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New satellite opportunities

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AfricaCom 2018

A preview of this year's show

Risk management

How telcos can improve financial risk management

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Using mobile technology to boost productivity

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A note from the Editor

THIS ISSUE OF Communications Africa explores how satellite communications is transforming sectors across Africa. Internet access is continuing to grow as a whole as it bring changes to the continent, with more than 450mn people now connected to the Internet. More and more farmers are embracing mobile technology, improving information and knowledge sharing to boost productivity. This edition also looks at how fintech remains to be an appealing industry for investors as start-ups in the continent look for ways to bridge the financial gap.

Une note du rédacteur

CE NUMÉRO DE Communications Africa explore l'évolution des secteurs de la communication par satellite en Afrique. L'accès à Internet continue de croître dans son ensemble, entraînant des changements sur le continent: plus de 450 millions de personnes sont désormais connectées à Internet. De plus en plus d'agriculteurs adoptent la technologie mobile, améliorant le partage d'informations et de connaissances pour accroître leur productivité. Cette édition examine également à quel point la fintech reste une industrie attravante pour les investisseurs alors que les nouvelles entreprises du continent cherchent des moyens de combler le fossé financier.

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FEATURES

Risk management

Gianluca Bisceglie, founder and CEO of Visyond explores what ways telecoms companies can improve financial risk management processes.

Digital

This article looks at the ongoing battle the telecoms industry faces in fighting telecoms fraud. Clémentine Fournier, VP Sales, Africa, at BICS highlights the importance of collaboration.

AfricaCom

AfricaCom is returning to the Cape Town International Convention Centre for its 2018 edition.

Connectivity

Brian Jakins, RVP Africa, Intelsat explains how satellite innovation is empowering communities across the continent and how new partnerships are driving digital transformation.

Fintech

Africa's fintech industry is set to contribute US\$150 to the continent's GDP by 2022 and brings a host of opportunities to previously underserved markets.



A look at how the continent has adopted blockchain technology.

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Circulations -

Business Magazines

Why more farmers are using mobile technology as a way to improve farming productivity.



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Orange Money makes real contributions to economic and social development in Africa and is a part of our strategy as a multiservice operator and digital transformation partner in Africa and the Middle East."

- Alioune Ndiaye CEO Orange Middle East and Africa

We are proud that with the launch of 4G+ network, our company has again put Tanzania on a global telecommunications map. We are now competing with the developed nations who are currently rolling out 5G technology."

- Tarik Boudiaf chief commercial officer Tigo

Numerous new entrants to the South African market are now offering affordable smartphones that boast very similar features to the leading brands. As such, we expect the country's migration away from feature phones to continue at a progressive pace."

- Arnold Ponela research analyst IDC Besides the ability to connect more consumers to a solution that enables them to pay without cash, the virtual card also supports the growth of e-commerce in Africa and supports businesses who want to appeal to a wider audience."



- Ngozi Megwa vice president market development Mastercard Sub-Saharan Africa

Lagos to host Africa Fintech Summit for the first time in November

AFRICA'S PREMIER FINTECH event, the Africa Fintech Summit, will be held for the first time in Lagos, Nigeria, on 8-9 November 2018. This event comes on the heels of the earlier edition in Washington D.C. which featured leading policy makers, c-suite business executives, start-ups, and investors.

The summit, organised by Dedalus Global, gathers innovators, investors, policy makers and other kev stakeholders in the Fintech sector discuss technologies to transforming finance on the continent, debate regulatory policies, compare best practices, and forge new ventures.

Tthe chairman of the summit, Leland Rice, said, "Lagos is an ideal host city; it's an epicenter of



The Africa Fintech Summit will take place in Lagos, Nigeria.

Africa's fintech revolution and the driving force behind the continent's entrepreneurial spirit. The successes of companies such as Paga, Flutterwave, Mines.io, and Paystack have strategically positioned Lagos as the destination of choice for investors."

"The first edition of the Summit in D.C. was a launch pad for several milestone fintech deals struck among its delegates in the months after the event. We plan to build on these successes in Lagos, with a focus

on bringing innovators and policy makers together to move the needle on fintech regulation and bringing founders and investors together to facilitate further capital raises," added Leland.

The two-day event will feature investor missions from the US, UK, and UAE, an Alpha Expo featuring the most exciting startups and entrepreneurs in Nigeria, a half-day blockchain masterclass, and an awards ceremony.





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AGENDA

AMN and Intelsat join forces to connect ultra-rural sub-Saharan Africa

INTELSAT S.A. AND Africa Mobile Networks (AMN) have announced that Intelsat has made a strategic investment in AMN. The new deal is expected to accelerate the roll out of mobile connectivity to unserved communities across multiple countries in sub-Saharan Africa.

Many mobile network operators (MNOs) are faced with the economic and geographic challenges of expanding mobile connectivity when trying to deploy their networks to these remote areas. AMN provides MNOs with a network-as-a-service (NaaS) solution in which AMN will fund, build and operate the ultra-rural network for the operators. This enables African mobile operators to extend their coverage with minimal opex and capex risk and in turn grow their subscriber and revenue base, and better serve all their customers.

AMN has designed a low-cost small cell solution that is powered by a highly reliable solar-based system which can be rapidly deployed and installed in less than six hours. As part of the long-term agreement, AMN will leverage the power, performance and efficiencies generated by Intelsat's next-



The small cell solution is powered by a reliable solar-based system which can be rapidly deployed and installed in less than six hours.

generation Intelsat EpicNG high-throughput satellites (HTS), as well as the 23 Intelsat satellites covering the continent to provide the optimal balance between coverage and high-throughput for the enabled sites.

According to AMN, once installed, the sites will connect over the Intelsat fleet to the core of the mobile network operator and deliver 2G mobile services, such as GSM voice, SMS and GPRS/EDGE packet data, with the ability to upgrade the base stations to 3G and 4G as data demands allow.

"The high performance, redundancy and flexibility of Intelsat's satellite fleet over Africa made them an ideal partner for us," said Michael Darcy, AMN's chief executive officer. He added: "Intelsat shares our view that mobile coverage is not spreading quickly enough and as such, invested in AMN's vision of installing a cell site in every African village. Together, we can accelerate the deployment of mobile connectivity and work to ensure that communities, wherever they are located, have equal access to high quality, sustainable and affordable broadband connectivity."

Liquid Telecom completes acquisition of CEC Liquid **Telecom in Zambia**

LIQUID TELECOM HAS announced it has completed the acquisition of the remaining 50 per cent stake in its Zambian subsidiary, CEC Liquid Telecom, from Copperbelt Energy Corporation PLC.

The acquisition will help facilitate the group's digital transformation strategy through an enhanced operating model and the benefit of 100 per cent of the cash flows from CEC Liquid Telecom and its retail arm, Hai Zambia.

"The acquisition of CEC Liquid Telecom represents another major milestone towards the delivery of Liquid Telecom's vision to build Africa's digital future," said Nic Rudnick, Liquid Telecom Group CEO. Rudnick added: "We have continued to expand the footprint of our network and broadened our award-winning product offering. These actions reinforce our position as a leader in cloud networking and digital transformation. We look forward to bringing the benefits of this acquisition to our valued clients across the region."

The move will put Liquid Telecom in a position where it will be able to focus on growing its wholesale, enterprise and retail offering across Zambia, aiming to improve customer service and the delivery of new products. This includes cloud-based services such as Microsoft Office 365 and Azure Stack, which will now be hosted locally in Zambia for the first time.

The acquisition will also allow it to invest further in its fibre network in Zambia, providing businesses and consumers with greater reach and network speeds across the country. It will connect Zambia to Liquid Telecom's "One Africa" broadband network, allowing access to the single largest independent fibre network on the continent - stretching all the way from Cape Town to Cairo.

Liquid Telecom and CEC first entered into the joint venture in 2011, and during this time it has invested in the rollout of a fibre optic network across Zambia that today delivers some of the country's and Africa's fastest broadband speeds.

According to Liquid Telecom, the Zambian division will form a key part of the company's focus on the Southern Africa region, alongside Zimbabwe, DR Congo and Botswana, with the new regional CEO of Southern Africa, Wellington Makamure at the helm of its operations.

Cisco and Smartworld collaborate for Expo 2020

CISCO, AN OFFICIAL digital network partner of Expo 2020 Dubai, has announced that it is collaborating with Smartworld, a UAE Cisco partner, to design and implement a smart network infrastructure for the first World Expo to be held in the Middle East, Africa and South Asia (MEASA) region.

Under the theme "Connecting Minds, Creating the Future", Expo 2020 Dubai aims to offer a glimpse into the future, guided by the belief that innovation and progress are the result of people and ideas coming together in new and unique ways.

Cisco is working with Smartworld to deploy parts of Expo's digital IP network infrastructure, including Cisco intent-based networking solutions.

The network is also designed to support more than 100,000 IoT devices during the Expo.

"Smartworld is committed to working with Cisco to help Expo 2020 deliver a global event enabled by the latest technology," added Abdulgader Ali, CEO of Smartworld.

Shukri Eid, managing director, East Region, Cisco Middle East,

said, "Cisco will provide its latest technology innovations and a secure, intelligent foundation for connectivity through our intentbased networking solution."

Mohammed Alhashmi, senior vice-president, Innovation and Future Technology at Expo 2020 Dubai, said, "An innovative and seamless digital infrastructure is essential for a successful Expo 2020. We're confident that the smart technology deployed at Expo 2020 will wow visitors from all over the world."

The expo will open its doors 20 October 2020 and will run until 10 April 2021 - expecting to welcome 25mn people, with 70 per cent coming from outside the UAE.



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Events/Événements 2018

| OCTOBER/OCTOBRE | | | | |
|-------------------|--|----------------------------|-------------------------------|--|
| 22-23 | Ecommerce Africa | Cape Town, South Africa | ecommerce-africa.com | |
| 31-2 Nov | Natexpo | Moscow, Russia | natexpo.com/en/ | |
| 31-3 Nov | World Crypto Con | Las Vegas, USA | worldcryptocon.com/ | |
| NOVEMBER/NOVEMBRE | | | | |
| 4-8 | Gartner Symposium/ITxpo 2018 | Barcelona, Spain | gartner.com | |
| 5-8 | Web Summit 2018 | Lisbon, Portugal | websummit.com | |
| 8 | Digital Future Congress Essen | Essen, Germany | digital-futurecongress.de | |
| 8-9 | Africa Fintech Summit | Lagos, Nigeria | blockchainafrica.co | |
| 8-9 | DigiMarCon Africa 2018 | Johannesburg, South Africa | https://digimarconafrica.com/ | |
| 13-15 | AfricaCom | Cape Town, South Africa | tmt.knect365.com/africacom/ | |
| 15-16 | West Africa Property and Investment Summit | Lagos, Nigeria | wapisummit.com | |
| 22-25 | Sitex | Singapore | https://sitex.com.sg/ | |
| 25-28 | Cairo ICT | Cairo, Egypt | cairoict.com/ | |
| 29-30 | TV Connect MENA | Dubai, UAE | tmt.knect365.com | |
| DECEMBER/DÉCEMBRE | | | | |
| 4-7 | SIGGRAPH Asia | Tokyo, Japan | iotglobalcongress.com | |
| 14 | Africa Tech Summit | New York, United States | africatechsummit.org | |

AfricaCom 2018 to highlight the critical role of entrepreneurship

REPRESENTATIVES FROM AFRICA'S telecoms, media and technology sectors will descend on the grounds of the Cape Town International Convention Centre to discuss the opportunities and challenges driving digital transformation across the continent. Headliners at this year's event include Rob Shuter, group president and CEO MTN, Hon.m Ursula Owesu-Ekful, telecoms minister, government of Ghana, senator Olabiyi Durojaiye, chairman of Nigerian Communications Commission, Jean Philbert Nsengimana, special advisor at Smart Africa, Priya Thakoor, chief digital officer at Coca Cola South Africa and Mohamed Dabbour CEO, Africa at Millicom who will debate the real issues impacting Africa's journey towards the Fourth Industrial Revolution.

Returning to AfricaCom is The AHUB programme, designed to highlight the critical role of entrepreneurship in driving Africa's digital economy and connect African tech start-ups and scale-ups to investors and corporate partners. The programme will feature briefings for both start-ups and investors, as well as live pitch sessions from start-ups on the continent, new AHUB start-up academy skills workshops, sector snapshots covering FinTech, digital health, agri-tech, clean energy and ICT4D, and panel discussions covering topics ranging from understanding investor mentalities to developing a disruptive mindset.

At the AHUB, start-ups and entrepreneurs can also learn how the investor community thinks and what they want to see from start-ups. Amplify your value proposition with media engagement tips and tricks designed especially for African start-ups.

The event will host discussions about entrepreneurship as an engine for economic growth; stimulating the development of Africa's tech start-up ecosystems and transforming ideas into tangible solutions with disruptive impact; investment opportunities in African tech, the factors impacting risk appetite for funding early stage start-ups, and what needs to happen for Africa to realise its potential as a world-class hub of entrepreneurship.

The second day's agenda will begin with a keynote address about tech entrepreneurs tackling Africa's social, economic and environmental challenges.



AfricaCom will return to Cape Town, South Africa for its 2018 edition.

Other hotly debated topics in the industry will be presented during the day, including strengthening connections between academic centres of innovation and African tech start-ups; the thought process behind investment decisions; a panel discussion on investor insights and how to stand out from the crowd; understanding investor mentalities, priorities and reservations; what separates the dreamers from the doers and tips on pitching your start-up.

Also on the agenda are presentations on exploring new opportunities in Francophone Africa; what are tech giants and other large corporates doing to stimulate the growth of Africa's tech start-up ecosystem; exploring the benefits of corporate and start-up partnerships in Africa; building synergies between MNOs and African tech start-ups, and an open debate on whether the African tech start-up scene is diverse enough.

Eutelsat takes further step in the integration of satellite into the IP ecosystem

Exhibiting at this year's AfricaCom show taking place 13-15 November, Eutelsat has announced it is offering a new service that will provide broadcasters with a turnkey content delivery solution via both satellite and OTT.

TT SOLUTIONS ARE widely being promoted as the future of broadcasting, however, as audiences demand greater image definition, operators must equally develop revolutionary services.

Eutelsat Communications will explain how satellite fits into this evolving landscape, and how hybrid satellite and OTT solutions can help broadcasters optimise their services and reach more homes with its new service Eutelsat CIRRUS - a hybrid satellite-OTT delivery solution, enabling broadcasters to offer a flexible, seamless content experience across multiple screens at AfricaCom 2018.

Turnkey TV distribution service

Eutelsat CIRRUS will provide a turnkey content delivery solution via satellite and OTT to operators seeking to launch or upgrade their service, offering the benefits of rapidly deployed video services, low operational costs, high image quality and consistent end-user experience. Through its dual offer of turnkey DTH services and OTT multiscreen delivery, this new service represents a further step for Eutelsat in the integration of satellite into the IP ecosystem.

CIRRUS' turnkey DTH service will also provide satellite TV broadcasters with end-toend video distribution combined with cloudbased service management. Bringing together the strengths of traditional DTH with nextgeneration features, the fully integrated platform will deliver an enriched viewer experience through live channel broadcasting, channel numbering, programme information, content security, subscriber and set-top box management.

Seamless and integrated multi-screen user experience

A multi-screen offer will complement the traditional DTH broadcast service with simultaneous OTT streaming through a native hybrid platform. It will enable end-users to watch video content on devices such as mobile phones and tablets, access multiple programmes, record and rewind, and view a rich array of programme information, while

providing business rules management and usage reporting for Eutelsat's broadcast customers.

Eutelsat CIRRUS is built on an innovative roadmap guaranteeing product evolution and ensuring the delivery state-of-the-art features for viewers by enabling operators to integrate new features and maintain a competitive offer without the need for support or technical upgrades.

Video at the heart of Eutelsat's strategy

"Eutelsat CIRRUS reinforces our value proposition in the video segment, which is at the core of our business. It will offer our customers the best of both worlds, combining the efficiency and reach of satellite with the convenience of OTT. This new hybrid solution is designed to facilitate the building of a content distribution business. It will free up broadcasters to focus on content and subscribers while Eutelsat takes care of the end-to-end logistics, accompanying them in maintaining their competitive edge in an increasingly complex environment", said Gerry O'Sullivan, executive vice president, Global TV and Video of Eutelsat.

Rodolphe Belmer, CEO of Eutelsat, concluded: "The launch of Eutelsat CIRRUS sits firmly within our broader strategy to reinforce and develop our core video vertical. By leveraging new technologies to deliver appropriate solutions to the evolving needs of our broadcast partners, we seek to reinforce customer proximity and loyalty and develop new growth opportunities for our group." *C*

Meet Eutelsat at Africacom, 13-15 November, D.40 where Eutelsat CIRRUS will be on demo.



Eutelsat Cirrus offers a reliable and cost-effective solution for broadcasters to get their content into more homes.

Five ways in which telecoms companies can improve financial risk management processes

Telecoms companies operate within a quickly evolving and somewhat uncertain risk universe. One reason telecoms operators have struggled in the past is a failure to adequately manage and mitigate the risks that the industry faces.

ROM SHIFTING REGULATORY demands to evolving consumer behaviours and an inability to extract sufficient value from network assets. Telecoms face and will need to navigate, a considerable amount of risk, from multiple sources.

Managing these risks is something operators know they need to improve. In an Annual Report, Vodafone outlined how they managed risk and, in particular, how information flows up from senior managers of various group functions and operating companies to a group risk co-ordinator, with several other committees contributing to the risk management and mitigation process.

How Vodafone manages risk is not unusual for a telecoms giant. But even with this complex process, Vodafone has struggled in recent years, only recently getting back into profitability.

Taking specific risks in mind, here are five ways telecoms operators can improve risk management.

1. Statistical scoring and risk segmentation for new customers

Every operator struggles with bad debt. Alongside customer churn, account holders who can't or won't pay has a negative impact on revenues and operating cashflow. When a new customer joins, the current risk assessment criteria is based on credit scores and policy rules that get reviewed annually, or as the need arises.

However, one way that telecoms put themselves at risk is when they lack a clear analytical and statistical framework that evolves throughout the customer lifecycle. Telecoms companies are sitting on an enormous amount of data: what many aren't doing is using it to understand how to de-risk relationships with customers and reduce bad debt.

2. Extract more value from network assets

Due to the success of Telco-OTT (over-the-top) providers and web giants, operators are under constant pressure to deliver faster broadband and data over their network for customers. Constant capital investments, such as LTE (wireless) rollouts and Fibre broadband, are something every operator is undertaking. Technology cycles are shortening and with the Internet of Things (IoT) requiring a new mix of infrastructure, telecoms companies must evolve and adapt technology roadmaps.

Telecoms need to factor these changes into risk models, increasing the value they get from these network assets through more networksharing and tower-outsourcing.

3. Identify new ways to innovate

Keeping pace with changing customer demands and preferences is a key strategic objective for every telecoms operator. Competition for wallet share from OTT players, web giants and other subscription services has never been stronger. Telecoms need to more closely

Managers, committees and board members need to be alert to evolving risk factors and regularly contribute information and up-todate figures.



Telecom companies have acquired a lot of data but are not using it to de-risk relationships with customers and reduce bad debt

identify where customers find value from their services, then deliver more personalised omnichannel experiences and services.

4. Mitigate the risk of changes to asset carrying value

Under the International Financial Reporting Standards (IFRS), assets carry a substantial amount of financial goodwill. Although changes to the rules surrounding goodwill wouldn't impact the cashflow of a company, it could result in a non-cash charge to a telecom company's income statement, which would in turn, negatively impact reported distributable reserves.

One way to reduce this risk is to review the carrying value of assets more often. Creating a dynamic and collaborative risk analysis process, thus giving risk committees the chance to stress test future cashflows based on mission critical assumptions.

5. Improve collaborative work on risk models and analysis

Risk analysis involves multiple stakeholders. Managers, committees and board members need to be alert to evolving risk factors and regularly contribute information and up-to-date figures. Working together across distributed divisions and teams means the information flow isn't always clear. There is a risk that data will get lost, be overlooked, or misunderstood.

Telecoms companies can reduce this risk using collaborative spreadsheet tools. At Visyond, we are working with an international telecoms giant to improve how they manage risk analysis and predictive models. Giving team and committee members a secure collaborative space where they can input figures, upload supporting materials and stress test the data is having a positive impact on how an extensive and evolving risk environment is managed.

Gianluca Bisceglie is the founder and CEO of Visyond, a cloudbased spreadsheet software platform that disrupts the way people work with spreadsheets \neg - allowing secure, selective and interactive data sharing, minimising errors, and performing analyses in seconds with a few simple clicks. @

For more information visit www.visyond.com

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Securing the future of Africa's digital economy

The opportunities the smartphone has afforded to individuals and communities has been illustrated in Africa like nowhere else. From healthcare to banking, the smartphone has delivered low-cost Internet connectivity and secure payment technology to millions.

STRONG. MOBILE-POWERED telecoms industry has helped to build businesses, pay wages, educate communities, and - of course - support communication across a diverse continent. However. this environment has also been exploited by those looking to make money illegally, either through taking advantage of lax security, or via traditional methods of telecoms fraud. Ahead of AfricaCom 2018, Clémentine Fournier, VP sales, Africa, at BICS, surveys the extent of the problem, and highlights the importance of collaboration in the fight against fraud.

Mobilising security features

More than half of the world's 174mn active registered mobile money accounts are in sub-Saharan Africa, and a number of prominent MNOs have launched, and are now running, successful mobile money services, including MTN Mobile Money, Safaricom's M-Pesa and Orange Money. In Kenya alone, more than 36mn mobile users are

Security and digital identity specialists can work closely with MNOs to source relevant data, which can then be purchased by digital service providers for security purposes.



registered with a digital payments platform, and 16mn transactions occur on M-Pesa's platform every day.

Financial products like bank accounts, insurance and credit can now be accessed by huge numbers who would traditionally have had little or no opportunity to access such services. This in turn is driving innovation, and attracting a high volume of new businesses eager to enter the lucrative market; at the end of 2017, there were more than 300 fintech start-ups across the continent. Of course, ensuring the security of mobile money services is crucial, with governments, regulators, endusers and the wider telecoms industry remaining vigilant.

Security features can be enabled via SMS, benefitting all service users, including those with only basic handsets and without Internet access. These features include things like alerts and notifications of payments and banking account access attempts, one-time passcodes, and automated voice calls to verify an account holder's identity.

Two-factor authentication (2FA) adds an additional layer of security, and extends beyond the simple, outdated method of using passwords to protect accounts and prove a user's identity. Historically, traditional telecoms and new digital service providers have been hesitant to partnerships. form close However, overcoming fraud improving and customer satisfaction levels - can best be achieved when these two entities work together. MNOs are currently sitting on wealth of subscriber data, which can be harnessed to bolster security across the full range of a consumers' digital accounts.

Security and digital identity specialists can work closely with MNOs to source relevant data, which can then be purchased by digital service providers for security purposes. This will enable 2FA for these accounts, linking phone numbers and personal details to online profiles, and using this information to verify a user's identity.

2FA should be integrated into the offering of any business – in Africa and elsewhere – entering the mobile payments market. Unfortunately, when the telecoms industry innovates, criminal outfits are usually quick to do the same.

Criminals (SIM) swap to a new scam

We've recently seen the emergence of a type of fraud known as SIM swap. This involves a criminal gaining access to a victim's phone number, bank account and personal details. They will then contact the victim's mobile network operator, requesting they swap the victim's phone number to a new SIM. The criminal will then activate this on new SIM. receiving а authorisation codes and the like from a victim's financial services providers, with the aim of accessing and siphoning funds from their accounts. It's important that both mobile users and operators are educated on the impact this can have, as both are targets. In the US, there were 1,038 SIM swaps reported in 2013, which more than doubled to 2,658 in 2016. Due to the relative ease of out this carrving scam.

consumers and operators in every region are at risk. People in Kenya and South Africa, for example, have recently reported huge financial losses. The telecoms industry must work together to raise awareness of SIM swap, while taking lessons from those who are leading the charge to tackle this fraud. This includes mobile operator MTN, which launched its MTN Verified system in March 2016.

Telecoms fraud: a viral threat

In addition to new threats, the telecoms industry must also wage an ongoing battle with established (and unfortunately, still continuing) methods of telecoms fraud. One of the most damaging of these is International Revenue Share Fraud (IRSF), and roaming fraud in particular. This involves criminals acquiring SIM cards and using them from overseas markets to call international revenue share numbers. It can take up to four hours for call records to get back to the home network for analysis - so a long time before incidents can be identified and dealt with. Comprising different 54 countries, Africa is particularly vulnerable to IRSF, as well as the rapid spread of fraud from one country to the next. Fraudsters located in one country can generate fraudulent traffic that originates in another country and terminates in a third, with fraud behaving like a virus – spreading outward very fast, infecting network after network in succession and generating massive revenue losses as a result.

Local intelligence, global action

Whether it's using mobile identity as a weapon against scams and a tool for furthering the mobile money market, or working to reducing roaming fraud – collaboration is key. There is strength in numbers, and operators, carriers, regulators and governments across Africa must work together, pool resources and share knowledge.

The success of a collaborative approach has been evidenced by the launch earlier this year of a Code of

More than half of the world's 174mn active registered mobile money accounts are in sub-Saharan Africa and a number of prominent MNOs have launched.

Conduct to reduce fraud in the international wholesale market, the result of the ITW Global Leaders' Forum (GLF), a leadership body of the International Carrier industry, working in partnership with the not-for-profit i3forum.

The telecoms industry has historically been secretive regarding instances of fraud, and the Code of Conduct is just one step towards rectifying this. Collaborative tools can be used to maximise visibility of mobile traffic across every African country – and indeed, of the world. A global database using crowdsourced intelligence can

Two-factor authentication (2FA) adds an additional layer of security, and extends beyond the simple, outdated method of using passwords to protect accounts and prove a user's identity. help to detect a wide range of fraud scenarios in real time and proactively push this intelligence to every contributing operator. Rather than waiting the traditional three to four hours to detect an instance of roaming fraud, operators can react immediately to threats before they reach a network.

The smartphone may have unlocked opportunities for businesses and end-users in Africa, but it's also done the same for criminals. Cross-border collaboration is needed across the continent, strengthened by global visibility of international traffic and fraud. This way, crime in the telecoms industry can be controlled and reduced, while customer satisfaction levels will get a boost, and Africa's digital economy will continue to go from strength to strength. ©

Clémentine Fournier, regional vice president Africa at BICS.



African countries need to develop a policy response to the digital economy

The rise of digital platforms and ecommerce will reshape the retail sector and in turn have deep implications for developing countries' industrialisation processes.

NIMROD R ZALK, industrial development advisor in the office of the director-general of the Department of Trade and Industry, delivered the keynote address at a Workshop on Digital Transformation Africa: in Leveraging the Promise and Addressing New Challenges convened by Global Economic Governance (GEG) Africa and the African Trade Policy Centre (ATPC) of the United Nations Economic Commission for Africa (ECA) on 10 September 2018.

Dr Zalk highlighted that a global process of rapid technological change, involving unprecedented growth in digital information will have far reaching consequences for the South Africa and other African countries. The rise of digital platforms and ecommerce will reshape the retail sector and in turn have deep implications for developing countries' industrialisation processes, which have been at the heart of all successful cases of development. This requires African countries to develop policy

responses that address the rise of digitisation in ways that ensure the policy space to harness potential benefits and ameliorate negative consequences.

Zalk emphasised that there are a number of domains that African countries need to take into consideration in forging a policy response to the rise of digitalisation. of national sovereignty with respect to issues of data ownership, privacy, cybersecurity, structural transformation and economic inclusion objectives.

Third, national taxation systems need to adapt to the rise of e-commerce and digital platforms. This requires ensuring an appropriate taxation regime in relation to e-commerce and other

Countries need to secure the policy space in multi-lateral, regional and bi-lateral fora and processes to develop responses to digitisation that are tailored to domestic conditions and policy considerations.

First, countries need to secure the policy space in multi-lateral, regional and bi-lateral fora and processes to develop responses to digitization that are tailored to domestic conditions and policy considerations.

Second, as data becomes the "primary resource" of an increasingly digitalised economy countries need to secure a degree digital and their suppliers and to address issues of transfer pricing and profit shifting to low taxation jurisdications.

Fourth, policy must address issues of market dominance, competition and market access. The EU has for instance begun to put in place competition policy responses to the impact of network effects that attract users

to the largest and fastest growing platforms which result in "winner-

African countries need to develop policy responses to the implications of expedited technological change.

> takes-most" outcomes. Fifth, developing countries need to develop digital industrial capabilities including ensuring high speed and cheap broadband, building linkages between digital platforms and domestically produced goods and services, the provision of industrial financing instruments to do so and the adaptation of technology and skills curricula

and institutions to new digital

realities. He stated that the manner in which the rise of the Fourth Industrial Revolution and digitization are conveyed, are often in hyperbolic terms which tend to assume either unbridled opportunities to "leapfrog" into a brave new world or a disastrous collapse in employment. Rather than assuming either of these extreme outcomes, African countries need to actively engage in understanding and developing appropriate policy responses to the implications of expedited technological change. C

East African construction companies: Are you using tech to increase your productivity and performance?

Mobile technology could help East African construction companies to boost productivity as they seek to optimise efficiencies and take advantage of a regional infrastructure investment boom, writes Nikki Summers, regional director for Sage in East Africa.

HE CONSTRUCTION INDUSTRY in East Africa continues to enjoy robust growth, off the back of strong regional economic performance. According to Deloitte's African Construction report for 2017, the number of major construction projects in East Africa last year increased by 65.1 per cent over 2016 and the value of projects rose by 18.8 per cent.

The trend looks set to continue for the next decade. Per BMI Research, Kenya's construction industry is forecast to outperform all sub-Sahara African countries and enjoy an average annual growth of 6.2 per cent up to 2026.

To capitalise on this increasing demand, construction companies should be looking at investing in new technologies that enable them to improve productivity and efficiency. Examples of technologies that have the potential to reshape construction in the years to come include innovative materials, Building Information Modelling (BIM), 3D printing, drones and wearables.

But before they look at these technologies, most construction companies will be able to score major wins by investing in today's mature mobile solutions and business management software. Many East African construction companies are not yet taking advantage of the full potential of mobile technology for two reasons:

Many mobile tools don't integrate with the back-office systems contractors use to run their businesses.

The industry takes a conservative view on the adoption of new technologies.

But with mobile solutions becoming easier to integrate and use, the first concern is starting to fall away. On the second point, the construction industry is under pressure to improve productivity of people and assets in the face of rising costs. It also needs to optimise business processes to improve the quality of its output.

From the field to the back-office

Today, most mobile applications for the construction industry are point solutions. They do a good job of solving a particular problem but

don't connect their data to anything else in the organisation. That means opportunities are missed to streamline processes by reducing the need for redundant data capture, and to use data to gain better visibility into the business.

Thus, the next step for construction companies is to link apps used on the job site with their business management systems.

When this type of integration occurs, executives have a much more holistic picture of what is happening with each project. This, in turn, means everyone in the field and the office can make better decisions. They also have a reliable audit trail of what happened on the project and C-suite executives can get a holistic view of performance across multiple projects.

Analysing ever-richer data

Increasing back-office integration to mobile solutions also gives contractors more options to choose from to best fit a project's needs.

Many jobs need only light mobility to more easily view drawing changes, handle RFIs, and submit daily field reports. Other projects are more complex and require more robust collaboration systems to make sure all the players -owner, architect, engineer, and subcontractors—-stay in sync. With back-office integration available for either of these scenarios, contractors can tier their projects in terms of which will require a heavy collaboration system and which will need only a light mobility tool.

Mobile solutions also offer the possibility for human resources departments to gather data to be used to optimise workforce productivity and performance. Though labour cost in East Africa are relatively low compared to many parts of the world, many construction groups are starting to see high productivity as an important lever for financial performance.

With an integrated business management solution and human capital management (HCM) platform with strong mobile functionality, construction firms can gather and analyse richer data about the workforce - from working hours and location. They can even use Internet of Things sensors to monitor carbon dioxide levels to which workers are exposed.

Wearables will bring a new level of sophistication that will have a profound impact on businesses in this space. Smart vests with embedded GPS sensors and smart eyewear could, in future, be used to track workers' biometrics, heart rates, location and more. This information could help shape a safer workforce as well as to speed up decision-making and improve collaboration.

Predicting future performance

Advances such as these are allowing construction businesses today to track and measure their workforce to a degree not previously possible. Using HCM systems, managers can measure, funnel and interpret data collected in near real-time and provide feedback to executive decision makers and people on the ground.

Organisations are starting to move away from historical reporting towards having more predictive capabilities - they can start to predict how the workforce will perform in the future rather than simply explaining why productivity slumped in the last quarter or why there were more workplace accidents than usual. \mathbb{C}



AfricaCom 20/20 agenda set to explore the future of tech and telecoms in Africa

This year's AfricaCom to be held in Cape Town, South Africa, features a jam packed line up which will set the scene for discussions around some of the most pressing issues facing Africa's entry into the 4th Industrial Revolution, as well as presentations outlining the possible solutions to meet these challenges.

HE EVENT 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. Housed within the Technology Arena at AfricaCom AfricaCom 20/20 will launch at midday on 13th November 2018. Companies in attendence at this year's event include: Airtel, Econet, MTN, Orange, Liquid Telecom, Eutelsat, Gazprom, ArabSat, Amos, Intelsat and Safaricom.

This year's show will bring a host of speakers to centre stage, including Lanre Kolade, managing director of Vodacom Nigeria, who will share some key insights with audiences eager to learn what the

The annual AfricaCom Awards will once again celebrate success and innovation this year, by recognising the achievements of the best companies, solutions, products and personalities. effects of this shift have had on Africa to date and what might be expected in years to come. This will be followed by a keynote panel entitled: The Digital Gold Mine - Overcoming Regional Obstacles, such as the effect of digitisation upon production, management and governance, as well as addressing technological expertise and economic difficulties.

Experts already agree that many of these socio-economic challenges will be met by Africa leapfrogging legacy systems. Yet, while this may be the case, the principle of laying solid foundations remains a prerequisite for long-term success. Patrick Kabre, managing director, Alink Telekom will give a keynote exploring this. This will be addressed by Dimitris Maniatis, head of Secure-D, Upstream, who will share his thoughts on the darker side of the web. Companies such as the MST Group, social impact а that organisation operates sophisticated mobile units which deliver comprehensive solutions in healthcare, education and the



Day three of AfricaCom 20/20 will highlight the future of technology in Africa with Siphesande Sonti, head of network: energy department, Mycput, and where agri-tech is headed from Lesley Colmer, director at Greencom. With more than 2.5bn gamers in the world and growing, the opportunities are endless, especially as more and more are switching to playing games on their mobiles. Therefore, organisers expect the presentation on the endless opportunities in the gaming and



This year's edition of AfricaCom will see new categories to celebrate the best and brightest innovators across tech and telecoms in Africa.

eSport revolution to be a dead cert to attract interested fans. AfricaCom 20/20 is located within Technology the Arena at AfricaCom, which takes place 13-15 November 2018 at the Cape Town International Convention Centre. The Technology Arena will also be the centre of innovation with a number of demonstration pods, the AHUB and the cheeriest place to be?

AfricaCom Awards 2018

The annual AfricaCom Awards will once again celebrate success and innovation this year, by recognising the achievements of the best companies, solutions, products and personalities improving connectivity and driving Africa through the Fourth Industrial Revolution.

Supported by Founding Awards Sponsor, PCCW Global, the awards will be held on 14 November at The Lookout in Granger Bay, Cape Town. With 'Mardi Gras' as the theme for this year's celebrations (it is also AfricaCom's 21st birthday), the event promises to be an unforgettable night of music, entertainment and celebration. PPCW Global confirmed their involvement saying: "PPCW Global is delighted to sponsor the AfricaCom Awards which recognise the sterling works performed by companies and personalities that are developing solutions and products to improve connectivity that will drive Africa into the fourth industrial revolution. Good luck to all who enter."

In line with all the new focus areas for AfricaCom 2018 – Artificial Intelligence (AI) and enterprise digital transformation among them - the organisers have created some exciting new categories to celebrate the best and brightest innovators across tech and telecoms in Africa.

This year the AfricaCom Awards cover nine categories voted for by the public and presented at the AfricaCom Awards 2018, the AfricaCom Enterprise CXO of the Year accolade is awarded to an African-based enterprise leader who is at the forefront of navigating their company through

Industry 4.0 by prioritising innovation, embracing disruptive tech and elevating the continent's digital economy. Returning for 2018, this prize recognises the achievements of CEOs, CTOs, ClOs, CDOs and others in driving development across telecommunications and technology in 'Digital Africa'. It is open to CXO's from licensed network operators, broadcasters and enterprise/SMEs within Africa and is free to enter. Other awards categories for AfricaCom 2018 include:

Best Network Improvement This award recognizes the most successful initiative from an operator or a vendor that has significantly improved the performance or coverage of a network in Africa since the end of November 2017.

Delivering Excellence in Customer ExperiencePlacing the customer in the spotlight, this award recognises a company or initiative that has provided a compelling customer experience. For example, this could be through developing an integrated CEM strategy, using data innovatively, or considerably improving mobile user experience.

Fintech Innovation Award

This recognises a FinTech business that has disrupted the financial services sector with new and innovative services, creating competition and transforming the way we experience financial services. This may include an innovative new product or service that disrupts the payments sector; services could be from all areas of the FinTech sector, including mobile or digital currency providers. This may also be a product or service which offers a new, or significantly improved, service and demonstrates the advanced use of technology to benefit customers and financial institutions to encourage financial inclusion throughout Africa.

Most Innovative use of AI Technology - This award recognises the most comprehensive and effective AI solutions to the market, across any industry in Africa. Judging will focus on how effectively the The AfricaCom CXO of the Year Award, back for 2018, recognises the outstanding achievements of CEOs, CTOs, CIOs, CDOs and others in driving development across telecommunications and technology in 'Digital Africa'.



application has solved one, or several, business critical challenges.

Most Innovative Service This prize recognises a popular new offering which, from conception to execution, has been an innovation. It could be for the consumer or the enterprise market. It must be in an African market and should have offered significant new prospects for revenue growth and customer satisfaction.

Changing Lives Award This is where ICT meets socioeconomic development and inclusion. This award will celebrate a product, initiative or social enterprise that is having a lifechanging impact on individuals or communities in the region.

Best Sustainable Power Solution.

As infrastructure reaches into some of the remotest parts of Africa to connect the unconnected, the electricity grid is increasingly inaccessible and unstable. This award recognises power solutions that can supply all the power required to provide a reliable service at a low cost, with a reduced reliance on fossil fuels.

IoT Product or Service of the Year

This award goes to the enterprise (either supplier or end user) that demonstrates excellence in IoT- related platform deployment or integration of an IoT-related solution into existing IT and business processes.

Best Innovation in Digital Entertainment

This award is for the most innovative product or service in which music, video or gaming content is being distributed across Africa. This could be a new streaming service, OTT platform, content model or a technology that provides an enhancement in the way content is being viewed on the continent.

Delivering Excellence in Customer Experience: MTN & Huawei for their Customer Experience Management (CEM), Changing Lives Award: UNHCR for the Smart WiFi Kiosk, Best Innovation in Broadcast: Telkom and Huawei for their Telkom LIT Service solution, Most Innovative Service "The Business of Tomorrow": Orange for rural electrification, IoT Product / Service of the Year: SqwidNet for EcoCash Diaspora, CXO of the Year: Ben Cheick D. HAIDARA, the CEO of Orange Burkina Faso S.A 🕐

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Affordable and accessible broadband via satellite technology

In today's digital era, if you are not online, you're locked out of society. Sadly, this is the current situation many South Africans face as the cost of broadband access for them far exceeds that of most of their peers living in other parts of the world.

APPING INTO INNOVATIVE, locally developed satellite technology, however, has presented a light at the end of the tunnel with an opportunity for South Africa – and the African continent as a whole – to reap the benefits of inclusive, affordable and reliable internet access.

This is according to MzansiSat, CEO, Bart Cilliers, who notes that satellites are the only reliable and time-efficient short-term solution to expanding broadband access on a national level.

A recent study by Point Topic - a resource for worldwide broadband, IPTV and VoIP market intelligence - revealed that ADSL and fibre prices in South Africa are the 16th most expensive in the world. The research scorecard used in the study compared the entry-level, media, and average residential broadband tariffs in 80 countries.

With this in mind, MzansiSat, COO, Victor Stephanopoli asked, "What is your constitutional right of free speech worth, if you have no decent means of making your voice heard?"

MzansiSat's concept of a satellite for Africans, which will have the ability to deliver cheap ubiquitous broadband and capabilities, was recently announced at the ITU Telecom World conference which was hosted by the International Telecommunication Union (ITU) in Durban from 10-13 September. Cilliers highlights that the ITU platform has given the team behind the proposal the opportunity to gather valuable insights on the African telecoms industry's regulatory environment.

The proposed innovation will also be presented to industry leaders, decision makers and legislators at the recent Aerospace, Maritime and Defence (AMD) Conference held 18-23 September, and the Africa Aerospace and Defence (AAD) Expo, from the 19-23 September.

Cilliers said: "We have been working on this concept since 2013 with the primary goal of connecting South Africa to the world through new infrastructure anchored by the first South African owned and operated telecoms satellite."

Hoping to receive public sector buy-in to launch their first satellite - MzansiSat-1 - into space and debut their offering to the African market in 2022, MzansiSat is, in Cilliers' words, ready to go. "The biggest challenge we face is securing the legislative and political approval we need to launch the satellite. Once this box is ticked, superfast, super-cheap Internet satellite offering competition-shattering pricing and military grade encryption can be a reality, ensuring greater access to technology and the opportunities that come along with it."

"While the infrastructure required to provide the service has the potential to lay the basis of a new African economy, consumers will not be required to pay for this infrastructure – members of the public will just be paying for their own connection service," he explains.

MzansiSat Chief Technology Officer (CTO), Bernard Greyling, adds that the infrastructure surrounding the MzansiSat concept will not only improve the value of the country's telecoms industry and support the national broadband development framework but will also act as a foundational breakthrough in terms of providing a new way of sharing applications and services with the African public. This is over and above the almost immediate value to the public - empowering them with a great, affordable connection - no snags, no strings," Greyling explains.

Already gaining international recognition, MzansiSat was shortlisted for the prestigious ITU Telecom World Global SME Award 2018.

Cilliers concludes, "While the country has experienced turbulence with regards to its economic stability in recent years, South Africa keeps growing and so will our need to communicate with the global community. With this innovation at our fingertips, there is no better time than the present to launch South Africa into a realm of inclusive connectivity."

"Invaluable opportunities for greater awareness and debate, such as those presented by the ITU Telecom World conference, which promotes our shared goal of creating a strong telecoms structure, will only add to the motivation to roll out the MzansiSat concept. I'd like to personally thank those who brought the conference to South Africa: Houlin Zhao, ITU secretarygeneral and Malcolm Johnson, ITU deputy secretary-general. Special thanks should also be extended to Rahul Iha, officer at the United Nations Agency, who organised and made the ITU Telecom World conference a reality, and supported MzansiSat throughout."

The industry body has expressed its mutual admiration with ITU deputy secretary-general, Malcolm Johnson tweeting, "Very interesting visit to @MzansiSat booth - fascinating innovative approach to connect South Africans equally, everywhere. ©



MzansiSat chief operations officer (COO), Victor Stephanopoli

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session

Infrastructure

through technology."

TECHNOLOGY

Shonibare, Development Bank's director for energy financial solutions, policy and regulation, said the Bank's commitment to connect millions of households under its New Deal On Energy For Africa - a core

THF

new technology and blended

finance will get goods and services

to end users, and connect

underserved populations to

under the theme "Unlocking

Sustainable Technology-driven

Infrastructure," and took place 13

October 2018, on the sidelines of

the World Bank/International

Monetary Fund annual meetings.

The "last mile" was a crucial topic

of discussion during a main panel

entitled "Achieving the last mile

the

Forum

of

This year's forum was held

Resilient.

business value chains.

Inclusive.

Infrastructure Forum 2018

the African Development

Bank (AfDB highlighted

GLOBAL

and

Global

2018,

African

component of its Light Up Africa High five development priorities required flexibility and innovation from both a technology and financial perspective.

"We are looking to connect 200mn households to electricity -75mn of those will be off-grid." Shonibare, said. "Conventional grids cost, on average, US\$2,500 per connection in rural communities, whereas minigrids cost between US\$500-1,00 per connection," he added.

In Cote d'Ivoire the Bank's approval of a credit guarantee covering part of a guaranteed loan facility to Zola EDF Côte d'Ivoire (ZECI) a 50/50 joint venture between Off-Grid Electric (OGE) and EDF, paved the way for them to provide access to approximately 100.000 rural households with pay-as-you-go solar home systems by 2020, Shonibare said.

This operation is the first largescale local currency financing structure using the securitisation technique for the off-grid renewable energy sector in Africa.

The Global Infrastructure Forum takes place annually and brings together private sector investors with representatives from the United Nations, and leaders from the major multilateral development banks.

Energy projects in Rwanda and Nigeria which had obtained Bank additional approval. were examples of the Bank partnering with the private sector to bring service to end users in innovative ways, Shonibare said.

Other panelists in the session weighing in from backgrounds in law. private sector and development finance, discussed new and green technology, the digital economy, social media and innovation.

Sarquis Jose Buainain Srgis, vice president for Economic Research, Risk and Strategy and Partnerships NDB, warned that the contribution of MDB's would still depend on conventional infrastructure -roads, healthcare access, which is why innovation was particularly essential.

Jiang Yang, an entrepreneur from China who has developed a map-based public participation platform focusing on space quality and livelihood issues said data would be essential to the process of creating opportunities for doing business inclusiveness, and improving the livelihood of people.

Given the remarkable improvements in the field. Shonibare said there was no doubt as to the role technology could play in the Light Up drive and other key aspects of the Bank's development agenda. Smart technologies, creative financing models could facilitate business and inclusiveness, improving livelihoods across the continent.

"We have to look for more ways of scaling up access," Shonibare said

The Global Infrastructure Forum takes place annually and brings together private sector investors with representatives from the United Nations, and leaders from multilateral the maior development banks, namely the African Development Bank, Asian Development Bank, Asian Infrastructure Investment Bank. European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank, International Finance Corporation, Islamic Development Bank, New Development Bank, and the World Bank

In a joint statement released, the heads of the banks reaffirmed their commitment to work together to deliver infrastructure that is resilient, inclusive, and sustainable. They expressed their condolences following the tragic loss of lives and livelihoods in Sulawesi, Indonesia following a major earthquake. @

Bridging the infrastructure gap through new technology and blended finance

Innovative finance and new technology will connect underserved populations which is expected to lower costs for off-grid electricity supply and benefits consumers

> Smart technologies, creative financing models could facilitate business and inclusiveness, improving livelihoods across the continent.



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Solving the connectivity gap in Africa

Technological advances are transforming society in Africa. Internet access is accelerating economic growth, overcoming barriers such as a lack of access to education and healthcare, and building digital bridges that connect people.

A pilot project in Uganda delivered satellite services to two remote communities via the Intelsat 37e satellite.

Al-Al-

ONNECTIVITY TRANSFORMS AND empowers communities, and by 2025, the Internet's contribution to Africa's GDP could grow by as much as 10 per cent, or US\$300bn, according to McKinsey. Entrepreneurs across the continent have embraced this, working on innovations to revolutionise access to goods and services and make the economy more inclusive. Africa 's 400-plus active technology hubs are also abuzz, transforming the way businesses operate with the emergence of 5G and the Internet of Things (IoT), which are expected to have a tremendous impact by bringing increases in business efficiency and corresponding decreases in operating costs. While advancements have been made, connectivity still remains out of reach for far too many. Surveys have identified nearly 4 billion people around the world who do not have access to Internet connectivity, with nearly three-quarters concentrated in just 20

countries, including several in sub-Saharan Africa. This is largely due to disruptions in established networks, which erode business confidence and hurt economies. According to the Collaboration on International ICT Policy in East and Southern Africa (CIPESA), over a combined period of 236 days since 2015, Internet interruptions – caused by government shutdowns – in 10 sub-Saharan countries led to deficits of more than US\$235mn. Connectivity can also be interrupted by weather, accidental fibre cuts and vandalism, among other reasons.

> Internet interruptions – caused by government shutdowns – in 10 sub-Saharan countries led to deficits of more than US\$235mn

Empowering communities with disruptive satellite innovation

With Africa's size and difficult terrain, satellite is typically the only practical way to provide connectivity to the more rural and remote areas due to satellite's reach, scalability and fast deployment. And recent innovations in orbit and on the ground have closed performance and cost gaps, made integration into hybrid networks easier and improved the total cost of ownership for network operators. The performance of new high-throughput satellites (HTS) such as Intelsat EpicNG is delivering unprecedented reach and economics to telecom infrastructure providers by combining increased throughput and higher power with the traditional advantages of satellite. Intelsat EpicNG enables higher data rate applications and smaller terminals, enabling customers such as Vodacom Business Nigeria and Orange to expand their networks into remote areas and develop new applications while also ensuring that end-users experience an improved quality of service.

The higher power of Intelsat EpicNG means services can be delivered using smaller, solarpowered terminals that can be carried by hand and installed by just a few people. Also, as the expense of terrestrial buildouts often cannot be justified in low-ARPU remote regions that lack electrical infrastructure, a full-service, solarpowered solution such as Intelsat Mobile Reach Solar helps MNOs deliver 2G, 3G and 4G solutions in a cost-efficient manner.

To fully exploit the opportunities offered by connectivity and create a more digitally inclusive society, the entire telecommunications sector needs to make it simpler to integrate all technologies into a seamless network to truly overcome the challenges that network operators and governments face. Enabling inter-connectivity and interoperability between networks is crucial to connect successfully all of Africa and satellite solutions need to become part of a much broader telecoms infrastructure.

A hybrid solution combining satellite and terrestrial technologies provides network operators multiple layers of resiliency to ensure their customers and the larger population remains connected at all times. Hybrid networks also improve can the communications responses in times of disasters, as well has helping return networks to normal operations as quickly as possible. Earlier this year, Mauritania was left offline for 48 hours after the African Coast to Europe (ACE) submarine cable was severed, according to infrastructure analysts. Nine other West African nations were affected by outages, and the impact of just a day or two without Internet connectivity can be severe. Hybrid, flexible networks will also play a crucial role in delivering the next level of communications to Africa. While some regions are still transitioning to 3G and 4G, 5G network deployments are beginning to accelerate, and the development of low-cost, easy-to-deploy remotes that integrate satellite capabilities into the terrestrial equipment providers will be critical. The continued development and evolution of the 5G ecosystem will be the biggest trend for the entire telecoms sector in 2018 and beyond. This network of networks will have multiple technologies supporting a global infrastructure: satellite, Wi-Fi/WiGi, small cells and traditional mobile wireless networks, among others. The development of 5G provides the opportunity for the broader telecoms community to come together.

Solar-powered solution Intelsat Mobile Reach Solar helps MNOs deliver 2G, 3G and 4G solutions in a costefficient manner.

New partnerships to accelerate Africa's digital transformation

Understanding the fundamental role of connectivity in the socio-economic development of Africa, governments and regional organisations are working on transforming Africa into a digital single market by unlocking the continent's value chains and creating enabling platforms for large-scale implementation in all areas of the society and economy.

Smart Africa, which Intelsat joined earlier this year, highlights governments' commitment to the transformation of Africa through high quality, affordable and sustainable connectivity. Its success will depend upon the development of public/private partnerships, this combined effort and the companies' innovative approach enabling governments to reach their connectivity goals.

For example, Intelsat, working with the government of Uganda, ITSO, Gilat and MTN, is helping accelerate 3G infrastructure deployment that expanded the availability of high-quality, affordable broadband connecting remote communities and enhance economic and social programmes. As part of a pilot project, IntelsatOne Mobile Reach Solar 3G satellite services, delivered via the Intelsat 37e satellite, connected two communities in remote regions of the country. The project demonstrates how Intelsat has made deploying solar-powered satellite solutions simpler using hardware and a method that can replicated throughout other parts of Africa. The combination of corporate and government organisations working together to solve deployment challenges also underscores that no one technology or industry player can solve the connectivity gap in any given country.

Africa is transforming fast and connectivity is playing a crucial role by changing how people communicate and businesses operate. But for the continent's digital transformation to spur the expected socio-economic development, everyone needs to benefit from it, even those in the most remote areas. With its disruptive innovations, its new business models and its creative partnerships, the satellite industry brings the solutions to ensure a more digitally inclusive society. ©

Brian Jakins, RVP Africa, Intelsat



Yamal-402 for TV broadcasting and SNG services in Africa

Gazprom Space Systems (GSS) has operated on the African telecommunications market since 2013, following the launch of Yamal-402 in 55°E orbital slot. The satellite provides Ku-band coverage over Russia, CIS countries, Europe, part of the Middle East and sub-Saharan Africa.

USTOMERS CAN OPERATE both within the African footprint (the Southern beam) and use the interbeam connection between Europe and Africa, according to Gazprom Space Systems. Wide Southern beam of Yamal 402 with highenergy performance (EIRP 46-51 dBW) covers a large part of the African continent, particularly sub-Saharan Africa, Madagascar and neighboring areas of the Indian Ocean. The quality of services for customers is determined by the high characteristics of Yamal-402 and good elevation angles, under which the satellite is visible from Africa.

Despite strong competition on the African market in recent years due to the appearance of a large number of new satellites, the capacity of Yamal-402 is very popular. Yamal-402 is often involved to provide services to enterprises, government institutions and population, as well as for live broadcasting of political, cultural and sports events in African countries. Optimal coverage of the African territory and Africa — Europe inter-beam connection allows to arrange TV reportages as well as content transfer quickly and qualitatively both inside the African continent and from Africa to Europe.

The Yamal-402 Southern beam is on a big demand for TV broadcasting in Angola, Cameroon, Lesotho, etc. Approximately a dozen of African TV channels are broadcasted via Telemedia company, our long-standing and reliable partner.

Gazprom Space Systems has been associated with Telemedia since prior to the launch of Yamal – 402, in fact Telemedia contributed to the final footprints of the sub-Saharan beam for Yamal – 402 which is now used extensively by local broadcasters in sub-Saharan Africa. Telemedia operates a network of satellite contribution services and provides hire of satellite news gathering systems to many of the local broadcasters



who fall within the sub-Saharan footprint of

Yamal-402 coverage zone (Southern Beam)

3a7

Yamal – 402. Telemedia is responsible for a number of live church broadcasts, which owing to the wide coverage of the Yamal – 402 footprint for coverage of church broadcasts when reception is required, both locally within South Africa and extensively beyond the borders of Central and West Africa where Yamal – 402 footprint is quite powerful.

Telemedia also transmits an MPEG4 bouquet on the sub– Saharan beam of Yamal – 402 which provides six channels of live horseracing, as well as other multi destination services on a saturated transponder.

Telemedia provided assistance with TPA Angola for the introduction of their Satellite network and after the end of life of NSS7. All of TPA Angola's traffic was transferred to Yamal – 402 for not only their National Distribution Service, but also their regional contributions and SNG services.

Peter Bretherick of Telemedia said: "Telemedia makes extensive use of Yamal – 402 sub-Saharan coverage since it is easy to operate with Gazprom Space Systems and the extended coverage of the sub-Saharan beam allows interchange of programming amongst many of the sub-Saharan – Southern African broadcasters from Mauritius in the East to Dakar in the West."

Gazprom Space Systems anticipates Yamal-402 capacity to be even on more demand for media applications in upcoming years on the African continent. ©



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Build your own chatbot to transform telecom customer service

Customers rate telecom customer service poorly on feedback forms and Net Promoter Scores (NPS). This is no surprise for those who know how extremely complex the interplay of mobile devices and global wireless networks are.

USTOMER SUPPORT CALL centres are unfortunately where technological complexity thrives. Service agents have the impossible task of fixing all service or device problems thrown their way, all done remotely via a mere phone call.

Chatbots are becoming the preferred platform to deal with customer care interaction in many industries – they can easily deliver answers and solutions. In this article, Olivier Engel, the EVP of product development at Sicap, investigates how mobile service providers can build a Customer Care Chatbot. Dan Code-McNeil, the head of sales at Ada, a global Al customer service leader provided insights for the story.

According to the analyst firm Gartner, chatbots will be integrated across 25 per cent of all customer service and support operations by 2020.

Telecom customer care hits the chatbot sweetspot

Thanks to the many chatbot platforms available, any company can now build a chatbot in no time. However, automating a customer service bot that scales to meet the needs of millions of customers can be challenging, without an experienced partner and Al powering your bot.

Smartphone owners encounter dozens of different kinds of problems, and the solution to their particular problem can differ, depending on the device and operating system involved.

When a mobile service provider decides to begin a bot-building journey, the first step is to define the purpose, objectives and usecases for the bot. In the customer care context, they may be used to accomplish customer requests – such as helping subscribers to configure Access Point Name (APN), Wi-Fi hotspot or an email account, instructing them on how to top up their prepaid balance and so on.

How brainy does a bot need to be?

It's important to find an AI-powered platform that provides not just instant, but also intelligent support.

When a user asks a bot for help in repairing the Internet connection, the chatbot

must understand what the user wants and provide the right response. Natural Language Processing (NLP) makes this possible.

Ada, a global leader in AI-powered customer service allows non-technical teams across telecommunication companies, build and deploy a scalable, intelligent customer service bot in less than a month, and this is available in more than 100 languages.

Dan Code-McNeil, head of sales at Ada, says that the company has enabled businesses to automate up to 70 per cent of their customer service, with more than 80 per cent recognition by using its Al powered platform, Ada.support.

The company's proprietary machine learning and natural language processing model learns from hundreds of thousands of conversations taking place every day across their clients' bots. This allows Ada to consistently improve the accuracy and capabilities of its AI, and to ultimately strengthen the customer experience.

Chatbots can also be built without Artificial Intelligence. The hard-coded rulebased approach is technically easier, but lacks the scalability, flexibility and intelligence of the AI-based solutions. The caveats can be substituted by suggestive questions, combined with quick-reply buttons and other components, aiding the conversation with a less intuitive bot.

A bot framework or a bot platform?

Operators and MVNOs can build customer service bots in two ways.

Using a Bot Framework, such as Wit.ai or Chatscript requires software development resources, but they make the development faster and remove much of the manual work involved in building bots.

Bot platforms, such as Ada.Support are complete online ecosystems, on top of which chatbots can be deployed and operated without software development skills. Many include a pre-integrated partner network. Ada partners with Zendesk, Genesys, and Live Person for a quick bot-to-agent handoff.

Leverage chatbot communication channels

Chatbots can leverage popular chat mediums such as Facebook Messenger,

Twitter, Kik and Telegram in addition to website chat windows for customer communication.

The most frequently encountered problem at telecom call centers is a nonfunctional Internet connection, which makes SMS text messaging an important communication channel for chatbots.

How can you integrate a telecom bot?

A bot is a seamlessly embedded component on a mobile operator's end-toend customer care flow. This requires integrations into several external systems.

Integrations to CRM and ticketing tools can enable a swift chatbot to live agent handoff. An Automatic Device Detection system (ADD) and Device Intelligence Data repository can provide vital handset related information to bots. Online Smartphone Support platforms provide ready-made help content tailored for different device models and operating systems. An SMS Center opens a back-up communication channel, which will work even without an internet connection. An Equipment Identity Register (EIR) provides bots with information about stolen devices. VoLTE Device Entitlement Server gives operators the ability to deliver Rich users Voice-over 1 TF and Communication Service (RCS) configurations through the bot.

In conclusion

Chatbots have proven their benefits in the first line in telecom customer service; they save customers' time, decrease support costs, and enable agents to deliver more meaningful human-to-human experiences. But, that's not all. Ada and Sicap have already witnessed telecom operators creating new roles and teams dedicated to driving automation across the customer journey.

Sicap's Smartphone Support Chatbot guide is available and free for all operators and MVNOs to learn more about the planning and building process. For more information visit www.sicap.com/blog/how-to-buildsmartphone-support-chatbot/

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Africa's fintech industry set to soar

Mobile phone companies are leading the charge in bringing a raft of financial products and services to previously underserved African markets.

PPORTUNITIES ARE RIPE for business in Africa's thriving financial technology, or fintech, industry, which is set to contribute some US\$150bn to the continent's GDP by 2022.

That is the forecast from Financial Sector Deepening Africa, a development finance organisation, which says the industry is currently worth about US\$40bn. It represents dramatic growth over the next four years or so.

The potential is certainly there. It is estimated that more than two billion people in the world have limited or no access to essential financial services, mostly in emerging markets, and perhaps coming online for the first time via a mobile phone.

Fintech is an increasingly important employer in Africa too, now supporting some three million jobs already, directly and indirectly, throughout the region.

Expect more to come, reckons FSD Africa's financial markets director, Evans Osano, who says mobile phone companies, in particular, are driving the change.

"If you look at the value chain, most of that money is coming out of mobile phone companies," Osano said in an interview recently with news agency Bloomberg.

But the big phone companies, such as of MTN and Safaricom, are themselves supported by a vast network of communications expertise, from equipment vendors right through to satellite providers, such as Arabsat and Amos Spacecom, among others.

As Africa's communications infrastructure and coverage grows so too does the scope for rolling out sophisticated new products such as financial services, with the increasing mesh of technology and banking.

It is an industry showing signs of maturity too. Today, there are

hundreds of fintech start-ups across the continent, and now gaining the attentions of high profile investors.

South Africa-based fintech firm JUMO recently closed a US\$52mn fundraising led by Goldman Sachs.

Headquartered in Cape Town, it calls itself a "rapidly scaling technology company" that provides information services, financial infrastructure and products to underserved markets across Africa.

It has additional offices in Kenya, Uganda, Tanzania, Rwanda, Ghana, Zambia and the UK, and plans to use its latest financing to access markets in Asia, and extend its African footprint.

Since its 2014 launch, more than nine million people have saved or borrowed on the JUMO platform, mostly micro and small business owners, with more than US\$700mn of loans originated.

It partners with many of the region's banks and mobile money operators to offer individuals and small businesses savings and credit products via mobile devices.

Indeed, the goal of leveraging technology to advance financial inclusion among Africa's underserved markets is, of course, hugely appealing to big ticket investors.

Jules Frebault, executive director at Goldman Sachs, says there is "immense opportunity" across Africa and beyond for JUMO to build on its track record developing digital marketplace infrastructure to offer mobile subscribers access to financial products.

That means an increasingly diverse product offering as well. Since the early pioneers of African fintech, with its focus on mobile money and payments, the sector has blossomed to include insurance, credit scoring, data analytics and more.

Venture capital firm Village



Some people living in emerging markets may have no access to essential financial services and are perhaps coming online for the first time via a mobile phone.

Capital charts the the rise of Africa's fintech sector in a recent report in conjunction with online payments giant PayPal.

It gives an example of the emerging support for the continent's all-important agricultural sector.

Farmers make up around 70 per cent of Africa's workforce yet there is a huge lack of access to finance, it states, something that could boost efficiency, the adoption of new technologies and opening up of new markets.

"Agriculture fintech in Africa is a promising sector," the report states. "New payments, insurance and investment startups are helping farmers access credit, track inputs and reach new markets." It cites supply platform Twiga as a major success in the region, having raised US\$13.3mn from 2017-18, but other start-ups, like Nigeria's Farmcrowdy, have also seen recent success.

The agricultural chain is just one area that could be set for transformation given greater access to finance, but there are others too. No wonder growth prospects for Africa's fintech business are generating interest and excitement among some of the world's best-known banks and investors. ©



For those looking for investment opportunities, Africa is full of promise. According to the IMF, Africa's growth prospects will be among the highest in the world between 2018 and 2023, with the continent already ranking as the most profitable region in the world in figures from the UN.

N OUR DIGITAL age, however, rapid economic development must be underpinned by a robust and farreaching telecoms infrastructure with all citizens experiencing reliable access to the internet. Currently, this is not the case.

Internet penetration in Africa is just 35.5 per cent, labouring behind the world average of 54.4 per cent. Part of the issue is the expense of laying conventional fibre optic; the vast distances involved makes it too expensive to reach remote communities. But connectivity doesn't end with fibre optics. Wireless technologies present a viable solution and, among these, TV White Space (TVWS) has huge potential to cover vast areas and to connect the many in Africa who are still unable to participate in today's digital world.

Proven success

TVWS, for the unfamiliar, is the name given to the parts of the spectrum that are unused by TV services in a certain location at a particular time. The available channels can be identified by a dynamic database and then used to provide wireless broadband Internet access without causing any interference to TV services. The use of TVWS is proving attractive because it is possible to transmit at low power over long distances, penetrating trees and other obstacles with ease. It doesn't rely on a line of sight connection to operate and can be quickly and cheaply installed.

Doug Anson works within the Emerging Technology team at Nominet, a company primarily known as the operator of the .UK Internet infrastructure, and first identified the potential of TVWS technology as a connectivity solution around five years ago. The switchover from digital to analogue TV that took place in the UK between 2007 and 2012 freed up new white spaces in the spectrum that was believed to be able to connect remote communities to the Internet.

We built a dynamic TVWS database for identifying available spectrum channels and secured one of the first licences from British regulator Ofcom for its use in the UK. Working with equipment manufacturer partners who provided the radios, the company has used technology to connect rural communities in Scotland and Wales, in partnership with local ISPs such as Broadway Partners and Whitespace UK. Pilot projects were followed by commercial launches, and Nominet continues to lobby for this dynamic sharing approach to spectrum to be used more widely to offer a high-speed connection to the millions across our country that have no or a slower - Internet connection.

African opportunities

Connectivity is now a fundamental part of life, with some suggesting it is akin to a human right in our digital times. And yet billions of people across the world lack a high-speed internet connection. The ensuing 'digital divide' is having a serious impact on communities and countries, with various studies showing the positive impact connectivity can have on GDP, if available.

After our success in rural parts of the UK with TVWS, Nominet has begun considering which other parts of the world could enjoy similar benefits from this wireless, innovative technology. Africa is a natural choice, and not only because of its poor Internet penetration rates. The barriers to connectivity in Africa are largely terrain-based and investment-driven, and these are challenges that TVWS is proven in overcoming. Additionally, Africa is well suited to using TVWS as many of the spectrum channels that could be used for TV broadcasting services are available, unlike in Europe where more of the TVWS spectrum is already being used.

Nominet has been working on the potential of TVWS in Africa for more than a year now; a valuable process that has enabled the company to refine and improve our approach so that it's fit for purpose across the continent. For example, in Mozambique, the firm is supporting a pilot being run by the regulator INCM in two different cities (Maputo and Nampula), while in Kenya they are collaborating with Mawingu Networks to run a database-driven TVWS network in Nanyuki.

Nominet has plans to support more projects in the coming months, but already have a tried and tested blueprint which is ready for use. They have also worked with the Dynamic Spectrum Alliance to create policy and technical guidelines to support speedy adoption of TVWS. The company has a production-grade implementation of a templated TVWS database that can quickly be developed in any country. With all this momentum, Nominet hopes to see African nations considering and using TVWS technology to meet their connectivity needs and finally begin to move the dial on the digital divide.

The Internet should be for everyone. It was developed to be an open and accessible platform to connect people globally and has grown to become a facilitator of all aspects of personal and professional life. For Africa, on the cusp of extraordinary growth and development, the Internet will be a crucial part of fulfilling potential. Nominet hope that TVWS technology – and a dynamic approach to spectrum use – will prove part of the solution to the connectivity challenges of the world and support Africa on its developmental journey. *C Doug Anson*

Over the past few years the global perception of biometrics has undergone a huge

shift.

Biometric systems protect against telecoms fraud

Fingerprint biometrics systems provide the telecommunications industry with a powerful line of defence against fraud.

Photo: Adobe Stock

RAUD. IT'S A pervasive issue in the telecommunications industry. In the United States, the US Federal Trade Commission reported that incidents of SIM fraud had risen from 1,038 in 2013 to 2,658 by 2016, in Kenya, a study by Kenya Financial Transaction Fraud found that SIM swap fraud was the most prolific form of financial service fraud, and in South Africa there has been significant growth in SIM fraud with hefty amounts stolen and a rise in reports to the ombudsman. The sector is under increasing pressure from government, financial institutions and customers to improve protections and minimise risk.

SIM card fraud extends beyond the challenges of SIM-swapping, where a person's details are used to change their phone number and access their bank accounts. Unregistered SIM cards are equally as pervasive a threat and are often used for serious criminal activities such as terrorism, intimidation, kidnapping, robbery and fraud. This level of criminal activity is an ongoing problem that poses a threat to both industry and individual. It is also one that has been addressed by governments and regulators, with varying degrees of success.

MTN Nigeria received a hefty fine of US\$5.3mn from the Nigerian government and the Nigerian Communications Commission for failing to disconnect its unregistered SIM cards by a set deadline. In Tanzania, the telecoms regulator fined six mobile phone operators to the tune of US\$250,000 for not enforcing proper SIM card registration. In Malawi, Uganda and Kenya, authorities are clamping down on how SIM cards are registered and swapped. Legislation and regulation across Africa are being adapted and refined to find the perfect layers of protection to prevent the unrelenting rise of unregistered SIM cards and the subsequent cost to economy and business.

In Uganda, the system currently being introduced to manage SIM card fraud is using the ineffable accuracy of biometrics to change how people gain access to a SIM card. Biometrics is still one of the most reliable and accurate ways of affirming a person's identity, especially if the system uses the most advanced technology with liveness detection and the ability to scan several layers below the skin. This technology ensures that the fingerprint is clearly captured and scanned regardless of the quality of the skin.

While there is no absolutely perfect solution to the SIM fraud problem, biometrics provides both customer and telecommunications organisation with a far more reliable assessment of a person's identity than a document or a PIN. It is also less trouble for the

For the telecoms sector, reliance on a biometrics system to validate customer identity resolves a messy pile of problems quite neatly. consumer than having to carry a pile of – easily forged – papers into the store to prove identity, location and personal details. A biometrics system can be used to instantly determine who is applying for the SIM and whether or not they have the right permission.

For the telecoms sector, reliance on a biometrics system to validate customer identity resolves a messy pile of problems quite neatly. It can work with SIM and mobile phone contract applications, confirm SIMswap identities, and it can ensure that only employees gain access to specific systems or locations. By introducing a robust biometrics system, the potential for fraud is significantly reduced as it makes it extremely hard for criminals to gain access to the system. If at all. In addition, for those customers who are just there to change or purchase a SIM card, biometrics adds a helpful layer of simplicity. The process of affirming identity is streamlined and made far more efficient, potentially reducing waiting times and customer frustration.

Over the past few years the global perception of biometrics has undergone a seismic shift. It has become mainstream in banks, ATM machines, hospitals and organisations. Its ubiquity makes it a powerful candidate for the telecommunications industry which is in dire need of fewer fines, richer compliance and a smaller SIM card battlefield. ©

Claude Langley, regional sales manager, Africa, HID Global Biometrics HID Global (www.hidglobal.com)

Very high resolution satellite data for Africa

Jonathan Sumner, business development director at Earth-i looks at the merits of using Earth Observation satellites in tourism, farming and urban development.

HAT DOES NAMIBIA, South Africa, Mozambique and Kenya have in common? Well, one thing is that they can all now be seen in unprecedented detail from space. The latest generation of Earth Observation satellites is enabling all nations to develop fit-for-purpose strategies to manage land administration, unlock new economic potential and drive social and environmental development.

The pace of technological development in the satellite industry has rocketed in the last decade. Earth Observation satellites used to be large, sophisticated, exquisite scientific instruments, which cost enormous sums to develop and launch. If you needed to map or investigate the Earth's surface in detail they were your only option. However, in the space of just 10 years, all that has changed.

Satellites are getting smaller

Pioneering satellite developers and manufacturers in the US and UK have simplified and scaled down EO satellites. While the very small shoe-box sized 'nano-satellites' have limited capability, those in the small satellite category (around the size of a washing machine or refrigerator) have very sophisticated capabilities. While much cheaper to build and launch, they can still offer very high resolution imaging capabilities – acquiring EO data at resolutions of better than 1 metre, meaning every pixel shows 1 sq metre of land.

Given the lower build and launch costs, these type of satellites can now be built and launched in constellations of multiple satellites working together to achieve much greater frequency of imaging, revisiting any location on earth at least once a day and, soon, multiple times a day.

Areas with regular cloud coverage have a better chance of being imaged if multiple identical satellites can revisit the area of interest frequently. This has traditionally defeated satellites in those parts of Africa where cloud cover can be a persistent challenge.

More images, data and analysis

It is hard to understate the revolution in earth observation that this stream of new high-resolution data is enabling. And at a price that makes insightful data affordable to scientists, governments and industries in Africa and other emerging markets.

As well as new constellations gathering very high resolution (VHR) data, there is also a steadily growing stream of data from large satellites launched by the EU and the US government which provide medium–low resolution data for global mapping and monitoring purposes.

This data has been deliberately made easily accessible on a global basis, and essentially free, to enable all nations of the world to apply earth observation data to their development and policy-making needs. The African continent was only lately added to the full coverage mission of the European Space Agency's Sentinel2 mission and many new applications are emerging.

Earth-i, a UK company leading advocate of the value of satellite imagery, is implementing large-scale geospatial projects based on satellite data across Africa. These are varied and include:

1) Tourism/Eco-tourism in Namibia (Etosha) – Road and tracks mapping, both for tourists and park rangers, requires detailed imagery to reveal small spatial detail.



2) Urban development in South Africa (Tshwane) – to establish a detailed urban footprint the mapping of dwellings, houses, roads and other infrastructure requires VHR EO data, and in a fast-growing city regular affordable VHR satellite data will contribute to sustainable urban management practices.

3) Mining and exploration in Mozambique – When setting up a mining project in remote areas, access and local conditions can be quite a challenge. An up-to-date and detailed baseline map allows for much improved planning in the early stages of a project – even at the initial explorations stage. Subsequently this data can be used to document progress and satisfy the authorities that planning permissions and environmental protection requirements were followed.

4) Coffee plantations and agriculture in Kenya and Rwanda – Even though agricultural applications for satellite data do not always require VHR satellite data, this is not true for projects like coffee crop monitoring down to the level of small fields and individual plants.

One of Earth-i's flagship projects is the Accord programme in Kenya and Rwanda, focused on driving improvements in coffee crop yields and quality, and in turn improving the incomes and security of smallholder coffee farmers in those countries. The programme is funded by the UK Space Agency and is proving how the value of satellite data integrated with new weather prediction technology can provide micro-climate predictions down to the individual coffee field and small holder farmer level. VHR satellite data can then also spot localised areas of deterioration in plant health using NDVI techniques to measure plant condition.

Other usage of this data includes the monitoring of access roads, washing stations and other localised infrastructure needs.

The new generation of satellites is therefore an exciting opportunity for many African nations. Several now have their own satellite programmes and space agencies, and for those that don't want to capitalise on the easier, more affordable access to data from space, commercial companies are offering unprecedented access to new constellations of EO satellites. @

Automation

Automation testing skills define the future

In 2016, the global test automation market was valued at around \$U\$16bn. In a study done by Zion Market Research, the company also predicted that this market will reach \$U\$55bn by 2022 with a CAGR of just over 23 per cent from 2017.

N 2016, THE GLOBAL test automation market was valued at around \$US16bn. In a study done by Zion Market Research, the company also predicted that this market will reach \$US55bn by 2022 with a CAGR of just over 23 per cent from 2017. Driven by digital transformation and measurable benefits to business and process, the test automation market is seeing steady growth. However, according to Mandla Mbonambi, founding CEO of Africonology, there is a critical need to invest in new skill sets to make local adoption of automated testing a more impactful reality.

"It is essential that we invest into multiskilling on the use of automation testing tools to ignite digital transformation and the adoption of automated testing in South Africa," he says. "Manual testing is still a critical component of testing, it cannot be completely removed, but it cannot cater for the full project scope beyond the sanity testing stage. As DevOps continues to grow in popularity alongside Continuous Integration/Delivery, automation testing is becoming increasingly important and so are the skills that support it."

South Africa is facing a significant skills shortage. Statistics point to a market that is lacking in education and has limited skills development. Organisations wrestle over the small pool of talent available while the young and the restless remain unemployed and untrained. It has never been more important for both the public and private sector to invest in skills development, especially in the areas of science, technology, engineering, and maths.



There has been a significant increase in test automation skills development in the industry as a whole.

"To build these skill sets in the African market, companies and universities can only align by collaborating with one another," he adds. "It is time to create opportunity and expand capability through innovative projects that address existing challenges and inspire students to come up with solutions. Universities and schools must emphasise the qualities of creativity and innovation to prepare the workforce of tomorrow."

That said, there has been a significant increase in test automation skills development in the industry as a whole. Most testing professionals are acquiring the knowledge and capability required to embrace the full potential of testing automation as they recognise the need to remain relevant in the digital transformation era.

"Organisations should invest into continuous training and innovation," Mbonambi concludes. "This will ensure that they stay ahead of the technology curve while endorsing a culture that embraces ongoing skills development and career growth. The result of this focus will be a marked increase in their testing capability while giving them the skills base they need to take advantage of the potential that automation testing offers."

Those organisations that miss the skills development boat will struggle to locate the talent required to kickstart their digital transformation plans and drive their automated testing goals. Without the right talent, their only option is to contract experienced test automation specialists at high cost and high talent turnover. By investing in training, both at the student and professional levels, the private sector is ultimately investing into a more sustainable and skilled workforce that will have a positive impact on the all-important bottom line. C

There has been a significant increase in test automation skills development in the industry as a whole. Photo: Adobe Stock

En Égypte, le recul du piratage de logiciels et les réformes législatives dopent les investissements étrangers

Selon une récente étude menée par l'Association Américaine Business Software Alliance, l'Égypte a vu une baisse de deux pour cent de son taux de piratage de logiciels, qui atteint aujourd'hui 59 pour cent. Avec l'arrivée de nouvelles réformes législatives, le pays devrait devenir plus attrayant pour les multinationales et les centres de données internationaux.



ELON LES CONCLUSIONS de l'étude, l'Égypte a considérablement réduit la valeur commerciale des logiciels sans licence, qui est tombée de 157 millions USD à 2015 à 64 millions USD en 2017.

L'étude a également déterminé le volume et la valeur des logiciels sans licence installés sur les PC situés dans plus de 110 économies nationales et régionales et sondé plus de 22 500 consommateurs et salariés qui utilisent un PC chez eux ou sur leur lieu de travail dans 32 pays.

À l'échelle mondiale, l'Égypte possède désormais des taux de piratage inférieurs à d'autres prétendants à l'externalisation internationale, dont le Maroc (64 pour cent), les Philippines (64 pour cent), le Vietnam (74 pour cent) et le Sri Lanka (77 pour cent). Ces taux sont d'ailleurs en recul pour la deuxième année consécutive.

Avec le soutien de deux tiers des 596 députés, la loi sur la cybercriminalité a été adoptée par le parlement égyptien. Ce texte va notamment permettre de réduire les cybermenaces et fixe des règles et des mesures à suivre par les FSI.

En outre, il légalise pour la première fois les preuves numériques dans la jurisprudence égyptienne, vise à éradiquer toutes formes d'informations d'incitation à la violence et à la haine et à réagir contre divers autres types de criminalité informatique tels que le hacking, la fraude ou toute attaque contre les systèmes et réseaux d'informations privés et publics.

M. Mohamed Hegazy, directeur du bureau de la propriété intellectuelle, commente les conclusions de la BSA : « Ces dernières années, le gouvernement a pris des mesures strictes pour sévir contre l'utilisation illégale de logiciels.

Nous sommes parvenus à créer un environnement commercial favorable en modernisant le cadre légal et l'application de la loi, en luttant contre le piratage et en protégeant les droits de propriété intellectuelle. », ajoute-t-il.

Le ministère égyptien de la Communication et des Technologies de l'information a annoncé que le Cabinet avait approuvé le projet de loi sur la protection des données et la vie privée qui inclut le nouveau Règlement général de l'UE sur la protection des données (RGPD).

« Nous travaillons sur une stratégie globale pour accroître l'attractivité de l'Égypte à l'égard des investisseurs internationaux. Pour ce faire, nous nous appuyons sur nos acquis et sur la croissance, qui restera solide selon nous, du secteur des TIC, confie Maha Rasha, PDG par intérim de l'Agence de développement du secteur des TI en Égypte.

Le pays possède la combinaison optimale

Les réformes récentes renforceront l'attrait de l'Égypte pour les entreprises mondiales et les centres de données internationaux, en plus de l'aider à réaliser des gains économiques et en matière de cybersécurité.

d'atouts, qui lui permettrait de devenir une plateforme idéale pour des activités mondiales et une innovation professionnelle sans précédent. »

Les nouvelles réformes législatives renforcent ce positionnement et génèrent une nouvelle vague d'investissements étrangers dans le secteur,» ajoute-t-elle.

Les récentes réformes législatives

permettront à l'Égypte d'attirer les multinationales et les centres de données internationaux, mais aussi de tirer parti d'avantages économiques et en matière de cybersécurité.

Le pays a déployé des efforts significatifs pour développer son infrastructure de télécommunications et construire des parcs technologiques dotés de programmes d'investissement et de mesures incitatives, en encourageant son vivier de talents grâce à des initiatives de formation sur les technologies de pointe telles que la science et l'analyse des données, l'IoT, l'IA et la cybersécurité.

Estimé à une valeur de près de 59 milliards EGP (3,26 milliards USD) en 2017, le secteur de l'exportation des services de TI et basés sur les TI (ITES) est stimulé par les expansions et la présence accrue des multinationales existantes et des nouveaux investissements directs dans les TI qui proviennent de l'étranger.

L'Égypte a déjà établi sa réputation en tant que destination privilégiée pour les géants technologiques désireux d'établir leurs centres d'expédition et de services partagés internationaux dans le domaine des TI/ITES.

De nombreux leaders technologiques et une longue liste de multinationales, dont DELL EMC, Valeo, Microsoft, Convergys, Teleperformance, Sutherland, IBM, Sykes et Mentor Graphics ont choisi d'externaliser leurs services de TI et de R&D en Égypte.

Pour le gouvernement, la priorité consiste à attirer les nouveaux investissements dans les TI. Il met donc en avant les coûts très compétitifs en matière d'activités multilingues, une main-d'œuvre abondante, qualifiée et dotée d'une grande habileté technologique, sans oublier un environnement commercial positif et un soutien constant des instances gouvernementales. Ø

Blockchain in Africa: The next frontier

John Kamara, director for Global Gaming Africa, on how Africa has embraced Blockchain technology. Words by Katy Micallef.



What kind of solutions can blockchain technology offer the continent? Is Africa on the road to becoming a blockchain hub?

Africa is rising and technology is at the forefront of our growth as a continent. We have seen the explosion of the mobile space in the continent and how it has allowed a number of services and solutions to become easier. Blockchain is about to help solve a number of issues we are currently facing in the public and private sector. Pockets of blockchain innovation are fast springing up in innovation hubs across Africa, as the public and private sector alike seek effective new systems of record with trust embedded.

With Kenya, Nigeria, Uganda and South Africa among the countries taking the lead in blockchain experimentation, the financial sector looks set to be the continent's earliest big adopter. However, development and trials are also underway to apply blockchain technology to virtually every industry sector – from health and social development to retail and agriculture. Governments are exploring ways of using blockchain to aid corruption across multiple verticals and also to push value to service sectors. One company planning to maximise blockchain's potential in Africa is Ecobank, a pan-African banking conglomerate with operations in 36 African countries. Ecobank's Fintech Challenge actively seeks out fintech innovations harnessing Blockchain, artificial intelligence, machine learning and other nextgeneration technologies.

Ecobank's Fintech Challenge actively seeks out fintech innovations harnessing Blockchain, artificial intelligence, machine learning and other nextgeneration technologies.

Other countries such as Kenya and Nigeria have either setup a blockchain committee or advisory programs to explore the opportunity. Some of the happenings in the private sector around blockchain education are also key to use case of the technology, i.e IBM research on blockchain and movement of trade in Africa. ITEX, a payment solution company servicing multiple POS solutions and software for banks across Africa is exploring blockchain for security and trust.

From my perspective Africa is looking at blockchain as a solution to solve some of the multiple problems we have, as we pioneer digital payment technologies in Africa as well.

As we move into the African future in technology blockchain represents a perfect decentralised and incorruptible 'truth engine' that cannot be hacked growth for payment, SME trade and a number of identity management and transactional problems we have in Africa.

Nairobi and South Africa have implemented crypto-friendly laws and Kenya's president Uhuru Kenyatta has launched a blockchain and artificial intelligence task force. Do you think other African countries will follow suit? Yes, more countries will follow and create other types of structures that will work for their economy based on their market need.

Some momentum has been gathered around the use of blockchain in Africa so far and throughout 2018. But what could be

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unusual is the role that governments and public sector organisations could play in raising its profile further. Typically, the development and application of emerging technologies is championed by the private sector before the public sector tends to take notice. Given that the potential use cases for blockchain align so closely with many public services, this is a technology where the public sector cannot afford to be sat in the passenger seat.

For example the Blockchain Association of Uganda was established earlier this year to create a credible vehicle for driving standards for blockchain across industries in Uganda. The membership organisation also aims to make blockchain-related resources available to government and public-sector consumers.

We also see the evolution of the Blockchain centre for excellence positioned to provide education and train young developers on blockchain and how to build solutions that can solve African problems.

Do you foresee any difficulties with the implementation of blockchain systems? There are some concerns about the risk of crypto asset crime, including tax evasion and money laundering.

Bitcoin's wild skyrocket last year may well have turned the world's interest on to cryptocurrencies, but in Africa we "still have a long way to go" before they will be considered legal tender, and as such are not of major interest. Governments are still struggling with how to manage crypto space and this is affecting the conversation around blockchain. Any decision to buy into a new cryptocurrency would be guided by the same criteria as other investment decisions, with a focus on avoiding the "cloud" created by the crypto buzz.

African Cryptocurrency exchanges – allowing people to trade various digital currencies against African currencies – may present a more valuable prospect in the short term, but overall, he leans away from the crypto proposition in favour of blockchain solutions. These, he says, will be far more attractive investment opportunities: It will not be as straight forward as it may sound.

A lot of African banks and government run when they hear the word crypto because of the effect they feel it will have on the economy and also loss of control. Issues around tax evasion are real and have to be discussed with clarity for us to find a way forward.

What potential does this have to revolutionise the lives of the unbanked, does it represent an opportunity to democratize the economy?

On the private sector side it is a huge opportunity for the fintech and private sector space. Also, the drive for financial inclusion is one that bodes well for the crypto space in



Governments are exploring ways of using blockchain to aid corruption across multiple verticals.

Africa. We can already see a number of exchanges setting up in Africa to take advantage of this growing opportunity.

Just as Africa skipped the early fixed-line telecommunication phases of the 20th century and moved straight on to mobile phone usage, could new blockchain tech provide it with a similar opportunity to bypass inefficient systems and leap into the future?

Yes, 1000 per cent – blockchain is going to revolutionise the way we look at tech and solutions going forward in Africa. And blockchain on mobile is the next frontier.

Governments are exploring ways of using blockchain to aid corruption across multiple verticals and also to push value to service sectors.

There is certainly a lot of buzz around blockchain tech and its potential to bring about change in Africa. In your opinion, is this sense of optimism realistic or are we jumping the gun a bit?

It is optimistic but needs guidance and clarity. It's also a huge educational opportunity for various private sector companies to create a whole new revenue and income stream. Africa is the land of milk and honey at the moment and blockchain is another form of milk that is going to become huge. Some interesting things happening in blockchain in Africa:

ITEX, one of the top payment solutions in Africa and specifically, Nigeria (more than 14 years old), has exposure in more than 23 countries throughout Africa and is currently working on an integrated Pan-African settlement platform on the blockchain. Paxful has announced plans to establish a blockchain incubator hub in Lagos, Nigeria, as well as to run Blockchain and cryptocurrency events in Nigeria, Ghana and Cameroon.

AID:Tech and PharmAccess are harnessing AID:Tech's blockchain platform to collect and verify digital health data to make antenatal care more effective in Tanzania.

Kenyan real estate firm Land Layby Group plans to use blockchain to store land registry records, eliminating the existing real estate challenges of fraud, double ownership and false documents. Kenyan startup 'Nurse in Hand', has signed a MoU with Apla Tech Company to build a blockchain-based accident and emergency response platform.

Blockchain start-up TariLabs has launched in Johannesburg, South Africa, with the aim of building the open source Tari blockchain protocol. The protocol is being constructed as a platform for the management, trade and use of digital assets, and will be merge-mined with the Monero blockchain.

The South African Reserve Bank (SARB) ran the Project Khokha proof of concept trialling a distributed ledger technology-based wholesale payment system in a 'real world' environment. It reported that the typical daily volume of the payments system could be processed in less than two hours with full confidentiality of transactions and settlement.

Jamborow, the pan African B2B platform for financial inclusion in Africa is also building a blockchain solution to help secure data, transactional information and identity management for her clients in Africa.

These developments prove that the private sector and governments are taking blockchain seriously in the continent. The proof is in the drive of our private companies to explore and deploy funds into blockchain research as well as projects. @

Africa's entertainment and media industry enters dynamic new wave of convergence - 3.0

The borders that once separated the entertainment and media (E&M), technology and telecommunications industries are blurring in the battle for the attention of the consumer in a world that is rapidly digitising.

S THE MOBILE device cements itself as the pre-eminent source of the E&M experience, the most disruptive, forward-thinking companies are striving to create an integrated ecosystem suited to this consumer-driven dynamic. This is according to PwC's 'Entertainment and media outlook: 2018 – 2022: An African perspective' released today.

By 2022, total E&M revenue in South Africa is expected to reach US\$12.1bn, up from \$8.8bn in 2017. Internet (access and advertising) is expected to grow at a compound annual growth rate (CAGR) of 11.3 per cent over the forecast period to reach US\$6.2bn, up from US\$3.6bn in 2017. Overall E&M growth will be less reliant on Internet access revenue as organic growth opportunities in Internet connections start fading towards the end of the forecast period. Internet advertising will greatly exceed TV advertising in terms of growth, leading the way with a 13 per cent AGR over the forecast period to reach US\$9.4bn and overtake TV advertising spend in 2022.

The Outlook is a comprehensive source of analyses and five-year forecasts of consumer and advertising spending across five countries (South Africa, Nigeria, Kenya, Ghana and Tanzania) and 14 segments: Internet, data consumption, television, cinema, video games, e-sports, virtual reality, newspaper publishing, magazine publishing, book publishing, business-to-business (b2b), music, out-of-home (OOH) and radio.

Vicki Myburgh, entertainment and media leader for PwC Southern Africa, said: "It's clear we're in a rapidly evolving media ecosystem that's experiencing Convergence 3.o. In Convergence 3.o, the dynamics of competition are evolving while a cohort of ever-expanding super competitors and more focussed players strive to build relevance at the right scale. And business models are being reinvented so all players can tap into new revenue streams, by, for example, targeting fans and connecting more effectively with customers to develop a membership mind-set.



The shift from physical to digital media has been one of the core drivers of the global and local E&M market for many years.

"The pace of change isn't going to let up anytime soon. New and emerging technologies such as artificial intelligence and augmented reality will continue to redefine the battleground. In an era when faith in many industries is at a historically low ebb and regulators are targeting media businesses' use of data, the ability to build and sustain consumer trust is becoming a vital differentiator."

South Africa's E&M industry faced a challenging year in 2017 amidst economic and socio-political uncertainty. Total E&M revenue rose at a comparatively low rate of 6.8 per cent year-on-year to US\$8.8bn. A bounce-back in 2018 sees an anticipated 7.6 per cent year-on-year growth, while the CAGR to 2022 is forecast at 6.5 per cent.

South Africa will see a strong CAGR of 7.6 per cent for consumer revenue to 2022, moving from R93.9bn in 2017 to R135.7bn in 2022. Beyond revenue from the Internet segment (buoyed by apps revenue) there are many success stories, most notably that of video games, which will surpass books, magazines and B2B to become the third-highest contributing consumer segment.

There is a striking difference in growth between digital and nondigital revenue, which have CAGRs of 11.4 per cent and 1.8 per cent respectively. Put another way, digital revenue will add R41.3bn and nondigital revenue R6.7bn absolute terms to 2022. The nondigital elements of five different segments – books, magazines, newspapers, OOH and video games – will all decline to 2022.

Within this overall increase, the fastest revenue growth will be in the digitally driven segments. Virtual reality will lead the way, albeit from a low base, at a five-year CAGR of 55 per cent to reach 45.8bn in 2022, from 5.1bn in



Vicki Myburgh, entertainment & media industry leader for PwC South Africa.

2017. "The exceptional growth in VR reflects the excitement in this space. VR devices and experiences are in the early stages of being accepted by the mainstream, as VR now emerges as a viable long-term platform for unique, immersive experiences, attracting major investment from media and technology companies eager to seize a share of this fast-growing market," Myburgh adds.

After a breakthrough year, South Africa's total e-sports revenue is forecast to rise. A host of high profile events in 2017 helped to propel e-sport further towards the mainstream, and a number of similar events have been and are being held this year.

A booming social/casual sector is driving strong growth in the video games segment, with total revenue is forecast to rise. TV and video will continue to be a major driver of consumer spend. Following growth at 4.8 per cent CAGR over the forecast period, the total TV market will be worth R40.8 billion by 2022.

The shift from physical to digital media has been one of the core drivers of the global and local E&M market for many years. But different media segments have experienced strongly contrasting patterns of digitisation. In some cases, consumers have been quick to drop physical formats and embrace digital alternatives at the first opportunity.

Although the growth rate for physical books is moderate, it is notable that books are performing far better than any other nondigital sector. "Permanency and collectability may be the reason for this. Books are seen as collectibles often owned and displayed for many years, making the loss of their physical presence more significant," explains Myburgh. Although books currently seem to have the best prospects of any physical media format, they are, like every other media segment, just one disruptive digital competitor away from major upheaval.

Despite 24/7 access to media and entertainment, the appeal of shared, live experiences still attracts audiences. Music events still draw large crowds, with ticket sales set to see an 8.0 per cent CAGR to 2022, helped by major tours from popular crowd-pulling acts in 2018.

Recovering admissions and rising ticket prices together with improved offerings will see box office revenue deliver modest growth at a 3.5 per cent CAGR through 2022. South African audiences are prepared to pay a premium to watch big-budget films with surround sound, vibrating seats, temperature change, strobe lights and so on. Radio continues to have a solid listener base in South Africa, and a weekly reach of 91 per cent. Radio revenue is projected to rise 3.9 per cent CAGR over the forecast period to surpass the \$347.3mn mark in 2022.

Chat apps and social platforms have become an increasingly important part of day-to-day life for consumers, both in South Africa and worldwide. As usage and entertainment rise, key players from across the E&M industry have teamed up with these platforms, growing them into 'one-stop shops' for consumer needs.

The report shows that advertising in the E&M industry was mostly affected by South Africa's economic environment, with cautious growth of just 1.9 per cent year on year. An improvement is expected to 2022, with new technologies and devices like artificial intelligence (AI), virtual and augmented reality, voice-based smart home devices and virtual assistants look set to drive innovation in online advertising on a global scale in the coming years.

Nigeria

Nigeria saw a huge 25.5 per cent rise in E&M revenue in 2017 to US\$3.8bn, although US\$605mn of this US\$764mn rise was attributable to Internet access. A 21.5 per cent CAGR rate is anticipated to 2022, with revenue reaching US\$9.9bn in that year. Again, Internet access revenue will account for 89.6 per cent of this absolute growth.

Kenya

Kenya's E&M industry saw 17 per cent year-onyear growth in 2017, again propelled by growth in the Internet sector. An 11.6 per cent CAGR will take the country to US\$2.9bn in 2022, from US\$1.7bn in 2017. Outside of the Internet space, TV and video revenue dwarfs the other segments.

Ghana

Ghana's E&M industry has more than tripled in value since 2013. Total revenue reached US\$75mn in 2017. It is forecast to surpass US\$1mn in 2019 and to total US\$1.5bn in 2022, increasing at a 14.2 per cent CAGR. As with Nigeria and Kenya, Internet access spend accounts for much of this revenue and growth. Ghana is in a strong position for further E&M growth as revenue gains critical mass over the next five years.

Tanzania

Total E&M revenue in Tanzania stood at US\$496mn in 2017, having risen 28.2 per cent year on year. Continued momentum at an 18.3 per cent CAGR will see revenue reach US\$1.2bn in 2022, 2.3 times the size of the market in 2017. Tanzania's E&M revenue make-up is ostensibly similar to that of Ghana, although here Internet revenue takes a slightly less dominant position.

By 2022, total E&M revenue in South Africa is expected to reach 12.1bn up from 8.8bn in 2017.

Between them, the five countries considered in the Outlook will, driven by Nigeria, add US\$12.4bn in revenue from 2017 to 2022, at a combined CAGR of 11.9 per cent. Although much of this will fall into the hands of telcos, there are significant opportunities for content providers too. The engine of growth here will be organic, with increased populations and gradually increasing disposable income swelling the ranks of potential E&M consumers – and everincreasing Internet access greatly expanding the range of E&M opportunities available.

"To succeed in the future that's taking shape, companies must re-envision every aspect of what they do and how they do it. It's about having, or having access to, the right technology and excellent content, which is delivered in a cost-effective manner to an engaged audience that trusts the brand. For those able to execute successfully, the opportunities are legion," Myburgh concludes.

Networks

Community networks vital to connecting Africa, says Internet Society

As Internet access continues to grow in Africa, with more than 450mn people now connected to the Internet, more than 60 per cent of the population still remains offline.

OMMUNITY NETWORKS ARE an important component in addressing the connectivity gap in the continent, according to the Internet Society, global а non-profit dedicated to ensuring the open development, evolution and use of the Internet.

Community Networks are communications infrastructure built, managed and used by local communities. They provide a sustainable solution to address the connectivity gaps that exist in underserved urban, remote, and rural areas around the world. In Africa, where these gaps are more prevalent, a recent survey was able to identify 37 community networks initiatives in 12 African countries, of which 25 are considered active.

The Internet Society (in partnership with the Association for Progressive Communications (APC) and Zenzeleni Networks recently held the third Africa Community Networks Summit in the Eastern Cape, South Africa. The Summit aimed to promote the creation and growth of Community Networks, increase collaboration between community network operators in the region, and to provide a networking opportunity between stakeholders including content producers, regulators and policymakers.

The Summit invited industry representatives from 13 countries in Africa (Kenya, Uganda, South Africa, DRC, Zimbabwe, Zambia, Malawi, Namibia, Cameroon, Tanzania, Sudan, Egypt and Ethiopia). Attendees also included representatives from Community Networks in Spain, Germany, Argentina, India and the United States.

The conference sessions covered topics ranging from how Community Networks can close the connectivity gap in Africa to strategies to support local access. Discussions also included how local networks could be used to improve delivery of basic services and inspire creation of locally relevant content and services, as well as how to create policies and regulations that enable Community Networks in Africa

Access to spectrum is critical for Community Networks. Policy makers and regulators can play an important role in ensuring innovative approaches to making spectrum available by working with Community Networks. An Internet



Despite more than 450mn people in the continent are online. 60 per cent remain unconnected.

Society report examined the various ways that Community Networks could gain access to spectrum, including the use of unlicensed spectrum, sharing licensed spectrum, and innovative licensing.

"Enabling communities to actually connect themselves is a new way of thinking." explained Michuki Mwangi, senior development manager for Africa at the Internet Society. "Policy makers and regulators should recognise that connectivity can be instigated from a village or a town and that they can help communities to connect themselves by providing an enabling environment with innovative licensing and access to spectrum.'

The Africa Community Networks Summit concluded with a visit to communities served by Zenzeleni Networks, South Africa's first telecommunications organisation that is owned and run by a rural cooperative. Zenzeleni Networks installs and maintains its own telecommunications infrastructure to deliver affordable voice and data services. All revenues stay in the community and the residents together decide what is done with the proceeds.

The cost to deploy Community Networks can be low. Often, the technology required to build and maintain the network is as simple as a (inexpensive, locally available) wireless router. The networks can range from WiFi-only to mesh networks and mobile networks that provide voice and SMS services. While they usually serve communities under 3,000 people, some serve more than 50,000 users.

Carlos-Rey Moreno, community access project coordinator for APC explained: "These networks not only provide affordable access in areas where operators don't find it commercially viable to provide similar services, but, by being built and operated by people from within the community, they bring many other benefits to the areas where they operate. They are key to enabling the unconnected connect themselves in Africa." ©

Ghanaian farmers embrace mobile technology to enhance productivity

Being the world's second-largest cocoa producer, Ghana's can safely say its agricultural sector is well established, however in recent years mobile communications is paving the way for the sector to grow even further.

NDEED, THE HOPE of farmers in the country is to increase in yields and access to market lies in SMS technology. Some private communication companies are helping farmers in this regard, such as Esoko. The company is making it possible for farmers to benefit from tips on weather, appropriate farming methods and market prices. And most farmers get such information through government extension officers.

According to the ministry of food and agriculture (MoFA), annually, smallholder farmers in most of the regions in Ghana particularly Upper East, Upper West and Brong Ahafo regions produce enough grains but they find it extremely difficult to send them to the market.

This situation arises a result of a lack of education and resources and so they cannot increase their yields, meet demands and therefore subsist under rising prices.

Without pricing information from extension officers or through text messages from companies such as Esoko, farmers are often ignorant about selling prices on the market. And this gives the opportunity to middle men and women to dictate their own price to the farmers who have no choice but to accept their meager offers which are below the cost of production.

Consequently, the government has committed funding to an extension programme among others, which will make it possible to provide electronic extension services to farmers and one of the many projects is Esoko's informational text messages. Esoko has representatives who visit more than 50 different markets in the various regions of the country daily. They compile food prices and send that information to the headquarters of Esoko where it is packaged into simple and comprehensive SMS and distributed to the farmers and traders who are also subscribers on the platform. Again, farmers receive information on weather patterns as regards when to plough their land, when to sow, apply fertiliser, check weeds and harvest.

Such an approach creates the platform for both players upstream and downstream in innovation platforms that are simple in nature. Because, just by either text messaging or voicing, it is possible to reach farmers and all the actors in the agricultural value chain. The rationale behind such a move is to empower the peasant farmers (who have formed their own groups) to be in a position to bargain on very good prices to motivate them to cultivate more.

It is refreshing to note that the farmers who receive the text messages have been trained on how to transmit the information to the other members in their groups and some of them display the prices on their notice boards where they have their weekly meetings while others share with other farmers.

According to the Green Revolution. "Much of the information and knowledge that the farmers of Africa need exists in some form. There are videotapes that show how maize farmers can increase their yield from two bags per acre to ten bags per acre by changing from broadcasting seed to planting in straight lines and spacing properly. What is clearly needed are effective ways of reaching the farmers and getting their attention and trust; communicating the information in ways that are effective; and following up interventions to determine if practice has indeed changed.

"With advances in information and communications technologies, there are numerous ways to improve information and knowledge sharing that will lead to the alleviation of poverty. We need an Information Network that will collect information from available sources in Africa and around the world, and make it available in usable form translating it into local languages. We need a Communication Network that will move this information throughout Africa to all who need it."

Kofi Annan, former UN secretary general launched a book a few months ago entitled "ICT 4D-Connecting People for a Better World, Lessons, Innovations and Perspectives of Information and Communication Technologies in Development" emphasised on the of role communication technology, such as computers, mobile phones, radio, TV, video and the Internet in spreading critical information and improve the lives of rural people.

In Ghana, there are six main mobile phone providers including: MTN Ghana, Vodafone Ghana, Tigo and Airtel. $\ensuremath{\mathbb{C}}$

Emmanuel Yartey

According to the Ministry of Food and Agriculture (MoFA) smallholder farmers in most of the regions in Ghana produce enough grains but they find it extremely difficult to send them to the market.



More farmers in the continent are using mobile technology to improve farming productivity.

Avaya demonstrates new communications solutions at GITEX

AT THE ANNUAL GITEX show held 14-18 October, Avaya demonstrated the integration of AI-Enhanced technologies, including biometrics and realtime sentiment analysis to its communication platforms, which enable organisations to elevate voice as a key user interface for richer, more seamless, secure customer and employee experiences.

There is growing pressure for businesses to reimagine their approach to customer and employee engagement. A recent Avaya survey of more than 8,000 consumers found that more than 70 per cent prefer contacting customer services by phone and believe it is the most effective means of getting the best answer. There is also an increasing amount of evidence that suggests increasing customer acceptance and demand for digital technologies, such as chatbots and biometrics, and research indicates that 25 per cent of interactions with these technologies will be conversational. Voice remains the cornerstone of customer service, and there is a clear opportunity for its extended application to enrich customer journeys," said Chris McGugan, Avaya senior vice president of Solutions and Technology. "Through our position as the leading provider of enterprise communications solutions, and our customer-centric approach to innovation, we have been embracing new and exciting technologies that enable us to effectively address these changing customer preferences and deliver voice as a more powerful user interface, for both customers and employees."

He continued: "For most of us, voice is the primary mode for communicating our thoughts and expressing our feelings with others—our



communicating our thoughts and expressing our feelings with others—our families, friends, co-workers. Gartner suggested that there will be as many as four billion digital assistants by 2022, and if this number is any indication of consumers' preference for voice-based engagement, it would be fair to assume that they would prefer voice to communicate with businesses as well," said McGugan.

Xperian introduces Blancco Mobile Diagnostics

IT ASSET DISPOSAL (ITAD) specialist Xperien has launched an in-depth diagnostics tool for mobile devices. According to the firm, which offers cost-effective solutions to combat the challenges associated with data loss and to mitigate reputational risk, Blancco Mobile Diagnostics enables mobile network operators and carriers, device manufacturers, retailers, customer service centres, insurers and resellers to quickly and accurately find the source of device issues and resolve them.

The company noted that their compliance meets the CEGS & NIST SP 800-88, particularly in terms of data destruction processes, while adherence to the Protection of Personal Information Act 4 of 2013 (POPIA) & General Data Protection Regulations (GDPR) is important to their business. Logistical solutions are tailored for to meet their clients' geographical spread and to negate the ever-present risk of hard-drive theft from decommissioned computers.

Xperien's Bridgette Vermaak highlighted that whether customers need a kiosk solution, web-based solution or on-device application, Xperien can provide the right mobile diagnostics package to accommodate one's needs.

"By identifying the cause of mobile device issues, your customers can optimise device performance, reduce the likelihood of NTF returns and recoup the costs associated with customer service complaints and repairs," she said.

With the advanced business intelligence dashboard, businesses can use real-time data and analytics to improve the overall customer care process, minimise costs and increase customer satisfaction.

Businesses are now in a position to make the most comprehensive assessment of mobile devices on the market. Blancco Mobile Diagnostics offers more than 50 diagnostics tests that last between 30 seconds and five minutes per device and are tailored for both Android and iOS.

"We can now offer comprehensive post-erasure reporting by producing a digitallysigned report with each device, including details such as the device name and model, IMEI code and storage capacity," she added.

Cummins offers DCC-rated diesel gensets for datacentre applications

CUMMINS HAS ANNOUNCED it has launched new DCC-rated diesel gensets for data-centre applications that boast a DCC rating from the Uptime Institute, which the company says guarantees total dependability. This is a key criterion in such a niche but premium market segment, where reliable back-up power is critical, according to Robin Kuriakose, power generation sales leader for Southern Africa.

The Data Centre Continuous (DCC) rating means that the Cummins diesel gensets are rated for unlimited hours of operation, with no restrictions on average variable or constant load factor. This spans Cummins' range of high horsepower diesel gensets, from 400 kVA to 3 300 kVA. Including Cummins's ability to offer technical solutions regarding Tier I to Tier IV applications whilst maintaining our two year standard warranty offering, he noted.

According to Kuriakose, consultants and engineers can design with the confidence that Cummins' diesel gensets can be applied up to the specified rating without restrictions on varying or non-varying loads or hours of operation. These ratings greatly simplify the engineering design process, and also make it easier for customers to achieve site certification from the Uptime Institute.

Kuriakose said: "This is a particular value-add for our clients, as we are one of very few local suppliers offering a DCC rating as standard." From large financial institutions to telecoms companies, it is critical that data centres have reliable back-up power in the event of any unforeseen outage, he highlighted."Back-up power can be supplemented by UPS, but this solution has a finite battery back-up capacity before it runs out. Only diesel gensets are capable of supplying power on-demand, for whatever period required." According to Kuriakose the problem with downtime for any data centre is not only the possibility of loss of data, but reduced data traffic, and therefore less revenue generated. He concluded that Cummins' strategy in this regard will be to focus on forging partnerships with its main clients, in order to get a foot in the door by upfront involvement in such projects.

Think exponentially, not incrementally: How the rules of the game are changing in Africa's banking sector

FinTech remains to be the most appealing industry for investors as African start-ups look to bridge the financial gap.

E ARE FORTUNATE to witness a period monumental of progress in Africa. The changes are visible across all sectors. African start-ups have raised a record breaking US\$560mn in 2017, an increase of 53 per cent from the previous year. African governments have welcomed technology into the continent, hoping to inspire a revolution across all industries and sectors. Some of the brightest minds are determined to rewrite the rules of the game by harnessing technology to tackle some of the continents greatest challenges - with one of them being the distinct lack of access to banking services for large parts of the population. Only four years ago, an astounding 66 per cent of sub-Saharan Africans did not have a bank account. Now, Africa has described been as а "leapfrogger" with the application of a technology driven economic model to reach the unbanked.

FinTech remains to be the most appealing industry for investors as African start-ups look to bridge the financial gap. Several of the largest deals in 2018 involved African FinTech companies: Kenyan-based Cellulant raised close to \$50mn from investors this year, while microfinance company Branch received another US\$20mn investment to continue funding their mission to bring digital financial services to the sub-Saharan continent.

While some banks may feel threatened, an abundance of opportunities are hidden within

this transformation, most of which come down to partnering with the disruptors. There is a clear chance to leverage existing customer relationships and a deep understanding of the sector in the form of a forwardlooking collaboration, which can fundamentally improve ways of doing business on both sides.

Think exponentially, not incrementally

It is a reality that the financial industry experiencing is disruptions on all fronts. As banks, we have a choice as to how we approach and address this change. One of the most important principles to master this evolution is to move from managing people and processes to managing purposes and principles with an entrepreneurial mindset.

US-based Singularity University, one of the world's leading incubators and think-tanks in the field of technology, stresses that the challenge for greatest established institutions is to reinvent themselves using a digital mindset by thinking exponentially and not incrementally. This doesn't mean the core of what companies do today has to be discarded, rather it is about innovating to foster sustainable growth.

Driven by unhindered obsession

An impressively large number of companies as well as individuals are investing in research, innovation and ideas for execution to keep up with the ever-changing demands of African consumers. Just in the first half of 2018, nearly 120 deals between investors and start-ups were signed. The time when start-ups were considered small, insignificant companies is long over: in fact, with their entrepreneurial spirit and unconventional approaches, they have the power and ability to shape the future of the continent. It can even be said that the people leading these small enterprises hold the key to growth by prioritising the greater good over personal goals. This is perfectly aligned with our bank's mantra 'Good enough will never change the world'.

During a recent trip to San Francisco, I had the opportunity to meet Patrick Collision, cofounder of Stripe (think PayPal). Started only seven years ago, Stripe displaces the need to have a merchant capability and enables sellers and buyers in ecommerce to invoice and collect payments. He believes it can be a large company, but it would have to have the mindset where people prioritise the greater good over personal goals. I thought this insight was fascinating, as for this kind of culture to grow, there must be unhindered obsession about doing better every single day.

Africa's bright digital future

Halfway through 2018, total funding for start-ups in Africa has increased by nearly four-fold compared to the first half of last year. Digital entrepreneurs are changing the sub-Saharan continent, and we have an opportunity be part of this monumental transformation. Only four years ago, an astounding 66 per cent of sub-Saharan Africans did not have a bank account.

However, it requires all of us to embrace both exponential thinking and the latest technology to the fullest. The banking sector has taken promising first steps in the right direction with a rage to think differently to support client needs in Africa. Our 'Women-In-Technology' incubator programme in Kenya and the launch of our first truly digital Bank in Ivory Coast gives me confidence we are on the right path. I am proud to see unhindered obsession and exponential thinking come to life despite the challenging hurdles of a global banking operation.

We must do everything we can to harness technology and champion the next generation of entrepreneurs in Africa. We must put our faith in people who are on a mission to accelerate the continent's development. In the words of renowned African entrepreneur and philanthropist Tony Elumelu, we have a responsibility to 'collectively invest in our young people, and if they succeed, we all succeed'. I am inclined to agree. ©

Sunil Kaushal, CEO, Africa & Middle East at Standard Chartered Bank

EQUIPMENT

iWayAfrica expands African footprint with Avanti's HYLAS 4

AFRICAN SKIES OFFER some of the best stargazing opportunities due to limited surrounding light pollution. Yet up among the stars tonight there are more than 4,857 satellites orbiting the planet. The United Nations Office for Outer Space Affairs (UNOOSA) reported that 1,980 of these are active with more than 200 new ones being launched in H1 2018, many for commercial communications purposes.

Over the past few years, Africa has seen the success of High Throughput Satellite (HTS) services with spot beam coverage in selected areas of the continent. Avanti's HYLAS 4 service is now bringing almost ubiquitous coverage with 64 spot beams operated from five Ground Earth Stations.

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 antenna thus reducing previous equipment and installation costs typically associated with VSAT.

As a wholesale VSAT provider, iWayAfrica has worked successfully with Avanti since

2014 for its HYLAS 2 services in East and Southern Africa. Its recent appointment as an Avanti Master Distributor is a natural extension of the two parties' existing relationship bringing even faster broadband services to the rest of 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. With more than 25 years' experience of providing satellite services across Africa to telecoms operators and enterprise customers via its partner network in more than 44 markets, iWayAfrica has earned its reputation as a leading VSAT service provider.

Satellite is a key element of the iWayAfrica Group 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. Once thought destined to be obsolete as mobile and fibre networks were ever increasing penetration in Africa, HTS satellite services are proving they can deliver



on today's customer expectation for high speed affordable connectivity in areas where even the mobile networks don't reach. In fact, Ka-band services are now also delivering cellular backhaul for mobile operators to reach new communities of users.

o:iWavAfrica

So next time you gaze to the night sky, take a moment to have a fresh appreciation of how satellite is shaping the new market reach in Africa.

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