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Satellite services for mobile operators



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Fintech

New mobile app makes international payments easier

Digital

African Union's strategy to improve Internet coverage



5G fever at Mobile World Congress 2019

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FEATURES

A note from the Editor

THIS ISSUE OF Communications Africa looks at the impact of the Fourth Industrial Revolution, the so-called Industry 4.0 reshaping society, which is being driven by disruptive technologies such as the Internet of Things (IoT), artificial intelligence, (AI), virtual reality (VR), biotechnology and robotics. This edition will also feature the growing popularity of 5G and its relevance in Africa and how a new mobile platform by Kaoshi fintech start-up will make international payments more efficient than ever before without incurring high fees.

Une note du rédacteur

CE NUMÉRO DE Communications Afrique analyse l'impact de la quatrième révolution industrielle, la soi-disant transformation de la société par l'industrie 4.0, reposant sur des technologies de rupture telles que l'Internet des objets (IoT), l'intelligence artificielle, réalité virtuelle, biotechnologie et robotique. Cette édition mettra également en évidence la popularité croissante de la 5G et sa pertinence en Afrique, et expliquera comment une nouvelle plate-forme mobile de la start-up Kaoshi fintech rendra les paiements internationaux plus efficaces que jamais sans générer de frais élevés.

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Moin Siddiqi considers the impact the Fourth Industrial Revolution is having on all facets of society and business. Known as Industry 4.0, it is being driven by disruptive technologies such as the Internet of Things, artificial intelligence, robotics and 3D printing.

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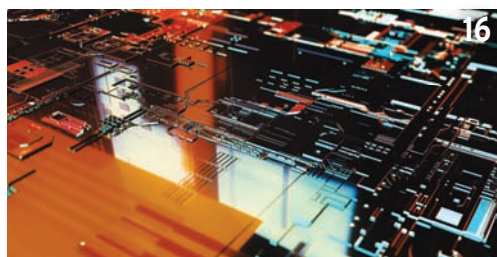
Chukwunonso Arinze, founder of fintech start-up Kaoshi, explains how its new integrated mobile platform will help people to make international money transfers more efficiently instead of resorting to informal transfer systems.

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The number of 5G connections are set to reach 1.4 billion by 2025, making it the fastest generation to be rolled out on a global scale. How relevant is 5G to emerging markets such as Africa?



An exclusive interview with the African Union's information society chief, Mactar Yedley.



Why bitcoin is becoming more and more popular in Africa.

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Microsoft a annoncé l'ouverture de ses premiers centres de données en Afrique, avec la disponibilité générale d'Azure depuis les nouvelles régions Cloud au Cap et à Johannesburg.

Editor: Samantha Payne - samantha.payne@alaincharles.com

Editorial and Design team: Prashant AP, Miriam Brtkova, Praveen CP, Emmet McGonagale, Manojkumar K, Deblina Roy, Nonalynka Nongrum, Rhonita Patnaik, Rahul Puthenveedu and Louise Waters

Group Editor: Georgia Lewis

Production: Srinidhi Chikkars, Eugenia Nelly Mendes, Infant Prakash and Hariharan PM
Email: production@alaincharles.com

Publisher: Nick Fordham

Sales Director: Michael Ferridge

Magazine Sales Manager: Vinay T Nair - Tel: +91 80 68888847
Email: vinay.nair@alaincharles.com

Country	Representative	Telephone	Fax	Email
India	Tanmay Mishra	+91 80 65700911		tanmay.mishra@alaincharles.com
Nigeria	Bola Olowo	+234 8034349299		bola.olowo@alaincharles.com
UAE	Vishnu Vijayakumar	+971 4 448 9260	+971 4 448 9261	vishnu.vijayakumar@alaincharles.com
USA	Michael Tomashefsky	+1 203 226 2882	+1 203 226 7447	michael.tomashefsky@alaincharles.com

Communications Africa

Head Office:
Alain Charles Publishing Ltd
University House
11-13 Lower Grosvenor Place
London SW1W 0EX, United Kingdom
Telephone: +44 20 7834 7676
Fax: +44 20 7973 0076

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Audit Bureau of
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Middle East Regional Office:
Alain Charles Middle East FZ-LLC
Office L2-112, Loft Office 2,
Entrance B, PO Box 502207
Dubai Media City, UAE
Telephone: +971 4 448 9260
Fax: +971 4 448 9261

Alain Charles Publishing

Chunghwa collaborates with Ericsson on IoT enterprise drive

TAIWAN-BASED COMPANY CHUNGHWA Telecom has opted to venture into the global market with the help of Ericsson Internet of Things (IoT) Accelerator.

Through this approach, the company intends to initiate the IoT drive towards enterprise customers, utilising Ericsson's expansive network of more than 30 service providers in order to enable solid and secure connectivity management of IoT devices to more than 3,500 enterprises across the globe.

"The cooperation with Ericsson marks an important milestone for our IoT businesses partnership in Taiwan and boosts our capabilities in machine learning and IoT operations," explained Max Chan, president of Mobile Business Group and Chunghwa Telecom.

"As Taiwan's industry is mainly export-driven, Chunghwa Telecom's IoT innovation drive will help local industries to expand their international IoT business horizon," he continued. Chan also discussed plans to monetise 5G IoT ambitions for enterprise customers in key segments; including government, finance, manufacturing, retail and logistics.

Speaking of the partnership, Håkan Cervell, president of Ericsson Taiwan, said: "IoT is making the business world a smaller, but more exciting, place. In strengthening our IoT partnership with Chunghwa Telecom through our Ericsson IoT Accelerator service, we aim to help its enterprise customers to enhance existing business as well as develop and explore new and exciting opportunities across the ecosystem."

The two companies have been collaborating on IoT since 2015, with the pair securing a Narrowband IoT and Cat-M1 system deal in 2017. Ericsson is also the sole supplier of Chunghwa's Long-Term Evolution (LTE) core network, boosting the telecommunication company's 4G network coverage and capacity. The pair has also collaborated on Chunghwa's Radio Access Network (RAN) in the most populated areas of Taiwan; an initiative which has supported augmented reality, virtual reality and high-definition video for customers in the region. Ericsson also functions as the prime integrator for Chunghwa's end-to-end IPTV solution, which intended to deliver multi-screen interactive multimedia services to more than 900,000 subscribers on a variety of devices including TV, computers, tablets and phones.



Chunghwa expects IoT to play a huge role in the company's future.

Photo: Chunghwa Telecom

Millicom sells Tigo Chad

TELECOMMUNICATIONS COMPANY MILLICOM has announced it has signed an agreement to sell Tigo Chad to Maroc Telecom, subject to approval from the Chadian authorities.

The company first began its Chad-based enterprise in 2005 via its commercial brand – Tigo. During its 19-year involvement in the country, Millicom was the first operator to launch 4G in the Central African Economic and Monetary Community (CEMAC); with 96 per cent of collaborations taking place in partnership with Chadian companies and 50 per cent of the company's leaders from the Central African country.

This selling of Tigo Chad is in keeping with Millicom's plans to increase its focus in Latin America, and the company claim it is not expected to impact the group as a whole.

MTN signs up for 4G future with Liquid Telecom

CATERING TO THE growing demand for high-speed mobile broadband across South Africa, MTN has signed up to independent data provider Liquid Telecom's 4G roaming service, securing MTN as the first customer to subscribe to the service.

As a result of this partnership, Liquid Telecom hopes to provide wholesale 4G roaming services to millions of South Africans, in keeping the company's 'Building Africa's Digital Future' initiative, as announced at the end of last year.

With MTN as a customer we have an opportunity to utilise our existing spectrum assets, ensuring that more people than ever will have access to fast and reliable mobile internet – and across Liquid Telecom's network nationwide for the first time," remarked Reshaad Sha, CEO of Liquid Telecom South Africa.

"This builds on our vision to give everyone the right to be connected by bringing high-speed broadband connectivity to all, with particular benefits for organisations keen to fully embrace 'digital transformation' to improve productivity, customer service and performance."

Similarly, MTN South Africa's CEO Godfrey Motsa has hailed the service for its customer-focused approach to services across the region. On the topic, he said, "This sort of infrastructure sharing deal is good for the industry, as it reduces the need for excessively high capital investment and it is also good for customers, that immediately benefit from even greater access to fast and reliable mobile data.

"Our focus is offering the very best experience to our millions of customers and by roaming on Liquid Telecom, we are deepening our commitment to continue our mission to be the Best Network in South Africa, through our consistent and reliable network performance."

Among Liquid Telecom's plans to streamline 4G services across South Africa is increased investment in Africa's largest independent fibre network, which spans almost 70,000km in length and is linked to more than 660 towns and cities in 13 countries. Likewise, the company's 'Cape to Cairo' network is the first direct land-based link between the two cities.

FERDI calls for lighter taxation in the African market

AMONG THE BUSTLE of this year's Mobile World Congress in Barcelona, the Foundation for Studies and Research on International Development (FERDI) launched its study on taxation in the African telecommunications sector in order to evaluate the effectiveness of existing taxation models.

Although the realm of telecommunications is one of the most dynamic sectors in sub-Saharan Africa, FERDI's study found the market remains fragmented with national legislations and regulations; including direct taxation, indirect taxes and parafiscal levies alongside licensing fees. This can be seen within the margin of progression between SSA countries, with Niger and the Democratic Republic of Congo maintaining a network penetration rate of 43 per cent and 44 per cent respectively while the African average stood at around 67 per cent, according to figures released by the GSMA.

In an effort to discover alternative taxation models which could be of benefit to both states and telecommunication companies, the foundation developed an Average Effective Tax Rate (AETR) designed to take into account the stages of mobile phone license exploitation, the cost of capital and past-and-present tax regimes to analyse the impact of alternative tax systems and tax reserves. Through applying this approach to Orange's subsidiaries in three African countries - Cameroon, Guinea and Niger - the foundation found the tax rates to be significantly higher than observed in other countries, especially in the extractive sector which relates to gold mining. The alternative schemes outlined by FERDI (built on the foundation of a lighter taxation) have been proven to improve tax revenue and operators' profit through a less confusing tax regime, providing ground for discussing tax policy applied to telecommunications firms, taking into investments and operating costs over the licensing period.

FERDI concluded there are alternative win-win models for both states and telecommunication companies, highlighting the need for an improved taxation model which can promote these models within the sector.

“Businesses, universities and young entrepreneurs are increasingly contributing to the digital economy and fostering innovation in Africa. Governments now need to work towards helping these private sector players to grow their solutions more rapidly and affect real change on the continent.”

- James Claude

*Chief executive officer
Global Voice Group*

“Solar powered irrigation is helping increase harvests, improve farming practices and raising agriculture incomes, which, in turn, boosts farming incomes and creates new jobs.”



- Simon Bransfield-Garth

*Chief executive officer
Azuri Technologies*

“The World Economic Forum is committed to expanding its footprint within the private sector throughout Africa, especially in historically less represented countries on the global stage.”

- Alekhine Veloso

*Business engagement lead for Africa.
UNITEL*

“Global food security is one of the biggest challenges of our age. The world is facing another agricultural revolution – this collaboration builds on our tradition of welcoming postgraduate and applied research students from around the world as well as partnering with industry to find solutions to the biggest issues.”



- Joanna Price

*Vice-chancellor
Royal Agricultural University*

“The global cloud services companies are now putting Africa on their development roadmap, and committing significant investment to several African markets.”



- Byron Clatterbuck

*Chief executive officer
Seacom*

Mobile malware figures 'nearly doubled' since 2017, report finds

FOUR AFRICAN COUNTRIES have made the list of the top 10 countries by share of users attacked by mobile malware, according to a research carried out by Kaspersky Lab.

The research found that the number of attacks using malicious mobile software has nearly doubled in the past year, skyrocketing from 66.4mn attacks in 2017 to 116.5mn attacks last year. Of these numbers, Nigeria ranked as home to the third most mobile software attacks, with 37.72 per cent of users experiencing the effects of malware in the past year; followed by Algeria in fifth place with 35.06 per cent, Tanzania in eighth place with 31.34 per cent and Kenya in ninth place with 29.72 per cent.

A point of concern from this research is the number of unique users who encountered malware throughout last year with the figure rising by 774,000 and totalling 9,895,774. The most significant threat to users was Trojan-Droppers designed to bypass system protection.

Similarly, the research found that attacks using mobile malicious cryptocurrency miners increased fivefold across the 150 countries observed by Kaspersky Lab, with 151,359 installation packages for mobile banking Trojans detected – 1.6 times more than the previous year.

"In 2018, mobile device users faced what could have been the fiercest cybercriminal onslaught ever seen," remarked Victor Chebyshev, security expert at Kaspersky Lab. "Over the course of the year, we observed both new mobile device infection techniques, such as DNS hijacking along with an increased focus on enhanced distribution schemes, like SMS spam. This trend demonstrates the growing need for mobile security solutions to be installed on smartphones – to protect users from device infection attempts, regardless of the source," Chebyshev continued.

In an effort to combat the issue, Kaspersky Lab experts have advised users to only install mobile applications from official app store such as Google Play or the App Store. Users are also advised to block the installation of programmes from unknown sources in smartphone settings, install system and application updates as soon as possible in order to patch vulnerabilities, and use reliable security solutions to prevent threats from accessing personal information on devices.



Attacks using cryptocurrency miners have increased fivefold since last year.

Photo: Adobe Stock

TMT aims for US\$10bn in transactions

AS INVESTOR APPETITE and valuations grow, TMT has predicted transactions for the year will exceed US\$10bn as a result of an increase in infrastructure mergers, acquisitions and fundraising across Africa.

The company hopes to reach record numbers for investment and mergers and acquisition deals in 2019, with a series of hefty deals planned over the next few months. Among the company's plans to tap into public investment fund interest is potential floatings with infrastructure operators Liquid Telecom, IHS Towers, Eaton Towers and Helios Towers Africa, all of which are expected to float or consolidate their sector in the next 12 months.

This comes after the US\$1bn sale of South African data centre firm Teraco Data Environments to US-based company Berkshire Partners, at which time the firm was reported to be valued at 22 times its 2018 EBITDA earnings of between US\$44-45mn.

Nominet supports WISP deployment in Africa

DOMAIN REGISTRY NOMINET has announced the launch of WaveDB Explore – a channel availability tool which enables wireless ISPs (WISPs) in the early stages of planning TV white space database (TVWS) deployment to establish where these channels will have the most impact.

As TVWS signals can travel through permanent obstacles such as trees, there are many network operator advantages to the support of WISP deployment across Africa; including line-of-sight not being required, up to 30km outdoor connectivity and no need for complex infrastructures.

This service also enables new business models to be explored, allowing WISPs to find real time channel availability based on a range of locally-customised country regulation, visualise network design and view demographics and broadband availability in order to assess the economic value of the project. Users are able to visualise area topography and search by location, optimising the TVWS experience as a whole.

"Too few remote communities are benefitting from the potential that

decent broadband connection provides – access to economic, social and educational benefits for example. Progress in closing the rural broadband gap has slowed in recent years as high costs, the absence of new and alternative technologies, and market and regulatory conditions have hampered efforts to expand coverage. The impact in the US is 24 million Americans lacking an adequate internet connection," said Adam Leach, director of emerging technology at Nominet.

He continued, "The good news is that the technology has evolved, and the stage is set for TVWS to help bring affordable, reliable broadband to rural America. We hope that WaveDB Explore will help WISPs develop this cost effective and easy-to-implement solution in the US and elsewhere."

This announcement builds on Nominet's partnership with Microsoft as part of its 'Airband Initiative' which intends to solve the connectivity gap in rural Africa and America through a combination on private sector capital investment in innovative technologies and regulatory support from the public sector.

Eseye targets IoT cloud solutions with partnership

IN AN ATTEMPT to meet the requirements of the rapidly-expanding machine to machine (M2M) Internet of Things (IoT) customer base, global provider Eseye has announced a partnership with MTN, one of the market's leading mobile network operators.

The operator recently joined forces with The AnyNet Secure Foundation – a worldwide association of mobile network operators (MNOs) created to meet the needs of IoT customers delivering cellular services onto hyperscale cloud solutions.

These partnerships aim to deliver a single cellular M2M solution that can be deployed across major world markets, with the AnyNet Federation taking responsibility for the delivery of global growth of cellular services onto Amazon Web Services' (AWS) Cloud.

Speaking of the collaboration, Nick Earle, Eseye chairman and CEO, said, "This is a ground-breaking global collaboration. The AnyNet Secure is already the most feature rich and integrated connectivity solution for AWS, and the AnyNet Federation as a key way of delivering simplified connectivity on a global scale, whilst allowing customers buy and manage their connectivity from within AWS."

Utilising Eseye's AnyNet Secure for AWS SIM card, the federation will enable customers to experience "out of the box" connectivity which integrates AWS' IoT Core and is globally scalable.

Oliver Fortunin, enterprise executive of MTN Group, commented, "MTN is delighted to bring their networks across 12 markets to the support the objectives of the AnyNet Federation.

"We believe that through collaboration we can speed up the deployment of our customers' global IoT and enhance their global business opportunities."

The launch of the AnyNet Federation comes as global research firm Gartner announced predictions the worldwide public cloud services market would experience a growth of 17.3 per cent this year, reaching new heights with a value of US\$206.2bn, up from US\$175.8bn last year.

MTN and BICS extend partnership

MTN AND BICS have announced the extension of their long-term commercial partnership, signalling the next stage of the pair's decade-long collaboration.

As a result of this partnership, MTN will be responsible for nising transport and management of traffic within the MEA regin, while BICS will continue to be the telecommunication company's primary providers for voice and messaging services worldwide.

"MTN has been satisfied with BICS' services over the last ten years. We are very happy to benefit from the market position and expertise of one of the world leading carriers, in full complementarity with the capabilities we are developing," said Jens Schulte-Bochum, COO of MTN Group.

European Commission for Africa urges double-digit economic growth by 2030

THE 2019 ECONOMIC Report on Africa has called for Africa to digitise its economy, broaden its tax base, prevent further deterioration of fiscal and debt positions and aim for double-digit growth in order to achieve the UN 2030 global goals and AU Agenda 2063.

Released at the Conference of Ministers in Marrakesh, Morocco, this year's Economic Report on Africa focuses on fiscal policy in order to ensure UN targets are met across the board; but in order for this to be achieved, the Report recommends comprehensive macroeconomic reforms aimed at building financial resilience, with emphasis on the need to accelerate growth to double digits by 2030 and boost investment from its current 35 per cent of GDP.

"The report identifies several quick wins in Africa's pursuit of additional fiscal space to finance its accelerated development," remarked Vera Songwe, executive secretary of the Economic Commission for Africa (ECA). "[It also] focuses on the instrumental role of fiscal policy in crowding-in investment and creating adequate fiscal space for social policy, including supporting women and youth-led small and medium enterprises."

On the topic, she continued, "African countries continue to search for policy mixes to help accelerate the achievement of the SDGs. However, financing remains the biggest bottleneck with applying capacity a close second."

While Africa did achieve a moderate growth of 3.2 per cent last year – a figure which has been credited to "a

moderate increase in commodity prices and favourable domestic conditions" – the report highlights that more needs to be done in order to boost growth, a feat which can be achieved through finding a balance between raising revenue and incentivising investments.

Likewise, the report found growth in Africa's largest economies, including South Africa, Angola and Nigeria; but maintains growth trends remain vulnerable to shifts in commodity prices. East Africa was found to be the fastest growing economy with a 6.1 per cent rise in 2017, followed by a 6.2 per cent rise last year; while the rest of the continent achieved growth at a slower rate in 2018 when compared to the year prior's performance.

The report also revealed debt levels remained high as African countries increased their borrowing in an effort to ease financial pressures. However, the ECA has called for African countries to increase government revenue by 12-20 per cent of GDP by adopting a policy framework to strengthen revenue mobilisations.

"Digital identification can broaden the tax base by making it easier to identify and track taxpayers and helping taxpayers meet their tax obligations. By improving tax assessments and administration, it enhances the government's capacity to mobilise additional resources. Digital ID systems yield gains in efficiency and convenience that could result in savings to taxpayers and government of up to US\$50bn a year by 2020."

MTN launches WhatsApp chat service

VENTURING INTO THE digitised world of WhatsApp, MTN South Africa has partnered with global customer engagement company Clickatell to launch MTN Chat.

The feature will allow customers to engage with the company via Whatsapp in order to purchase airtime and data bundles. Customers can also interact with customer support and self service options including performing upgrades, managing their upgrades and receiving low balance alerts in order to boost the company's customer base.

"Clickatell understands that mobile operators are under increasing pressure to deliver excellent customer service over the digital channels their customers prefer. By offering convenient services over a secure, convenient channel, MNOs can both increase their transactional volume and attract and retain customers – something that is paramount in an age of continuous digital transformation and growing competition," said Pieter de Villiers, founder and CEO of Clickatell.



Photo: Adobe Stock

More than 1.5bn people use WhatsApp every month.

Boasting more than 1.5bn users across 180 countries each month, WhatsApp has gained acclaim as one of the most efficient ways to reach a majority of customers who can benefit from telecommunication services – a service which has been optimised by the messenger app through its Business API, allowing brands to send out notifications and have conversations with consumers once they have opted in. Savvy to the app's popularity, Clickatell has already collaborated with Absa Bank, GTBank, First Bank of Nigeria and United Bank of Africa in order to implement similar engagement strategies for customers.

Ericsson Industry Connect targets 5G technology

IN AN EFFORT to accelerate Industry 4.0 digital transformation, Ericsson has launched Ericsson Industry Connect – a purpose-built service which enables communications service providers to offer cellular networks at factories and warehouse starting with 4G/LTE, with plans to incorporate 5G in the not-too-distant future. The solution is set to strengthen Ericsson's private networks and IoT portfolios by making 4G and 5G technologies accessible to new industrial markets, while simultaneously making cellular technology rapidly deployable for factories and warehouse staff. The solution can enable innovative Industry 4.0 use cases such as digital twin inspection with massive amounts of sensors, mobility for human machine interface, instructions for workers, collision avoidance and remote control for autonomous guided vehicles, as well as collaborative robotics for automated operations.

"Ericsson Industry Connect is built on design thinking to meet industrial customers' requirements on speed, reliability and security, while being easy to install and manage. It helps enterprises to accelerate their automation and operational efficiency to the next level," said Åsa Tamsons, senior vice president and head of business area technologies and new businesses.

On the topic, she continued, "It complements service providers' offerings to enterprises with a solution that is easy to scale. Ericsson Industry Connect increases the relevance of cellular solutions in the high growing segment of industrial connectivity – leveraging Ericsson's technology leadership, strength in connectivity, and R&D investments to date."

The service has already been implemented by Scania – a Swedish provider of transport solutions. Speaking of the solution, Roger Hartonen, senior manager of industrial IT at Scania Group, said, "At Scania, we are driving the shift toward sustainable transport by continuously innovating our manufacturing processes."

Events/Événements 2019

MAY/MAI

6-9	SATELLITE 2019	Washington	2019.satshow.com
8-10	Mobile Solutions Expo	Tokyo	www.tradefairdates.com
14-15	East AfricaCom	Nairobi	10times.com/east-africacom
15	Mobile Growth Summit UK	London	mobilegrowthsummit.com
15-16	IoT World Forum 2019	London	iotconferences.org

JUNE/JUIN

10	Tech in Ghana	London	www.techinghanaconference.com
18-20	CommunicAsia	Singapore	www.communicasia.com
20-23	Interop	Moscow	www.interop.com
24-28	CeBIT	Hanover	www.cebit.de

JULY/JUILLET

10-11	West Africa Com	Senegal	10times.com/west-central-africacom
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SEPTEMBER/SEPTIEMBRE

11-12	Nigeria Com	Lagos	tmt.knect365.com/nigeria-com
11-12	Capacity Africa	Rwanda	www.capacitymedia.com
18-19	Mobile Growth Summit Europe	Berlin	mobilegrowthsummit.com

Ukraine's first 4k TV channel broadcast via Spacecom's AMOS-7

SPACECOM, OPERATOR OF the AMOS satellite fleet, has announced its AMOS-7 communication satellite is broadcasting the Ukraine's first ever 4K TV channel.

Nashe Media Group's #NASHE HDR channel is being broadcast throughout the country by Ukrainian operator UkrKosmos. Following on from the channel's success, Nashe is planning a spring 2019 launch of a second 4K channel, ETNO.

Andriy Verkholyak, director of Nashe Media Group, said, "The success and positive reception by consumers of our 4K channel #NASHE HDR is exciting. As a relatively new player in the Ukrainian market, we are here to prove that we are market movers and by investing in 4K TV, we have proved that viewers are ready for this new technology. Working together with UkrKosmos and Spacecom is the correct decision and we are already planning for more 4K channels. We look forward to more growth with Spacecom as our satellite



AMOS-7 communication satellite.

communications partner."

Jehuda Amir, VP Sales CIS at Spacecom, said, "4K television is a growth point for TV business and a must-have feature in the premium segment. I am very

pleased that the first Ukrainian 4K channel is now broadcasting from our satellite. One factor holding back 4K growth is that it requires large capacity, which has been expensive. Spacecom's

intensified efforts in developing satellite technologies to provide TV channels with sufficient capacity at a reasonable price have succeeded. Nashe Media Group's channel on AMOS-7 proves this."

Photo: Spacecom



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Preparing for the Fourth Industrial Revolution

The Fourth Industrial Revolution will impact everything from supply chains, energy/water supply to transport, education and healthcare. Moin Siddiqi investigates.

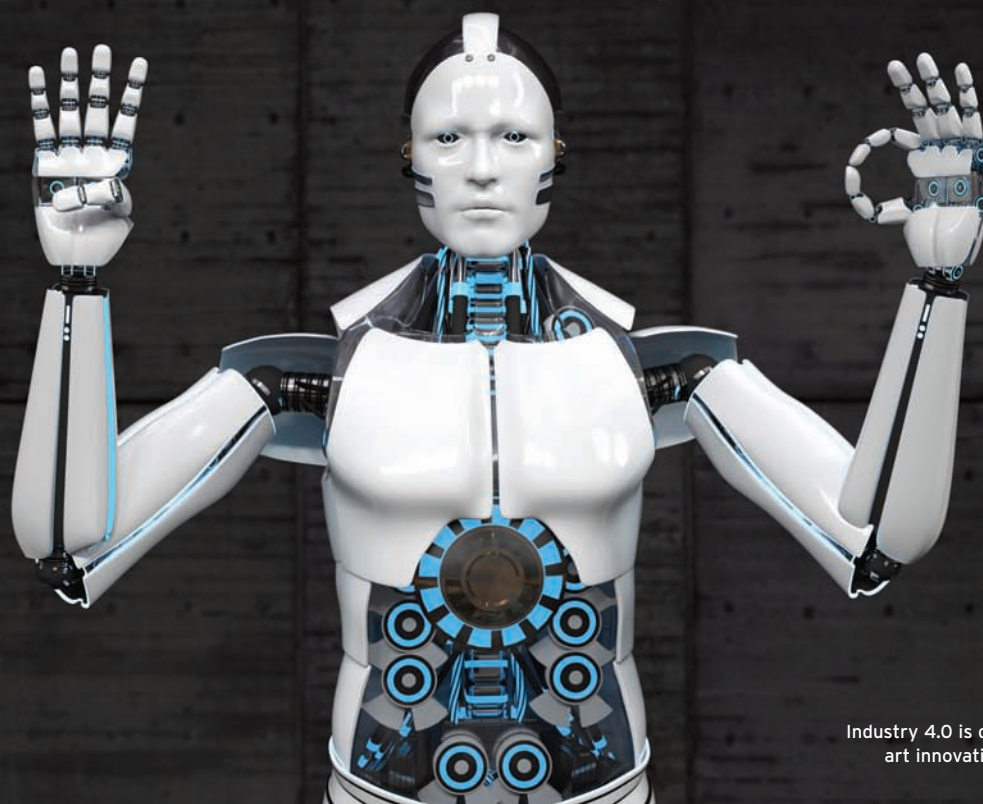


Photo: Adobe Stock

Industry 4.0 is driven by state-of-the-art innovations such as robotics.

NEW TECHNOLOGIES AND global economic integration are redefining the future of work, specifically how and where goods and services are produced. The impact on Africa could be direct if automation in advanced economies reduces region's participation in global value chains (GVCs) as sophisticated industries replace low-end manufacturing trade and services, thus hitting jobs. The challenges of high-tech innovations affect, however, both advanced and developing countries.

Historically, technological changes have reshaped our lives. The first two Industrial Revolutions – the steam engine (1760-1840) and electricity (late 1800s-early 1900s) led to mechanical and mass production. Whilst third – also called the digital revolution (1960s-2000s) used electronics and information technology to automate production. Now a fourth revolution or industry 4.0 is underway. Professor Klaus Schwab, author of *The Fourth Industrial Revolution* and founder/executive chairman of the World Economic Forum, explained the new age is differentiated by the

We need to promote digital literacy and identify the skills that will allow the next generation to work with and take advantage of technology rather than be replaced by it.

Christine Lagarde, MD of the IMF

speed of technological breakthroughs, the pervasiveness of scope and the tremendous impact of new systems. Exponential technologies that constitute the Fourth Industrial Revolution (4thIR) will impact everything from supply chains, energy/water supply to transport, education and healthcare.

What exactly is Industry 4.0?

The 4thIR – an extension of digital revolution – is rapidly expanding the scope of machines' capabilities via 'groundbreaking' technologies

that combine the physical, digital and biological worlds. The term was not well-known until it became a central topic at the World Economic Forum in Davos, Switzerland. The underlying power lies in high-tech communication and connectivity rather than technology. These technologies boast vast potential to continue connecting billions of more people to the web, while transforming entire systems of production, management and governance across the globe.

Industry 4.0 is driven by state-of-the-art innovations, i.e. using 'disruptive' technologies such as the Internet of Things (IoT), artificial intelligence (AI), virtual reality (VR), robotics, 3D printing, nanotechnology, biotechnology, machine learning, energy storage, autonomous vehicles, quantum computing and Blockchain. The 4thIR combines 'cyber-physical' systems and Internet of 'Everything' to change the way we live and work – thus representing new ways in which technology becomes embedded in wider societies.

Already, AI is visible around us, from self-driving cars and drones to virtual assistants

and software that translate or invest. Digital fabrication technologies are interacting with the biological world daily. Furthermore, engineers, designers, and architects are combining computational design, additive manufacturing, materials engineering in the building industry.

Policies to develop 'E-Economy'

The 4thIR will radically change the kinds of jobs needed in industry, where talent, more than capital and mass labour represent the critical factor of production. The International Monetary Fund (IMF) notes, "Innovation, creativity, and constant refreshing of skills are rewarded well in a globally competitive system." The key pillars are connectivity and skills upgrade.

Africa faces ongoing challenges to build/maintain adequate physical and digital infrastructure – total annual cost of which is US\$130-170bn (African Development Bank estimate). The overarching priority is transportation and electrification but greater digital connectivity within national borders, regionally and globally is critical for SSA to benefit from 4thIR. Presently, the region's internet penetration is merely half of global average plus broadband services are very expensive. The investment needs in digital communication are estimated at US\$5-7bn/year, modest compared to physical infrastructure requirements.

Africa should nurture well-trained workforce to compete in global markets.

"We need to promote digital literacy and identify the skills that will allow the next generation to work with and take advantage of technology rather than be replaced by it," said Christine Lagarde, managing director of the IMF. This puts premiums on science, technology, engineering, and mathematics (STEM) in higher education system, online courses using latest teaching methodologies, as well as investments in research/development and data-base design.

Looking at experiences of matured emerging economies where urban centres are drivers of new technologies, African mega-cities should aspire to become innovation hubs with new start-ups specialising in ICT, high-end manufacturing and fintech, which seeks to improve and automate the delivery and use of financial services.

How the digital economy improves lives in Africa?

Sub-Saharan Africa has made tangible progress in introducing new technologies, with mobile phone penetration reaching 44 per cent in 2017, with over 400 million subscribers. Mobile has effectively leapfrogged fixed-line telecoms infrastructure. Technology raises income levels and enhances the quality of people's life. Over time, transportation and communication costs fall, logistics and regional supply chains

become more effective and trading costs will decline. That, in turn, opens new markets and fuels economic growth across Africa.

Various examples of advanced technologies being used by African governments, businesses and consumers cut across sectors. East Africa has led to the development of mobile money (M-Pesa) in Kenya, facilitating access to financial services to millions of 'unbanked' populations. New start-ups, such as EC CASH provide mobile money transfer and micro-financing, while FarmDrive connects smallholder farmers with lenders and Hello Tractor links farmers with the nearest tractor owner. South Africa uses biometric data and payment cards to deliver social security across the country.

Rwanda boasts the world's first cargo drone delivery service with Silicon Valley start-up Zipline, which delivers critical medical supplies to remote health centres thanks to recent regulations that gave drones the status of government flights.

Drones are deployed by South African miners for everything from mapping to mineral exploration to tracking stockpiles. Drones deliver samples from sites thus surveyors spend less time gathering data in the field and more time interpreting it. The use of drone mining helps track deposits in deep mines.

Further examples of innovative local services include VULA Mobile (medical diagnosis app) in South Africa connecting health workers with specialists. Biscate is a mobile-recruitment service for blue-collar

workers in Mozambique. In education, Fundi Bots offers STEM training in schools and communities and KYTABU has improved access to textbooks and audio books. More significantly, a 3D printer can tackle Africa's chronic housing deficit by building a house in 24 hours at a low cost. In Ghana, Global Positioning System (GPS) is used to establish addresses where street names and numbers or maps are incomplete.

New technologies are vital to boost agricultural productivity – SSA is endowed with 60 per cent of globe's uncultivated arable land. Farmerline, a Ghanaian agro-tech company, uses mobile phones to provide timely information to farmers on weather forecasts, market prices and financial services. iCOW advises farmers and herders on crop cycle, fertilising, seeding, poultry and best practices; FAMEWS collects data and maps the spread of fall armyworm infestation to protect crops and livestock.

In summary, a 'New Age' is upon the horizon where technologies will fundamentally change societies across the world. Professor Schwab said, "My concern is that decision makers are too often caught in traditional, linear (and non-disruptive) thinking or too absorbed by immediate concerns to think strategically about the forces of disruption and innovation shaping our future." However, parts of Africa has yet to fully embrace the Third (digital) revolution, which explains the productivity gap with other developing regions, notably Asia. ☺

TECH TERMINOLOGY

* A **disruptive technology** displaces an established technology and shakes up the industry or a ground-breaking product that creates a completely new industry. For example, smartphones largely replaced mobile phones and Personal Data Assistants (PDAs) and, because of the available apps, also disrupted pocket cameras, MP3 players, calculators and GPS devices, among other possibilities.

* The **Internet of Things** is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs), with the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

* **3D printing** is any of the various processes where material is joined or solidified under computer control to create a three-dimensional object, with material being added together (such as liquid molecules or powder grains being fused together), typically layer by layer. In industry, 3D printing enabled the emergence of small-scale and customisable manufacturing and construction.

* **Artificial Intelligence** is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of data and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction. Known applications of AI are expert systems, speech recognition and machine vision.

* **Smart factories** in which machines are augmented with web connectivity and connected to a system that can visualise the entire production chain and make independent decisions. This enables the absolute customisation of products and the creation of new operating models.

* A **blockchain** is a growing list of records, which are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp and transaction data.

* **Robotics** is a branch of engineering that involves the conception, design, manufacture, and operation of robots.

* **Virtual reality** is an artificial tool created with software and presented to end-users in a way they suspend belief and accepts it as a real environment.

* **Biotechnology** is the area of biology involving living systems and organisms to develop, make and modify products or processes for specific use.

* **Quantum computing** is computing using quantum-mechanical phenomena, such as superposition and entanglement.

Making international money transfers easier across Africa

Fintech start-up Kaoshi hopes its new mobile app, in partnership with banks in Africa, will help people make international money transfers more efficiently without incurring exorbitant fees, according to its founder Chukwunonso Arinze.

WHEN THE OIL price collapsed in 2015, many African countries' federal reserves of US dollars were depleted. Tight regulation on forex came in, making banks and money transfer companies such as Western Union and MoneyGram unable to process all forex transactions on behalf of customers. Retail international money transfers became expensive and difficult.

On the other hand, Africa is still the most expensive region in the world to send money to. African immigrants deal with high remittance fees and unfavorable exchange rates. While there are many fintech that send money to Africa, at cheaper prices than Western Union, it is still four to eight times more expensive to send US\$500 to Nigeria than to India or Mexico.

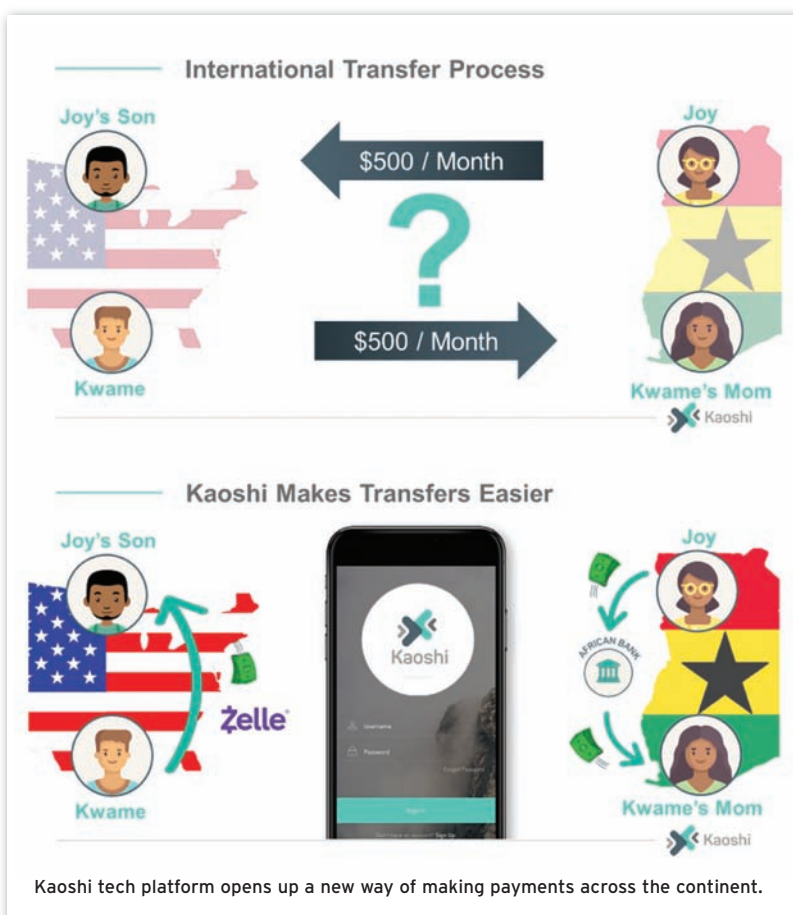
Thus, Africans and African immigrants are resorting to informal transfer systems such as peer to peer currency swaps. Take for example, Joy, a mother in Ghana, who wants to send US\$500 to her son, Kwame, in the USA. She calls her friend in the US and requests that her friend give US\$500 to her son, while she would pay the equivalent amount in Ghanaian currency to her friend's mother living in Ghana. No money crosses the border. No money transfer fees nor hustle for access to scarce and tightly regulated forex. Africans are using WhatsApp and Facebook groups to do these 'currency swaps', but these informal methods are very risky and disorganised, as they rely on trust.

Enter Kaoshi: Bringing bank level security, organisation, and the efficacy of the informal currency swaps, all in one platform. The platform will be integrated into the internet/mobile banking menu of African banks. Africans will post their money sending requests, so that African diaspora can see these offers, match them, and swap their currencies in a safe and secure manner. For the first time in Africa this new mobile app will allow Africans to make currency swaps without relying on foreign exchange (US dollars or UK pounds). Meanwhile, on the foreign side, Kaoshi validates the corresponding money swaps. The app consolidates the fragmented informal currency swap process under one secure platform. Entries on the Kaoshi platform are simultaneously broadcast across all banks on the African continent, which allows for a large and liquid currency swap marketplace.

There is a strong demand to send money out of Africa for different purposes.

Chukwunonso Arinze, founder of Kaoshi, said, "What is even more exciting is that for the first time ever, we can now have a direct currency swap between two African countries, without the need for an intermediary foreign currency like the US dollar or pound. For example, you'll be able to make payments directly from Nigerian Naira to Ghanaian Cedis. We plan to make the app available to all African banks.

"There is a strong demand to send money out of Africa for different



purposes such as small company imports from eBay and Amazon, individuals paying for online subscriptions, medical expenses, or student tuition and upkeep. Nigerians spend more than a billion dollars annually on foreign medical expenses and there are more than 500,000 African students studying abroad," he further explained.

Currently, the company is in talks with many banks (one is based in Ghana, but its name is still confidential). "We want to get at least one bank in Ghana and Nigeria, followed by Kenya and South Africa to pilot this innovation. After the pilot is concluded, then we will scale Kaoshi across multiple banks in each of these countries. Banks want to adopt Kaoshi because they will capture the informal remittance market they have been shut out from due to the limitations explained. With this app they can provide a significantly cheaper and convenient transfer service to their customers, while African diaspora will be able to send money to Africa for as low as a dollar," he added.

Arinze added, "I always like to emphasize Kaoshi's bigger vision. We are not a remittance company. We don't take money from people. Rather, we have created a financial technology solution to a huge problem that has plagued not just the African continent, but other emerging and developing economies as well; a problem the banks have not been able to solve for so long." 🌐

Satellites: connectivity at another level

SATELLITE 2019, happening in the USA, is a must-attend show for any sector from the satellite industry.

IN TODAY'S WORLD, satellites are playing a significant role in a number of various markets. That's why SATELLITE 2019 is a must-attend global show for any sector from the satellite industry.

Taking place from 6 to 9 May, at the Walter E. Washington Convention Center, Washington, DC, the high-profile event brings together more than 15,000 attendees from 105 countries, with hundreds of exhibitors and speakers and media channels. The event is expected to showcase cutting-edge technologies and next generation applications for buyers from multiple sectors such as business, finance, media, government, telecommunications, and transportation.

It aims to provide opportunities for new and existing customers to learn about how satellites can solve present and future challenges, as mobile and fixed connectivity, imagery, navigation, tracking and remote sensing capabilities have become more and more integrated with technology and tools that we use every day.

"Satellite 2019 will create a forum for the thousands of attendees to learn best practices, experience the newest technology and collaborate with colleagues from all sectors of the satellite industry," said a spokesman from SATELLITE 2019.

"The conference not only focuses on opportunities in our main vertical markets – military/government, broadcast, enterprise, telecommunications, mobility, maritime and commercial – but also digs deeper than ever before providing fresh data, keen market intelligence and the strategies you need to achieve new levels of excellence and business development."

Broadcasters, VSAT network providers, corporate network integrators, equipment manufacturers, launch service providers and satellite operators.

Thomas Van den Driessche, CEO of Newtec, one of the exhibitors at the show will be speaking with Hans Massart, Market Director Broadcast on Streaming Digital Media Services, Factoring 5G into the Future of Satellite Service Providers.

Driessche said, "In 2018, only 55.1 per cent of the world's population had access to the Internet. And although many of us consider the Internet to be part of our daily lives, just under half of us do not have access and therefore cannot reap the benefits it brings. There is,



Satellite communication is the solution that can deliver broadband to even the remotest places on earth, says Thomas Van den Driessche, CEO of Newtec.

Photo: Adobe Stock

however, a solution that can deliver broadband to even the remotest places on earth, yet it is often overlooked: satellite communication."

Apart from the emergence of High Throughput Satellites (HTS), which are changing the capabilities of the industry, he points to the "inexorable rise of the small satellite (smallsats) as the other significant development. Previously associated solely with the scientific and academic community, smallsats are now becoming part of the mainstream satellite industry".

SATELLITE 2019 digs deeper than ever before providing fresh data and strategies you need to achieve new levels of excellence and business development.

One of the exhibitors will be satellite operator, Eutelsat. It has launched an initiative called Konnect Africa dedicated to satellite broadband on the African continent, and recently announced its Internet access offerings in Côte d'Ivoire in January.

According to the Telecommunications Sector Observatory of the Telecommunications Regulator/ICT of Côte d'Ivoire (ARTCI), the number of fixed Internet subscribers (Ethernet cable, wifi and fibre) in Côte d'Ivoire stood at

155,541 in the second quarter of 2018, representing 0.6 per cent of the total population.

At the same time, according to Deloitte's TMT 2017 report, the country has nine million mobile Internet subscriptions, notably thanks to the 4G network. Some areas of Côte d'Ivoire, however, are not properly served by mobile technology.

Konnect Africa is now helping to bridge the digital divide in the country by offering broadband Internet to individuals and professionals, particularly outside major cities, where no reliable broadband solution is available. The Konnect or Konnect Home ranges are from 5GB to 30GB, costing from 9,000 to 35,000 CFA franc (US\$15 to US\$60). Konnect Pro offer between 50 and 500GB of data and are marketed at 58,000 CFA franc (US\$99). These offers will be made available on a prepaid basis in order to meet the needs of the Ivorian market. The speeds offered will be up to 20Mbit/s downstream and up to 3Mbit/s upstream.

On the occasion of the opening of Konnect Africa's services in Côte d'Ivoire, Jean-Claude Tshipama, CEO of Konnect Africa, said, "Satellite technology for high-speed Internet is the answer for efficient digital coverage in Côte d'Ivoire. Many "white zones" remain and Konnect Africa's complementary offer addresses this lack of connectivity. Thanks to first-class local partners, we are now able to offer quality broadband offers at competitive prices." ©

By Nawa Mutumweno

SatADSL: Connecting Africa, and beyond

According to March 2019 Internet World Stats data, 10.9 per cent global Internet users are in Africa, lagging far behind Asia, which dominates with 50.4 per cent.

Across Africa, SatADSL has installed around 4,000 terminals. The potential is huge but the digital divide is bigger with many without the Internet.

LEADING PROVIDER OF professional VSAT and secure private networks via satellite in Africa – SatADSL – has expanded its cloud service delivery platform (C-SDP), which allows end-to-end monitoring management of the satellite bandwidth to the Middle East and Asia markets.

Through SatADSL's C-SDP, a complete OSS/BSS, carrier-grade, fully redundant platform, telcos and service providers can, for the first time, offer, via the cloud, satellite services over any frequency band.

It includes a network management system, which allows IP traffic to be shaped and routed from and to different hubs, while the built-in customer management tool allows providers to manage and monitor their own customers.

Promoting the services at CABSAT 2019 in Dubai last month, Caroline De Vos, co-founder and chief operations officer of the Belgium-based company, said that the industry's first service also provides value-added services such as end-to-end billing and hotspot accessibility and monitoring.

She says, "SatADSL started with providing IP connectivity to western Africa and now we are reaching out to other regions with our specialised solutions. The C-SDP is a unique solution and has been launched in response to the market demand.

"The platform gives satellite and teleport operators the ability to access with multiple technologies different satellites, all from one single management tool."

SatADSL is also the only company in the continent offering voucher-based broadband services. This pay-as-you-go prepaid online service, just like a prepaid SIM card, is aimed at helping African providers develop long-term viable models. Introduced four years ago across Africa, the subscription helps recover payments as well as give the customers the right to choose.

De Vos adds, "This solution is continuously answering the real demand of the market. This is what differentiates us from our competitors – we allow the recipients to choose the best suitable solutions."

SatADSL's expertise lies in providing services to mobile network operators (MNO) and telecommunication companies in remote areas where cellular communication may be limited or unavailable.

Fulvio Sansone, co-founder and chief technology officer, points out that they provide backhauling services to cellular networks for operators where terrestrial networks are not reliable or absent. SatADSL solutions provide those customers with access to internet and data communication services wherever they are based.

Across Africa, SatADSL has installed around 4,000 terminals. The potential is huge but the digital divide is bigger with many without the Internet.

"We are trying to bring connectivity to everyone. Of course, we provide services to anybody who is asking us to do. But we observe that there is a growing interest for connectivity through a Wi-Fi breakout. This means bringing connectivity to a particular territory and then through a Wi-Fi network, the providers can make this connectivity available to users in the remote areas. In Ghana, for example, the Wi-Fi breakout was rolled out in school premises to provide Internet access to the community near these schools. This is something, which on one hand, brings connectivity to remote communities and, on the other hand, get people to schools."

A similar case study was pointed out at post offices in Togo.

Better connectivity is also boosting economics in rural Africa by helping the agrarian communities, Sansone adds.

As the age of connectivity progresses, the need for high bandwidth and quality remains the core focus globally. Aiming to demonstrate their expertise and mirror their Africa success in the Middle East, SatADSL participated at CABSAT because, according to De Vos, the show is the only one in the region that brings together industry professionals within the satellite sector to formulate and define the future strategies. ☺



Caroline De Vos is the co-founder and COO of Belgium-based and Africa-focused SatADSL.



Connectivity that captures all

Making connections count.

Fast, flexible and inclusive. SatADSL's multi-band, multi-technology, C-SDP takes your satellite offering to the next level and to new horizons, on a global scale.

Meet us at the following shows:

Satellite 2019	Stand 2343	6-9th May
CommunicAsia	Stand 1V 1-05	18-20th Jun
IBC Show	Stand 5.C31	13-17th Sep
AFRICACOM	Stand E38	12-14th Nov

Washington, US

Singapore

Amsterdam

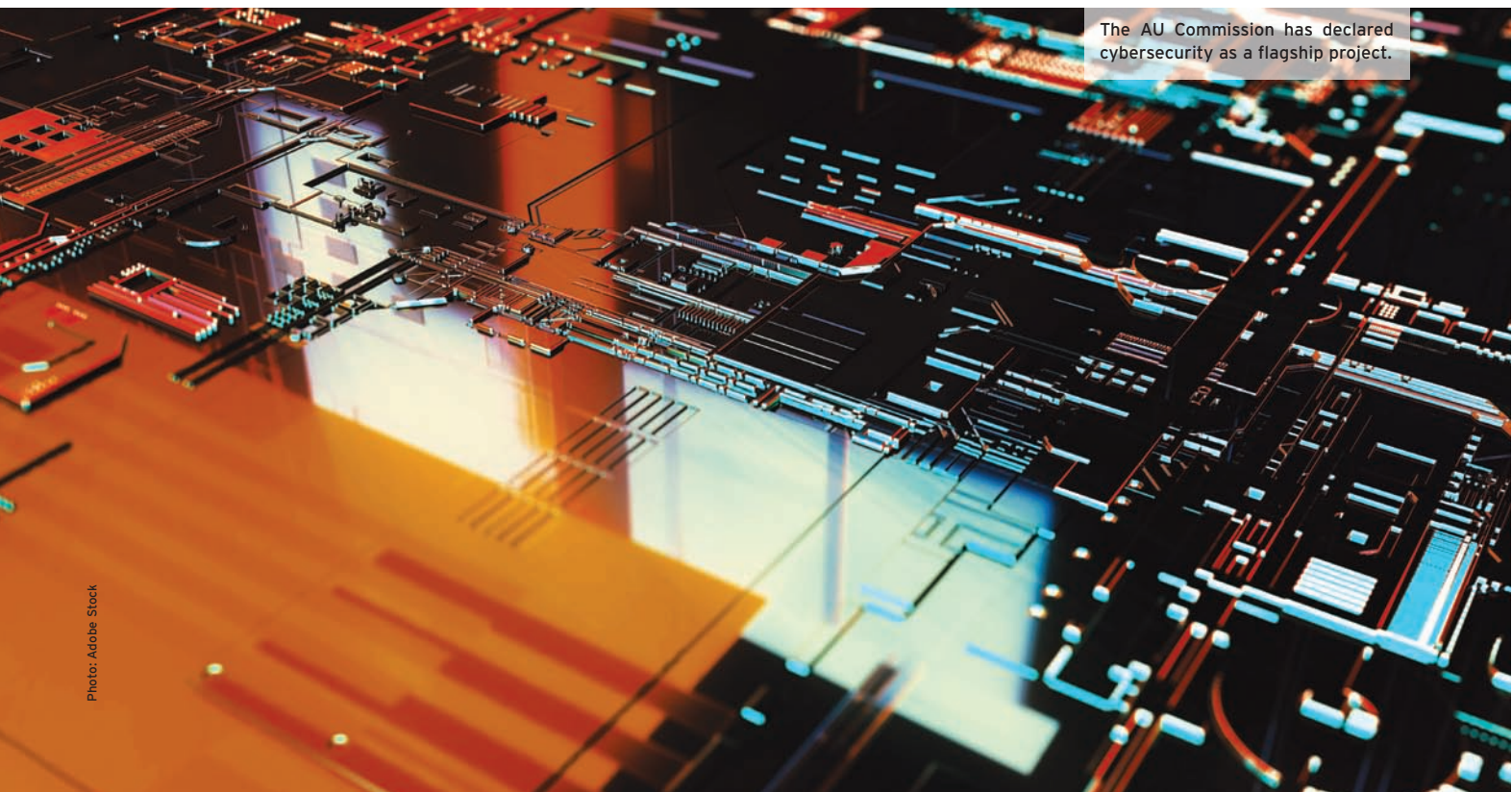
Cape Town



WWW.SATADSL.NET

Africa Union: Accelerating digital transformation across the continent

Communications Africa exclusively interviews Moctar Yedley, head of the Department of Information Society at the African Union Commission (AUC), about the policy changes in place to accelerate Africa's digital connectivity.



The AU Commission has declared cybersecurity as a flagship project.

Photo: Adobe Stock

What is African Union's vision on Africa's digital transformation?

Moctar Yedley: Our vision is to digitally empower our people and our institutions, safely and securely.

Indeed, digitisation and digital transformation have brought important productivity gains across all socio-economic development sectors. It has not only provided the conditions for enhanced participation in international value chains, facilitated market access, and lowered transaction costs, but it has also transformed governments and made them more efficient, effective and accountable. This will certainly increase cross-border trade and accelerate the progress of the African Continental Free Trade Agreement (AfCFTA), all of which are crucial to Africa's integration, leading to a unified market that will open up job opportunities for our youth. In collaboration with African and international partners we have started drafting the AU Strategy on Digital Transformation while continuing to build a digital ecosystem through the Programme for

Infrastructure Development in Africa (PIDA), African Internet Exchange Systems (AXIS) on data centres and the Policy and Regulatory Initiative For Digital Africa (PRIDA).

Our vision is to digitally empower our people and our institutions, safely and securely.

Since the last Specialised Technical Committee (STC) meeting on communication and ICT with ministers, what have been some of the major achievements?

MY: We have made significant progress, most notably since the AU summit adopted the Declaration on Internet Governance and Africa's Digital Economy. This important event is a conclusion of two years of the Inclusive Policy Development Process (IPDP). I believe it is the first time such an important document

has been discussed in the public arena and then later endorsed. The AU Commission has also declared cybersecurity as a flagship project. This means that the matter has now become one of the top priorities of the AU's agenda.

Last July, we trained 126 policy, technical and law enforcement experts from 42 member states on issues such as cybersecurity strategies, cyber legislations and cyber capabilities. We have also organised the first African Forum on Cybercrime, which was attended by more than 300 African and international participants including the Council of Europe and Interpol. We also launched guidelines on privacy and personal data protection in Africa prepared jointly with the Internet Society (ISOC).

We successfully organised the seventh meeting of the African Internet Governance Forum (AfIGF) in Khartoum last November, and launched the digital platform for knowledge management for exchanges of best practices on digital policies and Internet governance

matters, as well as trained 40 young people.

African countries are paying overseas carriers to exchange “local” traffic on their behalf. This is both a costly as well as an inefficient way of handling inter-country exchange of Internet traffic. Lowering communications costs by facilitating the establishment of the African Internet Exchange System will reduce the cost of financing trade and ultimately, the price of goods. Through the African Internet Exchange Systems (AXIS) project, we have continued saving the continent millions of dollars through additional Internet Exchange Points (IXPs) in Algeria, Guinea, Mali and Senegal and by supporting Kenya, Nigeria, Rwanda and South Africa national IXPs in becoming Regional Internet Exchange Points.

Last but not least, the implementation of PRIDA has enhanced the coordination mechanisms and regulation in Africa, and Internet governance for all AU member states.

We are working towards strengthening African capacity to contribute to the general debate on Internet governance and digital cooperation.

Let us talk about PRIDA: Please explain how it will deliver accessible and affordable broadband across the continent?

MY: The overall objective of PRIDA is to foster universally accessible and affordable broadband across the continent to unlock the future benefits of Africa’s digital transformation. The PRIDA programme aims at creating a more harmonised and enabling environment for the use of ICTs for human, social and economic development, with a special emphasis on addressing the policy, regulatory and legislative dimension of broadband demand and supply in Africa.

Secondly, digital cooperation and the right digital governance are keys for digital transformation. We are working towards strengthening African capacity to contribute to the general debate on Internet governance and digital cooperation. Electronic transactions and digital platforms, in particular, are helping to level the playing field between businesses across sectors and across geographical boundaries. In order for digital transformation to flourish, international cooperation, as well as economic and social enabling conditions, need to be in place. Digital transformation needs to be developed in connection with other policy issues, such as cybersecurity, network neutrality, privacy protection, data localisation and labour rights. Countries such



Moustapha Yedaly is in charge of the African Union's Department of Information Society.

Burkina Faso, Ghana, Namibia, Nigeria, Rwanda and Uganda have made significant progress in delivering universal access and developing broadband plans – a great step towards improving accessibility and affordability.

The responsible collection and use of data requires governance, security and trust. What are some of the measures that member states have put in place against the backdrop of growing cybersecurity concerns across the globe?

MY: Trust in cyberspace and safe and secure electronic transactions are essential conditions for the development of a digital economy. The AUC has been active in promoting Personal Data Protection and Coordinated Border Management, as well as building capacity across the continent. The AUC is pursuing the ratification of the AU Cybersecurity Convention and Personal Data Protection, known as The Malabo Convention. It is unique that it is the only convention in the world that addresses both electronic transactions, personal data protection and cybersecurity including cybercrime. Despite challenges related to cyber skills and cyber infrastructure, the will of African countries to fight cybercrimes is increasing every day. Most member states are active in this area and have allocated funds to revamp their cybersecurity infrastructure, develop cybersecurity policies and strategies and set up a national Computer Security and Incident Reporting Team (CSIRT). The AUC has launched guidelines on data protection and Internet infrastructure security. We continue our advocacy and our co-operation with institutions around the world. An African cybersecurity expert group is being formed to advise the AUC concerning international

discussions on cyber security and cybercrime and to exchange best practices.

On Wireless Open Access Networks, what is Africa Union's position on putting measures in place to ensure fair competition?

MY: The deployment of Wireless Open Access Networks has been initiated in Kenya, Rwanda and South Africa. The AU in collaboration with the Regional Regulatory Associations, continues to monitor its levels of success.

We recognise the role of Public Private Partnerships (PPPs) in scaling up connectivity, who are some of the AU's notable partners?

MY: PPPs in the field of technological innovation are essential for the competitiveness of regions and individual countries, and various regions are making moves to identify the best use of PPPs in this respect. On the one hand, the PPP model can provide an ideal vehicle for funding ICT projects, helping enable the development of the needed infrastructure with some relative assurance of an appropriate return on investment. On the other hand, ICT services can more easily be put within the financial reach of millions of consumers in rural and urban areas because service delivery objectives of the public sector can be easily aligned with the business objectives of ICT service providers. Just as important as the delivery of social services through communications networks, it is appropriate that government and private-sector organisations collaborate to ensure that ICT infrastructures are available to businesses and individual citizens. The AUC continues to promote PPPs that are of win-win nature to contribute to the digital transformation of Africa.

Lastly, what is the AUC's position on increasing the restriction to information on the Internet and Internet shutdowns carried out by AU member states?

MY: As per the AU's declaration on Internet Governance, member states “pledge to work together in the fight against the inappropriate use of ICTs in a bid to reach a consensus, in the medium term, on the best cybersecurity mechanisms and practices in Africa”. To strike a balance between accessing the Internet and protecting the national security of member states, the AUC would encourage all concerned stakeholders to work together in a multi-stakeholder fashion that takes into account the rights of citizens and countries, while incorporating policy, legal and technical solutions to address the legitimate concerns of the parties in question. ©

By Nancy Onyango

Unveiling firefighting technologies at Intersec in Dubai

The 21st edition of Intersec, held from 20-22 January at the Dubai International Convention and Exhibition Centre, attracted 34,854 visitors from 126 countries, a 20 per cent increase over the previous year.

ORGANISED BY MESSE Frankfurt Middle East, the leading trade fair for security, safety and fire protection featured 1,212 exhibitors from 54 countries, six show sections, 15 country pavilions, live outdoor demonstrations, a drone zone, and the new Future Security Summit.

Andreas Rex, Intersec's show director, said, "We put in a lot of effort into making this edition of Intersec the most comprehensive yet in terms of increasing the diversity of our exhibitor range and offering a more engaging conference format, while at the same time returning with improved popular highlights such as the outdoor live demonstration area."

"A lot of exhibitors used Intersec 2019 to not only announce important strategic business partnerships, but to launch their latest products for the global marketplace."

Smarter and safer cities were important themes.

Dubai Police unveiled a hydrogen-powered drone which will be used to survey mountainous and marine areas, while Dubai-based Bristol unveiled the latest innovative



Business discussions at the show.

firefighting technologies, including a UAE-built fire truck, fire suppression systems and powerful water pump solutions.

Nearly two-thirds of the world's top 50

security manufacturers were on board, including Hikvision, Dahua, ASSA ABLOY, Bosch Security Systems, Axis Communications, FLIR Systems, Hanwha Techwin, Avigilon, VIVOTEK, CP Plus, Nedap, Milestone Systems and KEDACOM.

Meanwhile, smarter and safer cities were important themes, underlined by a Memorandum of Understanding signed at the show between Smartworld, a UAE systems integrator, and Honeywell Building Solutions to implement digitally transformed, sustainable, safe and efficient buildings across the UAE.

Attracting a lot of attention on the show floor were AI-based security and surveillance systems with applications across safe city and smart home security systems.

High-definition IP-Network cameras and analytics software used across various industries ranging from banking and retail to hospitality and oil & gas were also among those drawing greatest interest.

According to analysts 6Wresearch, the regional market for physical and perimeter security, commercial and information security, fire protection, and drones, is currently estimated to be worth US\$14.5bn, and is estimated to grow to US\$31bn in 2024. ©



Many firms displayed their firefighting technologies.

Photo: Messe Frankfurt

Photo: Messe Frankfurt

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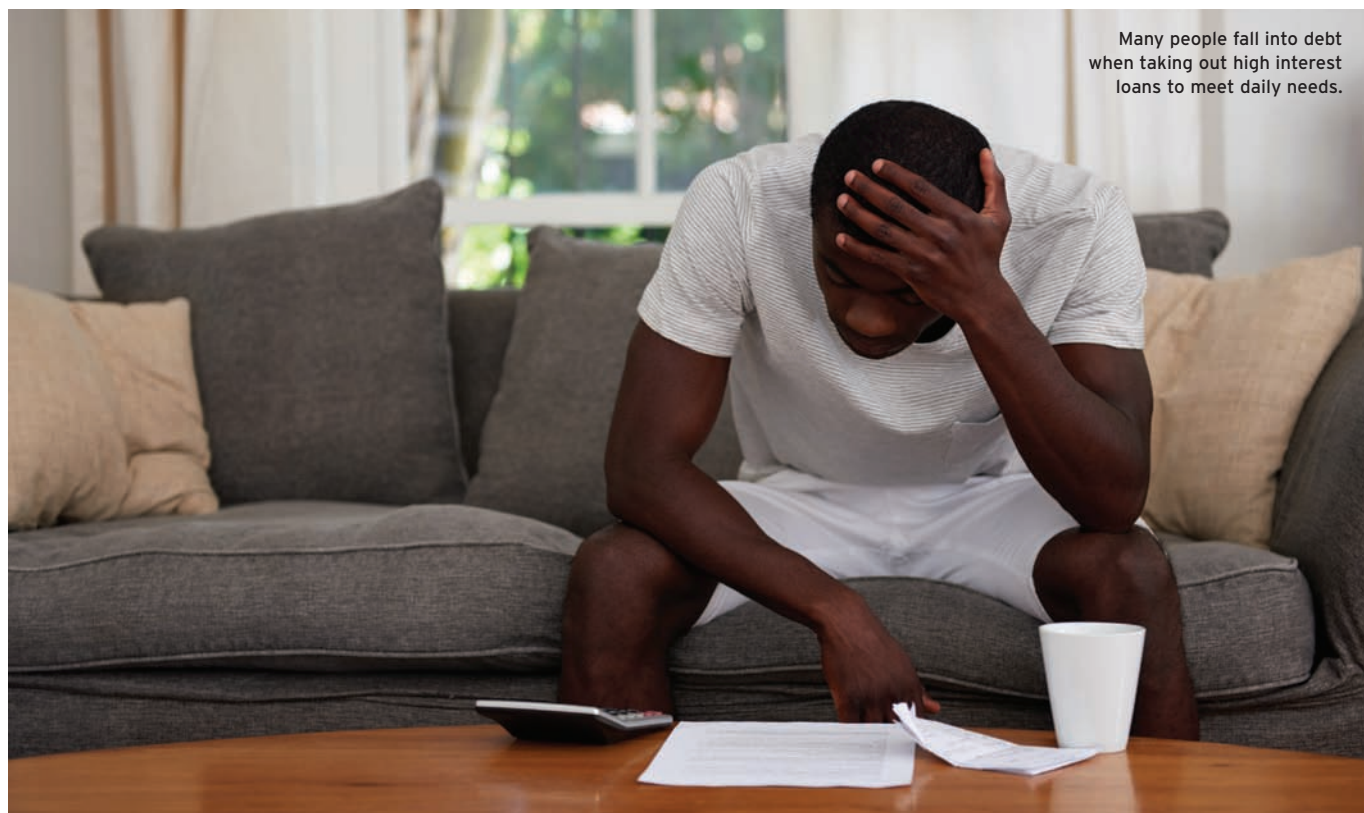
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EUROPE Tel: +44 20 7834 7676

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Rise in digital loans fuels debt trap

Business financing and daily consumption needs are the main reasons behind the uptake of digital loans in Kenya.



INCREASINGLY, KENYANS ARE using digital capital to finance their day-to-day consumption needs as well as business financing – boosting the fortunes of more than 25 mobile money companies and fintech firms.

With 46 million mobile subscribers and at least 18.2 million Kenyans owing mobile phones, digital loans have found a fertile ground for growth as has been witnessed in the last five years.

At least 63 per cent of mobile subscribers use a smartphone, according to a report by the International Data Corporation.

A survey done by Financial Sector Deepening Kenya (FSD-Kenya), in partnership with the Central bank of Kenya (CBK) and the Kenya National Bureau of Statistics indicated that 35 per cent of these Kenyan residents have tried at least one digital loan.

Now, more than six million Kenyans have the technology to

access microloans within seconds and can build a credit history which will allow them to get bigger loans in future.

The representative survey of 3,000 Kenyans revealed that those seeking digital loans are younger customers, mostly male (55 per cent), urban (55 per cent) and highly educated.

Taking bets

Business financing as well as day-to-day consumption take the lion's share of the digital loan spending, the survey revealed. Betting – something younger Kenyans have taken seriously – is taking up these digital loans.

Formal employees, casual workers and business people are all taking out digital loans – which are easy to apply and access at times of need, unlike the usual paperwork-ridden formal bank loans.

According to the survey, 37 per cent borrow to advance business, 35 per cent borrow to meet day-to-

day needs with about 15 per cent borrowing to buy airtime.

Interestingly, 6 per cent take loans to repay other loans – recycling a debt cycle. Of the digital loans, 3 per cent is used for betting purposes.

With the huge appetite for digital loans, banks, local and foreign investors have joined the fray, launching mobile apps to offer instance digital loans to millions of Kenyans.

Banks and microfinance institutions are now competing with fintech firms to lend out money to customers.

According to the Communication Commission of Kenya (CAK) the number of mobile money transfer transactions stood at 730.2 million and valued at Ksh2.02 trillion (US\$2.02bn) in the first quarter of 2018/2019 financial year. Most of these involve digital loan transactions.

Among the most popular money apps in Kenya today is M-Shwari. Started off in 2012, M-

The allure of these easy to obtain short-term loans has overridden the fear of defaulting.

Shwari is a partnership between Safaricom – a mobile services provider – and Commercial Bank of Africa (CBA).

The app gives a minimum of Ksh 100 (US\$1) and a maximum limit which is determined by the customer's ability to repay loans and their M-PESA transaction history.

M-Pesa is a mobile money transfer service offered by Safaricom network and which is now used to gauge customer's financial worthiness.

Loans on M-Shwari platform are disbursed through the M-PESA service and attract a 7.5 per cent interest payable within a maximum of three months.

It is processed within five minutes upon application through the mobile device.

Another app is the KCB M-PESA, equally a partnership between Kenya Commercial Bank and Safaricom Limited. It was started in 2015 with loans being disbursed through M-PESA.

The minimum loan limit is Ksh 50 (US\$0.5) and a maximum of Ksh 1,000,000 (US\$10,000). Loan interest is at a rate of 1.16 per cent per month with a one-off negotiation fee of 2.5 per cent. The cost of a month's loan is 3.66 per cent with excise duty applicable to fees.

Last year, Barclays Bank of Kenya launched Timiza app to enable customers and non-customers to access.

The app offers loans of up to Ksh 150,000 (US\$1,500) with an interest of 6.17 per cent. It is payable within 30 days. Equity Bank has the Eazzy Banking mobile app. EazzyApp recorded 260.3 million transactions in 2018 compared to 94.8 million in 2017 with the value of transactions rising by 71 per cent to Ksh 134 million (US\$ 1.34mn), according to the bank's recent financial statements.

Equity is the largest bank in Kenya by branches and has expanded to Tanzania, Uganda, Rwanda and South Sudan. Other banks such as Co-operative Bank and Ecobank have also come up with money apps especially after the capping of interest rates by the Central Bank of Kenya.



M-Shwari is one of the most popular money apps in Kenya.

Fintechs

The fintechs have also not been left behind with the most popular being Tala and Branch. To access these apps, a customer is required to download them from Google Play store and install. The Tala loan is disbursed through the M-Pesa account and the minimum loan limit is Ksh 500 (US\$5) with a maximum of Ksh 50,000 (US\$500) at an interest rate of 15 per cent payable within 30 days.

Owned by a San Francisco-based company Branch International, Branch was launched in Kenya in 2015. The minimum loan limit is Ksh 1,000 (US\$10), and the maximum loan limit is unknown. The loan is disbursed via Mpesa and the interest rate is dependent on the repayment of the weekly installments by the due date which ultimately increases the credit score and decreases the interest rate.

Last year, the company invested Ksh 7bn (US\$70mn) to boost its ability to meet rising demand for loans. It has been loaning out more than US\$4mn monthly, according to Jumia's Kenya Mobile White Paper 2018.

Other apps include Sadia, Kopa Chapaa, Zidisha Loans, Stawika Loans and mKeys Loan. The Okoa Stima apps are specifically tailored to cater for loans for servicing electricity bills. Concerns have, however, been raised on the risks associated with the digital credit market. Excessive borrowing and debt problems among the low income Kenyans have been cited as one of the vices of this digital evolution.

With their high interest rates compared to other sources of

credit, digital loans have become a burden to many Kenyans.

The allure of these easy to obtain short-term loans has however overridden the fear of defaulting.

The FSD-Kenya survey states that 14 per cent of the digital borrowers were repaying multiple loans from more than one provider. At least 800,000 Kenyans were found juggling multiple loans – creating financial stress to borrowers.

At least 13 per cent admitted defaulting on their loans. About 50 per cent have been forced to dip their hand into their savings to pay back a loan, 20 per cent reported reducing their food purchases and 16 per cent were borrowing from friends to service their digital loans.

Loan providers

Take for instance, 27-year-old Geoffrey Kiiru, a university graduate employed as an assistant teacher in a secondary school. He juggles three loans from different providers. An ardent soccer fan and a betting addict, Kiiru sleeps late to watch FA Club soccer as well as other European teams hoping to win big in his betting exploits.

"While digital loans provide instant cash, they can be overwhelming when one is unable to repay. Loan providers can even embarrass you through constant reminders as well as calls to relatives. One needs to be disciplined to benefit from digital loans," warns Kiiru, who is using the digital loans to finance further studies at a local college.

Like Kiiru, millions of youth in the country, driven by aggressive

advertisements by media and betting companies, have been hooked to betting which currently rakes billions of dollars in Kenya. Many have moved to digital loans to financing their betting activities hoping to recoup their investments. Failure to repay loans, however, carries an even bigger danger – being listed on the dreaded Credit Reference Bureau (CRB).

Microsave, a consultancy which advises lenders on sustainable financing, says at least 2.7 million Kenyans have been listed on the CRB in the last three years. More than 400,000 of these have been listed for loans of less than two dollars. Listing on the CRB hinders future credit availability and job prospects. Kenyans seeking top government and private sector jobs must have clearance from the CRB.

Regulators have also weighed in these emerging financial services. Last year agencies that included the CBK, Sacco Societies Regulatory Authorities, Insurance Regulatory Authority, the Capital Markets Authority and the Ministry of Trade noted in a joint statement that 'unregulated financial services and products' posed a huge risk. Financial technology – being a relatively new concept – which is being quickly adopted, can easily be used a tool for exploitation, officials warn.

CBK has warned of a scenario where banks and fintech firms do not reveal terms and conditions of services offered, exposing customers to undue penalties or accrued interest.

"A number of customer protection concerns have emerged including lack of safeguard for funds held by non-prudentially regulated providers, limited disclosure of fees, terms and conditions," observed Mohammed Nyaoga, the CBK chairman of the board. According to Nyaoga, the role of the regulator is essential for the sector. It is essential that the innovations in the financial sector are conducted safely without jeopardising financial stability and protecting consumers. ©

By Mwangi Mumbo

Microsoft ouvre ses premiers centres de données en Afrique avec une mise à disposition générale des services Microsoft Azure

Les entreprises de tout le continent peuvent maintenant tirer pleinement profit des nombreux avantages de Microsoft Azure.

MICROSOFT A ANNONCÉ l'ouverture de ses premiers centres de données en Afrique, avec la disponibilité générale d'Azure depuis les nouvelles régions Cloud au Cap et à Johannesburg, en Afrique du Sud. Cela fait de Microsoft le premier fournisseur mondial à proposer des services Cloud depuis des centres de données sur le continent, ce qui aidera les sociétés à transférer en toute sécurité et fiabilité leurs activités vers le Cloud, tout en satisfaisant aux besoins de conformité.

“Microsoft Azure est dorénavant disponible à partir de nos nouvelles régions Cloud au Cap et à Johannesburg. La combinaison de l'infrastructure Cloud mondiale de Microsoft avec les nouvelles régions en Afrique créera de plus grandes perspectives économiques pour les organisations en Afrique, accélérera les nouveaux investissements mondiaux et améliorera l'accès au Cloud et aux services Internet,” a déclaré Yousef Khalidi, vice-président d'Azure Networking chez Microsoft.

Ibrahim Youssry, directeur général de Microsoft Afrique du Nord, de l'Ouest, de l'Est, centrale, Levant et Pakistan, a affirmé, “Nous vivons aujourd'hui un moment historique en rapprochant le Cloud mondial des citoyens et des entreprises en Afrique. Les entreprises de tout le continent peuvent maintenant tirer pleinement profit des nombreux avantages de Microsoft Azure, et utiliser les services Cloud pour maintenir la sécurité et satisfaire aux normes de conformité.”

D'après le rapport Cloud Africa 2018, l'utilisation du Cloud en Afrique dans les organisations de moyenne à grande taille a plus que doublé entre 2013 et 2018. Du fait des avantages du Cloud en matière d'efficacité et d'élasticité, plus de 90 pour cent des sociétés sondées en Afrique du Sud, au Kenya et au Nigeria prévoient d'accroître leurs dépenses informatiques pour des services cloud au cours de l'année à venir.

Cependant, il reste primordial de fournir des services sécurisés pour maintenir cet élan, de nombreux PDG africains étant préoccupés par les cybermenaces.

“Microsoft jouit d'une grande expertise dans la protection des données qui permet aux clients à travers le monde de répondre aux importantes exigences en matière de sécurité et de confidentialité, et qui offre notamment le plus vaste ensemble d'attestations et de certifications de conformité de l'industrie,” a ajouté M. Khalidi. “Nous nous réjouissons à l'idée de soutenir davantage d'entreprises africaines dans leurs parcours Cloud et d'offrir une voie fiable vers la transformation numérique.”

Nous vivons aujourd'hui un moment historique en rapprochant le Cloud mondial des citoyens et des entreprises en Afrique.

Un investissement en Afrique

Avec un réseau de plus de 10 000 partenaires locaux, et près de 30 années d'activités sur le continent, les nouveaux centres de données font partie de l'engagement continu de Microsoft permettant la transformation numérique dans toute l'Afrique.

En 2013, Microsoft a lancé son Initiative 4Afrika, travaillant avec



Un centre de données de Microsoft.

Photo: Microsoft

des gouvernements, des partenaires, des startups et des jeunes pour développer un accès plus abordable à l'Internet, des compétences adaptées au 21^{ème} siècle et une technologie pertinente localement. Cela inclut un récent partenariat avec FirstBank Nigeria pour étendre les services Cloud et les plateformes pédagogiques numériques aux clients PME.

Au Kenya, Microsoft déploie FarmBeats, une approche globale pour aider les fermiers à bénéficier de la technologie. FarmBeats s'efforce de rendre possible l'agriculture guidée par les données, réunissant le savoir traditionnel, l'intuition et les données pour aider à améliorer la productivité et les rendements agricoles.

En matière de développement des compétences, Microsoft a mis en place un réseau de plus de 800 Microsoft Imagine Academies, offrant à des étudiants de diverses tranches d'âge des formations directes dans le domaine des technologies. Conjointement avec la Banque africaine de développement, Microsoft déploie par ailleurs «Coding for Employment» en vue de créer 25 millions d'emplois et toucher 50 millions de jeunes et de femmes à travers l'Afrique.

“Nous travaillons avec des partenaires pour accélérer la préparation et l'adoption du Cloud en Afrique, permettant aux entreprises de lancer des services sur le marché plus rapidement, de prendre des décisions davantage guidées par les données, et que les gouvernements puissent mieux être connectés avec les citoyens,” a ajouté M. Youssry.

“À l'heure où nous connectons davantage d'entreprises à Azure, nous observons une augmentation des innovations sur le Cloud et des startups qui étendent leurs services à de nouveaux marchés. La combinaison de l'infrastructure Cloud mondiale de Microsoft avec les nouvelles régions en Afrique connectera dorénavant les entreprises avec encore plus d'opportunités et de clients à travers le monde.”

Azure est le premier des services Cloud intelligents de Microsoft à être délivré depuis les nouveaux centres de données en Afrique du Sud. Office 365, la solution online de Microsoft pour la productivité, devrait être disponible d'ici le troisième trimestre 2019, tandis que Dynamics 365, la nouvelle génération d'applications commerciales intelligentes, est prévue pour le quatrième trimestre. ©

Assessing impacts: The meteors of security and AI

As security threats evolve and artificial intelligence pervades, what impact are they set to have on business over the next year?

A 2018 STUDY FOUND that the illicit proceeds of global cybercrime had reached US\$1.5 trillion annually. Norton Security estimated that by 2023, a total of 33 billion records would be stolen each year. Internet of Things (IoT) attacks increased by 600 per cent and Microsoft cloud user accounts saw a 300 per cent increase in cyber attacks, over the past year. It is little wonder that worldwide spend on security-related hardware, software, and services are forecast by IDC to reach US\$103.1bn in 2019. There is a need for a new security paradigm that makes greater use of emergent technologies and is more agile and effective than in the past.

“The security challenges and requirements for business 2.0 require far greater use of analytics and machine learning to identify the baseline behaviours of people, applications and infrastructure,” says Jon Tullett, Research Manager for IT Services, IDC South Africa. “This will allow for rapid responses to potential threats and makes better use of cloud technologies – both public and private – to build out an in-depth defence that is consistent with oversight within the organisation.”

Incident response will always be a part of security, but the sad reality is that it is also always behind. That said, the next generation of cloud technologies and analytics can greatly improve security capabilities and help organisations overcome that sense of always being left behind. While there will be a new



Photo: Adobe Stock

More and more businesses want to know how AI will affect their organisations in the future.

generation of threats loping casually beside – and ahead – of technology’s evolution, the measurements that assess the efficacy of a security system should be around response times. Does the business respond faster than it did in the past?

“A much faster and more agile infrastructure needs new thinking about policies and compliance,” says Tullett. “Orders of magnitude increase in data transactions and volumes require different ways of thinking about protection and threat mitigation. This is further affected by the fluidity of on-demand applications and API access as they increase the number of unpredictable types of access to systems that were, in the past, easy to secure.”

Going forward, security must place scale and agility at the centre of design thinking and planning. The security team has to build capability that allows them to move faster and take more effective and decisive action with greater insight and confidence. Today’s security products aren’t ready for this. What’s needed is a next generation set of thinking and tools that are in line with the technologies that preceded them.

“This isn’t an incremental change,” adds Tullett. “Most of today’s security tools and many of today’s security companies probably will not survive to see the next generation of business. The changes that are coming are going to have a disruptive impact on market, business and security thinking.”

Of course, in the meteor shower of disruption, it’s hard to avoid the conversation

of artificial intelligence (AI). Every organisation and individual want to know what impact this technology will have on the organisation. The reality is that the changes it will make to life and business will be fairly mundane.

“It will offer better insights, efficiencies and more confident decision-making, sure,” says Tullett. “There will be outliers where an AI model will create a completely new business or achieve an unheard-of improvement, but they will be the black swans. There will also be some businesses that may be dramatically impacted by AI in the next five to ten years, but it will be limited within a niche. For most the future is mundane improvements, for that niche, the disruption will be severe.”

Perhaps the question isn’t the impact of AI but rather the impact of not investing in AI. Can the organisation afford not to make a move towards a technology that has proven results and delivers improvements to the bottom line?

“If your competitors are improving their customer experience and gaining efficiencies, you have to keep up,” concludes Tullett. “The good news is that a lot of AI won’t require separate investment. All the enterprise software vendors have a plan to leverage AI capabilities within their products so they will be a subscription service for most customers. And that will effectively answer both questions.”

Security was one of the key topics at the IDC CIO Summit 2019, which took place at Fairmont Zimbali Resort on the KwaZulu-Natal North Coast on 4-5 April. ©



Photo: IDC

Jon Tullett, research manager for IT Services, IDC South Africa.

5G fever at the Mobile World Conference 2019

With the prospect of fifth generation networks serving as the main talking point of this year's Mobile World Congress (MWC) in Barcelona, its relevance within Africa's emerging telecommunication market is yet to be brought to light.



Photo: MWC 2019

Hubraum tech incubator utilised MWC to showcase its ventures into the world of 5G augmented reality and virtual reality technology.

LOOKING BACK TO the birth of wireless mobile telecoms in the 1980s, it is safe to say society has become substantially more tech-savvy as the decades have passed. Today, our 7.7 billion-strong population is increasingly keen to experience the benefits of the latest and greatest in high-speed networks.

With this growing demand comes the economic boom of 5G – marking the dawning of the age of ‘intelligent connectivity’, as aptly signposted by the GSMA's flagship Mobile Economy report series. Published at MWC in Barcelona, the report predicted the number of 5G connections to reach 1.4 billion by 2025, making it the fastest generation to be rolled out on a global scale. However, Africa's role in this connectivity cavalcade remains up in the air, leading some experts to question how relevant 5G is to emerging markets as a whole.

Bold claims in Barcelona

Eager to address the ‘will they/won't they’ aspect of 5G networks, MWC 2019 saw telecommunication experts rally in their

We have just got 4G in emerging markets and we need to make sure that we are getting some return on that investment before we rush into 5G.

hundreds to explore the future of connectivity across the globe, with some mixed reviews on the concept along the way. Discussing the emergence of 5G throughout the four-day event, ‘The Next Generation’ keynote saw Hatem Dowidar, CEO of UAE-based telecommunication corporation Etisalat International, discuss the relevance of 5G to emerging markets such as Africa. Speaking of the topic at length, Dowidar explained, “I am very exposed to emerging markets, we have just got 4G in emerging markets and we need to make sure that we are getting some return on that investment before we rush into 5G.” He continued, “I want all the manufacturers and

developers of equipment to think of emerging markets more.”

According to a 2019 report by telecommunications company Ericsson, Africa is currently the region with the highest growth rate of mobile subscriptions worldwide. The company also predicts the market will grow to accommodate more than 900 million subscriptions by 2023, emphasising the role 5G will be able to have in transforming the region's telecommunications market on the whole. On the topic, Dr Ntsibane Ntlatlapa, manager of telecommunications and media competency at CSIR, said, “Investment in technology research and innovation that address the challenges the countries are facing, will help Africa emerge from the economic challenges in a more sustainable manner.”

“This investment in research can result in creative solutions and forward looking policies and regulations that can lead to inclusive socio-economic development and has the potential for rapid service improvements and digital readiness across societies, governments and industries,” he continued.

Not-so fantastic four

On the other hand, Africa has found itself on the lower end of the wireless telecommunication spectrum in terms of the 4G network speeds in the region. Opensignal reports that customers in South Africa have experienced relatively consistent wireless speeds across the board, with experts observing a 40 per cent difference between slowest and fastest speeds throughout the day. While this appears to be of benefit to users as they will see less of a difference in speed during busy demand periods, the region was also found to be home to the 39th fastest network connection across the globe, reaching average highs of 24.5Mbps and lows of 17.5Mbps, while South Korea stood strong with the world's fastest speeds, reaching heights of 55.7Mbps. Further down the line, the UAE ranked 25th, with speeds ranging between 32.9Mbps and 38.6Mbps, while Côte d'Ivoire and Nigeria trailed closer to the bottom of the market.

We are really pushing the boundaries of what we can do on today's networks – we need 5G to deliver the kinds of experiences that we are imagining.

Paving the way for 5G

On the front line of 5G in Africa, VIAVI seized their moment at MWC to showcase the full force of 5G via its 'Lab to Field' network lifecycle testing, which has supported the installation and activation of RAN for its first commercially available 5G network in the United States. The company's wireless and optical networking lab validation systems have enabled the acceleration of 5G network development in China which, according to GSMA, is estimated to reach 460 million 5G connections by 2025, with connections expected to reach 47 million in the Middle East and North Africa, and 12 million in sub-Saharan Africa. On the topic, Oleg Khaykin, president and CEO Officer of VIAVI, explained, "With 55 commercial networks expected by the end of 2019, this is the year the promise of 5G becomes reality."

"As we deliver critical validation, verification and visibility to leading equipment manufacturers and service providers, we see a clear and pervasive drive across the industry to accelerate the availability of 5G services in the market."

Continuing MWC's momentum of 5G in emerging markets, Telecom Egypt and Nokia joined forces to sign a Memorandum of Understanding between the two companies. This partnership to introduce the high-speed wireless telecom across the region, with focus on the development of 5G in the Egyptian



market. As Nokia is already equipped with cutting-edge 5G-ready solutions and services, Telecom Egypt is determined to provide consumers with ultra-fast connectivity paired with ultra-low latency for an unparalleled wireless experience. While operators will also be able to flexibly support various use case scenarios, the integration of 5G will connect billions of Internet of Things (IoT) devices to improve the quality of life for locals. "We are delighted to sign this Memorandum of Understanding with our strategic partner Nokia which paves the way for the development of 5G use cases in Egypt," remarked Adel Hamed, managing director and CEO of Telecom Egypt. "This MoU marks a new chapter of the partnership between the two companies as it will allow our company to support the realization of the digital transformation strategy in Egypt."

"We are confident that Nokia with its global expertise will help us maintaining our leading position in providing the best and latest technological solutions to our customers. This is also an ideal opportunity for us to put a strategic roadmap to develop our network capabilities and make sure of its readiness to deploy 5G technologies."

Among the plethora of advantages to be gained from 5G networks is use of consumer cloud services such as Netflix and Spotify, alongside the prospect of moving console gaming onto remote servers. Likewise, gaming experts have tipped the 5G network to be the

saving grace en route to unlocking the full potential of augmented reality (AR) technology. Speaking of the gaming world's newfound reliance on high-speed networks, Niantic CEO, John Hanke asked audience members, "What is it about 5G that's relevant to AR gaming?"

"Is there some way that it is going to allow the creation of products, for example, that are going to generate real consumer excitement about wanting 5G service and upgrading to 5G handsets? We think there definitely is. We are pushing the boundaries of what we can do on today's networks – we need 5G to deliver the kinds of experiences that we are imagining."

Consumer expectations

While all signs point to 5G becoming a game-changer within the telecommunications market, not everyone is buying into the prospect of lightning-speed networks this early in its development. Using his time on MWC's keynote stage, Groupon CEO Rich Williams opted to quash the ongoing excitement in relation to the fifth generation mobile network, claiming he, for one, is 'over it'. He explained: "I've been walking these halls over the last couple of days; I've seen 5G everywhere and nobody can explain to me what it means. I think it sounds super cool and disruptive, but the biggest disrupter is something different."

Surprisingly, GSMA's report also predicts a strong growth in fourth generation networks by 2025, accounting for 60 per cent of connections across the globe. As the association recalls, it was only last year that 4G overtook 2G to become the leading mobile technology worldwide, begging the question: how long will it take for 5G to catch up with its predecessor? ☎

By Emmet McGonagle

I've been walking these halls over the last couple of days; I've seen 5G everywhere and nobody can explain to me what it means.

Africa's digital economy needs cross-border cooperation to succeed

African governments have a crucial role to play in taking the continent to the next stage in its digital evolution, according to James Claude, CEO of Global Voice Group.



Photo: Fiona Graham/WorldRemit Comms/Flickr

AFRICA STILL LAGS behind the rest of the world in its digital transformation, and in spite of a growing number of innovative solutions, the ongoing lack of adequate infrastructure and connectivity is preventing the continent from realising its true economic potential. The best and fastest way to overcome these barriers, may lie in heightened cooperation between countries

and their various regulators. This is according to James Claude, CEO of Global Voice Group (GVG) – a provider of IT solutions to governments and regulatory authorities – who says that while many countries in Africa are individually working to increase their infrastructure and digital capabilities, the most effective solution will be to approach these challenges from a regional perspective.

While attending the Fifth Crans

Businesses, universities and young entrepreneurs are increasingly contributing to the digital economy and fostering innovation in Africa.

Montana Forum in Dakhla, Morocco, in March, Claude noted that African governments have a crucial role to play in taking the continent to the next stage in its digital evolution.

“Businesses, universities and young entrepreneurs are increasingly contributing to the digital economy and fostering innovation in Africa. Governments now need to work towards helping these private sector players to grow their solutions more rapidly

and affect real change on the continent. This will require harmonising regulations that allow businesses and services to expand beyond country borders.”

Mobile money platforms such as M-Pesa has fundamentally changed the way that money is circulated on the continent.

Africa's potential as a global leader in the world's digital economy grows significantly with each passing year. Africa's population is increasing exponentially, and is expected to reach between 1.379 billion and 1.486 billion by 2025. In addition to this, the market penetration of digital technology is accelerating. Importantly, it is predicted that half of Africa's entire population is expected to own smartphones by 2020, which already goes a long way towards overcoming infrastructural barriers to digital transformation and connecting people and services online. “Building on this, mobile money platforms such as M-Pesa has fundamentally changed the way that money is circulated on the continent. E-commerce is also growing rapidly as a result of mobile money, with online retailers that accept mobile money payments even providing people without bank accounts access a greater variety of goods. Similarly,



Photo: Global Voice Group

James Claude, GVG CEO, with Pierre Emmanuel Quirin, CEO Crans Montana.

Mobile money indicators by regions, 2017

	Accounts per 1,000 adults	Mobile money outlets per 100,000 adults	Transactions per 1,000 adults	Transactions per cent of GDP
Sub-Saharan Africa (SSA)	245	210	16,500	20
Asia	150	90	4,500	7
Latin America	125	30	2,000	1
Europe	125	20	4,000	3
Middle East & North Africa	50	45	2,000	2

Source: IMF Financial Access Survey.

As of first-quarter 2017, there were more than 420 million mobile cellular subscribers in SSA, equivalent to a penetration rate of 43 per cent (GSMA Intelligence 2017).

small and medium businesses are able to increase sales and overcome many infrastructure restraints.”

Claude explains that governments across the continent must build on this by creating more digital services based in Africa, facilitating more local tech companies, and continuing to invest in education and incubators that allow citizens to fully access and benefit from digital

transformation.

He said, “Equally vital, is to ensure that regulators in every region and country have the visibility, transparency and the necessary data to make informed decisions that will help the digital economy across the different jurisdictions. This is an area in which GVG already has a lot of experience, having pioneered the regulatory technology solution, RegTech, on the continent.”

GVG has been helping regulators and government agencies to play a proactive and relevant role in developing their digital agenda. “Our solutions provide major data that help regulators to migrate from paper-based institutions to digital ones. We will continue to play this role, and focusing on Big Data for better regulation, compliance monitoring, revenue assurance, fraud prevention and also digital identity. We believe that these will be the critical enablers allowing Africa's citizens to become active participants in the

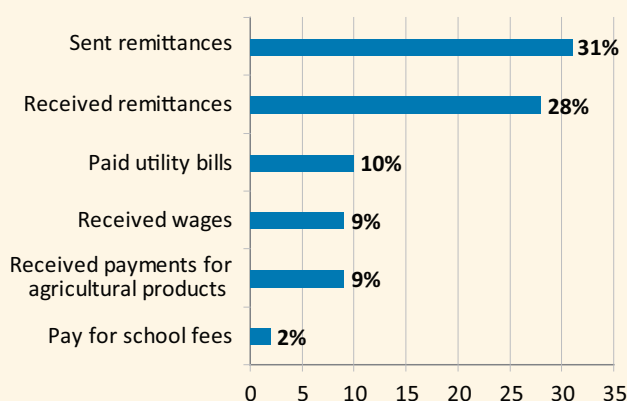


Photo: Eric19/Flickr Follow

M-Pesa and other mobile money apps have grown in popularity in Africa.

digital economy instead of mere consumers of imported digital goods. Digital ID will also be vital to improve better government services delivery,” he added. ☎

Uses of mobile money in SSA (per cent)



Source: Global Index.

Empowering people through bitcoin

Regardless of bitcoin's price volatility, last year saw a massive increase of activity among African users. The average monthly transaction volume was worth around US\$41mn in Africa last year.

BITCOIN IS VERY popular in Africa, especially for people who are unbanked and need a step to help lift them out of poverty. It is a digital currency, which does not need a central bank or single administrator to make payments, so this type of currency is ideal for people who cannot access banking services.

With bitcoin, money can be sent from user to user on a peer-to-peer bitcoin payment network such as Paxful, which has been operating in Africa since 2016. Paxful has now more than a million users across the continent, predominantly in Nigeria, Ghana, Kenya and South Africa. Over the last year, it saw the number of its transactions in South Africa increase by 25 per cent. However, the number of users in Africa grew by 100 per cent. The company said the growth was driven mainly by Paxful's users almost tripling in Ghana with 35,000 accounts and more than doubling in Nigeria to 250,000 accounts.

Artur Schaback, COO and co-founder of Paxful, said, "South Africa is our number five top country in the world and what we are seeing is that the number of cryptocurrency use cases are coming from the younger generation, because they are the ones who are hungry for knowledge and looking for ways to save money – blockchain technology is allowing people to do that."

"Normally, people pay as much as 10 to 15 per cent in remittance fees, but with bitcoin the fee is only one or two per cent. This cryptocurrency also helps to devalue prices and make and accept payments easier."

People can buy bitcoin through bank transfers, cash deposits, debit/credit cards and even as gift cards via iTunes, Amazon and Google Play. He added, "We have seen in Africa that there is a huge



Paxful has more than a million people in Africa using its peer-to-peer payment platform.

demand for bitcoin and multiple ways to acquire it. For example, merchants can acquire it through accepting payments. One lady in Rwanda was selling her clothes on Instagram to western consumers, but in order to do that, she needed a credit card payment facility which was only possible if she established a company in a western country, which costs money.

However, she could accept bitcoin payments straight away and was successful through Paxful. She also sells this cryptocurrency to other people. This is how peer-to-peer transactions are evolving on the continent and from abroad." When asked why Africa's crypto

economy has an advantage over developed markets, Schaback said, "People understand the true value of bitcoin. Most are underbanked so they find it hard to get a bank account, so people are looking at alternative currencies to benefit them."

"The people of Africa's crypto economy, the so-called 'cheetah generation' are excited for new knowledge and innovation. Mobile payments are huge over there so people are used to innovative ideas and solutions. Africans don't buy bitcoin to have it in itself, they use the currency as a means to transfer the value to someone else and then that person cashes out."

"Our job is to spread the

knowledge in Africa about the different user cases and tell their stories." Schaback assured Paxful is deeply committed to creating a crypto-focused economy on the continent and plans to grow its pioneering #BuiltwithBitcoin charitable programme to encourage the sector to contribute funds for humanitarian projects.

He added, "We have just built a primary school in Rwanda through the #BuiltwithBitcoin initiative and are looking to build the next school in Kenya. We are really committed to the whole of Africa. We hope to partner with more schools and universities across Africa to improve educational resources so that prospective users know what bitcoin is and how to manage their own personal wallets." ©

People in Africa understand the true value of bitcoin. They are underbanked and are looking at alternative currencies.

To find our more information about Paxful, visit www.paxful.com

#datafree pioneer biNu prepares for expansion across Africa with CEO appointment

#DATAFREE PIONEER BINU has appointed new CEO Stephen Newton to spearhead its expansion across Africa and other emerging markets – following successes in Nigeria and South Africa.

biNu addresses a major problem that continues in countries where consumers pre-pay for their mobile access and are data sensitive: the high cost of data restricts most people's usage of services such as websites, apps and mobile money. As well as frustrating consumers, expensive data is also affecting the ability of brands, companies, governments and NGOs to reach citizens, customers, prospects and employees through their mobiles.

The Alliance for Affordable Internet's 2018 report found that more than two billion people live in a country where the cost of 1GB of mobile data exceeds the affordability threshold of 2 per cent or less of average income.

To help solve this problem, biNu has developed a unique technology platform that enables organisations to maintain #datafree apps and websites that people can visit without using any of their mobile data.

This #datafree experience is based on a pioneering reverse billing model that enables the owner of a website to pay for the data used to access their site rather than the cost being borne by the mobile phone user. This effectively zero rates the organisation's digital touchpoints for the consumer.

biNu has reverse billing agreements in place with MTN, Vodacom, Cell C, Telkom and Airtel to date.

The company has also developed the Moya Messenger app to showcase its reverse billing



Stephen Newton is the new CEO of biNu.

platform. This #datafree app provides people with an alternative to WhatsApp enabling them to send messages without using any data.

Moya has grown virally without any marketing spend; it currently has 300,000 monthly active users (MAUs) in South Africa and, based on current growth rates, is on track to achieve one million MAU in April.

Moya Messenger can be downloaded from the Google Play Store.

biNu co-founder and executive chairman, Gour Lentell said, "We welcome Stephen on-board. His experience and expertise will help shape and drive biNu's international expansion."

Newton brings more than 20 years' experience in helping digital businesses successfully grow and scale in fast-growing emerging markets on the African continent. Previous positions include head of Google South Africa and CEO of eCommerce platforms Naspers and MIH Africa. He is also an advisory board member of various online businesses focused on the African continent.

He said, "biNu is an innovative and inspiring company offering a unique solution that is solving a huge and very real problem across Africa and other emerging markets: data is expensive relative to incomes. #datafree moves the cost of mobile data from consumers to the owners of the content. It has a multitude of applications, and I am delighted to be part of the company's future."

In South Africa and Nigeria, biNu's #datafree Publisher Platform is already being used by brands, commercial enterprises, public bodies and NGOs who need to reach and engage with a variety of different target audiences including employees, customers and prospects. Its many benefits include the ability to expand reach, increase engagement and lower communication costs by moving contact online from call centres and shops/branches. This helps an organisation to foster loyalty and grow its competitive advantage.

#datafree biNu is also being used by commercial publishers looking to extend their audience reach and engagement to mobile consumers.

For more information visit www.bi.nu and www.datafree.co

Cloud-based platform provides access to the largest database on African consumers

FRAYM HAS LAUNCHED a cloud-based platform that makes harnessing the power of their local-level data even easier, the company says.

The dataFraym tool makes data accessible and actionable for markets across the continent. As an enterprise subscription service, it allows teams to zoom into over 50 countries at 1 sq km resolution and see what the population looks like.

Using advanced geospatial data and analytics, it is now possible to understand population characteristics in markets where data has been traditionally hard to access. Capable of displaying over 60 proprietary indicators, dataFraym delivers precise information about people in specific countries, cities, and regions. This valuable information can now be incorporated into business's workflow.

It is ideal for a bank which wants to establish an agent banking network in areas where they do not currently have a presence. The ability to zoom in on and surface, prospective communities that have concentrations of target, unbanked households would dramatically accelerate growth – dataFraym makes this a reality. The ability to know what specific concentrations of consumers looks like in different areas is an unprecedented advantage.

Applications for dataFraym are vast and applicable across sectors. For example, consumer product companies are often looking to improve their performance in secondary markets. By integrating their historical data, they also can overlay sales performance with consumer hot spots to identify latent demand or optimize distribution networks. One user increased their sales by up to five times by remapping territories based on dataFraym insights.

The company says dataFraym's simple interface was designed for ease of use. The data available in each instance can be customised based on unique needs and areas of focus. The tool supports over 60 data layers for countries including;



dataFraym is said to deliver concise information about people in specific countries, cities and regions.

demographics, financial services, media consumption, consumer segments, spending by product category, mobile phone and internet access, health, and education.

Other functionality includes ability to build customised consumer profiles, map hot spots of target customers and groups, search by priority location, create reports on favourite locations, overlay points of interest, data at 1 sqkm resolution, quarterly sales report, and external data integration.

Human-centric data is critical for answering strategic and operational questions like where to focus scarce go-to-market resources, how to optimise performance, and how to monitor results. By illuminating markets that have been challenging to enter, the company adds that dataFraym is pioneering the way toward more successful outcomes for businesses and communities.

Five mistakes that turn corporate security awareness into a waste of money

Maxim Frolov, vice president of Global Sales at Kaspersky Lab, shares why more than half of businesses consider their employees to be the weakest link in corporate cybersecurity as their actions may put company data and systems at risk.



MORE THAN HALF of businesses consider their employees to be the weakest link in corporate cybersecurity, as their actions may put company data and systems at risk. That's why companies heavily invest in educating employees on basic IT security skills to protect data and systems. In fact, leading analysts predict the security awareness training market will evolve to be worth US\$10bn by 2027.

Despite this, some businesses may be skeptical about training staff on cybersecurity. Some may think that people, aware of the potential threats or not, will always make mistakes. Isn't it a waste of company's money to invest in courses that do not generate the desired results?

The true purpose of security awareness training is surprisingly not to raise awareness. It should change an employee's behaviour online – not just inform them about the threats and measures.

Based on more than 20 years of researching cyberthreats and providing cybersecurity services to eliminate 'the human factor' in cybersecurity, we realised that the following five educational pitfalls can make cybersecurity training ineffective.

1. Inefficient format

Corporate learning and development may come in different forms: a lecture by a member of the company, a talk by an external speaker, or a computer-based course. One training course format that suits one business may not necessarily work for another, so companies should choose a format which is proven to be effective for achieving a particular skillset. In our practice, a tedious lecture is not suitable for a training course aimed to improve employees' practical cybersecurity skills. By using an online format, you can combine a range of content (video, text, tests) and add gamification elements that transform a lesson from a boring obligation to something much more amusing. Such interactivity makes a cybersecurity course more attractive and engaging for employees. Moreover, an online course allows workers to progress at their own pace and spend more time on especially complicated topics. This is nearly impossible when employees attend traditional lectures.

2. The same qualification for all job roles

There is a belief that the responsibility of a company's cybersecurity is

everyone's job, as the actions of each person may affect security. So, the tempting idea for businesses is to introduce security awareness training with the objective of transforming every employee into a cybersecurity pro – and make it obligatory for everybody, for ultimate peace of mind. Nonetheless, the curriculum of a security awareness training course, which would be useful for certain employees, depends on what systems and information they have access to. Teaching employees things they never deal with in their life (especially at work) is not cost-effective. Simply put, to avoid mass attacks, everyone should know how to identify obviously malicious websites, for example, like ones which ask to update software. Personnel with access to sensitive information and business-critical systems should then be given a more advanced course and be able to even recognise personalised fake emails.

3. Information overload

Often, security awareness training is designed to cover all important topics at once. However, this type of format hardly facilitates changing behaviour, as it is unlikely that all the information will be absorbed. It is believed humans are able to remember only up to a limit of seven chunks of new information. You may know from your own experience that it is hard to perceive lots of facts and rules all at once. Content is best remembered when it is delivered in bite-sized modules, as it is less likely to blur into one piece of information or fade away. If a short lesson (which won't consume a lot of precious working time) is devoted to a single topic and offers a reasonable number of takeaways, it's more likely that people will be able to keep in mind how they should react for a particular threat.

To avoid mass attacks everyone should know how to identify obviously malicious websites, like ones which ask to update software.

4. Lack of practice and repetition

Sometimes there's good content in the training but it's not memorised as it should be – just because of a lack of repetition. However, it is the cornerstone of translating awareness into actions.



Online training in cybersecurity skills can engage employees in a greater way rather than taking part in a lecture.

Security training courses are often taken by uninspired audiences who might listen to instructions but are unmotivated to learn and commit them to memory. Companies should, therefore, implement courses that make topics easy to remember, emphasising the most critical aspect several times. For example, to highlight the importance of strong passwords, this topic should be reinforced and mentioned several times throughout the course: in lessons about sensitive information protection, social media, email, etc.



Maxim Frolov,
vice president of Global
Sales at Kaspersky Lab.

Photo: Kaspersky Lab

5. Lack of real-life relevance

The way to solve the issue of employees lacking awareness may seem obvious – increase awareness and tell employees general cybersecurity rules and policies. Unfortunately, this strategy will hardly work when the aim should be to change behaviour for the better.

The majority of employees simply do not have a security, or even a general IT background. They may not understand what they should do if you simply advise them to keep their applications updated and be careful when opening suspicious attachments. To overcome this communication barrier, the learning content should be carried out by simulating potential situations an employee could face, such as working with emails or surfing the Internet looking for a site to download their favourite series.

To be successful, cybersecurity training needs to be conducted in a way that not only covers all the essential topics, but makes them easy to understand and memorise.

For example, one of our clients, Donau Chemie Group, which specialises in the production of different chemical materials, had traditional offline training on cybersecurity for its employees. However, it failed in motivating non-IT workers to change their security behavior. Nonetheless, it was not the problem of unreliable employees. When the company implemented our recommended training, which consists of interactive education and simulation, the situation changed completely. For example, the number of clicks on links in simulated phishing attacks (which are listed among the top three attacks leading to data loss) is now less than two per cent.

When employees are forced to spend hours of their time in lengthy training sessions, on a topic which is not part of their job responsibilities, it can be difficult to ensure they take the advice on board. However, if the training does not take much time to complete and is easy to understand, it is much more likely for this to result in less mistakes and stronger overall security. ©

Charting a new course for Africa's economic prosperity

The telecommunications industry needs to renew its business model, develop ecosystem of new partners and customers, and unleash the potential of next generation technologies, says Fuad Siddiqui, senior partner and head of consulting, Nokia Bell Labs.

IMAGINE A WORLD where the laws of business survival are being redefined and new competitive market models re-assembled with the advent of 4th industrial revolution. Emerging technologies are changing the way organisations shape their offerings and service new markets. They are the muses of innovation and inspiration and the keys to unlocking the potential of business in Africa. It is time to build economic models that change industries and reshape the way we live, work and play.

The continent is evaluating what Industry 4.0 means to its citizens and businesses while organisations are beginning to rethink industrial architectures and how to optimally harness technology choices.

We need to look at how we can demystify questions around Industry 4.0 and make it easier for companies to understand the scope of their roles, the promise of new business models, and what it means for Africa's future.

There is enormous potential, especially with regards to automation and how it can re-define productivity, but we need governments to be swift and create incentive structures that encourage investment and innovation.

One of the challenges, particularly in the telecommunications industry, is that most companies have predominantly focused on consumer play and is comfortable with a tried and tested business model. They look at their consumers in a certain way and adopt models that are simple in structure and deliver the same results. The problem is that consumers are wading in a saturated market, accessing offers from a smorgasbord of suppliers



Fuad Siddiqui, senior partner and head of consulting, Nokia Bell Labs for MEA and APJ.

The continent is evaluating what Industry 4.0 means to its citizens and businesses.

and taking the ones with lowest cost, that deliver the best value for their needs. There is little or no loyalty and minimal financial returns. The industry is fighting in the mud for a small piece of the profit pie, while technology is opening up new channels and platforms that offer far greater reach and opportunity across new segments.

There is so much more that the telecommunications industry can do, especially with 5G and emerging technologies. For the first time, the power of 5G offers the potential for service providers to branch out and invest into new markets; industrials, verticals and enterprises in a big way. We know industries are at varying stages of their digital journey, and all industry sectors will be massively transformed by the ability to

become automated and to exist independent of physical space and infrastructure – essentially to become virtualised. New drivers around performance, reliability, trust will dictate new stringent service requirements and new market models will be needed to achieve economic growth. Within this new realm of possibilities, a future of intricate alliances and collaboration of global-local market players will emerge, with global players excelling at the art of service creation and local players owning the sphere of contextual service delivery. This techno-economic collaboration will be made possible by a digital network fabric enabled by 5G, driving the creation of a new industrial world order characterised by enterprises with global reach and the ability to

scale with worldwide demand, but which leverage and required local context for service delivery – something telco service providers can own, control and monetize.

Imagine a telco investing in 5G network without a bold vision to diversify beyond consumer, or isn't proactively engaged with the industrial sector (shipping, mining, transport, manufacturing, and supply chain) and offer them symbiotic partnerships, showcasing what 5G can do?

It will most certainly be depriving Africa of economic productivity and prosperity.

From a global standpoint, we see many industrial sectors moving forward with proprietary networks that partially deliver on new innovations to drive productivity and profits and telecommunication companies are beginning to realise this shift and drawing up their own plans to advise and shape the next chapter for growth. Or else they will risk losing out on a significant opportunity.

As industry and organisations earmark big budgets for automation and intelligent systems, telecommunication service providers should be part of the discussions and the solutions and see how a general purpose technology like 5G can catalyse growth? The industry needs to evangelise the promise of future technology and showcase what benefits it brings. Now is the time to prepare a plan and sign up industrials and verticals. The issue is to – understand how emerging technologies will change commercial models, assess investment potential and what it can do across sectors to uplift Africa's macro-economic status. ©

By Fuad Siddiqui, senior partner and head of Consulting, Nokia Bell Labs for MEA & APJ

Empowering Ugandan women by improving access to smartphones

Founder of Kiteka, Hephzi Pemberton, shares how the digital charity is helping Ugandan women become entrepreneurs by providing them with smartphones.

IT IS UNDENIABLE that smartphones have revolutionised the modern world; we pay for our food shopping, organise our banking and can even run a business while on the go. Smartphones and digital technology are magnificent enablers for budding entrepreneurs, and given the vast array of opportunities that smartphones provide us, it is vitally important to begin to assess how they can be used to unlock entrepreneurial talent from women in Uganda and across the developing world.

The Global Entrepreneurship Monitor has recently reported that female entrepreneurship rates in sub-Saharan Africa (SSA) are currently the highest in the world with one in four women engaged in early-stage entrepreneurial activity, much of which is accessed via connected technology. However, while this statistic paints an incredibly positive picture of SSA, 64 per cent of women in Uganda do not have access to a smartphone, the main catalyst of entrepreneurship in the region.

Kiteka has taught me that my future is in my hands.

In Uganda, working women currently earn a third less on average than men with, the relative underemployment of women resulting in a wider macro issue of US\$95bn in economic contributions being lost per year, according to data from the United Nations. This is largely due to huge technological imbalances with women being a quarter less likely than men to own a smartphone. A damning 64 per cent of women do not have access to a phone and by extension, the internet. The consequences of not having access to this technology is that women are deprived of the opportunity and power to raise their own independent income and start entrepreneurial ventures. Entrepreneurial spirit and talent is therefore sadly stifled and financial independence for many women is inhibited. Kiteka highlights the chasm between men and women in accessing technology across the developing world and open up the untapped potential of enterprising women who want to build and grow their own businesses.

Kiteka's work has been pivotal in helping Ugandan women get into entrepreneurship by providing them with smartphones and digital training to enable financial independence



Photo: Kiteka

Kiteka's smartphone programme has been pivotal in helping to grow people's businesses.

across the region. Helene Kansime, 27-year-old receptionist received one million Ugandan schillings from Kiteka for her social media marketing agency, which allowed her to make the transition from rural to city life.

She said, "Kiteka has helped me gain a wide range of skills, which will help my dream of starting an events company come true."

Stella Achen, mother of three children, explained the impact of the scheme has helped her charcoal microbusiness. "Kiteka's smartphone loan programme has really helped me grow my business," she said. "I can connect with my customers via WhatsApp and expand my customer base."

Vannesa Ruvako started training before starting a social worker internship with Kiteka.

She said, "I think Kiteka is an inspiring platform where women share their stories, knowledge and learn new skills to help them in their personal development and also there is an increase of women's self-confidence. What I

like is the fact that Kiteka is changing lives of the women (myself included). For example, after some of the training I received at Kiteka, I was inspired to create my own business which is something I never thought I could do because of the mentality many of us have that after college, you get yourself a good job and settle. But Kiteka has taught me that my future is in my hands."

It is undeniable, from looking at these case studies, the empowerment and independence these women have gained through having access to a mobile phone. For these, and many other women, having a mobile phone is not a just a luxury, it is imperative for their financial independence and therefore to improving gender equality within Uganda and beyond. With the implementation of the social media tax in Uganda, more women are now 'offline.'

For the country and its people to thrive, ensuring access to the internet and the adequate training is the way forward. ©

Nominet launches WaveDB Explore

NOMINET HAS LAUNCHED WaveDB Explore, enabling wireless ISPs (WISPs) in the early stages of planning TV White Space (TVWS) deployments to establish where TVWS will have the most impact.

This announcement follows the approval of Nominet as a TVWS Database Administrator by the Federal Communications Commission in the USA, and builds on Nominet's partnership with Microsoft as part of its Airband Initiative, to help deliver TVWS deployments in the US and Africa to support more affordable and accessible connectivity to broadband in rural areas.

With a focus on bringing reliable broadband connectivity to hard-to-reach areas, TVWS solutions – utilising unused broadcast frequencies freed up in the digital TV switchover – have the potential to bring social and economic benefits for consumers, as well as expand opportunities for WISP networks.

As the TVWS signal can travel through permanent obstacles such as trees and light structures, as well as uneven terrain, there are many network operator advantages. These include line-of-sight not being required; up to 30km of outdoor connectivity being achieved; no need for complex infrastructure; no need to change radios if the rules to access change slightly; and it enables new business models.

Mike Davies, VP business development at 6 Harmonics said, "Nominet's leadership in spectrum management databases for TVWS has been enhanced with the development of its WaveDB Explore platform. We are using WaveDB Explore to deliver solutions to communities in rural areas in both the UK and in the US. Our subscription to WaveDB Explore builds on the Nominet TVWS database, allowing us to visualise our network design and to perform feasibility studies to learn how to get the best out of TVWS."

WHO launches health-surveillance app

ON A BID to prevent a health epidemic across Africa, the World Health Organisation (WHO) has created an app dedicated to monitoring diseases such as measles and polio in order to ensure the people most in need are being reached.

Through the use of Polio Geographic Information System (GIS) Technology, health workers visiting remote villages across the region will be able to use the app to alert the WHO if they detect any symptoms of life-threatening diseases.

The system also uses the AVADAR computer platform to allow the WHO and health ministries to monitor visits carried out by caregivers and health workers across 43 countries in the region, which the organisation hopes will be a huge step in eradicating diseases such as polio once and for all.

"This is one of the most exciting things that is happening in the WHO regional office in Africa," said Dr Matshidiso Moeti, WHO regional director for Africa. "Overlaying the geographical location of the mobile phone signal and the route of the roads, we noticed that sometimes visits were only made along the main road and not to the most remote places, which is where we need to be if there is a problem.

"This is an absolutely powerful tool," she continued.

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Bühler solutions on display at Hannover Messe

BÜHLER SHOWCASED A series of solutions at Hannover Messe Exhibition on 1-5 April using Microsoft technologies such as Azure Blockchain.

They were Laatu: a breakthrough technology for reducing microbial contamination in dry goods; Tubex Pro: a smart, self-optimising, scale system for the food industry providing a constant flow of real-time production data, using Bühler Insights; Yield Management System: a mobile yield monitoring system that provides remote oversight of production data across plants and Mill E3; an innovative mill concept that brings all these solutions together.

Bühler's goal is to secure safe food while reducing 30 per cent of waste and 30 per cent of energy in these processes by 2020.

"Our collaboration with Microsoft has opened up massive opportunities to achieve these goals while delivering outstanding solutions to our customers," said Stuart Bashford, digital officer at Bühler Group. "Food safety and transparency across the value chain are global challenges that require new levels of collaboration. Combining our leadership in food processing with Microsoft Azure, we have developed Bühler Insights, the first cloud platform dedicated to the food industry, enabling secure, high-performance, reliable digital services that, together with blockchain technologies, can achieve significant progress in improving safety, quality, efficiency, and traceability across food production value chains. Today, more than 85 per cent of our solutions can be connected to the Bühler Insights platform."

"Our Mill E3 project for Whitworth demonstrates what can be achieved when we combine Bühler's world-leading processing knowledge with Microsoft's technology," said Johannes Wick, CEO Grains and Food at Bühler Group.

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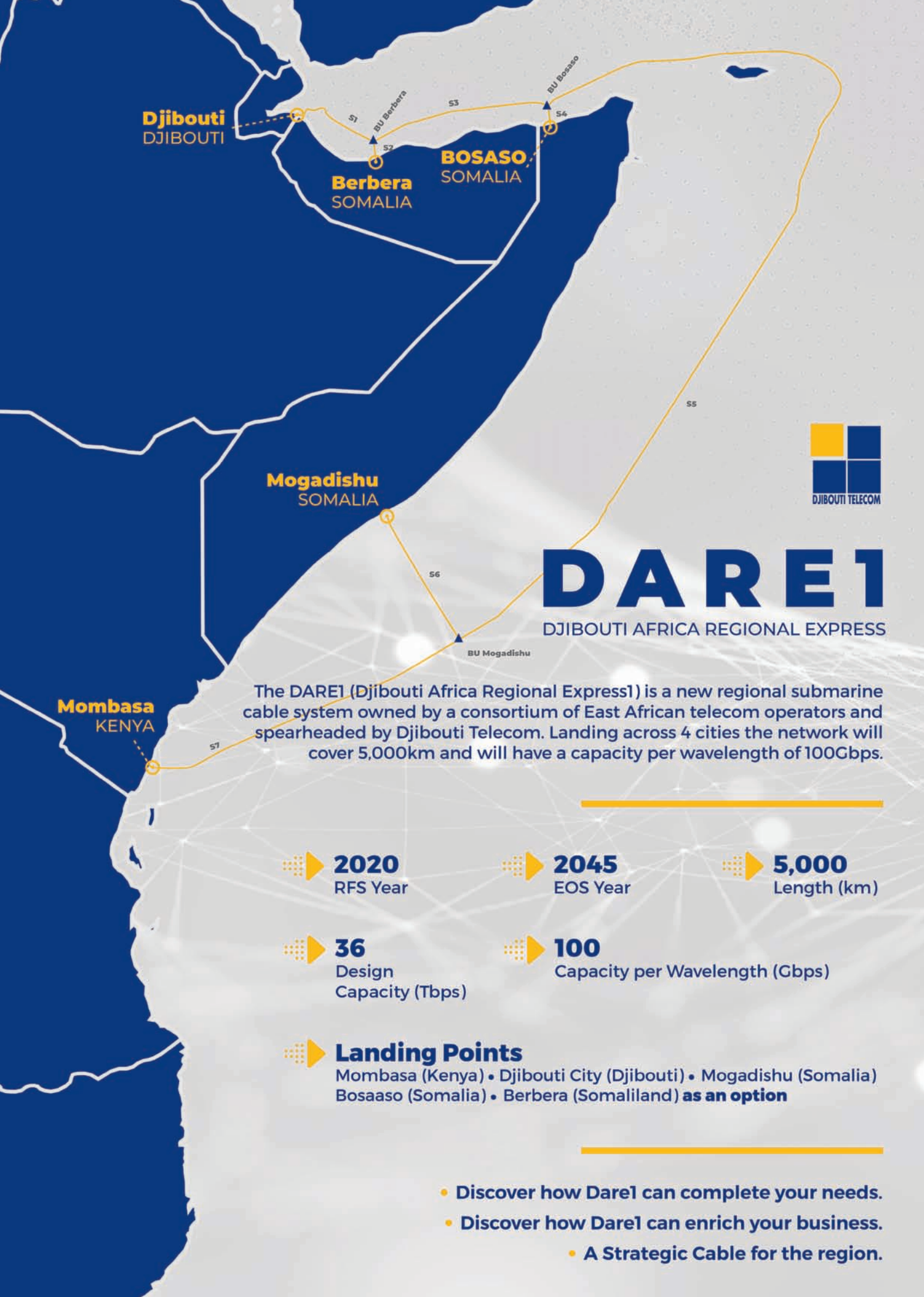
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