream are actually doing it. Millions of people in South Africa now have the ability to remain connected to digital information which they would not have had otherwise."

Zero-D, an ad-funded free mobile internet platform, gives users the fallback option of a zero-rated web environment whenever they have used up their credit.

Users are currently averaging sessions of nearly six minutes as they use the free digital content available in the platform

Johannesburg to Cape Town fibre line lit up

Cable operator Seacom has lit up a one terabyte fibre line connecting Johannesburg and Cape Town, the company told the media.

It comes at a time when the firm is said to be lighting up the fibre assets of FibreCo, which it bought almost a year ago. The new addition owns and operates a national open access dark fibre network, providing infrastructure, connectivity and services across the whole of South Africa.

Seacom previously only had capacity from Durban up to Johannesburg, but since this new Johannesburg to Cape Town development, Seacom is said to be targeting East London.

Furthermore, the fibre push is thought to be part of Seacom's strategy to diversify its business and rely less on its subsea cable operations. The sector is growing, with competition potentially coming from Silicon Valley giants Google (with Equiano, the first phase of which is to be completed in 2021, connecting Africa with Europe) and Facebook (with Simba, which will circle the continent), among others.

Seacom launched Africa's first broadband submarine cable system along the continent's eastern and southern coasts in 2009. In 2019, it owns Africa's most extensive ICT data infrastructure and partners African businesses, network carriers and service providers.

Mauritian government denies UTL 'meeting'

The Mauritian government has denied claims it held a "secret" meeting with Uganda's state minister for investments and privatisation Evelyn Anite over the acquisition of shares in the troubled Uganda Telecom Limited (UTL).

It owns over 30% shares in Mauritius Telecom Limited (MTL), one of the companies that had bid to recapitalise UTL.

In August, Ugandan media reported that minister Anite had secretly travelled to the island nation to meet directors of the said company in what was claimed to be a sinister move to hand over the multibillion contract. Although she admitted travelling to Mauritius, the minister said she did not meet the MTL directors and hold any discussions with them in regards to UTL.

In a letter dated September 23rd, 2019, G. Banymandhub, Mauritius' secretary to cabinet wrote that no meetings have been held between representatives of MT and any member of Ugandan government including Anite. Banymandhub said that Mauritius government pulled out of the process of acquiring a stake in UTL in September 2018 after realising that a rival bidder [Teleology Holdings] was in process of being awarded the contract and that since then it has not pursued anything."MT has confirmed that no meeting was held between Mrs Evelyn Anite and themselves in Mauritius and they were not even aware if Mrs Anite travelled to Mauritius in August 2019," the statement reads.

Malawi operator morphs mobile money division into independent company

Telekom Networks Malawi (TNM) has turned its mobile money division Mpamba into an independent company and has named Chikhulupilito Mpatso as its general manager.

The new company's board chairman Michiel Buitelaar said the development was indicative of TNM's long-term ambition to leverage the growth of mobile money and its ambition to become more than just a telecom service provider.

"The birth of TNM Mpamba Limited will fully exploit the benefits of the big synergies between TNM and the mobile money business, underscoring our vision of becoming more than just a telco," said Buitelaar. "Our strategy seeks to enable mobile phones to become financial outlets."

TNM said the development was indicative of their long-term ambition to leverage the growth of mobile money and its ambition to become more than just a telecom service provider

Mpamba's new general manager said he will remain a key player in the operator's mission to deepen financial inclusion and application of mobile money technology. "As a company, we will keep pushing the boundaries of innovation to enable customers transact on the Mpamba platform."

Angola launches tender for fourth operator

Angola has launched a new tender for the award of the fourth Unified Global Title for the provision of public electronic communications services, according to a statement issued by the country's Ministry of Finance.

It also said that this public tender is restricted by prior qualification and has two phases. The first is for submission of applications until November 8th for qualification of interested parties, while the second is for submission of proposals by qualified candidates.

The government department has separated qualified and non-qualified applicants, the former will be invited to submit technical and financial proposals within 60 days. Furthermore, an international tender will be held to attract the interest of foreign telecom operators.

The result of the previous public tender was annulled by a decision of President João Lourenço on the grounds that the winning company, Angolan Telstar, had not presented the balance sheet and income statement for the past three years, as required in the tender documents.

Telstar was founded in January 2018 with a capital stock of 200,000 kwanzas which was equivalent to US$625 at the time of going to press.

Its shareholders are made up of two people – General Manuel João Carneiro (90%) and businessman António Cardoso Mateus (10%).

Reports in Angola said that South Africa's MTN Group had dropped out on the grounds that the international public tender was "flawed".

Three companies currently provide the southern African nation with telecom services. Unitel has a market share of 80%, Movicel has the remaining 20% and Angola Telecom, with practically no share and of which 45% is due to be privatised.

Mauritius gets 'first mobile payment service'

Mauritius Telecom and PCCW Global's HKT division have launched what they claimed is the African island's first national mobile payment service.

The service, called My.t Money, is based on Hong Kong-based HKT's Tap & Go mobile payment service the company operates in its home market.

In addition to retail mobile payments, the system is designed to be integrated with a number of civic services including those related to education, transportation and social welfare.

Mauritius Telecom chief executive officer Sherry Singh said the company aimed to "positively disrupt the payments industry," adding 200,000 customers had already signed-up ahead of launch with 1,000 merchants on the island set-up to use the service.

Payment services will be available through both smartphone applications and a platform designed for use on more basic handsets, a feature PCCW Global said would help to address the unbanked population.

The companies said they see the move as a step toward closing the digital divide in Mauritius.

Operators up security

Zimbabwe's mobile operators have tightened security at their base stations amid rising numbers of cases of theft, vandalism, robberies and assaults on personnel at the sites. Network operators are said to be spending millions of dollars on replacing stolen batteries and boosting security. NetOne's head of public relations, Elderette Shereni, told the media that the company has beefed up security to make sure customers' service is not interrupted and thwart further attempts by thieves to destabilize services.

M-payment system ready for launch

Angola expects to launch its mobile payment system for the entire population in the next couple of months. The administrator of the National Bank of Angola, Pedro de Castro e Silva, last November said that the central bank started collaborating with World Bank to introduce legislation authorizing mobile payments in the country in March 2018. The new service is expected to launch before the close of 2019. No further information was available.

Zimbabwe gains power

Zimbabwe has obtained an additional 100MW from Mozambique as the nation's government continues to tussle with power shortages that have resulted in long hours of load-shedding. The energy and power development minister advocate Fortune Chasi, visited Mozambique's capital Maputo in September where he met the country's energy minister Ernesto Max Tonela "I was in Maputo last week where I met the Energy minister. I got 100MW," Chasi tweeted.

Talking satellite

Martin Jarrold, chief of international programme development, GVF

GVF... in Conference:

Satellite "Ascendancy" Compared

I should begin this latest column by explaining my choice of sub-title. It is not meant to be a pun on the ascent to orbit of satellites atop launch vehicles. I am not intending to explore launcher flight dynamics, or to extoll the virtues of particular launch site locations over others (though, of course, equatorial launches are the most advantageous for several reasons, including that satellites intended to attain geostationary orbit, e.g., communication satellites, must have zero inclination with respect to the equatorial plane). Rather, my reference is to one of my earlier articles in this publication, in which I made observations on the growth of satellite in Africa – for example, satellite programmes, mainly, but not only, in the earth observation 'smallsat' arena, recently introduced or announced by such countries as (alphabetically listed) Algeria, Angola, Egypt, Ethiopia, Ghana, Kenya, Mauritius, Morocco, Nigeria, South Africa, and Tunisia – and my use of the word "comparative" refers to a panel discussion session that is now in preparation by GVF (and its partner organisation C21 Communications) as part of a conference on high throughput satellites we will hold in London at the beginning of December.

That panel session is entitled 'Starship UK' and it will look at the United Kingdom as a global leader in space-related innovation at a period of critical and accelerated development in... NewSpace. The UK does, of course, have a long history of major contribution to space industries and space activities – early launcher development (where Britain was ahead of everyone else for some time); building satellites for scientific, military, as well as communication applications; astronauts on the International Space Station; to name only three – but NewSpace* is different. Like the African nations listed above, only on a significantly greater scale, Britain is becoming a regional space power, edging towards "front-runner" status in the Earth observation (and IoT) 'smallsats' environment.

The 2nd December conference, titled as the HTS Roundtable – GEOs, MEOs, LEOs: Enabling a Brave New World, will also address themes covering the HTS satellite operators already operating/planning to operate in GEO, MEO & LEO; the new paradigms of a multi-orbit future for the service providers and value-added resellers (VARS); and, ground segment network architecture innovations.

I've written here before about the importance of HTS for bridging Africa's digital divide and for achieving universal access to broadband. According to the Paris, France-based consultancy, Euroconsult, analysis of figures for 2017 and forecasts for 2027 shows that satellite's imperative contribution to backhaul for cellular/mobile networks will result in a four-fold increase in demand for in-orbit satellite bandwidth that is dedicated to cellular networks (2017 = 68GHz; 2027 = 269GHz), resulting in a multiple of x1.8 in satellite operator revenues from backhaul (2017 = US$1.4B; 2027 = US$2.5B). The differential multiple of these growth factors is a reflection of the effect of increased in-orbit (HTS) capacity on bandwidth capacity pricing.

Northern Sky Research (NSR), the Cambridge, MA, USA-based research and consulting firm, has found an average global decline in satellite capacity pricing of 18 per cent from 2018 to 2019 and estimates a further decline across 2019-2020. Though this figure is a global average and does not focus on the specific situation for the African continent, it is very firmly indicative of a general trend across all regions.

The continued evolution of HTS – from traditional GEO spacecraft (with throughput below 1Gbps) through to very high throughput satellites (VHTS, with GEO spacecraft throughput up to 1,000Gbps, or 1Tbps, and with next generation MEOs and LEO mega-constellations also in the mix), post-2020 – is, according to Euroconsult, re-shaping space segment costs. There is a clear pattern of significant decline in CAPEX per Gbps. Traditional GEO satellites had a CAPEX per Gbps of greater than US$60 million. With early HTS spacecraft the CAPEX per Gbps figure had dropped to just more than US$7 million. The figure has continued to drop through successive generations of HTS, and with VHTS capacities of 500Gbps to 1Tbps expected soon, the CAPEX per Gbps is forecast to reach almost as low as US$0.7 million.

But it's not just all about in-orbit capacity prices and reduced cost per bit. Other factors contribute to service pricing for the user – in the case of backhaul, the Mobile Network Operators (MNOs). Ground equipment efficiency has greatly increased since the introduction of Adaptive Coding & Modulation (ACM), and Forward Error Correction (FEC) technologies, resulting in satellite payloads optimising their spectral efficiency, thus reducing bandwidth prices. Additionally, more providers entering the market has, unsurprisingly, had the effect of introducing downward price pressures.

The HTS Roundtable is not the next event on the GVF-C21 schedule. October 29th will see the return of AeroConnect – The Inflight Online Revolution at 35,000 feet. This conference dialogue will also reference evolution in the HTS ecosystem; evolution that will help facilitate the significant growth in aero connectivity that is forecast.

According to Euroconsult, the total of connected aircraft in 2017 stood at just 4,772; this number is forecast to rise to 27,919 by 2027. Over this decade aero connectivity demand for bandwidth is expected increase 20-fold (from 9GHz to 181GHz) and provider revenues are projected to increase 8-fold (from US$317million to US$2.5billion).

Bringing aero connectivity to the world's commercial air routes will certainly impact services flying between (some of) Africa's national capitals and non-African cities (in Europe, North America, China?) before it impacts international services within the continent, or national domestic services. However, with the anticipated accelerated growth in on-orbit high throughput capacity from, for example, the launching of the many mega-LEOs currently in development, and the practical roll-out of various emerging innovations in electronically steerable flat panel antenna technologies – fostering new and much cheaper terminal designs and reducing connectivity costs for the airlines – even more aircraft will become connected.

Mobile KYC speeds up customer onboarding

NEC XON has created a Know Your Customer (KYC) solution that helps mobile network operators and financial services businesses onboard their customers quicker.

The integrated, self-service kiosk with biometric functionality that can be adjusted to meet local regulatory requirements can be used to quickly and cost-effectively issue SIMs and bank cards, among other business benefits.

"The solution helps transition mobile network and bank customers through the compliance process efficiently so they can quickly start consuming the value-added services they really want," says Grahame Saunders, business head of Biometrics at NEC XON.

The KYC solution gathers relevant customer details, including iris, facial, and fingerprint biometrics in any combination, processes that information as required to a central repository. It is integrated into existing systems so it can then issue SIM or bank cards automatically and activate them via back-end systems.

The solution can be customised to meet the local or regional requirements of KYC, which are often legislated, and reduces the front-office effort and costs required to issue SIMs and bank cards.

In the case of SIMs they are registered by collecting the customer's personal details together with their biometrics. That data is stored in a central repository for KYC-related activities and the SIM card automatically issued through the self-service kiosk that is about the size of an ATM. Subscribers verify their identities using biometrics and the necessary data is transmitted to the service provider's network for service provisioning.

NEC XON partnered with Wavetec for its KYC solution. Wavetec is a multinational IT company that designs and manufactures enterprise queue management, information displays and self-service kiosk solutions for mobile network operators and banks.

Integration is a key component of the solution. It employs standardised SOA-based APIs for modern system integration and has legacy integration capabilities. That future-proofs the solution as part of the customer's architecture and enables the flexibility businesses require to continue meeting evolving market requirements and legislative updates.

The solution's integration functionality offers potential to exchange biometric and other data with existing and future systems such as national identification, immigration and other databases. That enables bi-directional data exchange, effectively providing institutions that infrequently contact customers or citizens an opportunity to maintain and update their databases.

The solution is ideal for providing services to travellers wishing to obtain SIMs local to their destination country where legislation allows that. It can perform the necessary regulatory data gathering at the airport, for example, by scanning a person's passport and gathering their biometric data. Following the necessary background checks, it can then immediately issue the SIM, shortly before provisioning the requisite services.

Since it provides a central data repository and inter-connects with mobile operator systems, the solution can also be used to block SIMs, devices, and users as required. It can also be used to audit active devices, users and SIMs. The same feature also makes it possible to fully audit the process to meet regulatory requirements.

The front-end hardware is based on Windows, iOS and Android technologies so it's cost-effective and easy to maintain. It uses standard hardware internals that are relatively inexpensive in the world of biometrics. And it's highly accurate since it's based on NEC's biometric software platform that's acknowledged to lead the industry.

"The integration of the components and the capability to integrate the unit into the usual business systems has allowed us to create this game-changing solution for the mobile operators and financial institutions," says Saunders. "It effectively lets them turn what is currently an obstacle for customers to consuming their services into an opportunity to grow existing markets, tap new markets, and improve their customer and network management while still meeting their legislative requirement."

The solution is mobile so it can be deployed anywhere customers need it and for any length of time.

Grahame Saunders, business head of Biometrics at NEC XON

Smart lithium deters criminals

NEC XON's partnership with INCELL International delivers smart lithium technology to sub-Sahara Africa that uses half the space of lead acid batteries, weighs a quarter, and provides five times the energy density.

The partnership will support the needs of the market in replacing lead acid batteries, which have comparatively short lifecycles at just a couple of years compared with greater than 10 years for INCELL smart lithium batteries in field tests.

Magnus Coetzee, MD of NEC XON's Alternative Energy division, says, "Lead acid is suitable for domestic use and has scrap metal value, which makes it a target for criminals. The higher voltage range of lithium technology, for example the 42V to 58V range, together with INCELL's state of the art anti-theft solution, makes our offering not only robust but also makes the batteries unusable if stolen."

"Energy storage, particularly in the commercial and industrial sector, has traditionally not delivered the requisite returns on investment (ROI)," says INCELL International CEO, Stefan Jansson. "But our innovative technologies have developed strong business cases for storage based on field use, particularly for backup, peak shifting, renewable integration, demand reduction, and peak shaving cases.

This cost-effective energy storage also improves the case for photovoltaic solar energy solutions that are particularly beneficial across Africa's sun-profuse landscape. The continent is also characterised by vast distances, which make supporting generator solutions difficult and costly. Other socio-economic factors also make generator systems more lucrative targets for criminals.

INCELL is now launching its next-generation smart lithium batteries to sub-Sahara Africa through this exclusive distribution agreement with NEC XON. They introduce a new design with additional features and a technology platform developed to be flexible and robust. INCELL's product portfolio covers the range from 30 to 250Ah, including 19"- and 23"-wide products and pole-mounted versions ideally suited to 5G rollouts, among others.

In cooperation with NEC XON, INCELL will prepare to manufacture in the African continental free trade area. The partners will establish manufacturing capabilities in South Africa with local services options by NEC XON to better serve continental customers by shortening lead times and reducing costs.

NEC XON

Catch NEC XON at AfricaCom, Nov 12-14, Stand C50

Liberian regulator intervenes in row

The Liberia Telecommunications Authority (LTA) has waded into an ongoing price war between Orange and LonestarCell MTN, which dates back to 2012 with the former owner of Orange, Cellcom GSM.

Prior to the watchdog's intervention, the operators introduced campaigns offering subscribers three-day unlimited calls for US$1.

"The predatory price wars have stifled the growth of the sector and has led to a significant drop in revenues collected by the government that could be used to provide social services, among others," the LTA said.

Both operators also came under fire because their anti-competitive behaviour has resulted in market instability.

According to official figures released, between 2014 and 2017 the market lost US$49m to price competition after gross revenue dropped from US$150 in 2014 to US$101m in 2017.

"The LTA measure is in response to call for intervention by MNOs to stop predatory pricing wars which has stifled the sector growth and plummeted revenue significantly," said LTA chairman Ivan Brown. "Mobile network operators were forced to sell packages below market costs and were clearly not profitable. The promotional packages were sold at the cost of diminishing revenue to providers."

The regulator further directed the operators to maintain a floor price that would limit the number of minutes available to subscribers. It said following consultation, both players agreed to charge call minute at US$0.0156 per minute while a megabyte of data will now cost US$0.0218.

Operators have since readjusted their pricing and their campaigns. LonestarCell MTN said its subscribers can still enjoy the US$1 for three days offer, but it has capped the call duration to 45 minutes within its network and 10 minutes for calls made to other networks.

Prior to the watchdog's intervention, the operators introduced campaigns offering subscribers three-day unlimited calls for US$1

"So, effectively, you can buy a dollar $1 and call for three days as you used to but with a reduction in the allotted minutes," said Christal-Dionne Reeves, corporate communications and CSR manager for LonestarCell MTN.

PEOPLE MOVES & CHANGES

Date	Name	New employer	New position	Previous employer	Previous position
1/10/19	Ian Ferrao	Airtel Africa	Regional director	Vodacom Lesotho	Chief executive officer
1/10/19	George Mathen	Airtel Tanzania	Managing director	Bharti Airtel	Chief executive officer – homes
1/10/19	Philip van Dalsen	MTN Zambia	Chief executive officer	MTN Zambia	Chief executive officer
1/10/19	Bart Hofker	MTN Zambia	Chief executive officer	MTN Rwanda	Chief executive officer
1/10/19	Garsen Naidu	Cisco	Country Manager	MTN Zambia	Head of partner and system engineering organisations – sub-Saharan Africa
1/10/19	Mitwa Kaemba Ng'ambi	MTN Rwanda	Chief executive officer	MTN Benin	Chief marketing officer

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
8/8/19	MTN Group	South Africa	H1	ZAR	67.9bn	31.2bn	N/A	The group's service revenue expanded by 9.7% to R67.9-billion, led by growth of 12.2% by MTN Nigeria, 18.7% in MTN Ghana and just 3.3% by MTN South Africa.
30/7/19	Huawei	China	H1	CNY	401.3bn	N/A	N/A	Aggregate revenues up 23% year-on-year
29/7/19	Ooredoo Algérie	Algeria	H1 2019	QAR	QAR1.3bn	N/A	N/A	Results were further impacted by the depreciation of the Algerian Dinar by 3% year on year
22/7/19	Maroc Telecom	Sweden	H1 2019	MAD	MAD3bn	N/A	N/A	Figure relates to profit

Ericsson and MTN launch mobile money open API platform in Ghana

MTN and Ericsson have extended their Mobile Money partnership with the launch of an open API platform in Ghana.

The move will give entrepreneurs an opportunity to develop (EWP) revenue-generating applications. Under the terms of the new agreement, MTN will grant access to third parties to its Mobile API powered by Ericsson's Wallet Platform.

This will enable developers and programmers to get free access to MTN's proprietary software platform. Developers can now access it and create products that ease payment options and leverage the MTN clients registered on Mobile Money.

The MTN Mobile Money API can also be accessed online, saving time previously spent on submitting paperwork and a lengthy standard integration. Furthermore, the online system allows developers to test their products before going live, by using a sandbox available on the website at no additional cost.

Fadi Pharoan, the president of Ericsson Middle East and Africa, said "the ease to send, spend and receive money" using a mobile phone is becoming an essential part of people's lives. "Our new partnership with MTN in Ghana aims to develop a more open, easy and accessible mobile money network," he added. "Ericsson is driving this change of making Mobile money more open by collaborating with MTN to advance secure, flexible platforms that help build an interconnected and transparent financial ecosystem."

Sierra Leone takes out US$30m loan to fund project

Sierra Leone has secured a US$30m loan agreement to fund its contract with Huawei for the second phase of its National Fibre Optic Backbone Project.

Fibre cables will be installed in unconnected regions and enable MNOs and ISPs to expand their capacity and offer 3G and 4G services.

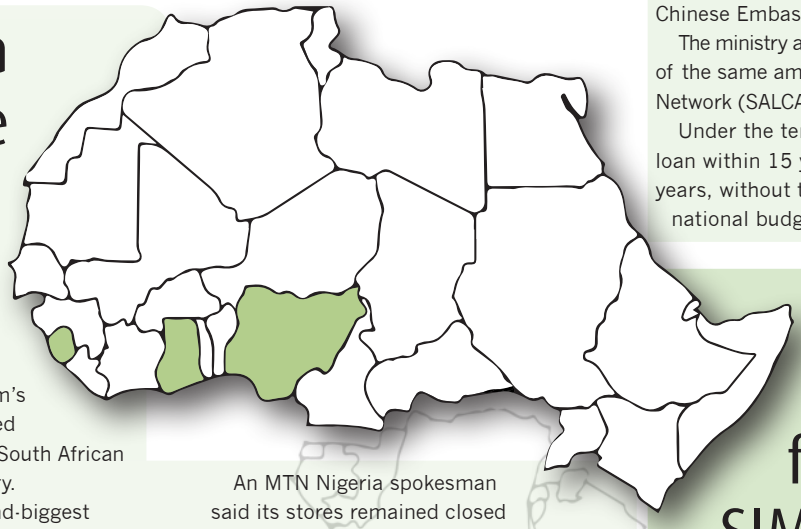
The regions include 19 cities -15 of which will get new backbone stations while a new metropolitan area network will be constructed in the remaining four, to serve around 2.6 million people.

The loan to finance the project was secured with the Exim Bank of China as a result of an agreement between the finance ministry and the bank's representative, the political counsellor of the Chinese Embassy in Sierra Leone, Wang Xinmin.

The ministry also signed an on-lending agreement of the same amount with the Sierra Leone Cable Network (SALCAB) which manages the project.

Under the terms, SALCAB must repay the loan within 15 years after a grace period of five years, without the recourse of applying to the national budget for support.

MTN Nigeria shares spike after partial re-opening



MTN Nigeria's share price hit a three-month high on 6th September after the telecoms firm's company offices partially reopened following a shutdown due to anti-South African attacks in the west African country.

Shares in MTN, Nigeria's second-biggest listed firm, rose 5.03% to NGN139.80 each, a level last seen in June. The local units of South Africa's MTN Group closed all stores and service centres in Nigeria after their premises were attacked following days of riots in their home country chiefly targeting foreign-owned, including Nigerian, businesses. The violence in South Africa has strained relations between Africa's two biggest economies, with Nigeria saying it would recall its top diplomat to Pretoria.

An MTN Nigeria spokesman said its stores remained closed as Southern African Wireless Communications went to press, but skeletal office operations were resuming while staff were asked to stay at home for safety reasons.

Prior to the shutdown, the telecom firm launched a mobile money transfer service, targeting Nigerians without bank accounts and said it planned to become a payment services bank once it obtains the necessary approval from the central bank.

Gambia: trio fined for flouting SIM card law

Gambia's regulator, the Public Utilities Regulatory Authority (PURA) has fined three mobile phone operators for failing to adhere to SIM card registration law.

Africell, Gamcel, and Qcell have all been fined a total of US$115,000 for selling SIM cards activated at the point of sale to subscribers without registering their identity as well as addresses and other details. They were charged US$595 for each SIM card sold.

In a statement, PURA said Africell was fined a total of US$110,700 because it sold the most SIM cards (186), while Qcell and Gamcel sold fewer.

"We embarked on SIM cards registration monitoring exercise for all operators countrywide," said Ya AmieTouray, legal, licensing and enforcement manager at PURA. "We bought SIM cards without following or going through the due process of registering our identity cards."

Touray added that it was not the first time Africell and Gamcel had defaulted and been fined, and there "was no change in the behaviour" of the operators.

Vodafone Ghana CEO joins council

Vodafone Ghana chief executive officer Patricia Obo-Nai has been appointed to the international advisory council of the west Africa STEM Hub organisation.

The organisation has a close association with the Western New York STEM Hub, USA and YALI Regional Leadership Centre, west Africa and its purpose is to empower students through life changing STEM experiences and to tackle careers in science, technology, engineering and maths.

The idea is to create an environment where people of all backgrounds work to maximise their individual potential. With 25-years' experience in the industry, Obo-Nai represents one of the leading figures in Ghana's telecom sector.

"The future is digital and it is our responsibility to empower the young ones to take up critical positions in this area in order to secure a better future for Africa," she said of her appointment. "I feel extremely privileged to be given this opportunity and I look forward to making a positive contribution to a worthy global cause."

5G is 'driving innovation'

Commercial 5G networks are going live across the continent, prompting innovation for new consumer experiences and presenting new opportunities for enterprises, according to Ericsson Middle East and Africa (MEA) president Fadi Pharaon.

Addressing media and analysts at GITEX 2019 in Dubai on 6th October, he also underlined the role the next generation will play in driving new revenue streams emerging from the digitalisation of different industries.

"The deployment of 5G networks will allow operators to develop new use cases, applications, services and revenue streams from IoT and industrial applications– sparking an unprecedented wave of innovation," he said.

In addition, Pharaon underlined how service providers can realise the full potential of 5G by giving examples of some of the most successful use cases globally. He also presented go to market strategies, including considerations on business models and value chain positioning, as well as network deployment requirements.

As part of the presentation, Pharaon said that many operators have already selected Ericsson as their 5G partner and that the Swedish company was first with publicly-announced commercial 5G contracts and commercial live networks across four continents, with more to follow.

Vodafone Zambia up for sale

Mobile Broadband Limited, trading as Vodafone Zambia, has been put up for sale after shareholders failed to keep the firm above water amid stiff competition in the southern African nation's data market.

The country currently has 16 ISPs all fighting for share, according to the latest report from the Zambia Information and Communications Technology Authority (ZICTA). They include Liquid Telecom Zambia, Hai, Zamtel and Paratus Telecommunications, a subsidiary of the Namibia headquartered Paratus Group Holdings.

However, cash-strapped Vodafone Zambia has struggled to maintain operations a year after it entered the local market in 2016 – citing "financial distress".

In July this year, the company issued a statement announcing that the delay in recapitalising itself by the shareholders resulted in network outages in the capital Lusaka and the Copperbelt region.

Vodafone Zambia said the so-called "financial distress" triggered a petition by employees to the High Court in Lusaka for business rescue. It led to the appointment of the business rescue administrator Luwita Sayila as the firm looked to attract new shareholders to the fold.

A business rescue plan was then introduced, which covered the comprehensive restructuring of the company's affairs including business, property, debt and other liabilities and equity. However, Sayila has since issued a notice inviting bids to secure new ownership and said interested bidders may acquire a complete set of bidding documents as of September 12th 2019 upon payment of a non-refundable fee of US$760.

"Mobile Broadband Limited hereby invites interested parties to participate in the open bidding tender for the sale of the company. Mobile Broadband Limited reserves the right to reject any and all bids, declare a failure of bidding or not award the contract at any time prior to contract award," read an excerpt from the notice. It is unclear at this stage how many bids have been submitted.

Tanzania mobile subs rise

Mobile subscription in Tanzania rose to 43.67 million in the three months ending in June, a 4.7% increase from the same period in 2018.

A report published by the state-run Tanzania Communications Regulatory Authority (TCRA) said Vodacom Tanzania, a subsidiary of South Africa's Vodacom Group, remained the front runner for both mobile phone subscribers and mobile money transfers.

Mobile phone use has surged in the east African country over the past decade, helped by the availability of cheaper smartphones.

The number of internet users rose to 23.14 million in June, up from 22.99 million year-on-year. Elsewhere, the number of people using mobile money transfers rose to 22.9 million in second quarter of 2019 from 20.8 million previously.

Vodacom Tanzania increased its share of the mobile phone subscription market share slightly to 33% from 32%.

Other major mobile operators in Tanzania are mainly made up of foreign-owned subsidiaries. They include Tigo, a subsidiary of Sweden's Millicom with a 27% market share, Airtel, a unit of India's Bharti Airtel with 26% and Halotel, owned by Vietnam's Viettel, has 10%.

Zimbabwe to keep 2% electronic transaction tax

The Zimbabwean government's 2% tax on mobile money and electronic transactions will continue despite a High Court ruling in September against the legal instrument behind the levy.

The intermediate tax on all electronic transactions is part of austerity measures implemented by finance minister Mthuli Ncube to generate more revenue for the state.

The Zimbabwe Lawyers for Human Rights (ZLHR) announced that High Court judge, Justice Zhou had set aside Statutory Instrument 205 of 2018 which had introduced the mobile money and electronic transactions tax.

"High Court Judge Justice Zhou has set aside SI205/2018 on the 2% transaction tax. The case was argued by (former Finance Minister and opposition member) Tendai Biti," the organisation said.

The ruling states that "the Finance Regulations, 2018 which are contained in SI of 2018 are invalid and hereby set aside".

The implications of the ruling has triggered debate in Zimbabwe because parliament fast-tracked the promulgation of the Finance Act of 2019, which also makes provision for the tax.

While Ncube has since confirmed the levy would remain in effect, Biti also said the government would use the Finance Act to defend its course of action.

Helios plans to list in London

Helios Towers, the African mobile networks operator, said it will list on the London Stock Exchange (LSE), after ditching plans for an initial public offering (IPO) last year which was expected to value the company at US$2.47bn).

The company said it hoped to raise US$125m through the issuance of new shares, in addition to the sale of existing shares by shareholders including the International Finance Corporation and telecom firms Millicom and Bharti Airtel.

Helios operates phone masts in the Democratic Republic of Congo (DRC), Republic of Congo, Ghana, South Africa and Tanzania.

It is understood that it dropped previous plans for a listing in March 2018, amid concern about political risk in DRC and Tanzania.

This time, Helios is planning a free float of at least 25% of the company and will use the proceeds to expand its services, including possibly into new territories.

Connecting Africa's Future: Working to Close the Connectivity Gap for sub-Saharan Africa's Unconnected Youth

Nelson Mandela once said, "our children are the rock on which our future will be built." There has probably been no greater influence on youth — and thus the future — than the emergence and advancement of digital technology. As UNICEF points out in its The State of the World's Children 2017 report, childhood itself is becoming increasingly changed by digital technology. Today, an estimated 71% of the world's 15- to 24-year-olds are connected. That still leaves 29% — or 346 million young adults — who are unconnected. Of those, approximately 60% live in Africa.

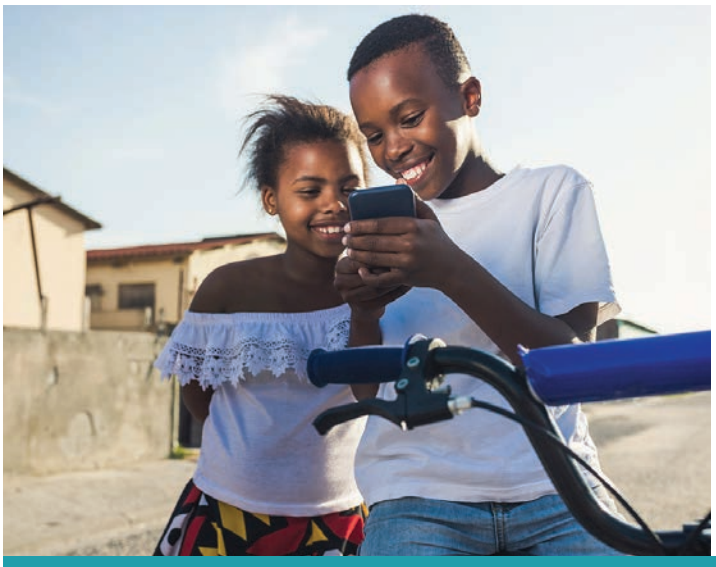
While Africa as a whole has seen rapid expansion of new technologies that has led to significant progress in information, communication, and human development, there are still many areas where gaps remain, especially across sub-Saharan Africa. This gap is largely attributed to the fact that much of the region is rural, resulting in a large portion of its 1 billion people who live beyond the reach of modern technology, including telecommunications. According to GSMA State of Mobile Internet Connectivity 2018, 40% of the population live in remote areas without access to 3G or 4G coverage — and ultimately without access to the internet.

This is especially problematic for the region's young. More than 42% are under the age of 15. That means as many as 168 million or more sub-Saharan Africa youth miss out on the advantages of connectivity, including the ability to access information and learn important skills needed to succeed in today's digital world.

There are many reasons why communities in sub-Saharan Africa do not have access to 3G or 4G. The biggest barrier is the considerable investment in both time and money required by mobile operators to build out the necessary telecommunications infrastructure using fiber and microwave across long distances. Also, in some instances, buildouts using traditional backhaul may not even be feasible.

These barriers are exacerbated by the large number of small, economically challenged populations who are geographically dispersed across wide distances within and across country boundaries. That makes it difficult for mobile operators to justify the investment without some level of certainty that enough revenue will be generated from each site to break even, much less profit.

While providing 3G or 4G connectivity to unconnected areas of sub-Saharan Africa using fiber, or even microwave, for backhaul is ideal, there is an alternative space-based solution when other approaches are not economically practical or geographically feasible.



Last fall, Intelsat entered into a partnership with Africa Mobile Networks (AMN) — an integrator of mobile network infrastructure — to bring mobile connectivity to unserved communities in sub-Saharan Africa. AMN developed a low-cost solution, powered by a highly reliable small-cell solar-based system that can be deployed in less than six hours. AMN has powered this solution with the performance and efficiency of Intelsat's three high-throughput, Intelsat EpicNG satellites along with 23 other Intelsat satellites that cover the African continent. The result is a mobile network infrastructure that is a fast, cost-effective, reliable, solution that can easily scale to meet evolving connectivity demands.

The partnership is having great success, having recently reached a key milestone. More than 500 remote sites in sub-Saharan Africa have been connected, with plans to continue expanding mobile coverage to other parts of the region by the end of the year.

A space-based solution for expanding 3G or 4G coverage is ideal for telecommunications service providers for several reasons: (1) the ubiquitous coverage of satellites, especially those in geo-stationary orbit that cover 99% of the world's populated areas, make it ideal for quickly — and cost effectively — connecting remote communities virtually anywhere in the world, (2) the ability to dynamically distribute connectivity to multiple remote sites across vast distances is efficient and economical, and (3) it opens the door for new opportunities, ranging from increasing market share to expanding future business strategy.

This approach to connectivity — along with governmental, non-governmental, and multi-national corporations working together to address other issues, such as affordability, consumer readiness, and relevant content challenges — means millions of sub-Saharan Africans can access the internet, often for the first time. And when we close Africa's connectivity gap, millions of its youth are empowered and enabled to build a brighter future, one where connectivity with the rest of the world represents the norm, not the exception. ■

INTELSAT

www.intelsat.com/Africa-AWC

Nigerian telecom firms angry with plans to impose 9% tax

Telecom businesses under the protection of Association of Telecoms Companies of Nigeria (ATCON) said they will fight against fresh plans by the Senate to impose nine per cent Communications Service Tax (CST) on telecom operators and cable television service providers.

Previous attempts were suspended by the eighth National Assembly, following the objection by telecoms operators and their subscribers. However, a new plan has emerged just a few days after Ghana increased its telecom tax to 9% from 6%.

The president of ATCON, Olusola Teniola, said telecom firms would reject it again because of the problems it would cause subscribers.

"It has been brought to our attention the re-emergence of 9% Communications Service Tax (CST) that was previously suspended by the 8th National Assembly during the intervention of ATCON NEC to the Senate President on November 8, 2016 whereby it was acknowledged by the distinguished senators that the growth of ICT is critical to the creation of jobs and reduction in youth unemployment," Teniola said in a statement. "The Senate president agreed and assured ATCON and members at large that the tax would be set aside. In attendance at the meeting were the Senate President of the eighth National Assembly, Bukola Saraki, the then Chairman of the Senate Committee on Communications, Senator Gilbert Nnaji and Senator Solomon Adeola Olamilekan respectively."

Teniola said ATCON recommended to government that the tax base of the country should be widened to include more taxpayers.

South African firm faces listing ban

Blue Label Telecoms, the South African distributor of prepaid secure electronic tokens of value and transactional services, has failed to comply with Johannesburg Stock Exchange (JSE) requirements and is under threat of suspension and possible removal.

The largest exchange in Africa said the company had failed to distribute its annual financial statements and notice of annual general meeting within the four-month period stipulated in the listings requirements.

"If the above mentioned company still fails to distribute its annual report on or before 31st October 2019, then its listing may be suspended," the JSE said in a statement.

No further information was available before Southern African Wireless Communications went to press.

Cisco appoints SA country manager

Cisco has named Garsen Naidu as the new country manager for South Africa. He has been with the company eight years – his most recent post was head of the partner and system engineering organisations for sub-Saharan Africa.

"Garsen has led our partner and system engineering division for two years now, with a sales team that is focused on unearthing partnerships that enhance the digital transformation journeys of Cisco customers," said Clayton Naidoo, general manager: sub-Saharan Africa at Cisco. "His ability to deliver customer-centric technology solutions, his inherent technology talent and his aptitude for solving complex problems has made him a valuable member of our team, and I am excited for him to now head up our SA operations. Cisco strongly believes in promoting from within first and our other recent senior leadership appointments are also testament to this."

Cisco said in a statement that Naidu started out as a software development engineer in the aerospace industry and his sales career began at a South African aerospace company, which resulted in him successfully concluding key deals for the company in east Asia.

Garsen Naidu joined Cisco in 2011 as an account manager and then became client executive in 2012. He was then promoted to regional sales manager: public sector and enterprise solutions in 2014.

"This is a wonderful opportunity for me and I look forward to helping Cisco leverage the opportunities that lie ahead for FY20, while aligning our local priorities and vision to Cisco globally," Naidu said. "This will ensure that we deliver the very best solutions to our customers here in SA."

MTN changes CEOs in Zambia, Rwanda and Côte d'Ivoire

MTN Group has announced senior level changes to its operations in three African countries. MTN Zambia chief executive officer (CEO) Philip van Dalsen left at the end of September. Van Dalsen joined MTN in 2012 as CEO of MTN Cyprus. In January, he moved to MTN Zambia in the same role. MTN Rwanda CEO Bart Hofker has replaced van Dalsen, effective October. Hofker is a senior commercial telecom executive with extensive experience in mobile, fixed and integrated businesses, the company said.

Elsewhere, Mitwa Kaemba Ng'ambi has been named as the new CEO of MTN Rwanda. Ng'ambi's career spans more than 10 years in the telecom sector and she returns to MTN where she previously held the role of chief marketing officer at MTN Benin and several other roles at MTN Zambia. Ng'ambi joins MTN from Airtel Tigo Ghana, where she was also CEO. Prior to that, Ng'ambi was CEO of Tigo Senegal.

Finally, MTN also announced that the CEO of MTN Côte d'Ivoire Freddy Tchala has left after 17 years with the company. After leaving MTN Cameroon, he served as CEO in Guinea Conakry and Congo Brazzaville, before joining MTN Cote d'Ivoire in 2015. MTN said it will announce a successor in due course.

Airtel makes senior appointments

Airtel Africa has named Ian Ferrao as regional director of its east Africa business, while George Mathen has been appointed managing director at Airtel Tanzania. Ferrao has over 12 years' experience in senior management telecommunications roles in Africa. Prior to joining Airtel, he was the chief executive officer (CEO) at Vodacom Tanzania, CEO of Vodacom Lesotho and chief commercial officer at Vodacom Business Africa. Mathen brings with him over 20 years' experience in senior management roles, with rich experience in the telecom and EMCG sectors. Prior to joining Airtel Africa, he was CEO – homes, Bharti Airtel in India where he designed and implemented the Airtel Home Strategy. Before he took on that job, Mathen had a number of CEO roles at the Indian firm. He joined that company from Coca-Cola India, where he also served in a number of positions.

"He will be responsible for the profitable growth of the business and help Airtel to be the preferred telecom brand to bridge the digital divide and preferred partner to grow financial inclusion" said Airtel Africa CEO Raghunath Mandava.

The appointments took effect October 1st, 2019

Airtel Africa CEO Raghunath Mandava said the appointments will "help Airtel to be the preferred telecom brand to bridge the digital divide"

Fairview expands RF limiter line

Fairview Microwave is expanding its line of broadband, high power coaxial packaged limiters with the introduction of 14 new models that it claims can operate over a wide frequency range in bands from 0.2 GHz to 40 GHz.

They provide low leakage power circuit protection of 10 to 18 dBm "while offering good suppression of even-order harmonics under hard limiting". The limiters also exhibit a fast recovery time of 10 to 100 nanoseconds and high CW power handling of up to 200 Watts peak power.

These new models have been designed to help protect sensitive components in the receive chain and other microwave circuits in close proximity to high power signals. Typical applications for these RF limiters include military communications, electronic warfare, fibre optic communication systems, instrumentation, SATCOM, radar, telecom, point-to-point wireless, and R&D applications. These RF limiters operate over a wide frequency range in bands from 0.2 GHz to 40 GHz.

The 50 Ohm designs incorporate hi-rel assemblies that do not require any external matching components. The compact packages support thru mounting holes and field replaceable connectors that allow for drop mounting onto a circuit board. Fairview reckons the rugged modules are designed to meet MIL-STD-202 environmental test conditions for shock, humidity, vibration, altitude and temperature cycle. *www.fairviewmicrowave.com*

Viavi's NSC-100 companion for field technicians

Viavi Solutions introduces NSC-100, which it says is the first in a new class of field test instruments called the network and service companion.

It integrates passive optical network (PON), ethernet and Wi-Fi test capabilities together with the automated test process known as Viavi OneCheck. It was designed to meet demand from service providers for intuitive instruments that any frontline technicians and contractors can immediately begin using to speed-up ethernet network deployment and maintenance up to 10G.

The compact, handheld NSC, designed to validate current and future gigabit services, tests both network delivery and service performance. It fits the need to test a range of network environments such as PON (for FTTH and 5G xHaul), DOCSIS 3.1 (cable), xDSL and Gfast (telco), and Ethernet (enterprise, data centre and metro).

It comes with a robust, screenless design and is operated directly via the Viavi Mobile Tech app or paired with other VIAVI test instruments to expand their capabilities. The Viavi OneCheck automated test process ensures that a technician completes all necessary tests while on site. The firm says it is also supported by StrataSync, a hosted, cloud-based solution that provides asset, configuration, and test data management for Viavi instruments and ensures they all have the latest software and options installed.

"Efficiency is the watchword of the network and service companion," says Kevin Oliver, vice president and general manager, converged instruments and virtual test at Viavi. "We designed it so a technician can pinpoint service performance issues in under a minute, and close out tickets on the first visit, optimising time, expense and subscriber satisfaction, even as networks and services get ever more complex." www.*viavisolutions.com*

Rajant's latest mid-tier ES1 BreadCrumbâ node is 'ideal for IIoT applications'

Rajant Corporation, the provider of Kinetic Meshâ wireless networks, has launched its latest BreadCrumbâ node, the ES1. This mid-tier BreadCrumb is described as a "cost-effective option to use in conjunction with all other Rajant nodes to form or expand coverage

"of a resilient, autonomously adaptable Kinetic Mesh network".

Like all Rajant offerings, the ES1 is powered by its patented peer-to-peer InstaMesh networking technology software that enables built-in network redundancy and resiliency.

Rajant claims the ES1 is ideal for IIoT applications and light-duty vehicles because it is compact, lightweight, and low-cost. It provides ethernet and Wi-Fi access point interfaces to enable data, voice, and video applications. Furthermore, it contains two transceivers and up to four external antenna ports as well as multiple mounting options.

"Not all organisations require the extreme ruggedisation that our other BreadCrumbs provide," says Geoff Smith, Rajant's executive vice president of sales and marketing. "The ES1 comes in an IP67 package, ideal for operation in outdoor environments that require a very durable solution. Whether you are building a new network or expanding upon an existing one, the inclusion and installation of the ES1 are simple and fast. There are no requirements for a central controller and the multi-radios automatically mitigate interference providing built-in redundancy." *www.rajant.com*

RSI unveils group call repeater for cross-border comms

Radio Systems Information (RSI) showcases X-Border, a TETRA network group call repeater designed for international border areas where users on different TETRA networks need to connect with each other.

Compatible with Motorola, Sepura and Teltronic TETRA radios, the firm describes X-Border as a quick and simple solution that can be set up anywhere and allows users to continue to use their normal TETRA terminals without any complex roaming configuration or the need for wired connections into either network.

It comes in a robust carry case and is compatible with Motorola Solutions, Sepura and Teltronic TETRA radio terminals. It has built-in loudspeakers for monitoring call activity and the case can be locked shut with a padlock. A built-in fan ensures radio terminals are kept cool.

The product has a number of key features, such as all received on radio terminal 'A' on network 'A' are re- transmitted on radio terminal 'B' on network 'B' and vice versa, so that users on network 'A' can communicate easily with users on network 'B'. It also has built-in loudspeakers for monitoring call activity and matched audio connection to ensure good voice quality. The case can be locked shut with padlock, while the built-in fan ensures radio terminals are kept cool. *www.rsi-uk.com*

TE's Multi-Beam Plus connectors now available

TE Connectivity has brought to market its Multi-Beam Plus connectors, the latest evolution of its claim to be a "highly-successful" power connector line. They share the same low-profile dimensions and enable the same through-system airflow as previous designs such as Multi-Beam XL, XLE and HD power connectors. The connectors, the company reckons, satisfy the demand for higher-power solutions by providing a high current per power contact at a maximum of 140 A/contact or 100 A/contact per four adjacent contacts. In addition, TE says the scalable and modular Multi-Beam Plus design also supports greater flexibility in configuration and PCB design.

TE's Multi-Beam Plus power connector is manufactured with thicker material and features a high-density tail to carry higher current. Separated power contacts improve dimension stability. They are suitable for telecom equipment, industrial automation devices, and power systems.

"The industry is demanding higher current and higher performance to power its new designs, and TE addresses this need by providing a connector with one of the highest currents available per power contact," says Tommy Yu, product manager in TE Connectivity's data and devices business unit. "TE's family of rectangular power connectors have become widely accepted in the industry, and Multi-Beam Plus connectors are expected to extend this trend." *www.te.com*

Amphenol RF allows customers to build-their-own SMA panel mount receptacle

Amphenol RF brings to market a line of customisable SMA panel mount receptacles – connectors it claims can provide outstanding VSWR performance up to 18GHz..

Termination options incorporate post contacts with extended PTFE insulators as well as solder cup, tab and slotted contacts which, the vendor says, make the connector perfect for a broad assortment of microwave component applications.

The stainless steel machined connector bodies are passivated, or gold plated, while centre contacts are machined from Beryllium copper and are gold-plated. Mechanical or epoxy centre contact captivation assures stability and a reliable PCB connection. Standard sizes are provided for quick delivery and custom contact, and dielectric lengths may be chosen with the company's easy to use part number configurator.

Amphenol claims SMA panel mount receptacles are excellent for microwave applications such as RF amplifiers, attenuators, detectors, microwave filters, couplers, power dividers and combiners, receivers and transceivers and solid-state switches.

There are multiple flange sizes available, including two and four-hole configurations. *www.amphenol.com*

Kobil helps protect online transactions

Kobil Systems, a specialist in online security, offers a mobile platform for secure internet transactions with its sign-series. The company says users of the digital hardware solution, which is initially available in three model versions, can make transactions of all kinds independently of smartphones, desktops, operating systems or networks via a secure internet access and confirm them comfortably with one click. Even your own, sensitive applications can be integrated into the system, while an independent security channel and a trusted server protects the entire communication environment.

The firm reckons it is invaluable for online activities, especially signed transactions such as money transfers, travel bookings or the conclusion of insurance by private individuals or professional users, such as public authorities, banks, insurance companies or health insurances, "with the highest level of data security, authenticity and confidentiality can be made".

Ismet Koyun, managing director of Kobil Systems GmbH claims that any kind of sensitive online transactions can be realised with the three sign models signDot, signPod and signPad and their integrated internet access with a high level of comfort, "With this platform, we are also pioneering the upcoming call for strong customer authentication, as required by strong customer authentication to reduce the risk of fraud," adds Koyun.

Apparently, a highly secure communication environment between the protected app and the dedicated security server protects and controls the user identification. At the first activation Kobil's security server performs a series of remote checks on the protected solutions. *www.kobil.com*

Look out for...

Siklu and BATS complete high throughput trials for 5G backhaul

Siklu and BATS Wireless completed the successful testing of BATS' OnPoint 5G antenna stabilisation system with radio partner Siklu's EtherHaul 8010FX, a high-throughput, millimetre wave wireless radio – claimed to be ideal for 5G backhaul applications. The test demonstrates how the OnPoint 5G can help meet or exceed the stability requirements of a high capacity mmWave link.

The OnPoint 5G solution, the companies claim, is ideal for applications where thermal venting or excessive wind become a barrier to link placement, or in areas where the infrastructure's rigidity is affected by environmental changes, such as heat and cold cycles.

The firm's further claim that Its precise stabilising ability has proven successful in helping Siklu deliver stable and reliable millimetre wave links for critical high capacity backhaul links.

During initial testing, Siklu, working with BATS, was able to demonstrate continuous connectivity under adverse conditions, with throughput rates up to 10Gbps Full Duplex. This performance is key due to the limited number optimal backhaul sites in most cities, a critical barrier for the deployment of large-area wireless backhaul networks.

What's more, the OnPoint 5G also helps Siklu reduce the time of installation by automating the alignment and fine-tuning process for the link. Where normal alignment procedures can take hours, the OnPoint 5G can have a millimetre wave link aligned and online in a matter of minutes.

"The need for ultra-high throughput solutions has increased with the coming adoption of 5G networks," says Phillip Cramer, executive vice president of sales and marketing at BATS Wireless.

"While sensitive to alignment issues, mmWave wave wireless backhaul is one of the most compelling technologies capable of delivering the capacities needed for these cutting-edge networks.

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Providing power to the towers

Solar, wind, batteries and fuel cells are all options when it comes to powering base stations. So why, in 2019, are we still using diesel generators? Robert Shepherd drills down to extract more information

Pollution, climate change and the environment have all, for want of a better expression, long been "hot topics". Whether it's the abundance of plastic in the oceans, the emission of greenhouse gases, melting icebergs or the way mobile network operators (MNO) continue to use diesel, governments and multinational corporations are coming under increasing pressure to do their bit before we are all hoisted by our own petard and perish like the dinosaurs.

Yes, we can leave the global warming debate for another time, but when it comes to the harmful effects of diesel, the scientific evidence is overwhelming. There's also no doubt that some industries need to shoulder more responsibility than others – and there's also no hiding from the fact that the telecom sector is complicit in this too, if only for the fact a vast number of base stations around the world are still powered – if not 100% – by diesel generators. In general, they have an outsized impact on pollution compared to other sources of power because they tend to be dirtier per unit of energy provided.

Yet, while the method of powering telecom towers and base stations might not be on the tip of world leaders' tongues when they imbibe at their summits – usually having just flown on a gas-guzzling private jet – the industry is acutely aware that more needs to be done to migrate from diesel-powered generators to reusable and green energy sources.

Bladon Micro Turbine produces a generator that runs on diesel, kerosene, paraffin fuels or a blend (to prevent theft and reduce fuel costs). "Instead of having a piston based engine like all other diesel generators we use a micro turbine engine (like a turbocharger) to generate efficient electricity for telecom towers," says Stuart Kelly, the company's VP market development.

Conversely, some companies are the standard-bearers for re-usable and other alternative power sources. For example, MTN Cameroon became a trailblazer in Africa when it went green with solar-powered base stations. Evidence then that the industry is going some way to ameliorate the damage caused to our environment.

Alessandro Ravagnolo, a principal at telecom research house Analysys Mason says

MTN has invested in a big marketing push about what it's doing in the power space, but it's not the only operator that made the energy supply a key focus of their network strategy in

Africa and other emerging markets. "Orange is also very active, experimenting contracts with specialised ESCO companies that are charged with managing the energy infrastructure and achieve savings," he says. "Investments in reliable and cost effective power source is also a focus of towercos that, in most cases, own the energy equipment on their sites and pass the cost to the MNO customers."

Still, the rejection of diesel and take up of alternative power sources hasn't happened at the speed many would like. So, why hasn't there been a race to become completely green, take the moral high ground (and move ahead of the competition in the process)?

"Through their investments, MNOs are mainly seeking efficiency gains (cost reduction) but also improvements in the quality of service through reduction in the number of outages and downtime," says Ravagnolo. "It is not necessarily a move against competition as other operators can be expected to do the same at some point in time."

However, we are now in 2019, so while many operators are investing in a green future, why in 2019 are we still using diesel at all?

"Diesel is still the only prolific and available fuel for providing more reliable electricity to the telecom tower market especially in Africa," says Stuart Kelly, the company's VP market development. "The Bladon Microturbine generator can also run on cheaper kerosene or a fuel blend too. Other fuels such as methanol still do not have a reliable enough supply, nor does gas for that matter to allow it to be used at scale. There are over 180,000 telecom towers in Africa, over 35% are not connected to the electricity grid."

The sales and marketing department at HIMOINSA, which designs and manufactures diesel and gas generator sets, hybrid generators, lighting towers and control panels, says:

"In many parts of Africa diesel is a most readily available, cost effective, fuel source. HIMOINSA manufactures gas and hybrid units as well as diesel, but unless a reliable, cost effective alternative is available there will be a place for diesel units when businesses are reliant on backup power."

Giuseppe Taranto, telecom business leader at Ausonia says even if everybody would like to dispense of diesel, today gensets are still the only energy source which can guarantee energy when necessary.

"Solar and wind cannot give operators the power continuity the generators can offer, so the best way is to understand how you can reduce the run hours, get efficiency and fuel savings," he says. "Following this requirement towards OPEX reduction, some gensets manufacturer has designed and deployed different capacities of DC generators worldwide, as (the Italian company) AUSONIA. The DC Gensets are used as back up to site and as a battery charger when Grid/Solar/Wind is not enough to power the sites and batteries are low with voltage. On off grid sites, the operators also can save the costs of rectifiers and ATS, as well to the issues connected to their potential failures."

If you are reading this with very little knowledge of the wireless world, you would be forgiven for pointing the finger of blame at developing nations. However, Ravagnolo says both developed and developing nations are still using diesel and that the reason for this is due to the fact that being connected to the grid does not come with the guarantee of having a reliable power source.

"In emerging markets, the national grid may be powered for only few hours per day. In developed markets, this is rare but operators do not want to take the risk on specific strategic sites (e.g. exchanges) where they will have both backup batteries and generators," he adds. "Having diesel generators gives operators the certainty of the service provided tanks are adequately refuelled."

Stéphane Téral a technology fellow and an advisor for mobile infrastructure and carrier economics at IHS Markit Technology, says the reason diesel is still so prevalent is because research needs to be conducted first – and as ever, that takes time and money. "Because

The industry is acutely aware that more needs to be done to migrate from diesel-powered generators to reusable and green energy sources

Giuseppe Taranto, telecom business leader, Ausonia

"Solar and wind cannot give operators the power continuity the generators can offer, so the best way is to understand how you can reduce the run hours, get efficiency and fuel savings"

due diligence and planning start with thorough analysis and review of solar radiation, sunlight intensity, and solar panel geolocation as key parameters; depending on the BS location, diesel might still be the best alternative," he says. "The location of a needed BS is dictated by the coverage and capacity demand and sometimes PV systems can't work."

In Kelly's opinion, "diesel is still the only prolific and available fuel for providing more reliable electricity to the telecom tower market". He says: "The Bladon Microturbine generator can also run on cheaper kerosene or a fuel blend too. Other fuels such as methanol still do not have a reliable enough supply, nor does gas for that matter to allow it to be used at scale."

Prima facie, the power of diesel cannot be disputed. However, there are cost implications, too. After all, it's no secret that diesel generators require regular maintenance and two need to be installed so one is operational while the other undergoes maintenance. Are the costs sustainable?

"That's part of the Opex and you also need periodic replacement," says Téral.

HIMOINSA says there are numerous factors at work here. "When reliable power is required to guarantee the safety of mine workers, for example, then the cost is secondary to reliability," it says. "Total cost of ownership for the units needs to be taken into account. HIMOINSA is a vertical manufacturer so its units are designed and manufactured with efficiency and longevity as key factors. With 500-600hrs service intervals, excellent fuel efficiency, OEM support and remote management of the units the units efficiencies can be monitored and costs can be managed."

Ravagnolo says no business "will intentionally deploy a site that isn't sustainable" or has a negative business case. "A reduction in the cost to run a site would improve the business case for rural deployment, where a limited number of customers can connect to the cell site and generate revenue," he adds. "This implies that operators will be able to stretch their networks further."

Kelly disagrees. "In a word," he says, "no because 50% of operating expenses related to running a telecom tower is related to fuel and maintenance expenses for diesel generators. Bladon's proposition eliminates the need for monthly (or more) site visits related to generator maintenance and instead needs a two-hour service once a year."

Monitoring and managing the generators is usually straightforward in cities and other built up areas. But how easy is it to do so within rural environments, particularly in developing nations?

Taranto says that gensets are monitored via Wi-Fi or LAN connection, even with 4G modem being available today. "All the operational data and performance indicators are often stored on a web-server (cloud) from which the authorized personnel can monitor and control the power system in any place in the world, editing also statistic and report for their better analysis and evaluation of the power solutions reliability and real operational costs."

Téral says they are equipped with sensors and send information via the cellular network provided by the BS they power. "The base station itself is remotely monitored from a network operation centre (NOC) and therefore sends info about everything including power function," he adds.

"Drones are increasingly used to monitor remote sites," says Ravagnolo. "It is an effective measure to monitor the infrastructure for maintenance requirements but could also be used for security reasons." The latter is a whole new topic in itself.

He adds that mobile networks are expanding into more rural areas in emerging markets and the chances of having grid connectivity is low there. "Electricity grids are not expanding at the same speed," says Ravagnolo. "This means that MBO, or whoever is managing their energy infrastructure, will continue using diesel for a long time despite investments in solar and other energy sources."

However, Taranto adds: "In many countries the traditional set up to power off-grid sites was by means of installing a dual Gensets system (1+1, master and slave), but today, whenever possible, MNOs and TowerCos are trying to eliminate at least 1 DG on site, to be replaced with batteries, and possibly by adding also solar, if the site allows."

So, what of hybrid solutions? After all they work in other industries, such as the automobile one.

"Operators are increasingly deploying hybrid solutions, which included solar panels, batteries and one genset," says Ravagnolo. "No need for a second generator. The idea is that the site would be running on solar and the genset kicks in when more power is required or there is something faulty. This reduces consumption and cost substantially compared to sites running exclusively on diesel."

Giuseppe Taranto says even if everybody would like to dispense of diesel, today gensets are still the only energy source which can guarantee energy when necessary

Taranto concurs and adds that not only is the hybrid model "definitively the solution today", it's already passed 10+ years of operation on site and it's the one that had "really allowed" MNOs and TowerCos to reduce their OPEX and increase their savings. "However, even if many companies today offer hybrid solutions consisting into genset, battery and optional solar, only a few of them have the consolidated experience allowing to offer a debugged unit to the end user, so buyers should carefully take care of this when looking for potential partners," he says.

Kelly argues that the hybrid solution "has been borne out of necessity" to avoid expensive service visits for the diesel generator. "Combining a diesel generator with a box full of batteries, control electronics and solar panels has been the common practice," he adds. "However, if your baseline engine does not have a need for oil, service visits or require expensive (attractive to steal) batteries then there's no need to build a hybrid. For off grid sites, we have found that having a Microturbine running 24 hours a day using diesel or kerosene as fuel is far more economical, scalable, and least attractive to theft."

With regards to greenhouse emissions, Ravagnolo says upgrading to more efficient energy solutions is not just a matter of cost savings but it also allow reducing emission, which is good for the environment. "In some countries there may be some taxation associated with carbon footprint (aka carbon taxes) providing an incentive to operators to become more efficient and greener," he adds.

It's also important to remember that there are other options too. Fuel cells have often been lauded as the next big thing in the energy space, but the talk, until now has been more about how good they will be and less about how good they are. So, how long until they become the norm?

"Fuel cells are still at the early stage and also the supply chain is not diffused yet to in many countries and regions, so I guess many years will be still needed to have this technology widely deployable," says Taranto.

Kelly says the fuel cell trials his company has witnessed has shown that the supply chain for hydrogen or ammonia fuel cells is far from mature "especially in Africa" and the transport of it is more hazardous than diesel fuel. Large telecom operators are also risk averse and "therefore are not keen to embrace new technologies en masse".

HIMOINSA says: "As the market and technology develops this will naturally increase efficiency and reduce the currently high cost of fuel cells."

Téral is less sure. "I don't know but one sure thing, with 5G requiring more cell sites, the demand for energy keeps going up so we need to find new alternatives," he says.

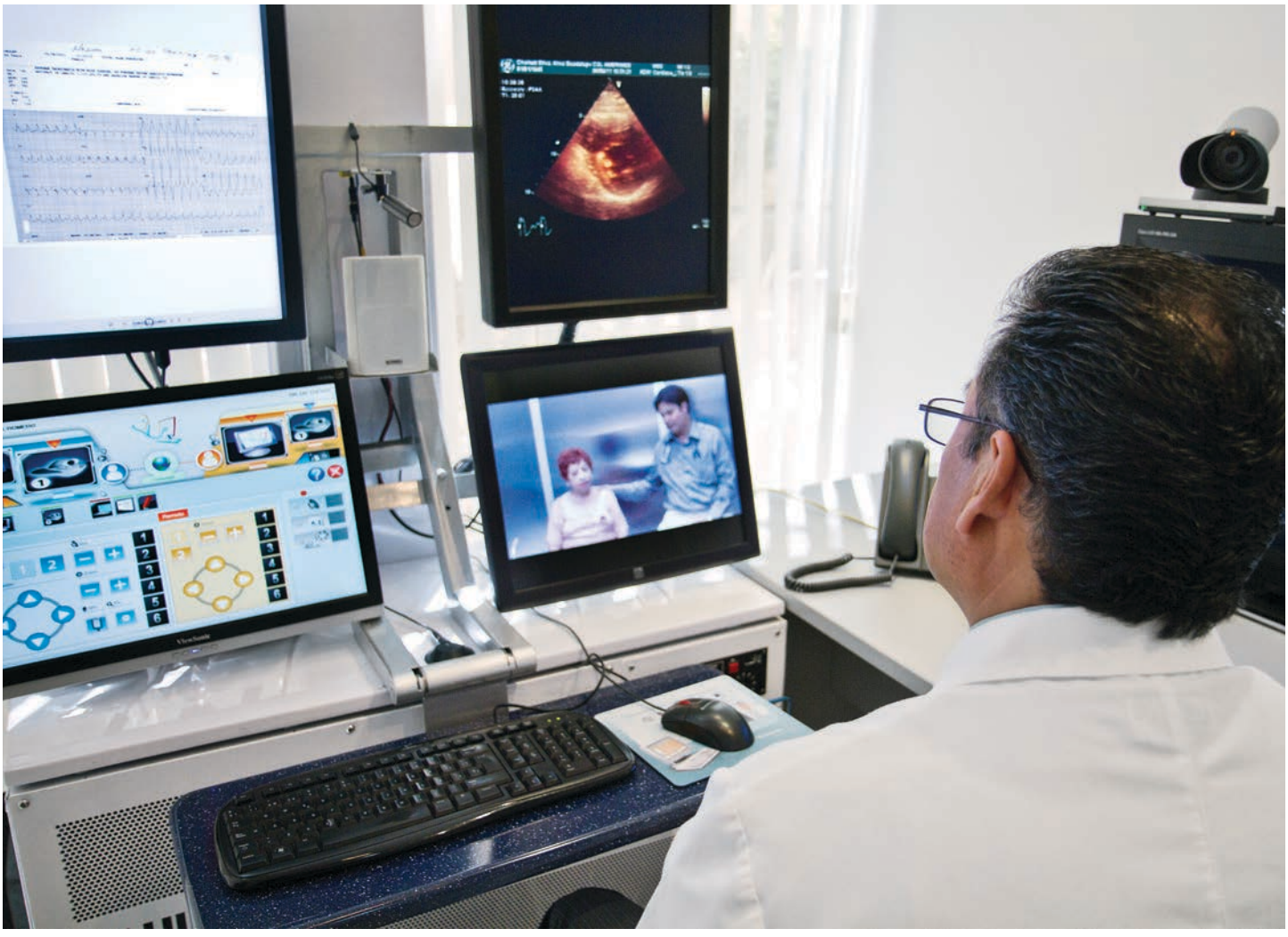
The GSMA report In early 2014 also says that for the first time, the number of mobile phone subscriptions in the world exceeded the global population. Now, with over seven 7 billion active mobile phone connections in the world – a number that will only grow – there can be no room for complacency.

What's more, GSMA indicates that future mobile subscriber growth will be concentrated in developing countries in Africa among populations that are currently 'unconnected' to mobile phone networks. In other words, developing nations.

Could 5G, as Téral points out, be the catalyst? ■

Alessandro Ravagnolo, principal, Analysys Mason

"A reduction in the cost to run a site would improve the business case for rural deployment, where a limited number of customers can connect to the cell site and generate revenue"



Bringing telemedicine to millions of Kenyans

Pan-African telecom group helps Mombasa hospital make telemedicine a reality for people who can't attend a consultation

Getting access to specialised medical treatment has been challenging for the 3.5 million people living on Kenya's sparsely populated 1,420km of coastline. Although treatment was available, it was mainly at referral hospitals based in the country's second largest city of Mombasa.

This meant that people in need of urgent treatment could end up travelling as long as a day in each direction. If the distance wasn't enough of a problem, travelling also costs money and in many cases the bus fare is seven times the person's daily wage.

"Travel costs were often prohibitive for patients," points out Hemed Twahir, medical director at Aga Khan Hospital Mombasa. "For example, patients coming from Voi to Mombasa spend around Sh700 on bus fares, which is a major cost at a time when most of the population struggle to buy even basic medication, and often cannot afford to visit the hospital for follow up appointments."

However, the hospital knew something had to be done to overcome these prohibitive distances – telemedicine. The hospital's initiative came at a time when Kenya was facing a shortage of healthcare specialists especially in dermatology (skin diseases and complications) and Otolaryngology (Ear, Nose and Throat (ENT) diseases.

"As healthcare providers strive to make specialists more accessible to patients in an affordable way through telemedicine, Liquid Telecom Kenya has been able to offer both the high-speed internet connectivity and software

to enable uninterrupted two-way audio-visual and data communication in a delivery that aligns exactly with our vision of driving digital transformation across Africa," said Adil Youssefi, chief executive of Liquid Telecom Kenya.

Aga Khan Hospital Mombasa decided it was time to provide telemedicine to its local clinics.

The challenge for the hospital was, of course, connectivity. It needed a 99.99% uptime guaranteed connection from Aga Khan Hospital Mombasa to its seven outreach clinics along the Kenyan coast. Furthermore, it needed to install a fibre network connection of sufficient quality to support telemedicine services.

Pan-African specialist Liquid Telecom was chosen to make it a reality. It established a high-speed connection of 24Mbps linking the main hospital and six of its outreach clinics. This was complemented by the Office 365 suite which offers Skype for Business, facilitating patient-doctor video appointments.

Suddenly, the less well-off were thrown – quite literally – a lifeline. If you visit Aga Khan Hospital Mombasa today, you will see that it now offers telemedicine services from its main hospital to its Ukunda, Kilifi and Voi clinics, which serve up to 200 patients a day. Delivered via Liquid Telecom's high-speed network.

The three clinics are offering specialist services in gynaecology, ear, nose and throat, and dermatology.

"When a patient at a clinic requires specialised attention, the clinicians logs a video request with the specialist and run a video conference with both specialist and patient," says James Siku, Head of ICT at Aga Khan Hospital Mombasa. "They also use our newly installed digital medical equipment to make a diagnosis, with everything about the patient recorded in the hospital records system."

However, the progress doesn't stop there. The hospital says plans are underway to further launch the service to its outreach clinics in Nyali, Changamwe, Mtwapa, and Bamburi Mwisho. They are set to roll out the video consultancy and diagnostic services.

"Thanks to our new digital equipment and internet, specialists can now see in real-time, say, the condition of the skin, and other vital readings, then offer consultancy and diagnostics online," says Sultana Shermana, interim chief executive officer of Aga Khan Hospital Mombasa.

The hospital has also invested in a state-of-the-art cardiac catheterisation laboratory that is first in the coast province for diagnosis of heart conditions and a 1.5 Tesla Magnetic Resonance Imaging (MRI) machine and runs a digital HMIS - managing inpatient and outpatient records, lab results and diagnosis – that is now accessible across all of its clinics and main hospitals.

Furthermore, it's not just patients who will benefit from this new telemedicine set-up. The hospital has already introduced e-learning courses covering Continuous Medical Education (CME) and Continuous Nursing Education (CNE) between the main hospital and its outreach clinics.

In addition, the hospital now runs knowledge exchange forums using video conferencing with public hospitals, such as Rabai, Tsangansini and Mariakani hospitals. The purpose is to exchange knowledge and discuss medical case management – in a collaborative process that drives best-practice treatment plans. The forums also help clinicians earn credits for their professional qualifications and credit transfers under Ministry of Health guidelines. ■

If you visit Aga Khan Hospital Mombasa today, you will see that it now offers telemedicine services from its main hospital to its Ukunda, Kilifi and Voi clinics, which serve up to 200 patients a day

Introducing drones to the villagers of Madagascar

The mere mention of the word "drone" can conjure up different emotions – anything from fascination and annoyance to pure fear.

Luckily, this case study tells the story of them being used for good. Madagascar's public health professionals, led by Dr. Peter Small, a professor of global health based at New York's Stony Brook University's medical school, wanted to help bring medical care to people in rural parts of the African nation. In order to do this, they partnered with a start-up drone company called Vayu, founded by Daniel Pepper, which aims to bridge the gap between remote villages and healthcare that is so often centrally available, but not so for local inhabitants.

The idea was to conduct an autonomous, long-distance flight of a drone to land and retrieve biomedical samples. In this case, they were blood samples collected by a health care worker in the field.

The machine flew from the central research facility and landed in the village and said health worker loaded it with real blood samples, before the drone flew back to the facility. This was a test with real samples and although this trip was just a one-stop round trip, with enough battery life, the drone could fly from location to location.

However, it wasn't as straightforward as it sounds. Small and his team needed to obtain permission from three different Madagascan ministries, each with different concerns about unmanned vehicles flying through their airspace.

The team also needed a drone that was capable of carrying large loads over long distances so Vayu selected one about the size of a picnic table, which can land, take off vertically, and fly autonomously as far as 40 miles (64km). With its helicopter-style propellers attached to static plane-like wings, the wing-and-propeller combination allows Vayu's drone to land precisely while still flying long distances economically.

Still, that wasn't the end of the challenges they faced. As well as wooing the ministries, the strangers had to gain the trust of – and educate - the villagers about drones. Many of these villagers live as their ancestors have for centuries and would be unnerved by flying vehicles.

Small relied on his colleagues at Stony Brook's ValBio research station, on the edge of Ranomafana National Park in Madagascar, who regularly dispatch health workers (by foot) to these remote villages.

"It's easy to say one could or will fly, but we actually did," Small said.

Today, drones fly to villages that aren't easily accessible by roads, in order to deliver medicine or pick up biological samples for analysis at a central medical centre. For remote villages in Madagascar's Ifanadiana district, where there are no roads, drones can fly to and from a central region in about an hour, compared to a trip lasting upward of 10 hours each way by foot.

Following the empowerment of the villagers of Madagascar, Vayu plans to launch pilot projects in other countries in different continents. ■

The machine flew from the central research facility and landed in the village and said health worker loaded it with real blood samples, before the drone flew back to the facility

PHOTO: NEWS.STONYBROOK.EDU

Moving Wireless Forward

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. We have grown and evolved over the years, along with the industry.

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Our customers have been our partners throughout the years. We believe in taking the time to understand our customers' individual needs. Through close consultation with clients, we are able to deliver innovative, tailored solutions that meet specific antenna requirements.

Rapid prototyping capabilities allow us to take our designs from concept to reality in an extremely short time span, and to verify the performance of the antenna. A variety of network analyzers and an anechoic chamber enable us to conduct measurements up to 13 GHz, and ensure that the antennas designed meet or exceed customer requirements.

We have onsite injection molding equipment and a fully equipped modeling shop staffed with skilled model makers to assist in the design phase and help us come up with a superior product – an antenna that not only meets the customer's electrical specifications, but is also very attractively packaged.

Mobile Mark antennas are used in many sectors of the wireless industry. Here are just a few examples:

Asset Tracking & RFID

Managing and tracking important assets can be a challenge in the field, and both RFID and WiFi offer effective wireless solutions. RFID / WiFi technology allows us to identify, monitor and track items ranging from medicine to fruit to parcels to people. Since each application has its own challenges, Mobile Mark offers a range of antennas so network developers can choose the right mix.

MobileMark
antenna solutions

We are now looking for distributors throughout Africa

Commercial Fleet Management

Mobile Mark has consistently lead the industry with the most extensive and innovative range of antenna solutions that combine multiple wireless technologies: from simple GPS & Cellular antennas to complex 6-cable antennas combining LTE MIMO, WiFi MIMO, DSRC and GNSS in the same antenna housing. This combination of wireless technologies allows fleet owners to track and/or redirect their fleets of cars and trucks for optimum efficiencies. Mobile Mark antennas are rugged enough to handle tough environments and efficient enough to maintain reliable connections.

Public Transit & Bus Management

From monitoring the location of the bus to monitoring the condition of its tires, wireless has become an essential part of professional bus management. Mobile Mark's multiband antennas allow the system to capture that information and transmit it back to a central monitoring station with real-time connectivity. For an added touch, real-time WiFi service can also be added for the passengers. That's why companies like INIT have selected Mobile Mark antenna to complete their product offerings. And they have made the following endorsement:

"INIT GmbH – as a worldwide leading supplier of integrated planning, dispatching, telematics and ticketing systems for buses and trains – uses Mobile Mark bus antennas in public transportation projects all over the globe.

For example: INIT has installed Mobile Mark antennas in projects located in Abu Dhabi, Hertfordshire UK, Turku Finland, Oslo Norway, Montreal Canada, Luxembourg, as well as several German projects.

In 2017, a fleet of more than 1,500 buses will have Mobile Mark Antennas installed in one of INIT`s current major projects for National Express, West Midlands, UK."

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Surveillance plays an important role in maintaining secure settings. Network deployments need to be low maintenance and weather resistant. Broadband surface mounts offer flexibility for multi-frequency coverage and are rugged and dependable. YAGI antennas provide practical point-to-point coverage. Our antenna solutions are designed to handle tough conditions while providing the reliable wireless connection you would expect from a Mobile Mark antenna.

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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.

Smart Cities & Smart Highway

For cities and highways, the lynchpin of a successful "Smart" system will be dependable wireless connections. Companies like Kapsch understand this, and have worked with Mobile Mark to find ideal antenna solutions. Wireless networks must reach seamlessly into hard-to-cover corners of city intersections and along vast expanses of highways. They must be carefully embedded in city lighting and electrical meters. Mobile Mark offers both small network infrastructure as well as embedded antenna elements to help network designers tie all the pieces together.

Let us know how we can help

We understand the RF wireless world and are ready to help you evaluate your options. Contact us by email, phone or fax and let us know how we can help.

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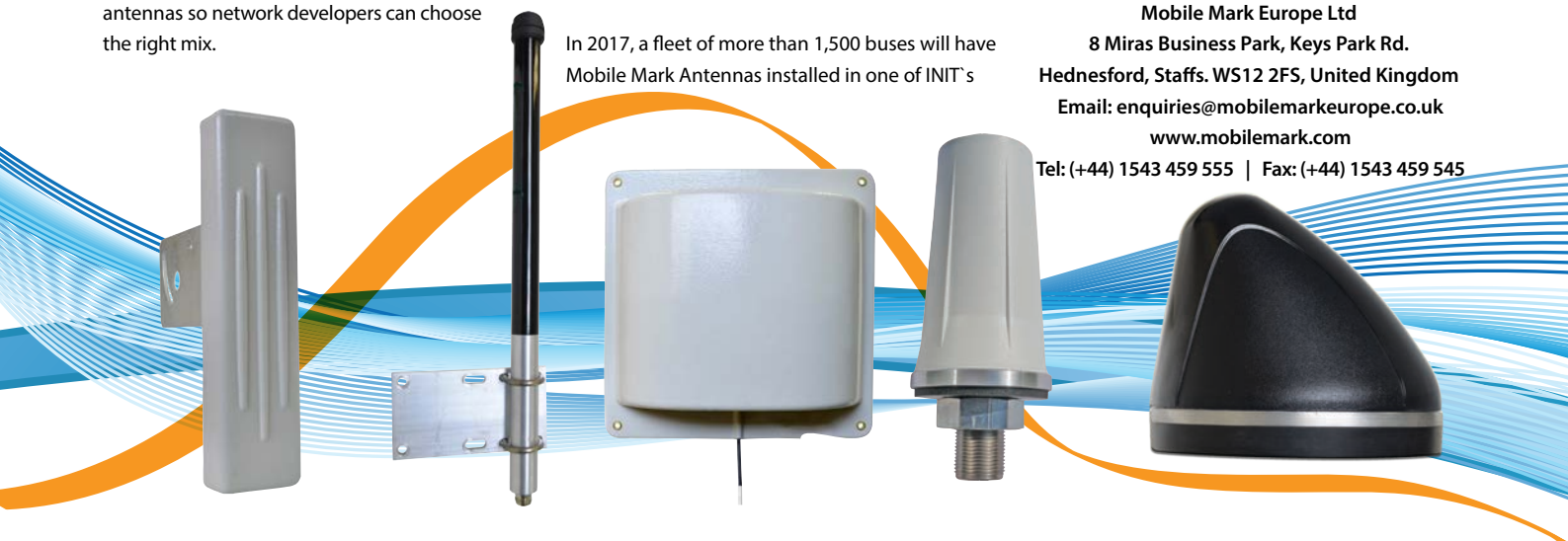


Satellite is the answer for the two largest continents

Following the successful launch of the AMOS-17 satellite in early August, Eran Shapiro, director, business technology ventures at Spacecom tells us how it will help the Asian and African markets

Soon broadcast, telecom, data and Internet broadband signals will be bouncing back and forth from a satellite located at the 17°E orbital position. The satellite, AMOS-17, is the newest member of Spacecom's multi-regional fleet providing services to Africa, Asia, Europe and the Middle East. For the fast-growing populations and economies of Asia and Africa this is an excellent sign as satellite communications represents the future.

On August 6, 2019, from Cape Canaveral in the U.S.A., Spacecom's AMOS-17 communication satellite soared upward towards its orbital position upon a SpaceX Falcon-9 launch vehicle. Some 30 minutes after launch, the satellite separated from the launcher's second stage and, as planned, began its contact with ground stations. By the end of August, the satellite's solar panels and antennas deployed as programmed. The company expects commercial operations to begin in a few months following extensive rounds of In Orbit Testing.

Satellites in geo-stationary orbit stay in one spot during their lifetime. For AMOS-17, this is

the 17°E orbital position. This position high above the African continent enables the satellite to provide services with its powerful beams to Africa and Southern Asia. In addition, these beams connect Africa, Europe, the Middle East, India, China and other areas in Asia, and as far west as Brazil. From 36,000 kilometers in the sky, the satellite will provide a plethora of services to help fuel and feed digital communications.

Around the globe, especially for residents of Asia and Africa, broadband internet and telecom on-demand are staples of life. If one thinks about it, people are coming to the realization that the Internet is so intertwined with their lives that they need it for their existence, not unlike bread and water.

It is this need, especially for residents in rural and outlying regions, or those from mountainous and geographically difficult areas to reach, that satellite communications is vital. Vast areas in Africa and Asia are either underserved or have intermittent connections to the outside world because they lack reliable ground-based communication infrastructure. Due to the many citizens living in low-density population area such as in rural and outlying regions, straightforward economic justification for investing in ground telecom infrastructure projects by operators and governments is subdued. This means that even today, the digital divide between urban and rural areas is growing. This growing chasm needs to be eradicated.

Africa is a huge continent with one of the world's fastest growing populations. Within a few years, the continent's population is forecast to reach 1.5 billion – and it will continue rising. The amount of young people under the age of 18 on the continent is close to half of its population. Asia, with a population of 4.463 billion, or 60% of global population is also seeing a growth in youth with close to 26% being under the age of 29. These younger populations are the largest and most savvy consumers of digital communications as they are the major users of applications and downloads, and as this population grows, it will consume more and more capacity. Yet, today, the regions where many of these young people live, suffer from a lack of easy and economically viable internet access infrastructure.

For governments, reaching its far-flung or hard to reach populations with digital services is a must. The easiest and most efficient method of long-distance services and communications is satellite. For corporations expanding their businesses into new regions, satellite again is the preferred method of providing services, Internet communication and data transfer.

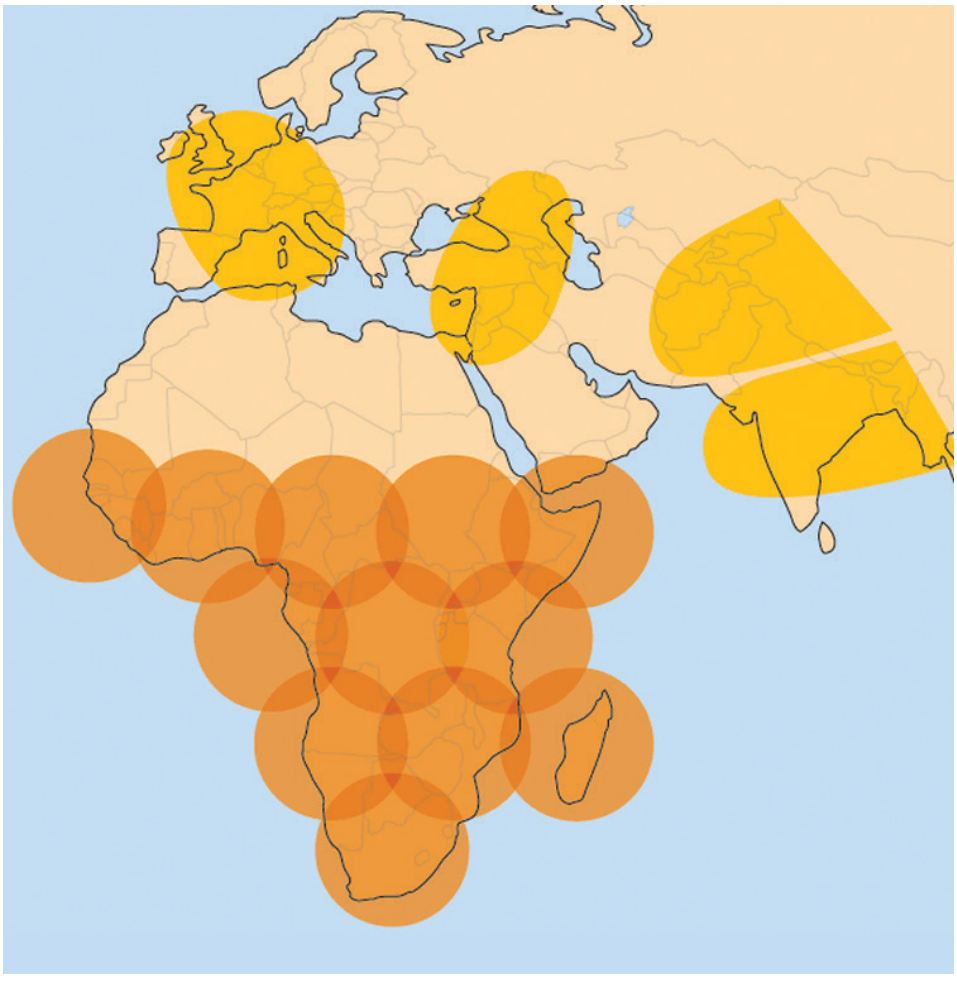
Spacecom took this into account in planning the satellite, ensuring that it meets the different needs of various communication services providers in Sub-Saharan Africa and Asia. By tailoring the satellite specifically to assist businesses and governments overcome the digital divide, the company's AMOS-17's beams can efficiently reach outlying regions to provide services for the growing broadband, broadcast and communication needs of governments, communication operators, MNOs, broadcasters and cellular companies.

"For governments, reaching its far-flung or hard to reach populations with digital services is a must"

One new technology utilized on AMOS-17 is a "digital channelizer." This element significantly enhances bandwidth efficiency by dividing uplink and downlink spectrum into independently routable sub-channels and providing a connection from any uplink coverage area to any downlink coverage area. It supports suppression of interferences, flexible capacity allocation, and other digital processing features for improved service while all command and control channels, as well as telemetry, are encrypted for maximum security.

AMOS-17's digital channelizer provides connectivity between all beams in all available bands in any combination. Thus, a client can use a combination of beams or can change its beam usage at any time to match all communication needs. It also enables a seamless combination of AMOS-17's fixed and steerable beams to a comprehensive integrated solution and ensures a fast response to customers' changing needs. For corporations operating in Asia and Africa, or considering expansion, this flexibility is a tremendous solution for multi-regional communications.

The opportunity is clear. By enabling service providers or governments the ability to offer an extensive array of services quickly, highly efficiently and at low cost to these populations, the satellite contributes to creating a new economic stimulus that excites corporate as well as government officials seeking to better serve their outlying populations. To get connectivity via AMOS-17, locals can set up a simple solar-powered terminal that functions in all types of weather, and requires very little maintenance, fueling, etc. It allows customers to minimize both their initial costs (CAPEX) and on-going operational costs (OPEX). This is what really sets this satellite apart: it creates a clear and vital economic case that helps close the digital divide and generate an open path generating improved communication between people. ■



AMOS-17's C-Band HTS enables provision of internet broadband services on one beam to a specific country, rather than using multiple beams for regional or full country HTS coverage

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South Korea's KT signs 5G deals with Europeans

South Korean telecom firm KT has inked roaming agreements with Italy's TIM, Switzerland's Sunrise and Finland's Elisa, which would allow its 5G subscribers to use the 5G networks provided by the three European players.

KT already has existing agreements with operators in 185 countries for 3G and LTE roaming and is now planning to extend those contracts to 5G as soon as 5G services go live in those nations. It has a similar agreement with China Mobile – though services have not been launched yet.

The price for customers during the 5G launch would be KRW55,000 per month and will have 8GB roaming data internationally. Subscribers paying KRW80,000 per month will enjoy unlimited roaming data. Premium customers will pay KRW130,000 per month for an increased speed limit.

Park Hyun-jin, managing director of KT's 5G business division, said: "KT is leading the roaming market with 'Super Plan', the first full data unlimited plan introduced in the industry with the commercialisation of 5G. We will continue to expand our service to other travel destinations."

NY construction firm lands major Saudi contract

A New York construction consultant has won a contract to provide project management consulting services for Riyadh-headquartered Saudi Telecom Company's (STC) redesigned plan for its current King Abdul-Aziz Telecommunication Complex.

Hill International will develop infrastructure, including roads, underground services networks, cables, landscape and hardscape, new buildings, plus the renovation and facelift of existing buildings as per the approved master plan design.

The operator has been on an aggressive mission since it lost the monopoly on mobile phone services after the assignment of a second license to Etihad Etisalat. In April 2007 its monopoly on fixed telephone services also ended. As a result, it has been enlisting help in order to get back on top.

Currently, the project consists of a headquarters building, an administration building, a multi-story car park, multipurpose buildings and recreational facilities comprising food and beverage outlets, health club and spa facilities, meeting facilities, retail outlets and a mosque.

The US firm will oversee the design and construction process to help ensure that STC and end-user requirements are implemented and achieved in the timeframe and within budget.

"STC is the leading provider of telecommunication services in the Kingdom of Saudi Arabia and is one of the largest operators in the Middle East," said Hill International's Adel Karem Jemah, senior vice president and country manager of KSA, said. "Hill is privileged to have been selected to help STC manage their new master plan and is committed to working with all stakeholders involved in this momentous project."

Free 5G and public Wi-Fi at Beirut airport

Lebanese telecom minister Mohammad Choucair in September launched 5G and public Wi-Fi services for all passengers at the capital Beirut's Rafic-Hariri International Airport.

The move is part of the Lebanese government's project aimed at expanding Beirut's airport to cater to an increasing number of passengers as the country heads into the next decade.

"Beirut's airport is among the very few airports to offer free 5G and public Wi-Fi internet connections starting today to all its passengers," said Choucair. "The internet speed at the airport is great now and all passengers can use it while waiting for their flights."

According to a recent study released by the airport in March last year, as many as 10 million passengers are expected to travel through the Beirut airport by the start of 2020, which has the capacity of hosting only six million passengers annually.

In 2018, Lebanese finance ministry approved 18 million US dollars in funding the expansion of the airport. The government said the introduction of the new wireless services was an important step toward future proofing the airport and keeping travellers connected.

Hispasat and Bansat partner for humanitarian effort

Spanish satellite telecommunications operator Hispasat has partnered with Colombian counterpart Bansat to offer satellite connectivity for a humanitarian mission in Colombia.

Organised by the Colombian government, the expedition is transporting humanitarian material and personnel to towns located on the banks of the Atrato, the third-largest river in the South American nation.

It will mean more than 4,000 families will receive kits for students and health and school supplies, as well as medical attention provided by the specialists taking part in the mission.

The members of the expedition, who work for public agencies such as the ministries of defence and health as well as private companies, will need communications in surroundings that have long lacked terrestrial infrastructure.

Satellite technology will help by providing coverage throughout wide footprints and VSAT terminals, which can be quickly installed to offer a high-quality internet connection.

The Atrato river is the third-largest river in Colombia

The mission started on September 5th and is expected to continue for a number of weeks.

Hispasat has had a subsidiary in Colombia since 2013 and has contributed to promoting digital inclusion and development in the country for a number of years, providing connectivity services in more than 700 points in Amazonas, Boyacá, Caldas, Cundinamarca, Guainía, Quindío, Risaralda and Vaupés.

In addition, the firm has installed Wi-Fi hotspots in remote towns in the departments of Bolívar and Sucre to offer satellite connectivity services which can be accessed on mobile devices by using prepaid passes.

Aussie complaints drop 21% in H1

The number of complaints made to Australia's telecom ombudsman fell 21.1% in the year to June to 132,387, according to the TIO's latest annual report.

Nevertheless, unresolved complaints took longer to close. In 2019, some 47% of escalated complaints were closed within 60 days, down from 77% in 2018.

The TIO said it showed the increasing complexity of technical issues and small business problems. Measures taken to address the problems include the creation of specialist teams to handle the escalated complaints, while working closely with the phone and internet providers to better understand why the issues remained unresolved.

Furthermore, the report also includes for the first time the top five issues in internet, mobile and landline services. Having a problem with a bill and experiencing poor customer service remain high, and expectations for quality and reliability of internet services is increasing, the ombudsman found.

Complaints about internet services (43,164) overtook complaints about mobile services (40,103) as the most complained about service type in the past year. Service and equipment fees, and no action or delayed action by a provider were the top complaint issues for consumers across internet, mobile and multiple service types, followed by the quality and reliability of internet services, and difficulties establishing a connection with an internet service.

The report further found an increase in complaints about changing provider or connecting to the NBN, to 8.6 per 1,000 premises in the second half of the year from 6.7 in the first half.

Vodafone secures Oman deal

Vodafone Group has signed a strategic partnership agreement with Oman Future Telecommunications (OFT), making the UK-based operator the third player in the Middle Eastern country.

The OFT consortium, led by Itqan Tech Development, had secured the Sultanate's third mobile network operator licence in October 2017. The acquisition was preceded by the cancellation of the tender process.

Under the 15-year non-equity agreement, Vodafone and OFT will work together to roll out a new mobile network and develop a number of new services using the Vodafone brand in Oman. OFT also becomes a part of the operator's Partner Markets programme.

The development of the new Vodafone branded network will start immediately with a commercial launch currently planned for the second half of 2020.

Vodafone Partner Networks chief executive officer Diego Massidda said he was delighted to start the strategic partnership with OFT and added how he is looking forward to developing a new network operator in Oman and contribute to the country's digital economy. He also said that this partnership will build into a strong and lasting relationship that will benefit customers of both companies.

Taliban fires warning to Afghan telecom firm

The Taliban has threatened to target employees and installations of the state-owned Salaam Telecommunication Company for not taking seriously the warnings of the group and conducting "intelligence activities".

Known as a Sunni Islamic fundamentalist political movement, the Taliban said in a statement that installations, offices and vehicles of the company will be treated as military targets and that the group will destroy the optic fibre lines. The group also claimed customers will also face the consequences of using the services of Salaam telecom company.

The Taliban said that Salaam is conducting intelligence activities and provides the ground for Afghan and foreign forces operations against the group.

Acting minister of telecommunication and information technology Mohammad Fahim Hashimi said the activities of the company will continue and that the security of its employees will be ensured.

"The Salaam company will continue its services to the people of Afghanistan. No threat will prevent the activities of this company. Urgent measures will be taken for the security of the company's employees," he added.

Vietnam's slow internet

Vietnam ranked 89th out of 207 countries and territories for internet speed and is far behind some of its neighbours, according to the cable.co.uk Worldwide broadband speed league 2019.

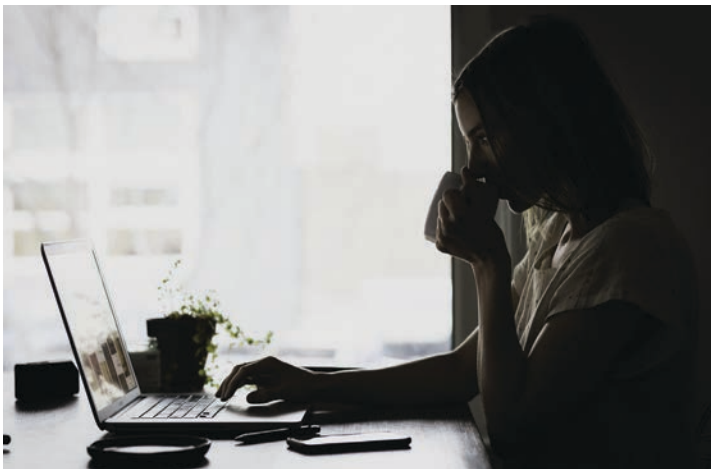
With download speed of 7.02 megabytes per second, Vietnam's internet speed ranking has plummeted 14 places from 2018.

The ranking was based on data collected over 12 months from May last year, analysing over 267 million speed tests across the globe.

Vietnam's average broadband speed was recorded as 10 times slower than Singapore at 70.86 Mbps, more than three times lower than Malaysia (23.86Mbps) and more than two times slower than Thailand (18.21Mbps).

However, it is ahead of Indonesia, the Philippines, Myanmar, Brunei, Cambodia, Laos and Timor Leste.

Around 64 million people in Vietnam, or over half of the country's population, are online. It currently has six submarine cable systems, plus a 120-gigabit channel that runs overland through China. However, frequent undersea cable ruptures have given Vietnam a reputation for unstable internet connections.



With download speed of 7.02 megabytes per second, Vietnam's internet speed ranking has plummeted 14 places from 2018

Meanwhile, Singapore has been pushed down into second place by Taiwan, which tops the world with an average broadband speed of 85.02Mbps. British dependency Jersey is third with 67.46Mbps, followed by Sweden with 55.18Mbps.

South Korea claims another 'first'

South Korea's SK Telecom has claimed a first – winning the race to successfully test and use a 5G standalone (SA) terminal, base station and network core earlier this summer.

The successful data transmission on a pure 5G network was initiated with base stations and core equipment from Ericsson and terminals from Qualcomm, the operator said.

SK Telecom operates on the non-standalone (NSA) core, which means the operator relies on a 4G LTE network core to support both generations of cellular technology. The firm said it planned to commercialise its 5G SA infrastructure in the first half of next year, along with other new capabilities such as network slicing and mobile edge computing (MEC).

Although SK Telecom is not the only operator moving hastily toward a 5G SA core, it is among the earliest and most advanced so far. Over the last few months, T-Mobile US completed a 5G SA data session using equipment from multiple vendors. Ericsson also readied 5G new radio software operators will need to deploy a pure 5G network, while the Swedish giant and Qualcomm initiated a 5G SA data connection test. Elsewhere, Nokia, Huawei and ZTE, and other vendors and operators are also completing trials and moving toward 5G SA deployments.

Norwegian government gives Huawei the green light

Norway's cabinet minister Nikolai Astrup, the man tasked with leading digital efforts across the government, said Chinese technology giant Huawei is free to operate in the country.

The news, which was first published by Reuters and then picked up by other news agencies, is good news for the embattled technology giant, which has been shunned by some countries due to its ongoing row with the US with regards to spying accusations.

"We have a good dialogue with the companies on security, and then it is up to the companies themselves to choose suppliers," said Astrup. "We haven't got any bans against any suppliers in Norway."

Norway was one of the countries which was considering a ban on the grounds of national security, though this now appears to be a process designated to the past. It also demonstrates decisive action from a government.

Huawei, which is said to have strong ties to Beijing, has denied the claims from the start.

Although Norwegian telecom operators are seen as fast-followers for 5G deployment, as opposed to leaders, they now have certainty. Other countries, such as the UK where services are already launched, remain in the dark as decisions are still currently being made. EE, Vodafone and Three are still waiting to hear if Huawei will play a role in the UK's digital infrastructure future.

Telenor, Norway's largest telecom business, plans to launch commercial 5G services in 2020, while Telia and Ice will also be prepping themselves following the country's first 5G spectrum auction in June. Post auction, Telenor and Telia each secured two 10 MHz blocks 700 MHz spectrum, while Ice collected two 10 MHz blocks in 700 MHz and two 15 MHz lots in the 2100 MHz band. Further auctions are planning over the next few years, with the valuable 3.4-3.8 MHz and 26 GHz bands up for bid next year.

Philippines police handed Hytera DMR network

The Philippines National Police (PNP) launched Hytera's digital mobile radio (DMR) communications system in a bid to strengthen PNP connectivity through digital transformation.

Unveiled during the Philippines Communications and Electronic Service 77th Founding Anniversary, Chinese firm Hytera provided "an intelligent" DMR trunking system and about 20,000 digital terminals. The new system can be integrated with many others, such as the public switched telephone network (PSTN) and a car identification database for queries.

"During the actual demo, we witnessed a seamless connectivity with regional headquarters from PRO-7 and PRO-11," said PMAJ Crysler M. Benedicto, chief of Com Center Section, FOCCD, CES. "The communications and radio check between officers is very clear. And it is a very understandable connection by using the DMR of Hytera, which is deployed nationwide."

The previous PNP analogue radio communications system was put in service in 1995 and has a lifecycle of 10 – 12 years

The previous PNP analogue radio communications system was put in service in 1995 and has a lifecycle of 10 – 12 years. Its APCO P16 technology was outdated compared with the radio systems used by PNP counterparts in other nations. Furthermore, serious communications issues had arisen because of the old system, including high costs of maintenance due to frequent repair and spare parts shortage, poor interoperability, inadequate coverage and low frequency efficiency.

"The DMR technology provided by Hytera is very, very clear, particularly in our area — Davao City – where we are implementing Tier 3," said PLTCOL Donel A Sungkip, AC, RCEO11. "Currently, all major events in Davao, the city where the Philippine president is located, are relying on this technology, particularly the product of Hytera. As we speak, it is being used for another important event in another province for their celebration. I bring my Hytera radio with me here in Manila, and it is still working and has very nice voice reception."

A series of live demos were carried out during the event.

Russia rushing to get 5G

The Russian government aims to have reliable 5G communication in all the major cities of Russia by 2024, according to plans for the "digital economy of the Russian Federation".

Five of Russia's major telecom operators are planning on launching 5G commercially in 2020 and one player, MTS, has signed an agreement with China's Huawei Technologies to carry out 5G network trials over 2019-2020. It is also working with Swedish manufacturer Ericsson to test smart city solutions over 5G/IoT networks in the Republic of Tatarstan.

Another operator, Beeline, received frequencies in the 25.25GHz-27.5GHz bands to carry out 5G trials in Moscow, St. Petersburg, Novosibirsk, Tatarstan Republic and Krasnodar. It is also working with the Moscow authorities to deploy a 5G network, NB-IoT, Smart City and virtual/augmented reality (VR/AR) solutions. To further develop and implement 5G and internet of things (IoT) services, Beeline has partnered with Skolkovo Foundation to establish a competence centre to facilitate technology integration in Beeline's business.

Five of Russia's major telecom operators are planning on launching 5G commercially in 2020

Meanwhile, Megafon and Rostelecom, established a 50:50 joint venture for 5G development. The former plans to pool its 5G-suitable spectrum including 24MHz in a 3.4GHz-3.6GHz band in Moscow, gained through the acquisition of Neosprint in April last year. Elsewhere, Rostelecom is working with a state corporation, Rostec, to develop a 5G roadmap. Rostelecom's responsibilities include the development of a section of the roadmap concerning the deployment of 5G infrastructure using domestic technologies and stimulating market demand for 5G.

The fifth telecom firm Tele2, in partnership with Ericsson, has launched an experimental 5G zone in Tverskaya Street in central Moscow. Over 50,000 base stations will be deployed across the country over the next five years.

Ethiopian PM invites Israeli investors

Ethiopian prime minister Abiy Ahmed has invited Israeli investors to consider investment in his country's telecom sector. He made the announcement when he visited Jerusalem in early September to meet his counterpart prime minister Benjamin Netanyahu of Israel. "In Ethiopia we have given due emphasis to widening the business space for the private sector to engage in all," Abiy said.

Oi 'in talks' with Spain's Telefonica

Brazilian telecom firm Oi SA is in talks with Spain's Telefonica SA and Italy's Telecom Italia SpA to sell its mobile network to avoid insolvency, according to reports. Oi has been struggling to turn around its business since filing for bankruptcy protection in June 2016 to restructure approximately 65 billion reals of debt. Reuters reported that the South American country's largest fixed-line carrier expects to raise more than 10 billion reals (US$2.4bn) by selling its mobile operations.

PM promises lower bills

Canadian prime minister Justin Trudeau's Liberal Party has pledged to lower mobile phone bills if re-elected. The party would seek to reduce the cost of wireless services by 25% within four years, according to a statement. To make it a reality, the party will work with telecom companies to offer plans at globally comparable prices, encourage competition and allow regulators to step in if that competition does not lead to lower prices.

Q&A

Anshoo Gaur
CEO
STL – Network Software

When was your big career break?
For me, a career is an evolving and continuous process. I don't believe in big career breaks.

What is the best thing about your job?
Primarily, I consider the ability to lead and define the future solution for arguably the most dynamic industry in the world today – telecommunications – as the best thing. Secondly, my job allows me to unleash the talent of the youth and channelize it in the direction that can help change the world.

What is the hardest thing about your job?
Getting customers to acknowledge that the changed operating context requires them to adopt a different set of platforms, practices, partners and mindsets is the hardest thing. The customers know that something has got to change but are not able to figure out what it is. The challenge for them is identifying the best way to offload legacy platforms, practices and mindsets.

> "My paternal grandfather has been a big inspiration for me... he rejected many offers from the British to trade prison time for giving up the freedom struggle."

Who has been your biggest inspiration?
My paternal grandfather has been a big inspiration for me. He was a Gandhian who spent his life in prison during the freedom movement. He rejected many offers from the British to trade prison time for giving up the freedom struggle. His humility, integrity, hard work and patriotism were unlike anything I have ever seen. He passed away when I was relatively young, but he remains as an inspiration to look up to and emulate.

What has been your career high to date?
I am not clear about how highs and lows are quantified in a career. My career so far has given me a lot of learning opportunities and this continues to be the case. I look at highs and lows from the point of view of alignment with the defined purpose of my life. Good alignment with purpose means high and low alignment means low. And on this scale, the career and personal decision we made to come back to India 13 years ago for multiple reasons was a high. The 'career' might have been 'better' if we did not relocate, but the alignment with purpose would be missing and hence this was the right choice and we have never regretted the decision.

What has been your career low to date?
Again, the time at which we do things that are not completely aligned with the purpose is a low. Similar to the urgent-important conundrum, I sometimes find myself dealing with things that I am just not able to assess for purpose alignment. I just go with the flow and later realise that there was no alignment. I consider staying longer than I should have in my earlier job as a low. I was clearly very busy and had a lot to do but in hindsight, my alignment with purpose had taken a hit. The 'important' part is to be aware and not allow this to become the norm and the good news is that I did not let that go on for too long.

What is your biggest regret to date?
I don't want to sound clichéd but I do not have regrets on the professional front at all. I'm a strong believer in 'everything has a reason' and I do not spend time looking back. Personally, not spending enough time with the kids is a constant regret. I have tried to make up in different ways, but it is not enough.

What would you say is the best technological advancement in your lifetime?
We are in the age of technology disruption. Technology is at the core of the digital wave. As per Singularity University, the technology change is exponential. In the next 100 years, we will experience progress equivalent to 20,000 years. If I look back, just when I have seen the greatest technological advancement, I get surprised by something amazing that comes along.

> "I am not clear about how highs and lows are quantified in a career. My career so far has given me a lot of learning opportunities and this continues to be the case."

What is the best business lesson you have learned?
The harder you work the luckier you get. In the end, there are no short-cuts.

If you had to work in a different industry, what would it be?
I would remain in the technology industry since it is at the heart of what is changing the world, something that fascinates me, and more importantly, a big catalyst to help me be aligned with my purpose. I would consider spending more time investing and mentoring companies that solve complex unaddressed problems in the world. Healthcare and education are of special interest to me as those are probably the two industries that will look very different in the next decade than they are today.

What is the biggest challenge the industry faces at the moment?
The biggest challenge is letting go of the technology – products and practices - that got us here. These were good for the past but not good for the future. We are in a most dynamic industry and legacy is a burden. legacy to defend. So, it thrives on driving FUD (Fear, Uncertainty, and Doubt) created in the minds of customers. It does not necessarily put the customer first but they do get things done, which is important when we deal with mission-critical systems. From another competitor, I learned the importance of design and anecdotally I learnt a very important concept of WIDIWIG (What I Design Is What I Get) from them. When you apply it to any business challenge you usually realise that the problem was inevitably how things were designed. Design plays a critical aspect of the success of the product.

Which competitor you admire the most and why?
I find that a few of them have important attributes to admire and learn from them. Further, in today's converging world, I admire and learn from other industries as well. I make it a point to attend at least one conference every year from an industry completely unrelated to me. Interestingly, these are the places of the greatest learnings that I have had. Closer to our industry, without naming any, I admire the delivery capability of one of our competition. It has a

What is the best thing about working in this industry?
The pace of change is breath-taking. In 2018 we had bots & assistants, video streaming and IoT in home automation. In 2019 we are closer to 5G and all the hyper-data applications it will support.

What do you want to do when you retire?
I love work, I am sure the nature of work that I do will evolve but I do not intend to retire. I believe in the power of youth and what they can do to change the world. I will continue to help in unleashing this talent to help solve the complex problems that the developing world faces. ■

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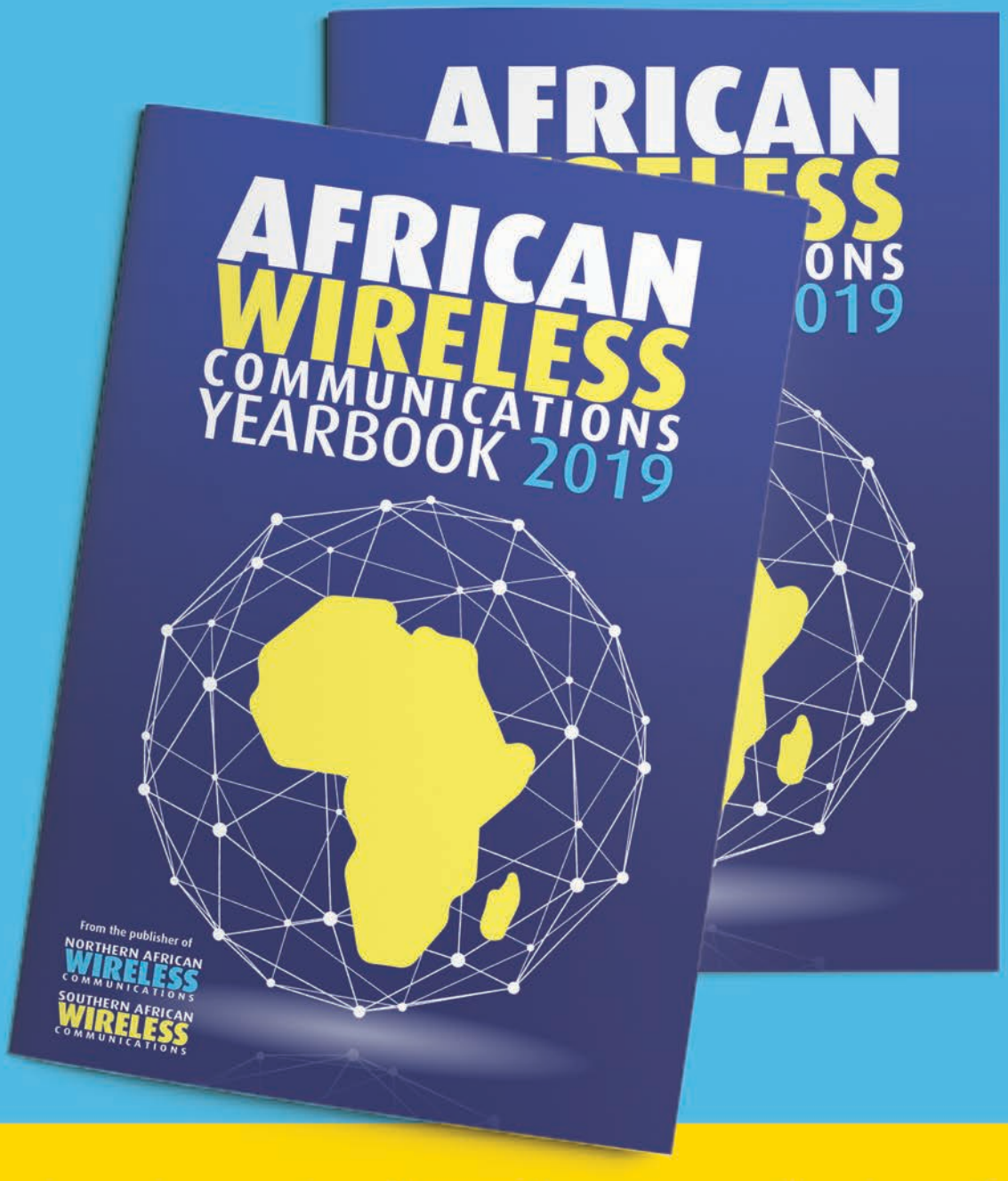

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