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Satellite broadband How technology can boost socio-economic development

Cloud computing Driving digital transformation

FEATURES: Communications Mobile Satellites **REGULAR REPORTS:** Agenda Solutions





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The global event for governments, corporates and tech SMEs.

Accelerating ICT innovation to improve lives faster.

10-13 September 2018, Durban, South Africa

ITU Telecom World 2018 is the global platform to accelerate ICT innovations for social and economic development. It's where policy makers and regulators meet industry experts, investors, SMEs, entrepreneurs and innovators to exhibit solutions, share knowledge and speed change. Our aim is to help ideas go further, faster to make the world better, sooner.

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A note from the Editor

This edition looks at the impact of technological innovation across industries in Africa, such as how satellite technology has improved telecommunications and mapping services. We also highlight artifical intelligence, IoT and 5G, the main topics of discussion at this year's ITU Telecom World show. In this issue, we also explore the changes blockchain is bringing needed change to Africa's telecom industry by enhancing privacy and security infrastructure, in line with the rise in mobile adoption rates.

Une note du rédacteur

Cette édition examine l'impact de l'innovation technologique dans tous les secteurs d'activité en Afrique, notamment la manière dont la technologie par satellite a amélioré les services de télécommunication et de cartographie. Nous soulignons également les domaines de l'intelligence artificielle, IoT et 5G, les principaux sujets de discussion lors du salon ITU Telecom World de cette année. Ce numéro explore le fait que, à l'heure de l'augmentation des taux d'adoption du mobile, la blockchain apporte le changement nécessaire à l'industrie des télécommunications Afrique en en améliorant l'infrastructure de confidentialité et de sécurité.

Agenda Bulletin Events Solutions

FEATURES

ITU Telecom World

The 2018 edition will explore three technological innovations: Artifical intelligence, IoT and $_{5}$ G – how they are the driving factors for innovation and creating a smarter world.

Technology

The benefits of satellite technology are endless, from helping farmers conduct crop forecasting to providing remote training for health workers. Improving access to broadband services plays an important role in driving socio-economic development in the continent.

Internet

Communications Africa talks to President of Wikipedia Douglas Scott about the importance of bridging the information gap on Wikipedia and the Wikimania conference held in Cape Town.

Data Centres

We look at three ways organisations can speed up deployment, cut costs and support expansion for today's colocation facility.

eLearning Africa

This year's event will have an in-depth focus on how ICT can help to combat food security in Africa, bringing together leading experts in communications technology and food security.



ARTICLES

Alger Smart Cities Summit



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Le secteur technologique algérien a beaucoup de potentiel et la révolution numérique devrait avoir un effet positif sur l'écosystème algérie

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QUOTES

Africa has an opportunity at this point to utilise blockchain for land registries or transactions; 'smart' buildings and infrastructure for facilities management or repair; or new database capabilities for collaborative data sharing between market participants."

- Jeremy Kelly

Director, Global Research

Data centres are an extremely important strategic focus for Siemon. We recognise the shift towards cloud-based services with data centres being the fundamental enabler for such services. Over the past five years we have successfully grown our presence in Africa and will continue to do so."

- James Kiriamit

Marketing and partner, Europe, Russia & Africa *Siemon*

Data centres such as MDXi provide a platform for different networks to directly interconnect with other operators and exchange traffic in Nigeria to guarantee lower bandwidth costs and improved margins for content owners and OTTs, quicker access to more content providers and carriers as well as lower latency and improved experience for local users."

- Gbenga Adegbiji General manager MDXi

Real-time payment schemes will enable new innovative services in the banking and retail sectors, and further disrupt the current global payments ecosystem."

- Paul Stoddart

CEO Vocalink, a Mastercard company

Improving the roaming experiences for customers - and providing an OTT alternative

AS VOICE REVENUE continues to decline, there are two significant interwoven challenges that MNOs across Africa need to urgently tackle, says Godslove Adagbonyin, communications & marketing manager at Kirusa.

The first is providing an alternative to OTT calling or messaging and second providing cost-effective roaming packages for their customers.

Most MNOs don't have a clear strategy for winning back their share of the voice market. One obvious approach that is being adopted by a few operators is to develop their own branded voice apps. These are sometimes pre-installed on smartphones – or MNOs encourage their customers to download them by providing free data for the download. But there is no need to launch a "MeToo" OTT voice app. To succeed MNOs need to offer something genuinely different to their customers.

Kirusa's InstaVoice ReachMe addresses both challenges, simultaneously. ReachMe was explicitly developed as a hybrid OTT service that allows mobile users to access traditional telco services such as calling, texting, as well as receiving missed call alerts and voicemails over data, while travelling or "at home." This provides next-generation telecom experiences for them.

InstaVoice ReachMe is an app-based roaming solution that can be easily and seamlessly integrated with mobile carriers' existing infrastructure to eliminate exorbitant roaming charges for their



marketing manager at Kirusa.

travelling subscribers without experiencing a decline in voice revenue. How? This unique telephony experience converts incoming phone calls (to the local/home mobile numbers of travellers) into Voice over Internet Protocol (VoIP) calls, allowing users to receive such calls within the app, without paying pesky roaming charges. With this function, carriers can offer low-cost roaming packages and plans to their subscribers even in countries where there are no roaming agreements in place.

Unlike OTT apps such as WhatsApp, ReachMe doesn't require both caller and recipient to have the app installed to connect. The called party simply needs to have downloaded the app and activated the service before travelling & must have an active data connection such as Wi-Fi to receive calls. Meanwhile, the caller's experience remains the same as when making a regular mobile call (via the phone dialler), with no need for the app or data connection.

ReachMe's underlying technology also solves a unique case of unreachability. With a feature called ReachMe Home, mobile subscribers can receive calls to their regular numbers, but in the app, over data, when there is no or limited network coverage such as in basements or train stations. Meanwhile for people with multiple SIMs and phones, all calls to all numbers - local and international - can be linked to the app.

For MNOs this type of hybrid OTT voice service means they hold onto the revenue from voice calls, which would have otherwise been lost. Also, there is an improvement in quality through a reduction in the number of dropped calls. If the called party is unreachable, the call will automatically be connected to the voicemail system within the app.

The voice market has changed forever, and it is time for the MNOs to fight back by offering new databased-services to their customers, to stay relevant.

For more details please visit: www.kirusa.com

MTN Nigeria focuses customer experience

MTN NIGERIA IS using Nokia's Customer Experience Management (CEM) solution to drive its transformation from network- to customer-centric operations.

"MTN Nigeria is the first service provider in the region to deploy our Cognitive Analytics for Customer Insight, with our Service Quality Manager (SQM) software," said Henrique Vale, MEA leader for Applications and Analytics Global Centre at Nokia. "Using powerful machine learning algorithms, Nokia Cognitive Analytics for Customer Insight software gives the operator a complete view of customer satisfaction and revenue as well as device and network performance." When combined with Nokia SQM, it paints a holistic picture of service behaviour and performance. "This, in turn, enables MTN Nigeria to quickly identify service issues, and they can prioritise improvements based on customer and business impact."

Avanti Communications and GetSAT demonstrate satellite on the move capabilities

GETSAT, AN INNOVATOR in small, lightweight satellite communication terminals for airborne, ground, and maritime applications, and Avanti Communications Group plc, a leading provider of satellite data communications services in Europe, the Middle East and Africa, have successfully demonstrated the potential of Satellite on the Move (SOTM) capabilities.

Utilising GetSAT's MicroSat terminal installed on a vehicle, GetSAT's Microhub modem installed in Avanti's Gateway Earth Station in Cyprus, and Avanti's HYLAS 2 Kaband satellite, data traffic rates reached up to 8.5Mbps from the moving vehicle, thus showcasing Avanti's network ability to stream live HD-quality video or surveillance imagery and data traffic for military and aovernment users.

The strategic partnership between Avanti and GetSAT offers significant capability enhancements to support military and government organisations in the provision of very small, flexible, agile and portable satellite communications. The collaboration will enable military and government users to maximise the benefits of High Throughput Satellite (HTS) broadband and take full advantage of high capacity data traffic, including full motion video and other C4ISR applications, even when on the move. Both companies will now seek to further develop the capability.

The collaboration will enable military and government users to maximise the benefits of HTS broadband.

Solutions, said, "The partnership between Avanti's High Throughput Ka-band technology and GetSAT's groundbreaking Satellite on the Move technology provides a capability that has enormous potential for military and Government users. We are proud to be working with GetSAT and look forward to collaboratively supporting our government and military customers."

Kfir Benjamin, CEO of GetSAT, added, "The combination of GetSAT and Avanti will add real depth and much higher capacities to our existing offerings and allow us to support the needs of our users for high data C4ISR traffic in remote locations and while on the move."

The US Army has recently chosen GetSAT's MicroSat terminal as a critical enabler for mobile satellite connectivity.

Graham Peters, managing director of Avanti Government

Liquid Telecom delivers first Microsoft **Express Route within Africa**

LEADING PAN-AFRICAN TELECOMS group Liquid Telecom has delivered the first Microsoft ExpressRoute service peering in Africa - offering customers better performance, tighter security and lower latency.

Microsoft ExpressRoute, part of Liquid Telecom's CloudConnect offering, allows businesses to establish private connections to Azure. Previously, customers could only access ExpressRoute via David Behr, group chief product officer, peering locations in Europe.



Liquid Telecom

Liquid Telecom recently deployed an ExpressRoute link for the Western Cape Government, which is overseeing a major upgrade to communications infrastructure in the region - making it the first customer with a direct private connection to the Azure Cloud that is exchanged locally in Africa.

The Western Cape government said, "Liquid Telecom's CloudConnect service has significantly increased the performance of our cloud services and will support the rollout of leading-edge cloud solutions to more of the region."

Liquid Telecom is the only Microsoft partner to be providing an ExpressRoute service across eight African countries on its own fibre, including South Africa, Zimbabwe and Kenya.

"Our advanced ExpressRoute offering is another important step forward for Africa's Cloud. Liquid Telecom's CloudConnect service is strongly positioned to be the highway that links businesses to a whole host of leading local and global cloud services," said David Behr, group chief product officer, Liquid Telecom.

Liquid Telecom will also be able to offer ExpressRoute directly to the Azure Cloud in Africa when it goes live in data centres in South Africa later this year.

Yahsat introduces Wi-Fi Enterprise solution with Tanaza

YAHSAT, THE UAE-based satellite operator, has announced the launch of YahClick Wi-Fi Enterprise Solution in partnership with Italian Wi-Fi cloud management software provider Tanaza. The announcement coincides with the signing of an agreement between the two companies, the terms of which allow Tanaza's cloud based Wi-Fi management platform to be used along with YahClick Wi-Fi Enterprise Solution across YahClick's footprint.

The solution provides a cost-effective, high-speed and reliable Wi-Fi solution developed to address the connectivity requirements of enterprises, NGOs, governments, and communities across Africa, the Middle East and Central and South West Asia. Featuring a simple multi-user management platform and seamless access for the end user, the solution also promises to drive sustainable socio-economic development by providing reliable high-speed connectivity to remote schools, clinics, and government offices as well as facilitating humanitarian aid and relief operations.

"In our fast-paced, always-on world, it is crucial that organisations of all kinds perform at peak productivity and therefore receive uninterrupted, high-speed Internet connectivity," commented Farhad Khan, Yahsat's chief commercial officer. "Many of the public and private sector organisations we serve operate in the remotest parts of the Middle East, Africa, and Central and South West Asia, where highperformance Internet connectivity is not readily available.

"With the launch of YahClick Wi-Fi Enterprise Solution, we look forward to supporting even more users with an Internet service they can depend on."

"We're excited to see Yahsat using our software to deploy costeffective high-speed Wi-Fi hotspots," added Sebastiano Bertani, CEO of Tanaza. "This distribution agreement will create a wide range of new opportunities for socioeconomic development across multiple continents."

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BULLETIN

USAVE, BluPoint to empower mining communities

USAVE BLOCKCHAIN (USAVE) will support offline Internet solution provider, BluPoint as part of its upcoming token sale, to increase access to education and information across African mining communities.

USAVE provides a disruptive alternative ecosystem for today's gold production and distribution standards. It enables an ethically sourced gold supply chain process - from the miner, with connected hardware recording production, through to tracking and fair payments using Blockchain technology. USAVE aims to maximise the living conditions of the miners in its ecosystem, whilst improving their access to education and the Internet. USAVE will allocate one per cent of the funds raised during its upcoming token sale to BluPoint, to build a turnkey solution for content provision and consumption across the mining communities within two sub-Saharan countries in its ecosystem.



Avanti Communications signs contract for HYLAS 4

AVANTI COMMUNICATIONS GROUP plc, a leading satellite operator and provider of satellite data communications services in Europe, the Middle East and Africa, has signed a HYLAS 4 Master Distributor contract with iWayAfrica, a pan-African service provider proving telecommunication solutions across the African continent, to provide satellite broadband services across sub-Saharan Africa.

The Master Distributor contract enables iWayAfrica to utilise the latest Ka-band satellite technology via Avanti's HYLAS 4 satellite, which offers 100 per cent coverage of sub-Saharan Africa. iWayAfrica will provide affordable high-speed satellite broadband to connect homes, SMEs, schools and enterprises across sub-Saharan Africa, especially in rural and remote locations where terrestrial networks are limited.

iWayAfrica has a presence in more than 44 African countries, and already deploys Avanti's Ka-band services in Eastern and Southern Africa via the HYLAS 2 satellite. HYLAS 4, which launched in April 2018, will extend iWayAfrica's Ka-band offering into new countries across West and Central Africa with commercial service scheduled from August 2018. iWayAfrica has regional offices for all its wholesale services in Ghana, Kenya, Mauritius and South Africa.

Small businesses critical to fourth industrial revolution in South Africa

AN INSIGHTFUL PANEL discussion in Midrand on 5 July said small businesses will be critical in ushering in the fourth industrial revolution in South Africa while access to information will revolutionise education. Panel speakers included Siemens Southern and Eastern Africa CEO Sabine Dall'Omo, CSIR Research and development strategy manager Dr. Daniel Visser, and SAA CEO Vuyani Jarana.

The discussion, hosted collaboratively by Siemens and CNBC Africa, explored effects industry 4.0 would have on the country. Industry 4.0 is drastically changing the work landscape, how we live and how we do things but with the involvement of academic institutions, government, private institutions and the South African society, we can ensure that this digital revolution will only impact the country positively. "There is no place to hide from connectivity. South Africa cannot step aside and not

participate. We need to actively participate and shape South African industries to be more competitive in the global market," said Dall'Omo. "This revolution is not only for big fishes. We want to help smaller companies get involved and apply technologies in their businesses. This will contribute to a stronger GDP," he added.

Ecobank Fintech Challenge finalists announced

ECOBANK, THE LEADING independent pan-African banking group, has announced the finalists for the 2nd edition of the annual Ecobank Fintech Challenge, a competition for Africa-focused technology start-ups. The list includes 11 fintech start-ups from across the continent and beyond. An Innovation Fair & Awards ceremony will honour the start-ups on 30 August 2018 at the global headquarters of Ecobank in Lomé, Togo. At the ceremony, the start-ups will exhibit and pitch their products to a jury for the Ecobank Africa Fintech Prize, which will be awarded the top innovator and two runners-up. The top three innovators will win cash prizes worth US\$10,000, US\$7,000, and US\$5,000 respectively.

After the Awards ceremony, Ecobank will enroll all eleven finalists into the Ecobank Fintech Fellowship

The eleven start-ups include Lypa (Kenya), Wallet.ng (Nigeria), Nala (Tanzania), Litee (Benin), SESO Global (South Africa), InvestED (Sierra Leone), Eversend (France), Secapay (Nigeria), Virtual Identity (South Africa), MojiPay (Togo), Awamo (Germany)

Telecom Egypt, Liquid Telecom sign Mou on fibre network

LEADING PAN-AFRICAN TELECOMS group, Liquid Telecom, and Telecom Egypt, Egypt's first integrated telecom operator, announced the signing of a Memorandum of Understanding (MoU) that will enable Liquid Telecom to shortly complete Africa's terrestrial fibre network stretching from Cape Town, South Africa, to Cairo, Egypt.

Under the MoU, Liquid Telecom will link its network from Sudan into Telecom Egypt's network via a new cross border interconnection – bringing together a 60,000 km network that runs from Cape Town, through all the Southern, Central, and Eastern African countries, and has now reached the border between Sudan and Egypt. The Cape to Cairo network - often referred to as "the One Africa" broadband network - has been in the making for more than ten years and serves some of the largest global companies with some of the fastest network speeds on the continent.

Africa needs an African cloud

FOR ORGANISATIONS IN Africa to truly reap the benefits of cloud and shared data centre services, local data centres need to be developed and deployed. This will not only address the issue around data sovereignty, but also stimulate local economic development and improve the lives of citizens using by widely adopting this technology,



Mohamed Abdelrehim. (Photo: Nokia)

said Mohamed Abdelrehim, head of solutions and business development for Nokia in the Middle East and Africa market.

"The whole purpose of building data centres is to create capacity where it does not exist," he says. "At a macro level, the government/large institutions of a specific country might not have enough budget/key resources to implement a local data centre, in which case they will then look at other countries and the global level for international ICT service providers to lease capacity from. Start-ups and SMEs also cannot each invest in their own IT infrastructure. They would then look at a major ICT company or ISP which offers data centre services in the form of "hosting for a monthly fee," says Abdelrehim.

Shining the spotlight on Africa's ICT sector

ITU Telecom World 2018, an international platform for influential figures from the government and industry, will provide a platform for tech SMEs and entrepreneurs to connect and discuss opportunities and challenges in Africa's ICT sector.

HE INTERNATIONAL TELECOMMUNICATION Union (ITU) – the UN specialised agency for information and communication technologies (ICT) – has started accepting entries for the ITU Telecom World Awards 2018, from 3 August, recognising the outstanding and innovative initiatives around the globe using ICTs for social good.

A distinguished jury of experts will select a shortlist of entrants who will pitch their solutions onsite at ITU Telecom World 2018. The winners will then be announced by ITU secretary-general Houlin Zhao during ITU Telecom World 2018, from 10-13 September in Durban, South Africa.

First launched in 2015, the ITU Telecom World Awards initiative recognises the innovative application of ICTs for social good created by entrepreneurs, small- and mediumsized enterprises (SMEs) and large industry players alike. It also facilitates knowledge sharing of best practices, while providing a platform from which to network, mobilise investment, explore partnership potential and create new business opportunities.

Categories for the ITU Telecom Awards 2018

- Global Corporate Awards for the most promising innovative solutions with social impact within large companies in two categories: sustainable development and smart emerging technologies.
- Global SME Award for the most promising solutions from SMEs making innovative use of ICTs for social impact, in a number of different categories.
- · Host Country SME Award for the best and



The event will enable visitors to share knowledge, explore best practice and learn from ICT experts.

most innovative SME or solution from the Host Country.

• Government Award for the National Pavilion at ITU Telecom Word 2018 with the most promising innovative SMEs present at the event, entering the Global SME Award.

Innovations for a smarter world

Under the theme Innovation for a smarter world, the event is set to combine an international tech exhibition, a forum for sharing knowledge, a networking hub for corporates, governments and SMEs, in addition to the influential ITU Telecom World Awards. It provides a unique international platform that brings together developed and emerging markets, public and private sector leaders and industry representatives from across the entire ICT ecosystem.

As the UN specialised agency for ICTs, with 193 member states, more than 700 private sector entities and 150 years of sector expertise, ITU aims to provide ICT solutions in accelerating social and economic development across emerging and developed markets alike. ICT-based applications, solutions and initiatives are uniquely powerful and effective in improving lives all around the world.

ITU will bring together developed and emerging markets, public and private sector leaders and industry representatives from across the entire ICT ecosystem

"The network and connections you can build at ITU Telecom World are invaluable – from a business perspective, an investor perspective and a networking perspective," said Matthias Brodner of South Africa's Simplus Innovation, winner of the 2017 Global SME Award for best business model.

It's about making ideas go further

ITU Telecom World 2018 is set to provide:

- Global platform for major industry players, tech SMEs, countries and organisations
- International visibility for innovative ICT products, technologies and solutions
- High-level debates led by experts on the core issues affecting the ICT sector
- Targeted networking at all levels of the industry
- Sharing knowledge and best practice across emerging and developed markets
- UN recognition as a provider of ICT for sustainable development in the Awards Programme ©



The ITU Telecom World Awards recognise excellence in tech SMEs and large companies worldwide working to provide innovative solutions with real social impact.

Events/Événements 2018

| AUGUST/AOÛT | | | | |
|---------------------|--|-------------------------|-------------------------------|--|
| 21-25 | BIRTV Beijing | Beijing,China | www.birtv.com | |
| 21-23 | AFPIF 2018 | Cape Town, South Africa | www.afpif.org | |
| 22-25 | Gadgets Expo International Mumbai | Mumbai, India | www.indiabig7.com | |
| SEPTEMBER/SEPTEMBRE | | | | |
| 10-13 | ITU Telecom World 2018 | Durban, South Africa | https://telecomworld.itu.int/ | |
| 19 | TMT Finance Africa | London, UK | http://www.tmtfinance.com | |
| 13-18 | IBC 2018 | Rai, Amsterdam | www.ibc.org | |
| 19-20 | Nigeria Com | Lagos, Nigeria | https://tmt.knect365.com | |
| 20-23 | MoldExpo | Moldova | www.moldexpo.md | |
| OCTOBER/OCTOBRE | | | | |
| 09-12 | Taitronics | Taipei, Taiwan | www.taitra.org.tw | |
| 10-1 | DESTIMOB Algiers | Algiers, Algiera | www.destimob.com | |
| 16-18 | IoT Solutions World Congress | Barcelona, Spain | www.iotsworldcongress.com | |
| 18-21 | Global Sources Mobile Electronics Show | Hong Kong, China | www.globalsources.com | |
| 31-2 Nov | Natexpo | Moscow, Russia | www.natexpo.ru | |

Focus on economic resurgence through ICT innovation at Nigeria Com

NIGERIA COM, ONE of the leading network and digital services events in Nigeria, is all set to open at Lagos Oriental Hotel from 19-20 September 2018.

Built around telecommunications networks and infrastructure, it has evolved into the most influential gathering of TMT leaders focused on bringing new digital services to the people and businesses of Nigeria.

Organised by KnectAfrica, the event brings together C-suite operator executives and the most innovative digital tech leaders to define pathways to strengthen low cost broadband connectivity and digital services offerings. It is set to futureproof business models across telecoms and the whole spectrum of enterprise verticals in Nigeria.

Some of the major topics that will be discussed during the event include stimulating economic growth with ICT policies, strengthening urban connectivity for fast consistent broadband access, diversifying the operator model in an increasingly saturated market, combining new and traditional operator strategies to reach new customers, analysing distribution strategies to capitalise on the DTT offering etc.

Nigeria Com aims to bring together the region's entire digital ecosystem in one place. These include:

Telco

Providing fixed and mobile network operators the tools they need to develop their

The event aims to strengthen Nigeria's network and digital services infrastructure. (Photo: Free-Photos/Pixabav)



commercial strategies, technical operations and consumer facing businesses.

Enterprise

Providing enterprises and operators a roadmap for effective digital strategy rollout; allowing them to develop an agile internal approach, while offering better services to their customers.

Digital media

This will allow MNOs, FTA broadcasters, Pay TV operators and emerging OTT players to understand the ways to successfully navigate the new connected entertainment ecosystem, bundling new services and content as part of a sustainable strategy.

New features 2018

Leaders in Nigerian tech: This boardroom will tackle challenging and controversial issues in an informal and intimate setting. The invitation only session will encourage frank, open and productive dialogue between industry leaders, policymakers and regulators.

Interactive behind closed doors sessions: The sessions will focus on:

- Ensuring ROI on fibre backbone
- Optimising the Internet of Things Value Chain Leaders in video boardroom: Designed to develop a roadmap for vibrant and selfsustaining business models for broadcasting in Nigeria.

FG Wilson: Reliability at low cost

Generator sets have been around since the early 20th century and today, when it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's still no better option.

HE BASIC PACKAGE is the same as it's been for many decades: a prime mover engine, coupled with an alternator mounted on a steel base which often contains a fuel tank, packaged with a control system and usually with an acoustic enclosure which makes the noise from the unit acceptable in built-up areas, protects from the weather and offers security. The key advantage of a generator set is that it can start when needed and run for as long as it is supplied by fuel.

Used for power generation, a diesel engine can expect a long working life if well maintained and examples of machines with 20,000 or more operating hours are not uncommon. The benefits of owning a generator set powered by a diesel engine are:

- Durability of the engine
- More economical to run than most other engines
- Fuel is safer to store and transport than petrol or gas
- Engines are typically easier to service and maintain

The basics may be the same but today's generator sets are in a different world from those of the past. A prime example is the FG Wilson 6.8 - 25 kVA, developed especially for telecoms operators running large fleets of generator sets spread around remote locations.

Michael Milligan, FG Wilson account manager, and part of the team who developed the range says, "This is a design aimed at minimising operating costs and maximising efficiency and it's a result of many hours working with our customers to figure out the ideal generator set. This means a big emphasis on operating costs and high levels of flexibility in product options and configuration."

To minimise site visits for maintenance and fuel replenishment, the range offers up to 1,000 hours between service intervals and comes with set-mounted fuel tanks of up to 600, 1,000 and 2,000 litres. Put in perspective, as an example, with the largest tank that means the 13 kVA P11-6S model can run for up to 185 days, four hours a day at 75 per cent load. That means fewer expensive visits to site to top up fuel.

The product options list includes a flexible range of enclosures with three levels of sound attenuation. This means operators can meet local noise regulations with an enclosure which



is right for their needs and avoid overspecifying. And if a generator set needs to be moved to a new location, its modular-designed enclosures can easily be upgraded to ensure it meets local noise regulations, if that's needed.

Control systems played a big part in product design. Michael says, "We've incorporated a high level of flexibility into control systems and remote communications to allow our generator set to integrate seamlessly with any hybrid system. And we're partnering with hybrid manufacturers to confirm compatibility and ensure efficient and fast deployment of our products on site."

Using market-leading control modules, including built-in mains sensing and changeover systems, the generator sets are designed to be easily and quickly deployed. Complete with the latest Deep Sea controllers, the range can be tailored to meet all technical requirements, from configurable alarms and protections, to remote monitoring, control and preventative maintenance. Plug and play options mean easy upgrading on site when needed.

Owners can monitor generator sets from the

A diesel engine can expect a long working life if well maintained and examples of machines with 20,000 or more operating hours are not uncommon. Telecom NOC which not only maximises uptime but also allows preparation for site visits, minimising servicing costs and ensures visits are only made when needed.

With security in mind, the range conceals all fuel pipework and fuel-filling connections, protecting against fuel theft. Optional security features include lockable door latches and GPS tracking devices.

As with all FG Wilson products, the range has been tested and validated at FG Wilson's Larne facility in the UK, a \$26mn Centre of Excellence which also houses Europe's largest Hemi-Anechoic Chamber for noise testing. Here, all FG Wilson products are given intense pre-launch testing which include vibration, engine/alternator cooling, electromagnetic compatibility, noise, water ingress and rating/transient performance.

Michael says this is especially important. "We're a volume manufacturer and we take reliability extremely seriously. We know from past experience that rigorous upfront design, testing and validation lead to superior reliability throughout a product's lifetime and that this can save customers a substantial amount of money over time."

Now it's proving to be so attractive to a much wider range of customers that we're integrating it into our core product range." \mathcal{O}

The 6.8 – 25 kVA range is available to order from FG Wilson. You can find out more from www.fgwilson.com or from your local FG Wilson dealer.

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Spreading broadband happiness

Pan-African Internet service provider iWayAfrica recently announced the signing of the first Hylas-4 Master Distributor contract with Avanti Communications to provide satellite broadband services across sub-Saharan Africa.

HE MASTER DISTRIBUTOR contract enables iWayAfrica to utilise the latest Ka-band satellite technology via Avanti's Hylas-4 satellite, which has widespread coverage of sub-Saharan Africa. iWayAfrica will provide affordable high-speed satellite broadband to connect homes, SMEs, schools and enterprises across sub-Saharan Africa, especially in rural and remote locations where terrestrial networks are limited.

Avanti Communications Group is a leading satellite operator, providing Ka-Band satellite data communications services across the UK, Europe, the Middle East and Africa. Building on the success of its previous high throughput satellites (HTS), Avanti launched its third satellite, Hylas-4 in April 2018 that is scheduled for commercial service over sub-Saharan Africa from September 2018. Hylas-4 will operate with 64 beams from five Ground Earth Stations. Hylas-4 significantly extends Avanti's coverage to West and Central Africa for the first time.

As a wholesale VSAT provider, iWayAfrica has worked successfully with Avanti since 2014 for its Hylas-2 services in East and Southern Africa. The appointment as Master Distributor is a natural extension of the two parties' existing relationship bringing even faster broadband services to the rest of Africa.

"With Hylas-4, we are excited to take Avanti's high-speed service plans to West and Central Africa for the first time. We are actively engaged with our partner network to bring these services online, as well as extending our reach in the region even further to new partners and new territories" says Michèle Scanlon, managing director, iWayAfrica (VSAT Wholesale Services Division).

iWayAfrica has regional offices for wholesale services in Ghana, Kenya, Mauritius and South Africa.

Ka-band satellite services have been designed to deliver high throughput and high speed meeting the expectation and user experience of today's demanding broadband customer. Most installations only require a small 75cm round antenna thus reducing previous equipment and installation costs associated in the past with broadband via VSAT.

"With a range of service plans including capped and uncapped with download speeds of up to 35Mbps and upload speeds of up to 4Mbps, JOLA Ka has an affordable and reliable option for every type of broadband user", continues Scanlon.

iWayAfrica launched its JOLA broadband service in December 2016 for sub-Saharan Africa bringing flexibility and affordability on Ku-Band service plans on IS-28 for consumer and SME segments. JOLA Ka is an extension of those same key service elements of bringing broadband happiness to Africa.

iWayAfrica offers its partners competitive wholesale rates, sales and marketing support with lead generation, installation training and accreditation, a 24/7 Network Management Centre and access to a dedicated distributor partner portal access.

iWayAfrica is part of Gondwana International Networks (GIN), a pan-regional telecoms investor with corporate ISPs across sub-Saharan Africa that trade as iWayAfrica or AfricaOnline. The Group was among the first companies on the continent to embrace the benefits of satellitebased communication and then, driving penetration on the back of the subsequent Internet revolution.

GIN's service offerings are diverse and cover both satellite and terrestrial connectivity solutions and other types of data and value-added services. The Group's service portfolio constantly evolves to address changing market demands and technological advancements. Satellite services include C-Band, Ku-Band and Ka-Band solutions. whilst its terrestrial services vary across markets, including licensed and unlicensed wireless, copper, fibre, cellular and Wi-Fi services

As elsewhere in the world. Africa is seeing an increasing reliance on Internet connectivity for all aspects of working and social lives with governments striving for new digital economies and its associated economic benefits. Yet in Africa, huge coverage gaps, poor quality of service connectivity and high remain equipment costs constraints on ability to drive market penetration. Satellite is a key element of the GIN approach to unlocking connectivity on the continent where more than 70 per cent of the population remain unconnected despite large investments in fibre and other terrestrial services.

With more than 25 years' of providing high-end satellite services across Africa to telecoms operators and enterprise customers via its partner network in over 44 markets, iWayAfrica has earned its reputation as a quality provider of services evidenced by its customer base and its consistent industry awards for VSAT Operator of the Year and Best Customer Service Provider of the Year. ©

GIN's service offerings are diverse and cover both satellite and terrestrial connectivity solutions and other types of data and value-added services.

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The Blockchain brings needed change to Africa's burgeoning telecom industry

Africa's telecoms industry followed a unique trajectory. In the 1990s, only one per cent of sub-Saharan Africa's population had ever made a phone call, and just about five per cent of the population even had access to mobile networking.



With millions of people coming online, telecom companies have to grapple with the duality of providing expansive access while also protecting user information.

HINGS HAVE CHANGED quickly for the world's second most populated continent. The installation and rapid expansion of mobile networks by companies such as and government-Google subsidised services provided by major network carriers enabled significant portions of Africa to skip the landline phone generation and enter directly into the mobile era. Moreover, the proliferation of affordable handheld devices and a growing hunger for digital devices have coalesced to create a compelling mobile ecosystem.

As a result, mobile adoption is surging in Africa. Quartz notes that mobile adoption more than doubled in a two-year period from 2014 - 2016. Africa's cell phone ownership has accelerated faster than almost any other region. For example, South Africa's cell phone ownership rates are on par with mobile-friendly countries such as the US, and other countries, including Ghana, Kenya, Tanzania, and Uganda also boast impressively high adoption rates.

Africa's mobile adoption rates are evident by virtually every metric. Deloitte identifies Africa as the fastest growing market for mobile adoption, and these customers are entering the industry at a transformative time. An emphasis on data usage rather than voice calling and an impending transition to 5G make this a particularly compelling time to enter the mobile industry.

Last November, African Business Magazine opined that "The challenge for African companies, governments and other organisations is to ensure that the continent is not left behind." When it comes to mobile accessibility, Africa is making mobile services available at a rapid rate, but progress produces its own set of challenges.

The problem of progress

Progress is frequently accompanied by unforeseen problems, and Africa's mobile adoption is no different. More specifically, issues of privacy and security are at the forefront of Africa's mobile adoption craze. For mobile adoption to mature and to meet its transformational potential, the industry must produce compelling and capable solutions to these problems.

Problems with privacy

The EU's recent implementation of the General Data Protection Regulation (GDPR) and the accompanying Federal Trade Commission Act (15 U.S.C. US\$41-58) in the US have raised the specter of data privacy in the mobile age. Now, questions of regulatory oversight are paramount to Africa's mobile sector. Last summer, Phuthuma Nhleko, chairman of MTN Group Ltd, told a collection of Africa's most prominent mobile carriers that "The regulatory challenges are top of our mind at all times."

This broad sentiment applies to numerous elements of Africa's mobile industry, but it has specific implications for Africa's approach to user privacy. With millions of people coming online, telecom companies have to grapple with the duality of providing expansive access while also protecting user information.

For most Africans, the first phone they used was a mobile

phone, so privacy standards need to adjust to the steep learning curve associated with instantly stepping into the mobile economy. This means that mobile carriers have a responsibility to preemptively and progressively protect the sensitive information that their users convey through their mobile devices.

Governments are increasingly aware that they have a responsibility to protect their citizens from corporate overreach and privacy violations. As Africa rapidly embraces mobile technology, there is no question that they will face many of the same challenges as the EU and the US, and those challenges are frequently met with legal or regulatory action.

Even so, it's a challenge more easily identified than solved.

Problems with security

Security provisions can be mandated by governments, but they are the developmental responsibility of mobile carriers, and several pressing issues require their immediate attention.

Sim swapping, the egregiously simple practice of stealing someone's cell phone number and using it to attain valuable twofactor authentication codes or to create comprehensive online identities, is on the rise. In just the

Deloitte identifies Africa as the fastest growing market for mobile adoption, and these customers are entering the industry at a transformative time.

past few years, reports of sim swapping have more than doubled, and customers are worse off because of it. Moreover, industry protocols like the Signal System 7 that allows users on different networks to communicate with one another have demonstrated vulnerabilities that make them as much a liability as an asset.

Unfortunately, for customers, there is little that they can do to better protect their data and personal information.

In the US, The Federal Trade Commission concluded, "The mobile carriers are in a better position than their customers to prevent identity theft through mobile account hijacking and fraudulent new accounts." In other words, there is little that customers can do to improve their device security. They are reliant on telecom companies to provide solutions.

Fortunately, the emergence of the blockchain as a viable, enterprise-ready technology could be a game-changer for both customer privacy and security.



New technology brings new solutions

Blockchain originated as the technological underpinnings of Bitcoin, the first and still most popular cryptocurrency. However, since its inception nearly a decade ago, its emerged as a nextgeneration technology that can vastly improve upon current privacy and security infrastructure.

In a comprehensive assessment of blockchain's role in the telecoms industry, Deloitte, identifies four crucial use cases for blockchain technology in the telecoms industry: fraud protection, Identity-as-a-service and data management, 5G enablement, and IoT connectivity.

In short, many of the ambitions and responsibilities of telecom providers are encapsulated in this Perhaps technology. most impressively, the blockchain can securely transfer data without compromising its integrity, and it can do this at speeds that can help telecom companies build upon the progress that they've already made. What's more, "zero knowledge storage" in blockchains can verifv information without revealing the actual data, which can assist telecom companies as they cater to their rapidly expanding user base.

A recent industry report reminds telecom companies of "the ever-present obligation to continue to update legacy IT systems, particularly as they expand into new areas."

To be sure, this obligation has many expressions, but the report overly identifies blockchain technology as an onus of this innovation. Mobile integration is a its critical component of economic and social success, so it's equally as crucial that companies take their responsibility to provide a safe environment for its continued adoption and proliferation. ©

Amazon Web Services Direct Connect live in South Africa

AMAZON WEB SERVICES (AWS) Direct Connect is now live in South Africa and located at Teraco. The platform allows clients to directly connect to their AWS resources in an AWS region. The service is accessible via a direct cross-connect within Teraco or from the Teraco Cloud Exchange platform in Johannesburg and Cape Town. "This enables clients to build and manage private, SLA governed, connections to multiple clouds over a single physical connection. The Teraco Cloud Exchange, is Southern Africa's only truly neutral switching platform between clients and multiple cloud on-ramps," says Andrew Owens, Teraco technical manager, Interconnection & Peering. He says that Teraco's Cloud Exchange is a robust infrastructure platform, situated in Teraco's collocation facilities providing access to AWS Direct Connect.

Owens says that the benefits of AWS Direct Connect include dedicated connectivity to AWS regions, consistent network performance, and

reduced bandwidth costs: "Reliable and predictable network performance are essential ingredients for the successful implementation of a hybrid or multi-cloud strategy, as applications are expected to seamlessly operate between private and multiple public cloud environments. Through the addition of AWS Direct Connect, via the Teraco Cloud Exchange platform, enterprises and service providers can now establish predictable, high performance, SLA based connections in South Africa."

In addition to launching AWS Direct Connect, Amazon also announced the availability of Amazon CloudFront in South Africa. Amazon CloudFront is a content delivery network (CDN) offered by Amazon Web Services. Content delivery networks provide a globally



distributed network of proxy servers which cache content, such as web videos or other bulky media, more locally to consumers, thus improving access speed for downloading the content.

Amazon recently hosted the AWS Summit Cape Town at the Cape Town International Convention Centre. Owens noted that the increased Amazon activity shows increased interest in the potential of the continent. At the summit Owens discussed AWS Direct Connect and how to extend an onpremise network to AWS locations over Ethernet. Speaking ahead of the event, he said: "The Summit is a great opportunity for both experienced and those new to AWS to understand the platform. I am looking forward to sharing our experience and knowledge of AWS Direct Connect with our local community."

Djibouti Telecom launches 4G+ telecommunications network in line with 2035 development plan

DJIBOUTI'S HEAD OF state, Ismail Omar Guelleh has announced the launch of a new 4G+ telecommunications network in Djibouti. The launch comes at a time when new information and communication technologies have transformed the world, he said.

The authorities are aware of the importance of digital technology in people's lives and the economic development of countries according to Omar Guelleh. "This is why we are more than ever determined to make the most of our potential in the telecommunications field," the president said.

Djibouti Telecom, the national operator has rolled out several submarine fiber optic cables to make Djibouti a technological crossroads of Africa, in accordance with the Djibouti 2035 development plan. The general director of the company, Mohamed Assoweh Bouh, noted that their new strategy is in full compliance with the guiding axes of this vision.

Djibouti currently has the largest number of international connections in East Africa, with connections to eight cables that connect the country to Europe, East Africa, the Middle East, East to the Eastern Mediterranean and to South Asia.





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AfricaCom 2018 – Where the digitally connected converge

Shaping Africa's digital future - AfricaCom launches free headliner conference tracks with world-class speaker line-up. By Hiriyti Bairu.



HETHER YOUR FOCUS is connectivity infrastructure, disruptive technologies, digital services or ICT strategy, AfricaCom 2018 – 13 to 15 November at the CTICC in Cape Town, South Africa – will be the place to be to shape Africa's digital future.

AfricaCom in 2018, turns 21 and will be bigger and better than ever, taking into account the ever increasing influence of technology on everyday lives. As a result, several new features will be launched this year. As always, the world's largest Africafocused technology, media and telecommunications (TMT) event, will offer visitors and delegates the prospect to discover and conclude business opportunities, as well as network with some of the most progressive minds in the sector.

More than 30 of these thought-leaders, over three days, will advance the conversation around Africa's digital transformation through a series of expert sessions – the AfricaCom Headliners – which are free of charge to all registered visitors this year. "We made a decision to open up a number of key conference areas, as we recognise the importance and significance of the conversations taking place around a multitude of topics all connected by the backbone of technology," commented Tom Cuthell, portfolio director of KNect365, organisers of AfricaCom. "The more people involved in these discussions, the quicker Africa will advance towards the Fourth Industrial Revolution."

The critical role of policymakers and regulators in determining how Africa and Africans will connect to strengthen their economies forms part of this year's agenda.

Where do Telcos fit in the digital ecosystem?

With greater connectivity comes greater responsibility and a requirement for new business models to address this latest era of communications. As the conduit for all this connectivity, telcos will need to explore how they can connect the next 1 billion and unlock the true value of Africa's digital transformation – beyond the commercial.

Addressing these issues, the Headliners will present a number of keynote addresses and discussions, including the evolving role of the African telco in a new age of data and digital services by Rob Shuter, Group President and CEO, MTN, on Day One of AfricaCom 2018. While the Mobile Network Operator (MNO) may continue to own the billing relationship in the current communication equation, the ability for customers to connect, converse and consume content is no longer dependent on telcos, with a myriad of alternative methods available to them. In order then, to do more than reverse downward revenue trends and prosper, telcos need to re-engineer their businesses to grab a slice of the paradoxically, increasing volume pie. This will be one presentation guaranteed to hold attention and stimulate debate.

From LTE to 5G in Africa

Kicking off proceedings on day one though, and under the banner of 'Digital connectivity to drive socio-economic development', will be a discussion around Africa's readiness for 5G. This also sets the scene for 5G Africa (formerly LTE Africa), which will run over two days. 5G Africa will focus on defining and developing preparations for the next evolution of mobile connectivity across the continent.

Supplementing the 5G discussions for premium delegates, are tracks covering 5G enabling technologies – MEC, NFV, SDN, Network Slicing – that will lead to a proliferation of next generation services such as AR/VR, AI and VOLTE.

The IoT

As the Fourth Industrial Revolution continues apace, bringing with it greater connectivity and subsequent products and services, the Internet of Things (IoT) becomes a tangible gamechanger for cities, enterprises (and end users). Consequently, AfricaCom 2018 will concentrate many Headliner discussions and a 3-day IoT World Africa conference track around how this can be achieved. Delegates can unlock the African IoT opportunity with sessions focused on making a business case for IoT; why – and how – IoT will bridge the "digital divide" in Africa and the transformative impact of IoT on Africa's social and economic development.

Kicking off proceedings on day one, under the banner of 'Digital connectivity to drive socio-economic development', will be a discussion around Africa's readiness for 5G.

As Africa urbanises with more devices connecting to the IoT, the African smart city arises but, what are the essential ingredients to success? How are ambitions with socio-economic realities aligned and what makes a smart city, smart? Day Two of the Headliners will look at realising the African smart city vision.

For enterprises, the main question is what technologies to use to ensure participation in the digital era; how to separate the hype from the practical – what will really lead to innovation and business



success and how to stimulate a corporate culture that supports innovation and entrepreneurship. Day Two of the Headliners will end with a spirited panel discussion on how to develop a winning ICT strategy.

Delegates can unlock the African IoT opportunity with sessions focused on making a business case for IoT.

The critical role of policymakers and regulators in determining how Africa and Africans will connect to strengthen their economies, also forms part of this year's headliner agenda. Enabling an African Information-based society will be critical to the continent's ability to advance and transact – a case study, presented by Senator Olabiyi Durojaiye, Chairman, Nigerian Communications Commission, will shed light on how this can be achieved.

The Money

Underpinning all development and future trade, are financial services, so what's next for African Fintech? Headliners will address the opportunities that exist in the midst of this financial services paradigm shift. For premium delegates, Fintech Africa will discuss, among other things, mobile money interoperability with leading MNOs and financial institutions, as well as blockchain deployment and cryptocurrency opportunities in Africa. Top quality fintech start-ups will also pitch their game-changing solutions.

Transmission

Rounding out the Headliner discussions at AfricaCom 2018, is a panel discussion that addresses the shift in how broadcasting models are developing in line with digital transformation across Africa. This content complements the newly launched Africa Video Forum, the evolution of TV Connect Africa.

The world-class speaker line-up in 2018 includes:

- Rob Shuter, Group President and CEO, MTN
- Olabiyi Durojaiye, Chairman, Nigerian Communications Commission
 Hon. Ursula Owusu-Ekuful, Minister of
- Hon. Ursula Owusu-Ekuful, Minister of Communications, Republic of Ghana
- Jean Philbert Nsengimana, Special Advisor, Smart Africa, Former Minister, Ministry of Information Technology and Communication, Government of Rwanda
- Mohamed Dabbour, CEO, Africa, Millicom
- Babak Fouladi, Group Chief Technology & Information Systems Officer, MTN
- Siyabonga Mahlangu, Group Executive: Regulatory Affairs and Government Relations, Telkom
- Nicholas Naidu, Managing Executive: Technology Strategy, Architecture & Innovation, Vodacom
- Francis Mumbi, Innovation Lead, Stanbic Bank
- Joseph Hundah, Group President and CEO, Econet Media
- Jason Lobel, Group Head of Video, MTN
- Botlenyana Mokhele, Councillor, ICASA
- Catherine Wanjiku Njari, Senior Manager, TV & Media Content, Safaricom
- John Momoh (OON), CEO, Channels Media Group and Chairman, BON

AfricaCom 2018 will bring together 14,000 attendees, 450 speakers and 400 exhibitors showcasing technologies and solutions covering everything from 5G, Al, IoT, Fintech, Blockchain and beyond, with a host of new content and exciting developments. @

To register for your free visitor ticket, purchase a delegate pass or find out more about AfricaCom 2018 visit https://tmt.knect365.com/ africacom/

Satellite broadband boosts African development

The spread of satellite technology across Africa promises great things for the continent's longterm socio-economic development, starting with improved access to broadband services.



ATELLITE TECHNOLOGY HAS already had a major impact on Africa, improving telecommunications, mapping services, and general understanding of the region. Long-term, this is expected to yield significant material gains, boosting productivity, driving business and enhancing socio-economic development.

New projects and technologies from major players in Africa's satellite tech industry continue to push for more, from improving healthcare services and education, through to assessing climate change.

With the advent of better communications, digital technology, and availability, the potential is limitless.

Right now, much effort is being made to expand satellite broadband overage across Africa, a potential trigger for a host of socioeconomic advances.

Intelstat is one company that has been busy expanding its footprint across the continent.

Uganda's Communications Commission (UCC) plans to utilise its satellite services to grow the deployment of 3G wireless infrastructure and expand broadband access for businesses and communities in rural areas.

A pilot programme, using IntelsatOne Mobile Reach Solar 3G satellite services delivered via the Intelsat 37e satellite as well as Gilat's SkyEdge II-c multi-application platform, will provide high-quality broadband connectivity to two communities: Bufundi in Rubanda and Kibuku in Ntoroko.

The objective is to demonstrate the ease of deploying a hybrid satellite solution — which incorporates a turnkey, solar-powered package to expand 3G service over a 2.5-km radius, including power supply and all satellite and cellular equipment — and study its commercial viability.

An exciting new entrant to the satellite broadband services market could be social media giant Facebook, which hopes to launch its own Athena Internet satellite soon.

Godfrey Mutabazi, head of the UCC, said it means citizens in some of Uganda's most isolated communities will experience "the power of reliable connectivity and the economic and social benefits it delivers."

Uganda has set a goal of achieving minimum broadband speeds of 3 Mbps and coverage of 100 per cent of rural areas by 2020.

Intelsat's chief executive, Stephen Spengler says that while satellite services have been at the core of communications networks in Africa for decades, simply improving technology is not enough. He says the entire telecoms sector needs to make it "simpler" to integrate all these technologies into a seamless network to truly overcome the challenges network operators and governments both face.

In June, Intelstat also announced it had joined the Smart Africa initiative, a project to accelerate sustainable socio-economic development on the continent through affordable access to broadband and ICT services.

Expanding coverage

Eutelsat has likewise prioritised broadband services in the coming years. It recently appointed Jean-Claude Tshipama to head up its Broadband in Africa unit. His core mission is to ensure that Eutelsat's broadband business is successfully deployed across Africa, drawing on the in-orbit resources of the Al Yah 3 satellite which will operate the service after entering operational service next summer. The operation of the Al Yah 3 satellite will be followed again next year by the launch of the KONNECT satellite.

An exciting new entrant to the satellite broadband services market could be social media giant Facebook, which hopes to launch its own Athena Internet satellite soon. It is the first of a planned constellation of satellites that could commence launching from 2019. The US Internet company wants to beam broadband access to remote areas of the world, including Africa, and hopes that its satellites in lower orbit, formed in a cluster, will yield faster speeds for users on the ground. It is keeping its own counsel on its ideas for now, however, and only divulged the information following a Freedom of Information request in the US.

The satellite constellations replace an earlier plan to deploy solar-powered Internet drones in low orbit, which Facebook had been working on for around four years.

Gazprom Space Systems (GSS) has also raised its profile in the region, recently announcing a contract for using its Yamal-402 steerable beam, which is now focused to service parts of northern Africa. The Yamal-202 satellite also continues to attract providers from the region. Africa and the Middle East together account for roughly half the company's foreign earnings.

South Africa recently won a bid to host the prestigious SpaceOps 2020 conference, which will bring together over 600 global experts to Cape Town in two years time.

And its services are yielding direct benefits in terms of socio-economic development. At last year's Africom trade event, GSS reached an agreement with Gilat Satellite Networks for the expansion of an education project in Ghana.

This year, Azercosmos intends to launch its Azerspace-2 telecoms satellite, which will provide additional strong signal coverage over



the African continent, something that has not gone unnoticed by Africa's leadership.

Dr. Amani Abou-Zeid, the African Union's (AU) commissioner for infrastructure, energy, ICT and tourism, visited Azercosmos's Baku headquarters in July to discuss the project.



Azerspace-2 will deliver additional satellite imagery that could benefit infrastructure, agriculture, ecology, mapping and other areas, according to Azercosmos.

It is five years since the launch of its first telecoms satellite, Azerspace-1, which covers Europe, Africa, the Middle East, Central Asia and the Caucasus. Abou-Zeid also explored the possibility of students from AU countries advancing their knowledge of the space industry with the company. South Africa is already taking strides to raise its profile in the space race utilising home-grown talent, with Denel Spaceteg developing the EO-Sat1 satellite, a high resolution multispectral imaging facility to be used for urban planning, disaster management and food security. The country is also looking to re-establish satellite launch capabilities in the Western Cape. The homegrown satellite would go part of the way to reducing Africa's almost complete reliance on overseas satellites.

South Africa has won a bid to host the prestigious SpaceOps 2020 conference, which will bring together over 600 global experts to Cape Town in two years time; it is the first time the event will have been held on the continent and represents a major boost for the South African National Space Agency. *©*

Martin Clark

Improving access to knowledge

While Afrikaans and isiZulu have active sites on Wikimedia most other African languages are either missing, or don't have regular contributions. Hiriyti Bairu talks to Douglas Scott, President of Wikipedia ZA, who says everyone has the potential to contribute something to its shared knowledge.

One of the challenges the continent faces is the means to access computers and Internet. What do you think needs to be done across to improve accessibility?

Zero-rating mobile data access to free knowledge content on the Internet, so that people will not have to pay data costs when accessing or editing sites such as Wikipedia would help improve accessibility. Over the past five years, we have seen a great increase in affordability and levels of ownership of devices that can access content on the Internet. Cheap smart phones and other devices have given a very large number of people the platform to access information. The biggest barrier now seems to be the high cost of data that is preventing people in South Africa from accessing content.

How do you think governments on the continent can support in bridging the information gap on Wikipedia?

Encouraging Internet service providers, especially mobile data providers, to lower data costs would be a good start. Continuing to invest in free universal education and access to education is also very important. Supporting free speech and free access to information is also extremely important and often over looked. It is very hard for people to be well informed and active digital citizens if government is hugging their data, hording information, or censoring content. Free speech as well as free from cost access to information are both critically important and are the two pillars of the Wikipedia community's philosophy.

African contributors are able to join a WikiProject around specific areas of interest where they can create articles on a specific topic on Wikipedia. Do you think it is of importance for users to share their passions with like-minded people in this way?

Yes, we feel it is very important that people are free to share their passions in this way as it allows for the creation, expansion and continual improvement of a vast range of different topics on Wikipedia and other WikiProjects. For example, without people who are passionate about trains Wikipedia would not have good articles on trains. The same goes for medical topics, science topics, current events, economics, places, cultural topics, social issues... the list goes on and on. Without the large number of editors having the freedom to voluntarily write on what they want to write about then the free encyclopedia that is Wikipedia, or the free travel guide that is Wikivoyage, or the free repository of photographs that is Wikimedia Commons, or the many other free Wikimedia projects out there would simply not exist.

There are many African languages missing or do not have regular contributions for Wikipedia. How do you think the importance of Wikimedia as a tool to gain and share knowledge could be highlighted across Africa? A very large proportion of African language Wikipedias do not have regular contributors which greatly impacts on the amount of content that exists on them and therefore greatly negatively impacts on how useful they can be to other people who speak that language. Increased coverage in the media of Wikipedia is one of, if not the, best way to encourage growth of Wikipedias. As more people learn about a language version of Wikipedia and start editing them it increases the amount of content on those Wikis thereby making them more useful to other people thereby increasing the number of readers of that Wiki thereby increasing the number of editors adding content. This cycle creates and grows a community of volunteer editors and it is the community that makes Wikipedia a reality. Wikimedia South Africa engages in a number of outreach activities to encourage more people to edit Wikipedia such as organising edit-a-thons that focus on editing a group of articles on a specific topic to workshops to show people how to edit Wikipedia.

How do you see Wikipedia evolving in the next 10 years, and specifically what do you think an increased uptake of Wikpedia will bring to the continent?

We expect to see Wikipedia to grow to better reflect local knowledge and information in addition to global knowledge. An increase in the diversity of editors will create a more wholistic and ever more useful Wikipedia for all. Increasing access to free knowledge reduces barriers to education and thereby makes it easier for people to improve themselves, their community, and their country. It will also increase awareness of Africa by the rest of the world. More people in Africa will create better and more locally relevant content at will help inform people in the rest of the world about Africa. Just as Wikipedia currently does for Europe or America.

Over the past five years we have seen a great increase in affordability and levels of ownership of devices that can access content on the Internet.

What was the objective of the recent Wikimania conference in Cape Town and what kind of impact do you think it will have across African countries?

The were multiple objectives for this year's Wikimania in Cape Town. The first was to raise awareness of Wikipedia and need for more people in Africa generally and South African in particular to edit Wikipedia. This includes raising awareness of African language Wikipedias. The second was to highlight the need to encourage a more diverse group of people to edit Wikipedia and discuss ways of achieving this. The third was to build relationships with institutions such as libraries and universities so we can continue outreach work in the context of Wikipedia and other future Wikimedia projects. The fourth was to strengthen Wikimedia ZA and better bring together existing Wikipedia editors in the Southern African region whilst also connecting them with the broader Wikimedia community internationally. Creating a strong and successful Wikipedia is an exercise in volunteer community building, both locally and internationally. We hope this year's event to have a long lasting impact on increasing the number of editors in African, increasing the quality of Africa related content on Wikipedia, and focusing the existing Wikipedia editing comunity on how to best connect with the rest of the world. @

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SatADSL covers Africa, Middle-East, Europe, Central Asia and Latin America with 10 satellites in Ku-, Kaand C-Band.

Currently, SatADSL counts more than 75 partners worldwide.







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Vue du sommet : pourquoi Silicon Valley lève le camp pour Alger

Selon les investisseurs de Silicon Valley, le secteur technologique algérien offre un potentiel encore inexploité et la révolution numérique qui se prépare aura un impact positif sur l'écosystème algérien



A VALEUR DES investissements de capital risque façonne le paysage de l'industrie technologique africaine, encore émergente. Si l'écosystème formé par la Silicon Savannah du Kenya occupe déjà le devant de la scène depuis une dizaine d'années, les nouvelles opportunités de développement d'infrastructures en Afrique du nord sont de plus en plus attractives pour la communauté d'investisseurs de Silicon Valley. Fait encore plus révélateur, les entrepreneurs de l'industrie technologique mondiale, la diaspora africaine, ont commencé à rentrer au pays, ou tout du moins à opérer sur plusieurs continents, espérant tirer parti d'opportunités fructueuses en lancant de nouveaux projets technologiques dans leur pays natal.

Cet effort d'innovation devrait à la fois favoriser le développement économique et les progrès socio-économiques. Sur l'ensemble du continent, les entreprises développent de nouvelles applications high tech, adoptant les technologies nouvelle génération issues d'autres pays ou modifiant les technologies existantes pour les rendre commercialement viables sur les différents marchés africains. Cet élan cherche avant tout à encourager la croissance de l'écosystème local et la création d'emploi pour stimuler l'innovation.

Alger est la tête de proue de ce mouvement, et plusieurs investisseurs de capital risque de Silicon Valley étaient présents lors du récent Sommet de l'investissement et de la technologie mondiale pour les villes intelligentes, les 27 et 28 juin 2018. Avant l'événement, Paddy Nathan, directeur général de Valley Innovation Centre, a commenté :

« L'Afrique peut adopter la devise de Silicon Valley, « apprendre vite », en travaillant avec des start-ups pour donner un coup d'accélérateur à l'innovation et au développement des infrastructures. Alger se présente de plus en plus clairement comme un marché véritablement viable, qui n'a pas peur de réécrire les règles de l'entrepreneuriat. La capitale algérienne permet à une nouvelle génération d'investisseurs de cultiver le potentiel d'un écosystème réellement unique. »

Le moteur de l'innovation est de soutenir le développement économique et socio-économique

La croissance du financement par capital risque

L'analyse conduite par Crunchbase and TNA Analysis indique que les investissements dans les start-ups africaines se limitaient à 400 millions US\$ pour 2014, alors que les prévisions s'élevaient à 1 milliard US\$ d'investissements dans les start-ups africaines pour la période 2012-1018.

Toutes les indications semblent conforter la croissance continue du secteur dans un avenir proche. Les entreprises du continent misent sur les technologies modulaires utilisant Blockchain et l'intelligence artificielle pour développer de nouvelles applications, commercialement pertinentes sur les marchés africains.

Comme l'a souligné Media Sif, entrepreneur de Silicon Valley, « à l'âge de la numérisation, nous avons l'opportunité de nous moderniser, de nous transformer et d'automatiser les processus. Pour concrétiser cette vision, il nous faudra relever les défis qui nous attendent à la croisée des chemins entre les technologies de communication, d'information et d'exploitation, et faire le pont entre des domaines administratifs, des organisations et des chaînes logistiques autrefois distincts. Le grand nombre d'entrepreneurs issus de Silicon Valley qui convergent aujourd'hui vers Alger illustre parfaitement cette tendance. »

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Des modèles d'innovation sur mesure

Pourtant, le paysage entrepreneurial et financier du continent africain est très différent de celui de Silicon Valley. Adapter l'écosystème d'innovation spécifique au contexte des pays d'Afrique est absolument essentiel.

Le rapport 2017 de Marketeur Drop, viceprésident de la Banque mondiale pour l'Afrique, met l'accent sur le fait que, pour « améliorer la capacité d'innovation, les pays africains doivent investir dans les trois aspects qui permettront de répondre aux besoins des politiques d'innovation. Le premier aspect concerne les capacités d'organisation et de gestion. Il est prioritaire parce qu'il permettra aux organismes d'adopter les innovations existantes et d'initier des collaborations avec les avancées technologiques d'autres pays, sur lesquelles le continent africain pourrait s'appuyer. Le second implique le développement de nouvelles capacités technologiques, pour que les pays africains puissent adapter les technologies et concevoir leurs propres innovations. La troisième étape concerne l'investissement à plus long terme dans les programmes technologiques. »

Karin Inampudi d'Alchemist Accelerator affirme : « il est crucial que les contrats commerciaux encouragent les investissements dans l'écosystème local, pour favoriser le transfert de connaissances et de technologies, l'amélioration des compétences et des opportunités d'emploi, et faire mûrir le véritable fruit des investissements. »

Exploiter le talent et la diaspora africaine

Avec plus de 30 millions d'africains vivant hors de leur pays natal, la diaspora africaine a un fort potentiel et se présente comme une source majeure de fonds pour le développement et de partenariats. Les investisseurs africains ont toutes les chances d'avoir une conscience sociale pus aigüe que celles de leurs pairs étrangers en raison de leurs liens socioculturels solides et de leur compréhension profonde des contextes locaux. Ils sont également en mesure de transmettre leur expertise et compétences en mathématiques, sciences, technologie et ingénierie pour combler le fossé qui sépare le continent de la concurrence.

L'écosystème de Silicon Valley s'articule avant tout autour du talent et c'est de là que tout découle », explique le Dr Raid Harty, de Smart City Algiers. « C'est pour cette raison que la mobilisation efficace des talents est un facteur essentiel au succès des projets d'innovation. C'est la vision qu'Alger souhaite incarner et elle offre aux investisseurs ambitieux l'opportunité de transférer leurs connaissances et de les adapter aux spécificités de l'écosystème local. »

Le projet Algiers Smart City stimule également l'innovation depuis l'intérieur. Le sommet a mis à l'honneur différentes startups récemment lancées dans le cadre du projet Smart City (ville intelligente). Ursiniaa, fondé par Abderrahman Aitsaid, est en passe de développer des solutions IoT pour les applications Smart City et est convaincu que le projet marque l'avènement d'une nouvelle Algérie. Il explique : « Les centres technologiques africains assument de nombreuses caractéristiques. Ils fournissent un carrefour aux jeunes étudiants, ingénieurs et entrepreneurs peuvent se rencontrer pour déployer leurs compétences, leur énergie et leur esprit d'innovation. C'est la clé : travailler ensemble pour donner vie aux possibilités. » 🕐

Fatiha Slimani, directrice du projet Smart City Algiers, affirme : « pour mieux tirer profit de la diaspora, les décideurs doivent d'abord identifier les talents qui ont toutes les compétences utiles et peuvent proactivement définir les initiatives qui contribueront au mieux au développement et au leadership. Le potentiel offert par la diaspora est capital, et tous les membres de cette communauté sont invités à contribuer au développement de leur pays natal. »

IBC to highlight latest trends, strategies and developments in online TV and video

MEDIA, ENTERTAINMENT AND technology show IBC will take place 13-17 September in RAI Amsterdam. This year's IBC Content Everywhere Hub will host 10 expert panel discussions and 34 product demos. The hub combines an exhibition with the Hub programme designed to help visitors learn and experience how innovative new technologies are expanding the opportunities arising from the significant growth of content consumption online.

The agenda for the hub is focused on 10 panel discussions bringing a number of leading experts to discuss key issues, such as the implications for the digital media sector of high profile emerging technologies such as 5G, Edge computing and blockchain. According to event organisers, IBC will also cover topics including how to successfully grow an OTT service, how artificial intelligence and machine learning are affecting content creation, OTT distribution and monetisation, new business models and innovations in programmatic advertising, as well as the convergence of broadcast and telecoms.

The 2018 edition of the show will see 34 product demonstrations covering the entire OTT distribution chain, including online video platforms, transcoding and streaming solutions, content security options and monetisation techniques. One of the companies exhibiting at this year's show is Globecast. The broadcasting firm will launch its new Digital Media Hub suite of services for sports and live events at



this year's show. The Digital Media Hub allows a live feed to be treated in multiple ways to create content suitable for cross-platform use, in both real-time or for use at a later date. The speaker line-up will include experts from small start-ups to some of the biggest names in technology including Google, Alibaba, CSGi, Telia, Ooyala and Roku.

Companies are increasingly seeing the need to offer consumers 'content everywhere' and catch-up

services, which are now important requirements for many broadcasters. This is to both complement traditional distribution, as well as telcos wanting to add video to their portfolios or independent content creators or brands wishing to go direct-to-consumer. The ability to deliver content 'over the top' across broadband networks has also given new players the opportunity to establish their own direct relationships with new audiences.

The African colocation data centre market is growing at a rapid pace.

Three tips for strategic colocation deployment

Dinesh OP of Siemon highlights three tips for data centre design and physical layer component selection that can effectively speed up deployment, cut costs and support expansion for today's colocation facility.

G LOBALLY, INVESTMENT IN data centres and colocation facilities is rapidly growing and is valued to be worth over US\$70bn by 2022. Africa represents a unique opportunity for this sector due to rapid economic growth and technological advancements. The African colocation data centre market is growing at a rapid pace, and colocation data centre managers will need to find ways to expand and equip their facilities quickly and cost effectively to meet increasing demand and the need for higher speeds.

Modularity with pre-configured cabinets

Selecting a modular design approach can efficiently support planned data centre expansion. This is because a modular design uses groups of cabinets, also referred to as pods, which can be easily repeated as the data centre grows. These pods often consist of two symmetrical rows of cabinets in a hot/cold aisle configuration and are typically based on capacity, function or application. Once the initial pod design has been defined, it provides a predictable set of costs and resources for easily deploying future pods based on planned data centre growth.

Fibre optic cabling remains the medium of choice for data centre backbones, but there is a shift happening in fibre connectivity.

Pre-configured data centre cabinets support a modular design approach. These types of cabinets are pre-assembled and preloaded with components, meaning that fibre or copper connectivity, power distribution units (PDUs), cable management or other accessories are already pre-mounted into the cabinet when it arrives at the customer site ready for final connections and installation of active equipment. This process eliminates delivery of several different components, as well as component location and installation in specific cabinets, and therefore requires significantly less time and labour. When pre-configured cabinets are deployed in a modular pod-based design, facilities can be deployed with a 30 per cent time and labour saving.

Wider cabinets with shared zero-U space

In other situations, existing tenants might need to expand beyond the boundaries of the space they currently lease. This can create a challenge for colocation operators, especially if there is no or very limited additional floor space available to rent out.

Colocation operators often assume that they can maximise space by accommodating more cabinets within the square footage of their facility and opting for smaller width 600mm server cabinets, when quite the opposite is true. Existing floor space can be maximised by deploying wider cabinets, especially with those that share zero-U space between bayed cabinets for power distribution, patching and cable management which allows for more servers to be placed inside the actual cabinet. Since power consumption in colocation facilities is often based on the entire cage and divided by the number of cabinets housed in that cage, with fewer larger cabinets, the power supplied to each cabinet can be increased and more servers can be supported per cabinet. Smaller 5kW cabinets for example can support approximately 12 servers each while larger 6.25kW cabinets can support 15 servers each. So, bigger is better! This principle of growing vertically within the boundaries of leased space, as opposed to adding more space, also leaves colocation operators with more floor space available to accommodate additional tenants.

Africa's power grids are always under pressure to deliver consistent power, and efficient power management in a data centre will help the facility to lower costs and demand on the grid. Reducing 'stranded power' is one way to improve efficiency.

Stranded power is power that is available but not used, and it typically occurs when more power is distributed to a cabinet than what is actually consumed by the active equipment of that cabinet. It can be reduced by addressing how power is distributed throughout the facility.

Traditionally, each rack or cabinet houses two power distribution units (PDUs) to distribute power to active equipment. If PDU usage is optimised with PDU outlets allocated more effectively, the number of stranded power outlets can be reduced. One way to achieve this is to deploy data centre cabinets that feature shared zero-U space between adjacent cabinets. This shared space allows connectivity and power to be shared between equipment in adjacent cabinets. In other words, PDUs only have to be installed between



Efficient power management is key to delivering reliable power.

Africa's power grids are always under pressure to deliver consistent power, and efficient power management in a data centre will help the facility to lower costs and demand on the grid.

every other cabinet, which cuts the upstream power connections in half and optimises PDU usage. When PDUs are shared between



Ethernet speeds are evolving to support the ever-increasing demands of Big Data, and storage-intensive cloud-based applications.

equipment in two cabinets, stranded power outlets can be reduced by up to 75 per cent, improving the overall power usage effectiveness (PUE) in the data centre.

Connectivity ready for 8-fibre applications

Lastly, cable and connectivity selection will determine if a colocation facility is prepared for what comes next, as Ethernet speeds are evolving to 200 and 400 Gb/s to support the ever-increasing demands of Big Data, and storage intensive cloud-based applications.

Fibre optic cabling remains the medium of choice for data centre backbones, but there is a shift happening in fibre connectivity. Going forward, both multimode and singlemode fibre applications will be dominated by 2- and 8-fibre solutions.

Colocation providers looking to expand should consider 8-fibre MPO solutions for their fibre infrastructure, instead of the commonly used 12-fibre MPO solutions. This is because 8fibre MPO provides a much more efficient and cost-effective method to support both current and future duplex and 8-fibre applications, such as current 40GBASE-SR4 and 100GBASE-SR4 and future 200 Gb/s and 400 Gb/s applications. Using 12-fibre MPO solutions for 8-fibre applications means that 4 fibres (or 33 per cent) of the optical fibre aren't utilised, which has a negative impact on costs and density.

The colocation data centre market in Africa is growing rapidly. If colocation owners take an effective approach to data centre design, facilities can be expanded quickly and cost effectively to keep up with rising demand. ©

Dinesh OP, technical manager for Africa at Siemon

Cloud if effectively deployed could unlock growth opportunities across Africa.

Cloud computing should be viewed as an enabler to drive inclusive development in 2018

Corine Mbiaketcha Nana, managing director Kenya Hub covering East, Central and West Africa at Oracle.

OT FAR FROM Oracle's Nairobi office is the head office of Kenyan telco, Safaricom, whose mobile money service, M-PESA, is having a roaring success in driving financial inclusion in the East African country. In 2017, researchers from the Massachusetts Institute of Technology found that access to the M-PESA ecosystem had lifted about 194,000 Kenyan households, which represents two per cent of the country's households, from extreme poverty. This included moving from subsistence farming into business. It is the cumulative effect of these kinds of economic actions and reactions, which have earned Kenya the moniker 'Silicon Savannah', that could progressively translate into narrowing the gap between Africa's rich and poor.

Inclusive development is a key area of focus for the world today. Hence the mantra that has been popularised by the Sustainable Development Goals (SDGs) – 'Leave no one behind'. While there is excitement around a resurgent economic environment in Africa, it is important that the benefits of future economic fortunes are inclusive.

Cloud, if effectively deployed, has the answer to the challenge of unbalanced development that plagues the continent, which continues to heighten the risk of insecurity and instability. According to the United Nations Development Programme (UNDP), sub-Saharan Africa remains one of the most unequal regions globally, with ten of the 19 most unequal countries globally being on the continent.

With cloud, new ecosystems that are employing millions of people are being birthed.

Africa's biggest challenge is that between five to ten per cent of the population is extremely wealthy, with the rest who are classified as poor, struggling to meet minimum living requirements. Technology is a strong enabler for efforts to bridge this gap and put the continent on a firm development path; it is the key ingredient to inclusive development.

View cloud computing as an enabler

Take cloud computing, for instance, which has been in use by some African companies for up to 15 years. However, it is finding further use in more recent transformative technologies such as drones, artificial intelligence, blockchain, and robots. Drones, for instance, are being used in the health sector, to deliver medicines, blood and other critical medical supplies in hard-to-reach places in Africa's hinterland.

To take advantage of these rapid changes, sustained strategic investments are required to enhance the penetration of cloud to all parts of the continent and unlock its potential to all. The ensuing benefits would range from social and economic impact to governance. However, all this would have to start with a mind shift amongst African people, companies and overnments.

Technology needs to be looked at in the

right way. Businesses often invest in technology as if they are acquiring a commodity. Cloud should not be thought of as a solution in itself but as an enabler. Thankfully, companies and individuals no longer need to procure cloud services; it is perfectly possible to pay as you go.

Technology touches everything and can make a huge difference if it is used to enhance the lives of citizens. Through cloud computing, individuals, irrespective of their trade, are able to improve their livelihoods. From lawyers to chefs, technology makes it easier to attract more work and engage more with customers. Similarly, with cloud, firms can gain new market share through bespoke solutions dedicated to the African market. This could translate into job opportunities. In the financial services space, as well as manufacturing, investment in data centres has opened up many opportunities, which is a step in the right direction. After all, a study by the UNDP found that limited opportunities for earning livelihoods is among the key drivers of inequality on the continent.

Cloud is here to solve specific business challenges

Cloud is the ultimate answer to a more inclusive Africa. With cloud, new ecosystems

A study by the UNDP found that limited opportunities for earning livelihoods is among the key drivers of inequality on the continent.



Corine Mbiaketcha Nana, managing director Kenya Hub covering East, Central and West Africa at Oracle

that are employing millions of people are being birthed. In Kenya, where mobile money is thriving, a whole ecosystem is emerging around this budding industry. Statistics from the Communication Authority of Kenya (CA) for the 2016/2017 financial year, estimate that the country today has 184,537 mobile money agents, a figure which continues to grow. All these are investments that are generating

Cloud, if effectively deployed, has the answer to the challenge of unbalanced development that plagues the continent.

returns for the owners and creating employment opportunities that were not there at the turn of the century, before mobile arrived in Africa. In Kenya, where mobile penetration is at an impressive 90.4 per cent, according to CA, the opportunities for earning livelihoods go beyond mobile money.

Technology's transformative potential for firms still benefits the individual. When companies, even in traditional sectors and industries, become more efficient using technology, they are able to thrive and employ more people. The economic benefits of a flourishing private sector are enormous, most importantly in the creation of employment opportunities – directly and indirectly by spurring growth across the value chain and related industries.

Cloud adoption has to be on a mass scale as opposed to how it has been perceived historically – as an enterprise solution. Customers need to know that they can decide on the unique path their cloud journey will take and where they want to invest first, whether it is in human resources, customer experience or disaster management, among others.

The continent is well positioned to ride the technological wave to transform businesses, governments and citizens. Cloud has to be impactful in Africa. @

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ICT's role in addressing food security in Africa

Education and technology can play a huge role in ending hunger and malnutrition in Africa, according to leading experts in communications technology and food security, who will be attending the eLearning Africa conference this September.



URRENT ESTIMATES SHOW, around 14.5 per cent of people living in Africa's poorest regions are hungry or malnourished. The victims in this scenario are usually children and the World Health Organisation reports, hunger and malnutrition are still the main causes of child mortality in developing countries. However, that could all be about to change.

Attending the conference to be held in Kigali, Rwanda from 26-28 September include speakers from Ghana, Rwanda and Zambia, who will show how new initiatives in the education sector in a number of African countries are already helping to combat malnutrition. They expect that ICT, which is increasingly being used to improve African agricultural output, together with a new focus on providing the right people with the necessary skills, could be the key to eradicating food poverty. One of the speakers at the conference will be Kofi Barimah of Ghana Technology University College (GTUC), who will explain how GTUC has used eLearning to enhance its nutrition programme. He points out, however, that malnutrition is still a serious problem in parts of Ghana.

'Kwashiorkor', which has found its way into the English dictionary, was derived from 'Ga', a

As part of the MCSP programme, more than 600 health care providers in 148 health centres have now already been successfully given on-thejob ICMI training. native Ghanaian language," he says. Barimah notes that 'Kwashiorkor' is a term coined to describe severely malnourished children and infants due to a lack of dietary protein. "The mere fact that the English name for a malnourished child comes from a Ghanaian language may help elucidate the seriousness of this problem in Ghana and Africa as a whole," he adds.

With the support of a small grant from the Catholic University College of Ghana and in partnership with the University of Southampton and the International Malnutrition Task Force, GTUC has integrated an online course on "caring for infants and children with malnutrition" into its degree programme on Public Health. The eLearning course, which has successfully integrated new learning and teaching materials, gives students and faculty members access to best practices for maternal and child nutrition, using both CDs and online learning.

"The project has been very much successful, with students applauding the IMTF and the UoS for such a wonderful intervention," says Barimah. "The team has been able to roll out the integration of the first batch of students with promising results. Over one thousand students have been trained during the first year of the introduction of the modules and others are yet to benefit."

Mudukula Mukubi of the Ndola Nutrition Organisation in Zambia will present evidence of the positive effects of ICTs on the delivery of key skills to households headed by women or children. The research is part of a project, funded by SPIDER, on self-help programmes for the households.

"The project seeks to address the lack of entrepreneur and livelihood skills faced by poverty-stricken women and child-headed households in the rural parts of Luanshya, Masaiti and Ndola districts of Zambia," he explains. "The project provides skills training in poultry and soybean production... using ICT tools, including smart phones to access and exchange information on social media."

Rwanda's experience in implementing a World Health Organisation (WHO) programme on the Integrated Management of Childhood Illness (ICMI) will be the focus of a presentation by Jean de Dieu Gatete of the Maternal and Child Survival Programme (MCSP). The programme, which is part of the WHO's strategy to reduce mortality and morbidity in



GTUC has integrated an online course on "caring for infants and children with malnutrition".

children by improving the management of common illnesses, was adopted by Rwanda in 2006 and is currently practised in public health centres across the country.

However, in spite of national clinical guidelines for the treatment of all children under the age of 5, only 65 per cent receive the recommended care. Less than 40 per cent of practitioners in Rwandan health centres have received ICMI training. The MCSP programme, which has surveyed 148 Rwandan health centres in 12 districts, has been exploring options for the roll out of alternative, sustainable and low-cost



The e-Learning Africa conference will be held at the Kigali Convention Centre. (Photo: KCC)

approaches for the delivery of ICMI training to a larger number of providers.

"The project established that computerassisted learning provided a real opportunity for training health care professionals at low cost (around US\$178 per participant) compared to the standard classroom based training (US\$472 per participant)," says Gatete.

With the aid of online learning as part of the MCSP programme, more than 600 health care providers in 148 health centres have now already been successfully given on-the-job ICMI training.

"The completion of this computer-aided training programme (has) helped to increase the rate of ICMI trained providers from 40 per cent to 79 per cent in six months."

Rebecca Stromeyer, the founder and organiser of eLearning Africa, said: "The full programme for this year's conference is now online and I am very pleased that it includes an in-depth focus on how ICTs can help to tackle the persistent problem of malnutrition in Africa. It is shocking that, in the twenty-first century, so many people still go hungry. I am sure, however, that ICTs can make a major contribution to solving the problem and to ensuring that children and mothers get the care they need."

The eLearning Africa conference is accompanied by an exhibition of new products, services and solutions. It also hosts the annual eLearning Africa Ministerial Round Table, at which education and ICT ministers discuss the latest developments in education and technology. ©

From Antenna to Receiver

Whether in a cable headend, earth station or teleport, reliable signal transmission and distribution form the backbone of a facility's successful operation.

ROM SIGNAL RECEPTION at the satellite dish, to processing and distribution, within a facility, and final distribution, signal quality availability must be properly engineered and managed. Redundancies play an important role in order to guarantee maximum reliability and uptime.

Satellite Reception

Satellite Earth Station antennas, often referred to as satellite dishes, are used for receiving satellite signals from television programming networks at cable head ends and other facilities. Their size may vary from one to as large as 30 metres in diameter, depending on the frequency, satellite position, and service requirements.

The signals are transmitted from space to earth at different frequencies and polarizations between satellite and ground antennas. Television signals are usually sent in the Ku (10-18 GHz) or C-band (3-6 GHz) or a combination, depending on local and regional environments. A growing number of signals around the world are being broadcast at Ka-Band (20/30 GHz). The direction of the electric field of the received electromagnetic wave is called polarisation. The Vertical and Horizontal polarisation are perpendicular to each other. The separation is performed by an antenna feed, which feeds the signals to a Low Noise Block Converter (LNB).

The LNB (Low Noise Block Down Converter) frequency converts the weak signals received from satellites and amplifies them for delivery via cables to indoor reception and decoding equipment typically racked with other electronic networking units.

The high-frequency input signals received (or downlinked) from the satellite in space are typically down converted by the LNB to the L-band (950-2150 MHz) or extended Lband (850-2450 MHz) frequency range and transmitted via cable, such as coaxial copper cables. Specially shaped antennas provide the ability to mount more than one LNB to receive several different satellite positions simultaneously.

Lightning protection devices directly installed on the antenna, or in the downstream signal path, can be used in order to protect equipment in the downlink chain from overvoltage damage. Transfer to the Receiving Device (Inter-Facility Link / IFL)

The next step is the transmission of down converted signals from the LNB to the Integrated Receiver/Decoder (or IRD), which processes and decodes the signals to baseband. This link is sometimes called the Inter-Facility Link or IFL. The electrical transmission over coaxial cable from the LNB often leads to attenuation losses, especially at longer transmission paths. Amplifiers are commonly used at the beginning of the route to compensate for losses. Otherwise, the signal level and Signal-to-Noise Ratio (SNR) can be too low to ensure proper signal quality.

For antennas and systems with transmission paths of less than 100 meters from LNB to IRD, transmission over coaxial cable introduces minimal losses and is typically acceptable for cost reasons. For larger cabling distances, or for systems with multiple antennas, where bigger line losses over coax would result, RF-over-Fiber transmission delivers major advantages and should be used. In addition, if a particularly high signal quality is required, coaxial IFL links may not be a prudent option.

In general, fibre optic transmission advantages include: dramatically higher bandwidth capacity, virtually lossless over much longer distances and extremely low noise. Unlike copper coaxial cable, fibre is very resistant to Electro Magnetic Interference (EMI) effects, such as can be caused by power systems, heating, ventilation, TV and radio station signals and radar. Reduced fire and lightning hazards: no sparks if cut; does not conduct electricity, security: fibre is much more difficult to tap than copper.

The conversion of an LNB output signal onto optical fibr usually takes place in dedicated devices that are housed outdoors in the rack shelters at an antenna site close to the antenna. Compact units are typically used, such as RF equipment supplier DEV Systemtechnik's DEV 7152 outdoor chassis (See Figure 2). Devices mounted directly on the mast of the satellite dish are also in use. These devices can provide redundancy features for the link to the IRD (Receiver) in addition to performing electricaloptical conversion. They can also be used to set important parameters for onward transmission of the downlinked signal.

Redundant transmission and antennas

In order to ensure continuous signal availability, even in the case of failure of a part of the transmission chain, routes are designed redundantly. If a section of the route fails, a backup can take over the signal transmission of the failed part. Implementing one redundancy unit for each transmission part (a so-called 1+1 redundancy) would lead to an increase of costs. Since backup equipment is only required in the rare case of a primary path failure, a more effective solution is to implement an N+1 redundancy. With N+1 redundancy, "N" number of primary units can share the same (1) redundancy unit, thanks to intelligent switching devices on both sides of the transmission line.

The concept of hedging against dropouts with redundancy is not only applied to transmission lines. Antenna fields can also be protected against failure. A motorised steerable backup antenna can be employed to restore failure of 1 to N number of fixed (non-steerable) antennas in a facility. The backup antenna, controlled from an Antenna Control Unit (ACU), can be pointed to different satellite positions in order to restore one of several fixed position antennas. This antenna failure backup restoral can be accomplished using a Redundancy Switch typically installed in an antenna rack shelter. It is also possible to install the switch behind the optical fiber transmission link.

If the redundancy switch detects a malfunction of the signal from one of the fixed antennas, the ACU points the motorised steerable backup (redundancy) antenna to the faulty antenna's satellite position. Once peaked on the correct satellite, the backup antenna can receive and restore the signal in place of the faulty antenna. The signal outage is thus minimised.

For operators that do not have a management system that can perform the switching automatically, or do not wish to perform the integration, there is a special solution from DEV Systemtechnik: the DEV 1993 Antenna Redundancy Switch monitors and switches the signals of connected antennas, and it can completely take over the control of the ACU in the case of a dish failure. As a result, it creates a closed, automated system for achieving antenna redundancy without the need for an external management system. Photo: DEV Systemtechnik

Site diversity

Failures are not only caused by technical defects. Severe weather events can affect entire antenna farms, due to attenuation of satellite signals caused by rain and atmospheric moisture, which more severely attenuates higher satellite frequencies (Ku-Band, Ka-Band). However, since outage-causing weather effects tend to be geographically localised, a concept called Site Diversity can be implemented to maximize uptime and minimise weather effects. With this Site Diversity approach, a redundant downlink antenna facility is built in another location, typically at least 50 to 150 km away. RFover-Fiber (RFoF) is used to link the two sites.

The redundant facility would typically be smaller, possibly unmanned, and may only include the primary satellite dishes, outdoor equipment and shelter. At the "Diversity Site". the downlinked electrical signals are converted for fibre transmission, multiplexed and sent to the main headend receive equipment via fibre optic links.

Since the purchase of fibre optic telecommunications service may be required for the fiber connection, and this can incur a costly recurring fee, methods such as CWDM (Coarse Wavelength Division Multiplexing) and DWDM (Dense Wavelength Division Multiplexing) are typically used to bandwidth-efficiently combine and transport the signals from the antenna Diversity Site to the main site. With CWDM or DWDM, using different wavelengths, up to 16 or 80 different signals can be transmitted over a single optical fiber. At the RF-over-Fibre receive location a demultiplexer divides the multiplex back to individual channels and paths. The switching between the antenna sources can

also be managed by a 1+1 redundancy switch.

Distribution inside the facility

To distribute, demultiplex, transport, and switch RF-over-fiber signals within and between facilities, different approaches are viable, depending on the application and operator preferences. The classic version is a hard-wired distribution: the incoming RF signals are fed to the electrical-optical converters on a splitter. Integrated amplifiers are mostly used here, since splitting reduces signal power. For instance, the signal level drops by about 3-4 dB with a 1:2 splitter. A distribution of 1:128 corresponds to an attenuation of approximately 26 dB. This very significant loss due to splitting must be addressed in addition to any line losses.

DEV Systemtechnik is a key supplier of equipment for RF signal distribution, switching and amplification functions, offering unique solutions in a single chassis. These products are available in different sizes and with different degrees of integration. Combining both the signal conversion and signal distribution in the same device delivers significant space and power consumption savings compared to conventional solutions.

Matrix Switching: Operating Efficiency, Control & Redundancy

Another, much more flexible option than "hard wiring" a facility is to use a Matrix Switch. This makes it possible to switch an input source to any number of outputs, or vice versa. With an RF Matrix Switch, it is no longer necessary to manually reconfigure the cabling or patch panels in order to change signal paths. Redundancies, optical-electrical conversion, and amplification can all be executed by a Matrix Switch. The device can be controlled remotely via a web browser or by an existing management system. The product portfolio of DEV Systemtechnik ranges from compact RF Matrix Switches with 8 inputs and outputs to a 64x64 matrix, which can be assembled in a cluster, and delivers up to 2048x2048 inputs and outputs.

RF signal routing requirements within a facility differ, depending on the application. For programming acquisition, incoming satellite and/or fibre RF signals are transmitted to IRDs (Integrated Receiver Decoders) to decode the video, and/or feed it to the cable or IPTV system multiplex. If an IRD fails or suffers faults, the Matrix Switch can be used to feed a backup IRD, or duplicate and route a problem signal to test equipment for testing and fault isolation.

On the outbound transmission side, matrix switches can also be used to route signals from IRD sources for forward distribution, for example to modulators for direct transmission onto an HFC (hybrid fibre/coax) cable network, or to IPTV encoding and multiplexing systems for downstream distribution to set tops.

About DEV Systemtechnik

DEV Systemtechnik, part of the AXING Group, develops and manufactures a complete range of products and systems for the optical and electrical transmission of Radio Frequency (RF) signals via coaxial cable or fiber. For over 20 years DEV has designed, engineered, and manufactured RF transmission equipment for satellite, broadcast, and cable applications. All products are built to meet the highest standards of system availability, reliability and manageability.

Africa: the gateway to a connected world

As digital technologies advance and become more ubiquitous in today's connected world, data is an increasingly valuable commodity.



Africa is a prime target location for new data hubs, and is perfectly placed to become an active contributor to the global telecommunications highway. HILE THE WESTERN world is seemingly taking the lead to fulfil the evergrowing needs of data consumers, other less developed areas of the world have, so far, not even been considered as being 'in the race'. However, times are changing, and data connectivity is slowly becoming a major export and source of revenue for these emerging countries.

While it may seem that everyone is constantly connected these days, there are areas of the world where this is not the case... yet. For example, the southern hemisphere is currently known for having some of the lowest levels of connectivity in the world. But, all that's about to change. So, how important is this region likely to be for the connected world of tomorrow?

The importance of expanding networks

Since the first submarine cable was placed between the coasts of England and France in 1850, underwater networks have been an essential part of communications. Subsea systems now stretch hundreds of thousands of kilometres across the globe, carrying 98 per cent of international data traffic and enabling the everyday activities we take for granted, from music streaming, email sending and Netflix watching.

But the use cases go way beyond the consumer. In fact, whole sectors have grown as a direct result of these technological advancements, meaning we can now quickly and easily transfer huge amounts of important or sensitive data to anywhere in the world. Excitingly, the growth of the data services industry has not even reached its peak. With the global population expanding constantly and 5G capabilities already in development, the worldwide demand for data can only grow further. This opens the door for new innovators to emerge and succeed.

For example, new routes in the South-Atlantic are a current focus: there has been US\$1.5bn of new cable investment in Latin America (LATAM) in 2017 and 2018. These new routes will have increased capacity for data consumers and will also provide the opportunity for a massive economic development in unexpected places.

Creating new paths

The Broadband Commission for Sustainable Development has set targets to increase Internet user penetration in developing countries by 2025. These objectives include increasing the world population using digital financial services to 40 per cent, overcoming the disconnectedness of micro-small and medium sized enterprises by 50 per cent and increasing broadband Internet user penetration to 65 per cent in developing countries and 35 per cent in the least developing countries.

In order to achieve these goals, emerging countries, such as those found within the southern hemisphere, must take the lead. To accelerate the speed of transformation and take a leading role in creating new paths, companies from these developing countries can become 'ones to watch' by pulling IP gravity south from the USA into South America and creating new traffic paths via Africa to Asia and beyond.

Africa: A gateway to the rest of the world

Africa is a prime target location for new data hubs, and is perfectly placed to become an active contributor to the global telecommunications highway. This is because, in connectivity terms, Africa is uniquely geographically positioned to connect with existing networks which already link to America and Europe. The companies willing to take advantage of this 'missing link' in connectivity will finally enable innovation in traffic management across the Atlantic.

From there, the door to the rest of the world is open. By developing an ecosystem that allows for local IP traffic to be exchanged locally and regionally, the efficiency of networks that are serving the southern hemisphere would be improved. Even regions beyond the Atlantic would benefit, with an alternative to the highly congested Suez channel giving a new route to American and European-bound traffic originating from Asia and even an alternative to East African countries. Other than the obvious potential for

By developing an ecosystem that allows for local IP traffic to be exchanged locally and regionally, the efficiency of networks that are serving the southern hemisphere would be improved.

financial gains, companies and individuals in these regions would benefit from an increase in connectivity, capacity and data exchanges.

Such a system would allow interconnectivity amongst submarine systems and operators as well as OTT providers and CDN's to quickly reach multiple networks. Further expansions in future would enable other major points across the Atlantic and emerging markets to be connected at a later stage. New investments will also offer route diversities and cut down latencies on major routes. As a consequence, it will facilitate greater and faster traffic flows between metropolitan areas across the globe.

Overcoming prejudices

This improved connectivity and capacity, pushed forwards by new, international wholesale carriers will not only stimulate digital commercial activity in the

The Broadband Commission for Sustainable Development has set targets to increase Internet user penetration in developing countries by 2025.



southern hemisphere, the rest of the world stands to profit too. However, while many global content providers in locations such as the US are renowned for leading these developments, African nations are not traditionally known for being thriving hubs for global IP transit and Internet innovation. As data connectivity becomes an increasingly valuable commodity, however, developing nations will take a new role enabling global companies to shift their attentions to these new regions and markets.

Emerging countries hoping to play a more prominent role in international connectivity and data markets will need to overcome current stereotypes and prejudices. While not impossible, this transition is going to take time. The fast-paced nature of the technology landscape is something all telecom operators need to contend with in their home territories. However, those from emerging or developing countries have the additional challenge of conquering the issues caused by a lack of both local content allocations and reliable (IP) telecommunications capacity.

In order to meet targets for increased user penetration in developing countries in the next few years, these locations will need to lead by example and embrace the opportunities new technologies bring. Continued exponential demand for data means that with the right investments, these new providers have the potential to take the lead in the market for this precious, upand-coming commodity. This, in turn, will accelerate digital transformation, create successful, profitable digital economies and change traffic management regimes globally. 🕐

Artur Mendes, CCO Angola Cables

SOLUTIONS

Troye launches security solution for modern data centres

TROYE HAS LAUNCHED a security solution for the modern data centre, combining Citrix SD-WAN and ZScaler, to provide a better cloud security.

The company aims to provide cost-effective and available Internet traffic, enabling compliance with corporate content and accessing policies.

The bandwidth control feature protects major applications and limits recreational applications by location or time of day which is managed globally from a single management console.

With the Zscaler security solution being cloud-based, it avoids the need to add additional security appliances to the network.

Kurt Goodall, technical director at Troye, said, "The ideal solution to enforce security without adding cost, complexity or latency is to route all branch Internet traffic from the Citrix NetScaler SD-WAN appliance to the Zscaler Cloud Security Platform."

The Zscaler Cloud Security Platform acts as a series of security check posts in more than 100 data centres around the world.

"Zscaler connects users and the Internet, inspecting every byte of traffic, even if it is encrypted or compressed. But customers still grapple with expensive Multiprotocol Label Switching (MPLS) links to backhaul branch traffic to the corporate data centre in order to filter traffic through security appliances, to detect malware and enforce policies," Goodall explained.

As the need for bandwidth increases in branch offices, enterprises have had

Oradian and ANMFIN partner on cloud solution

THE PARTNERSHIP WILL enable ANMFIN to promote access to financial services for Nigerian clients on a larger scale by using ANMFIN Cloud Express, a core banking system specially built for ANMFIN and its microfiance institution (MFI) members.

"The partnership will enable all of our MFIs to move to Oradian's cloud-based solution, helping our members to save time and money through more efficient, digitised processes - no more manual input of data," said Princess Adesola Ogunleye, ANMFIN President.

She added: "We and our members are very excited to improve administrative process, reduce high operational costs and offer digital financial services across the country."

With a cost and a system tailored for the needs of smaller MFIs. The two companies collaborating means more financial institutions can take advantage of technology to become more efficient, grow and reach more unbanked individuals in remote areas.

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tough choices, with each option presenting trade-offs in performance, cost and security. SD-WAN aims to simplify the customers' choices with a cost-effective manner.

"Zscaler puts the enterprise security stack in the cloud, arming each branch with a secure web gateway, cloud firewall, cloud sandbox and other security protections. Together, Zscaler and SD-WAN provide branch and remote users with performance and security that are both first-class," Goodall concluded.

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