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For communications professionals in southern Africa

NOVEMBER/DECEMBER 2014

Volume 19

Number 4

COMMUNICATIONS

- How to deal with satellite oversupply
- Creating the right ecosystem for mobile apps
- Connecting the machines: M2M's big promise

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Telkom announces initial rollout of LTE-A

Telkom Mobile plans to rollout LTE-A services in more than 50 suburbs across South Africa by the end of this year.

During late September, the operator said it was currently upgrading its network to offer customers peak speeds of more than 200Mbps, with a view to developing its network to ultimately deliver LTE-A peak speeds of 3Gbps.

"LTE-A is an integral part of Telkom's high-speed broadband strategy," said COO Dr Brian Armstrong. "We believe that in the coming years LTE-A will become the *de facto* mobile data standard."

Armstrong said that the LTE-A platform runs on 2.3GHz spectrum which is unique to Telkom. He

claimed that this spectrum allows the operator to offer "efficient, high-quality and stable" LTE-A technology to its customers. "The speeds offered on this technology are comparable to those offered over fibre connections, therefore offering an unparalleled wireless internet experience."

Armstrong said Telkom aims to have the first areas connected during December and expects the initial rollout to be completed by March.

"The precise LTE-A product offerings and prices are still to be announced, but we can confirm we will offer bigger bundles and greater speeds for an enhanced wireless connectivity experience."

Telkom says its initial LTE-A deployments will cover selected suburbs, enabling peak speeds of over 200Mbps in areas of Gauteng, KwaZulu Natal and the Western Cape.



Zimbabwe regulator calls for infrastructure sharing

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) says the country's operators should share passive infrastructure if they are to capitalise on the investments they are making.

In an industry consultation paper published in October, POTRAZ said the past five years have seen "rapid growth" in telecoms in Zimbabwe, as evidenced by penetration rates of 106.4 per cent for mobile and 43.1 per cent for broadband during Q1 2014.

"Operators continue to invest rapidly in order to keep abreast with changes in technology trends and consumer needs," stated the regulator. "Large investments in 3G, 4G and other next-generation networks are being undertaken by fixed and mobile

operators alike. However, revenues from these investments are still some time away, and are also being threatened by new OTT services that are riding on these networks."

The paper said that instead of passing on the costs of these investments to consumers via higher tariffs, operators should develop strategies that ensure the "optimum utilisation" of existing and new infrastructure.

According to POTRAZ, infrastructure sharing based on an open access model will be a "panacea" to most challenges currently being faced in the sector."

The authority has invited stakeholders to send their comments and views on the various issues addressed in the consultation paper by 30 November 2014.

Viettel to spend a billion on 3G in Tanzania

Viettel has announced plans to invest USD1bn in a new 3G network in Tanzania.

State-owned Viettel is run by Vietnam's Ministry of Defence and gained its license in Tanzania earlier in October. Since 2012, it has also operated mobile services in Peru.

In a statement issued in late October, the Tanzanian president's office said: "Viettel will invest one billion dollars in telecoms and other services in Tanzania, hence making Tanzania the second country after Peru to receive its state-of-the-art telecoms technology."

The office said that Viettel chairman Manh Nguyen Hung made the investment pledge during Tanzanian president Jakaya Kikwete's recent visit to the telco's

headquarters in Vietnam. According to the statement, Viettel will offer low-cost smartphones and provide free internet services to schools, hospitals and offices.

Viettel is expected to launch its mobile services next July, going up against Airtel, Tigo, Vodacom and Zantel. The market also features state-owned TTCL, Benson and Smart, but these three operators are said to have low market shares.

Under Tanzanian law, Viettel will have to become a listed company on the Dar es Salaam Stock Exchange (*see News, p10*). But as a new license holder, it has three years to do so.

According to the local regulator, Tanzania has around 29 million mobile subscribers, representing penetration of around 64 per cent.

Broadband key element of Namibia network strategy

Telecom Namibia says broadband penetration is a key element in its strategy of aiming to achieve the government's goals for economic development.

Namibia's ICT objectives are based on the global model which says that a 10 per cent increase in broadband penetration will lead to a 1.38 per cent increase in GDP. As the national ICT service provider, TN claims it has invested more than NAD2bn (USD1.85m) since 2007 to improve the country's telecoms infrastructure.



High quality affordable broadband is the foundation of an innovative ICT sector, according to TN MD Frans Ndoroma.

During the opening of a two-day national ICT summit in Windhoek in early October, the telco's MD Frans

Ndoroma said: "We believe a strong, reliable and nationwide ICT broadband infrastructure and global connectivity are key to the efficient functioning and development of the telecommunications industry, businesses and the economy.

"High speed, high quality, affordable broadband is the foundation of an innovative ICT sector which will enrich the quality of life for individuals and propel Namibia forward."

At the summit, Ndoroma said TN has started constructing a fibre-based

network to connect the central government to the administrative capitals of all 14 regions in the country. The network will also provide government with a connection to all educational and health institutions.

Ndoroma added that TN will continue to expand the availability of consumer and business broadband services via modern backbone networks and "state-of-the art" technologies such as ADSL, WiMAX, fibre, carrier-grade Wi-Fi, 3G and LTE.

Students to use M-PESA for bursary funds

Students in South Africa are trialling a system that allows them to pay expenses from their bursary funds using *M-PESA*.

The system is currently being piloted by Eduloan, an education finance and bursary administration provider. During the test phase, Eduloan bursary students will get their cash allowances deposited into their *M-PESA* accounts. This will allow them to pay for some of their daily expenses using mobile money.

Eduloan's existing bursary disbursement system – currently enabled by smartcard technology – has seen increasing student numbers as more organisations entrust the administrator to manage their funds.

Eduloan needed to further extend its platform to include mobile functionality to give students greater convenience when accessing funds. In addition, it also recognised the need to offer students an affordable and low-cost banking service.

Students can easily open an *M-PESA* account using their mobiles. Eduloan will then deposit allowances or stipend funds directly into the account.

M-PESA includes an optional Visa card, enabling students to use mobile money to make purchases at any store that accepts card payments. Other new uses of the mobile money system include the ability to deposit and withdraw cash at 27,000 ATMs and more than 240,000 merchant outlets in South Africa. In the near future it will also be possible to purchase pre-paid electricity using *M-PESA*.

"The rapid recharging and loading of allowances from sponsors and parents enabled by *M-PESA* is a much needed benefit to the student," says Charlotte Smit, Eduloan's chief sales and marketing officer. "Furthermore, the additional offering of access to data and airtime, which assists students with research and collaboration, is exactly what Eduloan's customers need."

Malawi's ICT masterplan

The Malawi Communications regulatory Authority (MACRA) has taken the first steps towards developing a strategy for wireless broadband access.

Malawi is one of four African states nominated by the ITU to be a beneficiary in receiving technical assistance as part of a project that has received funding from the Korean government. The aim is to help developing countries create masterplans for broadband access which will in turn assist their socio-economic progression. The other African nations are Eritrea, Guinea Bissau and Congo Brazzaville.

ITU consultant Adrian Foster recently arrived in Malawi to collect data on the country's current status on broadband internet. He has already held a series of meetings with ministerial representatives, ISPs, telcos, the Public Private Partnership

ITU consultant Adrian Foster says Malawi is held back by a lack of funding.



Commission, and the Malawi Confederation of Chambers of Commerce and Industry.

Foster said that 60 per cent of the world's countries have plans that are vital for accelerating broadband deployment and the remaining 40 per cent should follow the same route.

He noted that while many developing countries have fully fledged national ICT plans, these fail to say much about broadband services.

Foster said that Malawi's authorities needed to be cautious in

the development of their plan, and ensure that it was realistic, accurate and pragmatic. "It is encouraging that Malawi has a good level of planning on a number of initiatives. [The] only major bottleneck is funding."

He cited the market structure of the country's telecoms industry, regulatory framework and spectrum management as some of the key issues to consider in the formulation of the masterplan.

Foster also talked about the importance of equipping schools and other institutions with vital ICT equipment before the deployment of broadband on a large scale.

Once all relevant data have been collected, the consultant is expected to come up with a report that will help guide the development of the masterplan. Validation of his draft report will take place early next year.

Econet will connect cars in Zimbabwe

Econet Wireless has announced it is shifting its attention to connecting the Internet of Things, starting with cars.

Speaking at the launch of the firm's *Connected Car* initiative in mid-October, COO Dorothy Zimuto said Econet will ensure most of the more than 1.2m cars in Zimbabwe will be connected within a few months.

"We have invested in the necessary infrastructure to deliver this service with over 100 installers specifically trained for the *Econet Connected Car*, ready to offer unparalleled installation turnaround time," she said.

Econet claims *Connected Car* will

take fleet management services to "another level" with unique value-added services such as the *Connected Car Mobile* smartphone app. This will enable users' cars to perform regular self-diagnosis and send reports to their owners. The company says its personal vehicle management service also offers services such as geo-fencing and driver habit monitoring.

Zimuto said the service is now available at any Econet shop as well as the many authorised Econet *Connected Car* dealers across the country and the *Connected Car Crew*.

Service packages are available to

consumers and businesses for a one-off connection fee ranging from USD50-100 and monthly subscription charges of USD20.

Econet reckons *Connected Car* will disrupt Zimbabwe's vehicle management industry as *EcoCash* did in its financial services sector.

Darlington Mandivenge, CEO of Econet Services International, said: "This is the first of a very wide range of products that will offer customers what we call connected lifestyles, ensuring that everything is connected. This is going to be big. Very big."

Connecting machines – feature pp32-34

Orange ramps up Africa satellite capacity

Orange will use C-band capacity on *EUTELSAT 3B* to broaden its satellite capabilities across Africa.

The operator will use the capacity to support a fast response for anytime, anywhere communications as required by customers of its Orange Business Services (OBS) division, as well as serve its own internal requirements.

The new resources complement C-band transponders already leased by OBS on the *EUTELSAT 10A* satellite and *EUTELSAT 5's West A beam*.

Under a recently signed multi-year agreement, Eutelsat says the additional capacity will benefit



EUTELSAT 3B is loaded at Sea Launch's home port before making its way to an ocean-based launch platform in May.

businesses in Africa who need reliable VSAT connectivity between geographically dispersed offices, including offshore sites.

EUTELSAT 3B was launched in May 2014 from Sea Launch AG's ocean-based platform in the Pacific (see *News*, May-Jun). It's designed to increase and diversify Eutelsat's resources and footprint at 3°E, and reach Europe, Africa, the Middle East, Central Asia and Brazil.

Eutelsat describes *EUTELSAT 3B* as "three satellites in one". The company claims it's the first commercial satellite to assemble C, Ku and Ka payloads in a single platform. It says this tri-band configuration enables users to select the frequency band and adapt the service area according to their needs.



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Grant Marais,
Regional VP Africa,
Intelsat

ON THE NETWORK

C-band is critical for development

The importance of C-band to Africa cannot be underestimated. It serves as a vital link for millions of people, and without it communities will not have the critical connectivity needed to facilitate financial transactions, telemedicine and e-learning services.

In addition, local and global businesses operating in the region will not have the infrastructure needed to expand, negatively impacting job creation and growth.

What many people do not realise is that this important band is under threat. The International Mobile Telecommunications (IMT) community is targeting C-band in its quest for more spectrum, and this request will be addressed at the ITU's World Radiocommunication Conference (WRC-15) in November 2015.

Sharing C-band with IMT services will have a detrimental effect on communications across Africa and will eventually result in excessive levels of harmful interference. Research conducted by Euroconsult in partnership with the European Space Agency confirms this, demonstrating that sharing C-band spectrum with mobile wireless services will negatively impact satellite services, including public safety functions.

Contrary to arguments, applications that rely on C-band cannot be moved to other bands, such as Ku and Ka, as they're simply not as reliable, especially in areas prone to heavy rains.

C-band also has an extensive footprint. A costly migration could therefore prevent services from reaching remote areas in need of effective connectivity to support socio-economic development.

It is therefore vital that all players in the sector partner to educate customers, partners, regulators, and government officials about the potential impact losing C-band will have on their businesses and communities. We need to act now.



iSAT to offer 'unique' VSAT services in Zambia

iSAT Africa is hoping to become a major provider of satellite and broadband technology in Zambia.

The UAE-based company is a subsidiary of East African home entertainment, media and telecoms specialist Wananchi Group Holdings. It recently announced the formation of iSAT Africa Zambia (iAZL) with the stated aim of bringing the "best in the internet and data provisions sector" to the Zambian market.

iAZL owns and operates the only VSAT hub in Zambia via its teleport in Lusaka. Supported by what's described as the industry's "best



iSAT Africa is a subsidiary of Wananchi Group Holdings which operates a satellite groundstation in Nairobi.

vendors, suppliers and partners", the firm claims it will give its clients the opportunity to connect any site in

Zambia to their respective head office via a single hop, low latency solution.

As a licensed satellite operator and ISP, iAZL promises to offer high reliability corporate data connectivity, high-speed internet, as well as a "wealth of experience" and turnkey solutions for the broadcast sector.

"iAZL hopes to further the Zambian development agenda through appropriate solutions," says the company. "[Our] core focus is the delivery of very high, uptime-based managed services, with strict compliance to SLAs and the assurance of 24/7 customer and technical support."

Capacity doubled for SAT-3-WASC cable

Capacity on the South Atlantic 3/West Africa Submarine Cable submarine cable has been doubled.

The system has been upgraded from 340Gbps to 800Gbps in the southern segments, and from 420Gbps to 920Gbps in the north.

Operating typically at 40Gbps and with full in-system protection, it's claimed SAT-3/WASC offers one of the lowest latency routes from Africa to Europe. It has landing points in South Africa, Angola, Gabon, Cameroon, Nigeria, Benin, Ghana, Côte d'Ivoire, Senegal, Spain and Portugal.

This latest upgrade was carried out by Alcatel-Lucent. It says that this fourth upgrade enables a seven-fold increase in SAT-3/WASC's original design capacity through the use of what the vendor claims is its "advanced coherent technology".

SAT3/WASC also links with the SAFE (Southern Africa-Far East) system to create a 28,800km link between southern Africa and Asia with connectivity via South Africa, Mauritius, Réunion, India and Malaysia. It's claimed SAFE provides the shortest route and therefore the lowest latency between these regions.

The SAT-3/WASC/SAFE consortium comprises more than 30 global operators such as British Telecom, China Telecom and Orange. Some of its African investors include Angola Telecom, Gabon Telecom, Telecom Namibia, Vodacom and South African incumbent Telkom.

Alphonzo Samuels, Telkom's CTO, says: "This cable upgrade further addresses the global capacity demands such as fast internet connectivity, data-hungry applications, high-quality video-on-demand and increasing social media usage, thus enhancing customer experience."

AU expands connectivity with EMC

The African Union (AU) Commission has expanded its connectivity services agreement with Emerging Markets Communications (EMC).

EMC provides fully managed satellite and terrestrial connectivity solutions to all 54 countries in Africa. It offers C-band satellite capacity and operates teleports in Nairobi, the US and Europe.

Since 2008, the company has provided satcoms services to the AU for its corporate offices and remote locations in 20 countries. It enables connectivity for private data, internet access and voice, plus high-definition telepresence via its *HD Connect*

AU Commission division head Rekia Mahamoudou says EMC helps the union coordinate the development of its member states.



platform. As well as renewing its services contract with EMC for its existing sites, the union has also added eight further international locations.

Rekia Mahamoudou, the AU Commission's division head, said the union chose to continue and expand its connectivity services with EMC because of its "consistent" and

"reliable" network performance, and round the clock support.

"EMC's investments in local field support, satellite capacity, teleports and in-country inventory in Africa enables us to expand our operations to achieve our goals of promoting unity and solidarity among African states," she said.

In June, EMC said it was ramping up its support on the continent with the addition of new field centres in key remote countries. It already has 18 support sites across Africa and planned to add three more this year in Libreville (Gabon), Maputo, (Mozambique) and Niamey (Niger).



A Global Operator for the African Market

Eutelsat has been active in the African market for more than 16 years, and with an expanded network and two new satellite launches in 2015 offering greater African C and Ku-band coverage, we are in a significantly stronger position to serve customers in the region. Our global reach means we can offer exceptional connectivity to all parts of the world at a time when the links between Sub-Saharan Africa and Europe, the Middle East, Asia and the Americas are thriving.

The infrastructure we operate enables digital services to be accessed by everyone, irrespective of their location on the continent. In the broadcast market, Eutelsat is the leader in Sub-Saharan Africa, with more than 750 channels distributed. In the data sector, we offer a range of solutions for corporations, government, SOHOs and residential users, as well as for cellular providers to extend mobile telephony networks.

Broadcast and Media Solutions

Eutelsat is the leading operator for DTH broadcasting in Africa, with the largest number of both TV packages and channels. Almost 650 channels are delivered via two flagship satellite neighbourhoods, 36° East and 16° East. We have invested in and supported the launch of leading platforms including DSTv and ZAP in Sub-Saharan Africa and Canal+ Overseas, Parabole Réunion, Orange and France Télévisions Group over the Indian Ocean.

The 16° East neighbourhood has also attracted a growing number of free-to-air channels targeting French-speaking markets in West Africa.

In addition, Eutelsat provides capacity from 7° East in Ku-band for TV distribution and radio. This orbital position is becoming a new DTH hotspot for Eastern Africa. The Azam TV platform, created in November 2013, serves customers in Kenya, Uganda and Tanzania and already brings together 60 channels and some 130,000 subscribers.

In addition, we provide capacity in C-band for TV distribution services as well as telecommunications/internet applications from the 5° West and 10° East orbital locations.

Most African countries have signed up to the ITU global deadline for analogue terrestrial switch-off by June 2015. Eutelsat has significant experience in DTT broadcasting and is a major provider of DTT services over Africa, as satellites are the most efficient platform for delivering channel multiplexes to DTT transmitters as well as serving homes which remain beyond the range of DTT reception.

Data and Telecoms Solutions

Eutelsat has significantly increased the capacity available for data and broadband services over Sub-Saharan Africa, to support the deployment of high-speed satellite internet access, corporate internet, back-up solutions and backhauling services across the continent.

From its teleport and partner's teleports in Europe and Africa, Eutelsat offers a full range of telecom/data solutions including:

IP Easy: Internet access for consumer, SOHO, SMEs up to 10 Mbps.

IP Connect: International and national connectivity for corporate and governmental networks with customisable quality of service and bespoke design.

IP Trunk: High performance links for corporate networks with high reliability requirements and fibre back-up in countries without easy access to coastal fibre networks. GSM backhauling to connect sites to core networks in rural/suburban areas

IP Link: Hosting and co-location of satellite communication solutions in our teleports combined with uplink and satellite capacity services.

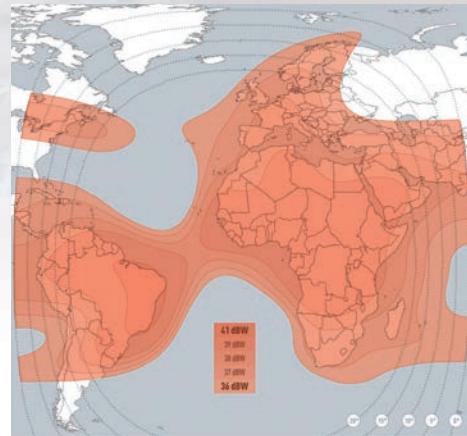
Mobility services: For maritime, aircrafts and transportation.

Mobile communications: For government services and security forces.

Coming soon: New Satellites for Africa

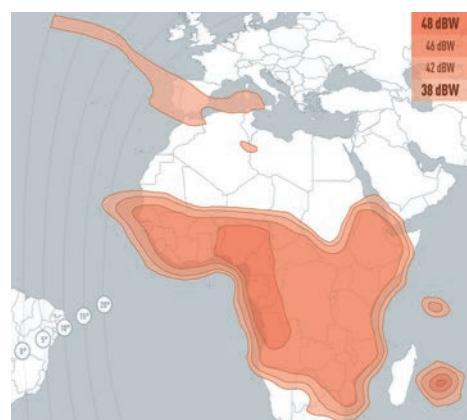
Two new satellites will become available in 2015 for Africa.

EUTELSAT 8 West B will be located at 8° West. It will introduce a C-band mission to this position, with 10 operational transponders connected to footprints covering the African continent and reaching west to



Predicted EUTELSAT 8 West B C-band Global Downlink

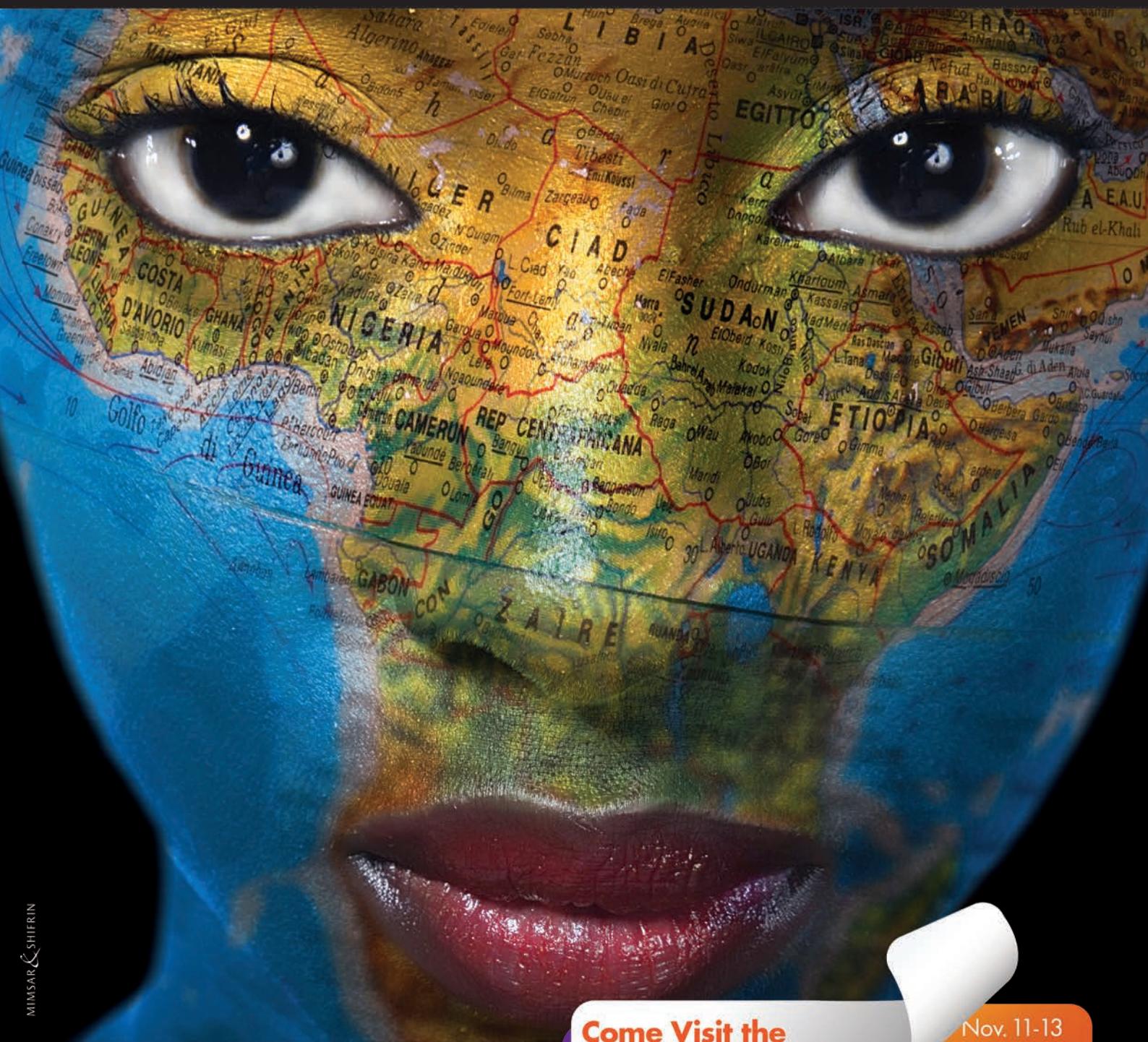
South America. It will also feature 40 operational Ku-band transponders designed primarily to serve Direct-To-Home markets in North Africa and the Middle East.



Predicted EUTELSAT 36C Ku-band Downlink

Eutelsat will also be leasing capacity on a new RSCC satellite, Express-AMU1, at 36° East. Express-AMU1 will ensure service continuity and growth for broadcast markets developed by Eutelsat in Sub-Saharan Africa, with Eutelsat commercialising the capacity under the name EUTELSAT 36C.

AMOS. EXPECT MORE



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Focused on Africa with **three** satellites from three different orbital locations* and newly launched services designed to enhance ICT in Africa. AMOS-5 at 17°E, delivering high-power Pan-African C-band and Ku-band capacity with access to Europe & ME. AMOS-4 at 65°E with Ka-band over Africa and

AMOS-6 at 4°W with **HTS beams** over Africa enabling service providers to re-think their data business opportunities. **Cellular-Satellite Hybrid Broadband** solutions launched in Africa in 2014 offer fast and affordable internet to all. Spacecom, an established satellite provider, a leader in CEE, serving Europe & the ME with AMOS-2 and AMOS-3 at 4°W 'hot-spot' and soon Africa - with AMOS-6.

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Mobile-enabled supply chain benefits farmers

The Connected Farmer Alliance (CFA) will use mobile phones to boost the productivity and incomes of thousands of farmers in Tanzania.

The CFA is a public-private partnership between Vodafone Group, the US Agency for International Development (USAID) and not-for-profit organisation TechnoServe.

It seeks to promote commercially sustainable mobile agriculture solutions and increase productivity and revenues for 500,000 smallholder farmers across Kenya, Tanzania and Mozambique. The programme also aims to increase revenues for agribusinesses and agricultural value chain service providers.

Under an agreement with the CFA and Vodacom Tanzania, around 30,000 of Olam International's coffee, cotton and cocoa smallholder farmers in Tanzania will benefit from new mobile tools. These include:



This infographic from the CFA highlights the importance of smallholder farmers and how they could benefit from mobile technology.

farming advice via SMS; notifications about upcoming training sessions and events; and real-time information about changes in market prices.

As from December 2014, services will also include the introduction of mobile money transfer using *M-PESA* in place of cash. Vodafone says this will give farmers greater control over their finances.

The alliance says the creation of a

mobile-enabled supply chain will provide considerable benefits for

Olam. For instance, it's claimed the use of *M-PESA* will increase security, reduce cash transportation costs, and improve Olam's ability to monitor and trace transactions.

Enhanced communications with farmers is also expected to strengthen relationships and build greater loyalty, while the replacement of paper-based transaction records with digital systems means greater business efficiency.

Jeremy Dufour, Olam International's environmental and social manager for South and East Africa, said: "Working with the CFA, we can put agriculture expertise, accurate data and payments in to the hands of smallholder farmers in real-time and at considerable scale, no matter how remote. This helps to improve yields and farmer livelihoods, while our business benefits from smarter operations and lower costs."

iSAT covers Africa thanks to Malaysia

iSAT Africa will use capacity on MEASAT's *Africasat-1a* satellite to expand its VSAT and broadcast services across the continent.

Santosh Sakpal, technical manager of UAE-based iSAT Africa, says: "We selected *Africasat-1a* due to the

growing demand of our customers for data trunking, broadcasting, and GSM backhaul solutions. [The satellite] is the best choice to meet these requirements, due to its high power and its African and European coverage via a single beam."

Africasat-1a was launched by Malaysian operator MEASAT in February 2013 (see News, Jan-Feb 2013). It orbits at 46°E from where it provides C-band services across Africa with connectivity into Europe, the Middle East, and south-east Asia.

Self-service apps can help reduce churn

Africa is one of the untapped markets for self-service mobile applications, according to a recent study by VAS specialist Mahindra Comviva and Ovum Consulting.

"An intensely competitive market and evolving consumer need calls for operators to offer more than just products," says Pawan S. Kulkarni, the vendor's head of consumer value solutions. "Customer relationship management becomes a vital tool for increasing service satisfaction score."

The study estimates that 80 per cent of calls to cellco call centres are related to simple queries. It says self-service apps (SSAs) not only

empower users, enabling them to manage their mobile account transactions in real-time via their handsets, but also helps the operator reduce customer care costs.

"It also holds the potential for an augmented customer engagement, provided it is a personalised and secure interaction," says the study. "By developing a rich interaction suite through the mobile self-service app, a telco can gain real-time feedback and deliver tailored offers to customers."

"With a well integrated self-service app they can resolve their issues within one session without having to wait for a 24-hour process timeline."

However the study warns that mobile first economies, where devices are attached to pre- and post-paid contracts on 2G and 3G, make it difficult for developing and embedding SSAs on handsets. In addition, such economies have poor literacy rates and this also presents a challenge in the adoption of such apps.

"Here, it is important to create a simple intuitive user interface with one touch options and a minimum number of menus and click through pages," say the researchers. "MNOs will have to find ways to overcome such issues in order to create opportunities for advanced and rich interactions."

Botswana internet cut

Botswana has been experiencing sporadic disruptions in internet services over the last few weeks. The worst outages were in August. According to the Botswana Communications Regulatory Authority (BOCRA), disruption on the 18th was caused by maintenance work on WACS, while a severe outage on the 28th was due to accidental fibre cuts to both WACS and EASSy. Engineers worked round the clock on repairs, and the problems were resolved a few days later.

Cellcos have to list shares

As part of legislation introduced in 2010, Tanzania's mobile operators will have to list their shares on the Dar es Salaam Stock Exchange (DSE) next year. DSE chief executive Moremi Marwa told *Reuters* the move would mean more listings, leading to increased liquidity and growth in the capital markets. The country's main cellcos – Vodacom, Airtel, Tigo and Zantel – have not commented but say they're taking part in a consultation process.

Rural areas broadband

South Africa's Department of Telecommunications and Postal Services (DTPS) will test new and sustainable approaches to bringing broadband connectivity to rural post offices. Working with partners from industry and civil society, the DTPS says the project will support the national broadband policy, *South Africa Connect*. This aims to provide affordable, high-capacity and reliable connectivity to support advanced applications and services for businesses, consumers and government, and especially for under-serviced rural communities.

MTC defends its billing platform

Namibian cellco MTC has rejected complaints from its subscribers who say they have been wrongly billed for excessive data usage.

The operator said it has investigated the matter and can now confirm that all data charges were correctly billed in relation to the data usage generated by its customers' smartphones. In a

statement issued in July, MTC assured subscribers that its billing system was "100 per cent accurate", and that complaints relating to excessive data usage were not due to a BSS/OSS issue or as a result of a recent upgrade of these systems.

The firm said the high data usage was a direct result of the latest versions

of smartphone operating systems which now offer greater functionality and therefore use more data.

MTC spokesperson Tim Ekandjo specifically cited mapping services as one of the most used features. He said that geo-tagging generates high data usage while customers are on particular applications, especially

social networks, and it was the user's responsibility to enable or disable such features.

"We are confident that this has nothing to do with our billing or IT systems," said Ekandjo. "We have performed thousands of various test trials to compare which operating system were registered in the meters of the device, what the data detail record was on the core systems, and what was charged by the billing system, and it is very clear that it's totally in sync and correct."

Ekandjo said that MTC had recently upgraded its post-paid billing system to a new BSS/OSS platform that was compliant with the TM Forum's model and supported by Oracle.

"MTC has invested heavily in its IT networks and its IT systems to accommodate the new reality of excessive data traffic. We are therefore confident that the problem is not with us."

He added that the pre-paid billing system was also due to be upgraded and converged this year.

GSMA issues IoT guidelines

Global operators have agreed guidelines to define how devices and applications in the Internet of Things (IoT) should connect to a mobile network.

The *IoT Device Connection Efficiency Guidelines* published by the GSMA in mid-October is backed by major telcos such as China Mobile, Etisalat, Orange, et al, as well as ecosystem partners Sierra Wireless and Jasper.

The guidelines aim to support device and application developers as the IoT market develops. They include a number of best practice areas such as data aggregation within devices, non-synchronous network access, application scalability, and advice on how to manage signalling traffic from de-activated SIMs.

GSMA CTO Alex Sinclair said: "It is imperative that the IoT market develops with the right standards and best practices in place, reducing undue pressure on mobile networks across the world and allowing the Internet of Things to grow unimpeded."

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Millicom foundation to support innovators in emerging markets

Millicom, the operator of the Tigo mobile brand, has launched an independent foundation to support digital innovators in Africa.

"This foundation is a part of our commitment to create a digital lifestyle for everyone," says Millicom CEO Hans-Holger Albrecht. "It will do more than just provide cash for ambitious social startups – it will support digital innovators to grow their ideas and scale them across markets."

Backed by an annual budget of USD10m, the Millicom Foundation will offer business advice, technological support and mentoring from the telco's experts. It will identify innovative ideas



Millicom CEO Hans-Holger Albrecht says the foundation will do more than just provide cash for ambitious social startups.

and solutions through the *Digital Changemakers Award* that will initially run in eleven of Millicom's African and Latin American markets.

The foundation's trustees include NGO Transparency International

founder Peter Eigen and Ory Okolloh, the Kenyan activist and co-founder of the open source Ushahidi platform. It will be led by social entrepreneur Till Behnke who has been appointed executive director.

Millicom claims to have an "impressive" record of bringing ideas to life in Africa. For example in Tanzania, it worked with UNICEF and the local community on a mobile registration system for newborn babies.

SEACOM connects NAPAfrica

NAPAfrica members connected to at least one NAPAfrica IXP can now easily peer with all exchange point members across SEACOM's South African IP/MPLS backbone.

NAPAfrica is a neutral, Layer 2 IXP located within each of the Teraco data centre facilities in South Africa. Instead of using costly multiple direct links to different providers, it offers ISPs a single peering point to allow multiple networks and inter-connectivity. It's claimed NAPAfrica recently achieved peak traffic exchanges in excess of 15Gbps.

SEACOM says operators and service providers with a NAPAfrica peering port who opt for its new service will have a virtual presence at all NAPAfrica IXPs. This will enable them to exchange traffic with other NAPAfrica members at those points, giving more end users, and from much further afield, access to content.

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 **ANACom, INC.**

Tigo Pesa users to share fund profits



Tigo GM Diego Gutierrez: "The objective of this dividend is to offer all Tigo Pesa stakeholders an opportunity to share in this return on their investment."

Tigo Tanzania will distribute TZS14.25bn (USD8.7m) of profits accumulated on the *Tigo Pesa Trust* account to millions of subscribers. In announcing its plan at the start of September, the Millicom subsidiary said it had become the world's first telco to share its trust account profit through mobile money.

The trust account contains all the funds deposited by subscribers since *Tigo Pesa* was launched in Tanzania four years ago. The operator says it is now in a position to distribute these profits following approval from the Bank of Tanzania granted in July.

"For the past three and a half years the *Tigo Pesa Trust* has been accumu-

lating returns at rates between five and 12 per cent which had reached a value of 14.25 billion shillings by June this year," said Tigo GM Diego Gutierrez. "The objective of this dividend is to offer all *Tigo Pesa* stakeholders an opportunity to share in this return on their investment."

He added that the average return each stakeholder receives will vary as it will be based on the average daily balances in their mobile money wallets.

Tigo expects the dividends to benefit more than 3.5 million *Tigo Pesa* users in the country. They include the 'super' and retail agents who form an integral part of the mobile money service's network in Tanzania, as well

as consumers in general.

Gutierrez said that the distribution of profits from the fund represents Tigo's continuing commitment to support economic and financial inclusion in Tanzania by extending the use of mobile money across the country.

"Apart from the USD100m dollars which we promised and continue to invest yearly as part of our network enhancement and expansion programme in the country, this new *Tigo Pesa Trust* dividend scheme will be a direct investment into the lives of all Tanzanians. It will boost their income and their social-economic wellbeing as a whole."

LCA releases ISM frequencies for wireless broadband in Lesotho

The Lesotho Communications Authority (LCA) has allowed the use of the ISM (industrial, scientific and medical) frequency band for wireless mesh networks. It hopes this will lead to wider broadband deployments in the country.

In July, the LCA adopted the new 2014 Radio Frequency Spectrum Management Policy. This replaced the previous policy of 2008 which restricted the use of ISM bands to wireless hotspots and WLANs within own premises only.

For example, ISM band LANs were not legally allowed to transverse public roads. The LCA says this was in strict compliance with ITU Radio Regulation Nos. 5.150 and 15.13. The application of these regulations meant that use of the band could not be extended to innovative technologies such as wireless mesh networks which can use the frequencies for broadband.

"Unfortunately, this has in turn

resulted in slow national wireless broadband deployment and [hindered] wider diffusion, even though wireless mesh broadband networks are far cheaper and faster to rollout than any wireless broadband technology in the market," says the LCA.

The 2014 Radio Frequency Spectrum Management Policy paves the way for the application and deployment of innovative technological developments, especially those that enable and extend broadband uptake in the country.

WAPA supports license-free spectrum allocation

South Africa's Wireless Access Providers' Association (WAPA) says spectrum allocation for broadband connectivity should be license-exempt where practical, as this leads to greater competition and lower costs.

WAPA believes that while license-exempt spectrum can be prone to interference from multiple users, the costs to build and deliver services

over these frequencies is lower. It says this enables new companies and SMMEs (small, medium and micro-sized enterprises) to innovate, thereby increasing competition and lowering the cost of communication.

"Currently, some spectrum bands are heavily used while other bands are unused or under-utilised," says the association. "There are many wireless devices which are widely and safely used in other countries which cannot presently be deployed in South Africa. This limits the abilities of the ISPs to innovate with technology in order to drive down the cost of communications."

WAPA has recently released a draft position paper on spectrum to help guide regulators and policymakers. It suggests several ways to solve the issues, including: more efficient use and management of spectrum that has already been allocated; expanding the range of frequencies allowed within existing allocations; and the allocation or re-allocation of spectrum based on

international best practices and the latest equipment technologies to relieve pressure in other frequencies.

At the end of September, WAPA hosted the Future Wireless Technologies Forum where experts discussed further recommendations.

For example, they said that 24GHz frequencies, which are currently used by short-range devices and field disturbance apparatus, should be re-assigned. Experts at the forum agreed that this spectrum should be re-allocated for point-to-point backhaul, preferably on a license-exempt basis, in order to relieve congestion in 2.4GHz and 5.8GHz

Level playing field in Mauritius

The Mauritius Information and Communication Technologies Authority (ICTA) has approved the introduction of wholesale tariff grids for operator leased lines, and the Bilateral International Private leased Circuit (IPLC) half circuit offered by Mauritius Telecom.

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
6/10/14	IDT Corporation	US	FY14	USD	1,651.5	45.3	0.39	Integrating IDT Messaging into product offerings impacted SG&A & capex. Sold Fabrix Systems to Ericsson.
20/10/14	IBM	US	3Q14	USD	22.4 (bn)	NA	3.46	Disappointing performance attributed to marked slowdown in September in client buying behaviour & rapid industry change.
22/10/14	Millicom	Luxembourg	3Q14	USD	1,674	549	0.79	African mobile customer base increased 10.6% to 23.8m.
22/10/14	Gemalto	Netherlands	3Q14	EUR	626	NA	NA	US revenue tripled & Asia up +18%. Accelerating growth in cloud and enterprise security with acquisition of SafeNet.
23/10/14	ZTE	China	3Q14	RMB	21.1 (bn)	NA	NA	Handset sales, carrier network equipment including 4G, & telecoms software systems are all up.

ICTA says: "The overall aim is to contribute to the sustained and optimum development of the Mauritian ICT sector at large, and is intended at bringing in more competition while ensuring that consumers get access to affordable and quality information and communication services."

Depending on the services and respective capacity selected, the authority says the introduction of wholesale offers will entitle licensed public operators to savings of between four to 53 per cent off the retail tariffs charged by Mauritius Telecom.

It adds that at this stage, the wholesale tariffs are specified for a minimum of 2Mbps (E1) to a maximum of 622Mbps (STM-4).

They are available solely to licensed operators that typically require national and international bandwidth connectivity in order to ensure the provision of services such as internet access, voice and data to consumers and businesses.

ICTA also hopes that the measures will provide greater transparency in terms of pricing available to licensed

operators. It expects them to pass on the benefits obtained through the savings made on national and international bandwidth connectivity by developing more attractive retail pricing for their services.

Adapt IT acquires AspiviaUnison

Adapt IT has acquired telecoms management specialist AspiviaUnison. In a deal worth up to ZAR200m (USD18.5m), JSE listed Adapt will own all of the company's intellectual property and technology. It says this will enable it to further diversify and bolster its customer base, especially in the financial services industry.

AspiviaUnison says it has more than 14 years of experience providing business intelligence on telecoms billing data in Southern Africa. Adapt IT CEO Sbu Shabalala adds that AspiviaUnison has a "robust" entrepreneurial management team and generates strong annuity income from its cloud-based products.

"Adapt IT is already a strong leader in the software sector, representing Microsoft, SAP, IBM and Oracle, and the AspiviaUnison acquisition will be

highly complementary, enhancing the overall Microsoft capability of the group," claims Shabalala.

Adapt IT mainly operates from business divisions in Durban, Johannesburg, Pretoria and Cape Town. It provides a variety of specialised turnkey IT solutions and services to the education, mining and manufacturing, energy and financial services sectors.

Codan Radio appoints Africa manager

Codan Radio Communications has appointed Mark Ellis as its regional sales manager for Africa. He will work with the EMEA/Central Asia team from the UK office.

Ellis was chosen for what Codan says is his "abundance of knowledge" in technical, government and military sales, as well as executive management.

He was previously director of business development and acting CTO at Trilogy Communications, and also spent 15 years with Motorola in various roles ranging from government sales to sales director of Africa.

With both HF and LMR expertise, Ellis will focus on providing

communications solutions for Codan's customers who specialise in life-saving operations, security and peacekeeping in Africa.

Cutting Wi-Fi complaints

ZyXEL will supply its *WRE2205* range extender to MWEB. The South Africa ISP will be equipping all its new subscribers with the extender to improve Wi-Fi coverage in the home.

The vendor claims MWEB's decision to choose the device was influenced by two major features.

Firstly, it supports the TR-069 protocol for remote management. This allows convenient remote setup and configuration or easy firmware updates at a later stage.

Secondly, the *WRE2205* supports dual SSIDs. This enables integration of third party Wi-Fi services from any MWEB access point.

ZyXEL says Wi-Fi is the number one customer service topic for ISPs. It reckons MWEB's decision to use the *WRE2205* will not only help it to attract new subscribers, but also reduce churn and Wi-Fi related customer support calls.

NEW APPOINTMENTS

Date	Name	New employer	New position	Previous employer	Previous position
9/9/14	Andrew Kumbatira	Malawi Communications Regulatory Authority	Director general	Malawi Posts Corporation	Postmaster general
16/9/14	Mark Ellis	Codan Radio Communications	Regional sales manager for Africa	Trilogy Communications	Director of business development & acting CTO
25/9/14	Denny Marandure	ZOL Zimbabwe	CEO	Verizon Communications	Strategy & business development manager, global division
28/9/14	Owen Davies	Dialogue Group	Solutions architect, SMART A2P monetisation programme	Vodafone Hutchison Australia	OSS architect/team lead
1/8/14	Claude Ayo Iguendha	Airtel Gabon	Chairman of the board	DRC Government	Economic advisor
13/8/14	Jean Pierre Kiwakana Kimayala	Airtel DRC	Chairman of the board	International Bank for Trade and Industry of Gabon	CEO
30/9/14	Enzo Strappazzo	Eaton (electrical sector)	SVP & GM, industrial control & protection division, EMEA	Eaton bussmann & power systems divisions	VP & GM
30/9/14	Mike Longman	Eaton (electrical sector)	SVP & GM, power quality & electronics Division, EMEA	Eaton (electrical sector)	SVP of global marketing
30/9/14	Cyrille Brisson	Eaton (electrical sector)	VP marketing, EMEA	Eaton (electrical sector)	VP of power quality division
1/10/14	Rob Irvin	WIOCC	Director of product	Tata Communications	Director of international network development
1/10/14	Mteto Nyati	MTN Group	Group CEO of enterprise business unit	Microsoft	GM of Middle East & Africa
1/10/14	Yau Chyong Lim	MEASAT Satellite Systems	CCO	MEASAT Satellite Systems	VP of business development & strategic planning
3/10/14	Gennady Gazin	VimpelCom	Supervisory board member	Studio Moderna	Vice-chairman of the board
15/10/14	Tony Sipho Sibanda	Emcom Wireless	Executive director for business development	Emcom Wireless	Head of business development
21/10/14	Stefan Skarabis	Emcom Wireless	CTO	Siemens Telecommunications	Senior technology solutions manager
23/10/14	Houlin Zhao	ITU	Secretary general	ITU	Director of Telecommunication Standardisation Bureau

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OneAccess unveils LTE-enabled multiservice access router platform

OneAccess says its new integrated 4G router platform enables operators, cloud and managed CSPs to add LTE connectivity to the growing list of access technologies they can integrate on multipath WANs. It adds that the

MANUFACTURER: OneAccess

PRODUCT: One1540-4G

MORE INFORMATION:
www.oneaccess-net.com

One1540-4G also provides a single, centrally managed application platform over which service providers can deliver “bundles of revenue-generating managed network services”.

The new platform enables a bonded LTE link on the WAN. OneAccess says that this ensures the continuous availability of business-critical applications as bandwidth-hungry cloud-based apps continue to force increasing volumes of data across the network.

The vendor claims the

One1540-4G can effect a seamless and automatic failover to LTE, together with an automated return to the primary link once the main fixed connection is restored. As a result, it

enables service providers to extend their business continuity commitments to cover peak



traffic periods when failover to legacy cellular standards, such as 3G or HSPA+, could risk performance degradation from overloading the network.

OneAccess says operators can use the platform with customers that require a superfast connection but have yet to install a fibre link. By deploying a *One1540-4G* they can deliver a high-bandwidth LTE link of up to 150Mbps which will automatically switch over to a fibre link when cabling is completed, retaining the LTE link as a failover.

Mini COFDM transmitter for bodyworn surveillance

MEL Secure Systems has launched a new and compact COFDM H.264 digital video transmitter to meet the needs of users in a wide range of

MANUFACTURER:
MEL Secure Systems

PRODUCT: Ranger Mini

MORE INFORMATION:
www.melsecuresystems.com

security and military applications. Measuring 86 x 56 x 25mm, *Ranger Mini* is said to support high-quality, real-time video monitoring and recording applications for bodyworn, mobile and temporary CCTV uses.

It's claimed to provide "class-leading" performance, and uses ultra-narrowband to provide "exceptional" range and video quality in high multipath environments regardless of line-of-sight. MEL says the unit delivers images at distances of up to 1km in

non-line-of-sight urban environments, while a 15km range has also been achieved in line-of-sight environments.

The firm says the device also enables users to collocate more channels in the increasingly crowded RF spectrum. It is available in a wide range of frequencies including 1.3GHz,

2.4GHz and 5.8GHz, while bandwidth is available in 1, 2, 4 and 8MHz. MEL adds that built-in AES 128/256-bit encryption ensures the highest security standards.

Optional receiver kits include an LCD monitor and integrated DVR which enable high-quality, interference-free images to be received from up to four cameras simultaneously.

Sepura introduces new DMR Tier III portfolio

Sepura has added a DMR Tier III solution to its product portfolio. It says the flexible design of its platform allows the creation of tailor-made solutions or off-the-shelf systems.

Sepura claims its Tier III DMR system architecture provides an extremely high level of built-in redundancy. Subscriber and network data is distributed across every node in the system, eliminating the need for dedicated site controllers and permitting no single point of weakness that could

cause the whole network to fail. In addition, existing Sepura Tier II deployments can be easily upgraded, allowing radio systems to grow according to user needs.

The firm says its new line-up includes "rugged and robust portables" as well as "sophisticated" fully featured mobiles. There's also a multi-functional and easy to install system incorporating a new controller developed in collaboration with Fylde Micro which Sepura acquired in May.

MANUFACTURER: Sepura

PRODUCT: DMR Tier III system

MORE INFORMATION:
www.sepura.com



Elevate "slashes" time-to-market for wireless devices

Spirent Communications describes the *Elevate Test Framework* as a "revolutionary advance" in testing wireless and M2M devices and services. It claims *Elevate* provides a unique open test architecture and offers "powerful" resources to enable faster time-to-market and improved user experience.

Unlike conventional platforms, Spirent says its framework separates hardware from software, making use of virtualisation and organising test elements into an open architecture.



Elevate offers analytics that cross all phases of wireless device development, such as emulated and live services, instrumentation, an open API, and automated and interactive testing. It then outputs shareable test results for comprehensive collaboration.

"With surges in smartphones and M2M devices, legacy test solutions are not able to support the complexity and time to market needs", says Spirent.

MANUFACTURER:
Spirent Communications

PRODUCT:
Elevate Test Framework

MORE INFORMATION:
www.spirent.com/elevate

Nokia Networks launches OSS software as a service

Nokia Networks has developed OSS as a Service in an effort to enable operators to shift capex to opex for lower and more predictable costs.

The firm is offering two OSS tools as a service: *Performance Manager* to help operators manage the performance

MANUFACTURER:
Nokia Networks

PRODUCT: OSS as a Service

MORE INFORMATION:
www.company.nokia.com

and capacity of 2G, 3G and LTE networks; and *Service Quality Manager* which aims to give them an accurate real-time view of service quality across mobile broadband and IT networks.

Nokia reckons OSS as a Service provides "greater business agility" with deployment in just a few weeks. It says overall operator costs can be 19 per cent lower compared to conventional business models, due to reduced installation, integration and operation costs.

The tools are hosted and supported by Nokia Networks' Global Delivery Centres. Users can choose to take the tools with maintenance and basic

services such as key quality indicator modelling for *Service Quality Manager* for example, or a more comprehensive package that also includes service management for a fully outsourced service operations centre.

Nokia says as operators look to take advantage of efficiencies that cloud-based networking can offer, hosting models can not only help reduce the disruption of upgrade cycles, but also schedule expenditures to better match the ramp-up in network requirements.

It adds service management can resolve service quality degradations 20 per cent faster than a NOC alone.

10GbE platform for virtualised services

Telco Systems has added *CloudMetro 100* to its *Open Metro Edge* range of solutions. According to the SDN and Carrier Ethernet specialist, the offering is the first 10GbE platform for virtualised IT services at the network edge.

CloudMetro 100 is said to offer a carrier-grade platform that enables service providers to transform their transport networks to full IT-enabled

MANUFACTURER:
Telco Systems

PRODUCT: CloudMetro 100

MORE INFORMATION:
www.telco.com

networks. According to Telco, this makes their networks "highly orchestrated, agile and virtualised".

The platform supports distributed network functions virtualisation (NFV), enabling operators to run the vendor's virtualised apps to provide multi-services in addition to connectivity.

To implement distributed NFV, *CloudMetro 100* combines a switch and integrated Intel x86 CPU as a hosting processor. This runs the *Telco Virtualisation Engine* infrastructure layer, enabling carrier-grade virtualisation support that simplifies NFV execution and management. The platform also utilises Intel's *VT-X* technology to optimise

virtualisation performance.

Telco says that accelerating demand for bandwidth is already pushing NFV toward the next modernisation wave that will satisfy bandwidth-hungry NFV applications over high-capacity Ethernet. It says the 10GbE-capable *CloudMetro 100* meets this approaching capacity challenge while supporting all of the latest transport technologies including Carrier Ethernet 2.0, IP/MPLS and OpenFlow.

In addition, it provides many OAM, resiliency and HQoS capabilities, as well as NETCONF and YANG for next-generation network management.



An all-in-one solution to critical threats

Adax has launched a new all-in-one solution to help operators protect subscribers and their data.

The packet-processing and network infrastructure specialist says its *SEG+* is a security gateway that will enable operators to have greater control of their networks. Adax says it will help

MANUFACTURER: Adax

PRODUCT: SEG+

MORE INFORMATION:
www.adax.com

them deal with a general culture of security threats which has opened up a whole new portal for intruders to infiltrate data packets on the core network.

It's claimed the gateway delivers performance, reliability and scalability, securing the connection between untrusted networks and the core in a complete carrier grade solution.

SEG+ has been designed to offer high-quality, robust security performance through hardware acceleration at low cost for high bandwidth and scalability.

Adax says the gateway uses the most current IPsec security features including MOBIKE, IKEv2 and TCP/IP firewall, and also offers support for IPv6/IPv4 and 64-bit platforms.

An onboard switch provides up to 16 x 1G or 4 x 10G interfaces to the network, and dual 10G or dual 40G connectivity to the core without the need for extra blades or modules.



ALSO LOOK OUT FOR

Keysight offers signal library for 5G research

Keysight Technologies says its EEs of 5G Baseband Exploration Library provides ready-to-use reference signal processing intellectual property for 5G technology research.

The Agilent subsidiary claims the opening of its library is an industry first, and that it will "dramatically" increase the productivity for system architects and baseband physical layer designers.

Available in late November, the library supports various 5G candidate waveforms for orthogonal and non-orthogonal multi-carrier comms systems, including advanced MIMO and beamforming signal processing.

It also provides transmitter and reference receiver modelling examples which, according to Keysight, can be easily re-designed to achieve optimal performance for comparison of each of the candidate standards proposals.

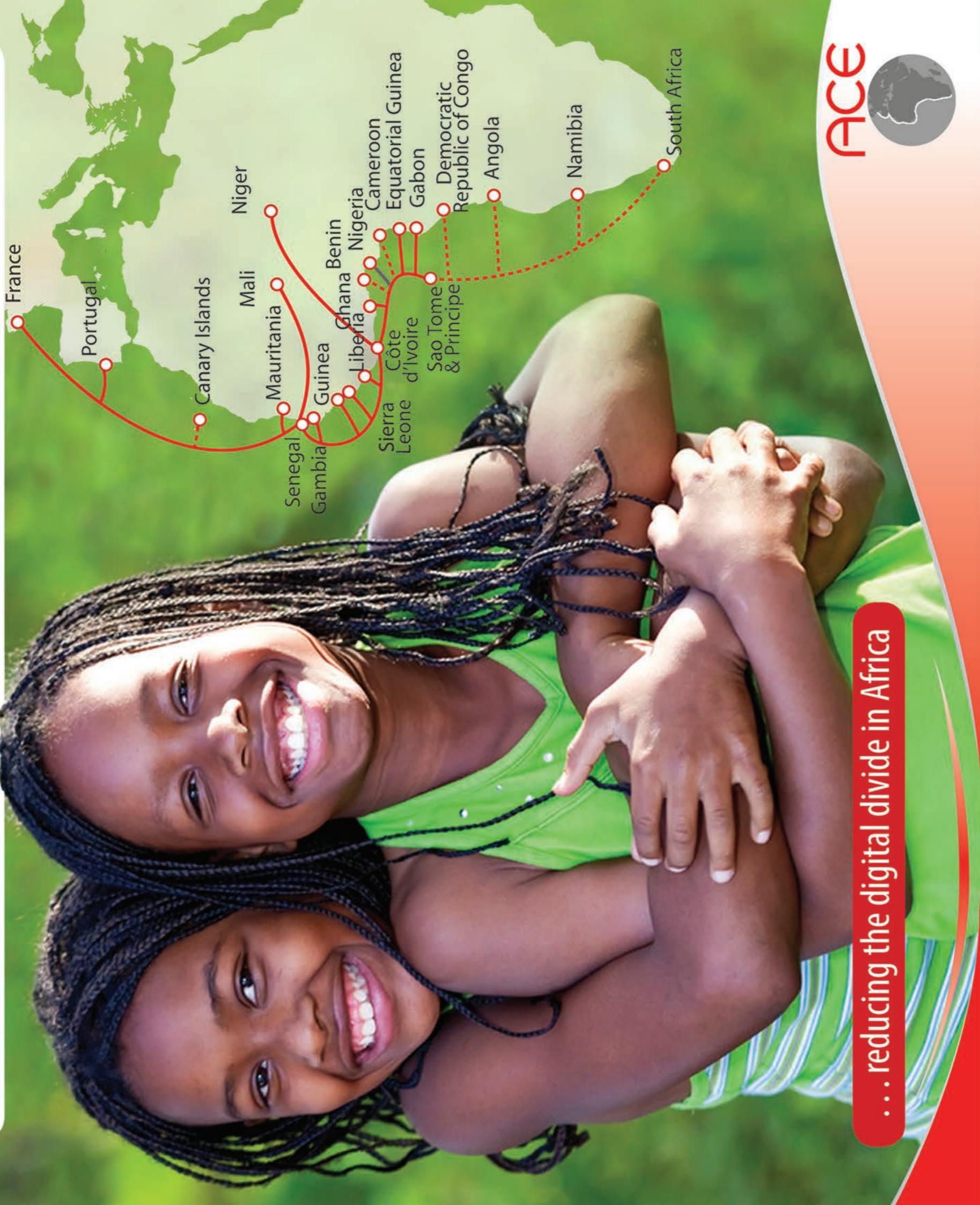
The new resource consists of source code, subsystems, models and infrastructure components. These can be used for the high quality, rapid development and verification of advanced digital modems using Keysight's *SystemVue* simulation platform.

The company says the source code provides a self-documenting independent reference library that allows system designers to quickly replace and modify blocks, and subsystems to meet the needs of their specific end product.

It claims *SystemVue*'s integrated simulation environment allows users to investigate, implement and verify their communications PHY signal processing designs with dynamic link-level scenarios.

Adding the new library to the platform provides a number of features. Keysight says these include: advanced DSP blocks for 5G candidate waveform technologies; end-to-end PHY layer transmit and receive simulation models; signalling schemes for MIMO channels including spatial multiplexing, space-time coding and multiple detection methods; and more.

The Africa Coast to Europe (ACE) Cable System



... reducing the digital divide in Africa



ACE Submarine Cable System: Reducing the Digital Divide in Africa

- ACE consortium is a mix of private companies, governments and NGOs
- 17 000 km long
- An overall investment of USD 700 million
- 40G technology proof (5.12 Tbps)
- ACE will give countries in Africa the opportunity to access the international broadband network at a lower cost
- This will increase high-speed internet in Africa, thus reducing the digital divide and triggering social and economic development
- In the end, 23 countries connected, among which :
 - ↑ 21 countries with landing points
 - ↑ 2 landlocked countries (Mali and Niger) via terrestrial link
 - ↑ 7 countries previously not served by a high bandwidth cable system (Eq. Guinea, Gambia, Guinea, Liberia, Mauritania, São Tome & Príncipe and Sierra Leone)
- Will provide seamless interconnection with existing high bandwidth cable systems connecting Europe, Asia, North and South America
- For those countries accessing submarine cable for the first time, ACE will broaden their opportunities in terms of connectivity, data-sharing and information sharing with the rest of the world
- Increasing network capacity allows the reduction of the final subscription cost and addresses the strong demand in internet and mobile networks in Africa

ACE Consortium Members



Out of orbit

Just a few years ago, Africa faced a satellite 'capacity crunch'. But now there are increasing concerns about oversupply – and yet new satellites keep coming. It seems as if demand and supply have fallen out of alignment, as RAHIEL NASIR discovers.

Since the beginning of the year there have been at least half a dozen satellites launched for Africa. While some are replacements for spacecraft that have either reached end of life or are being re-positioned, most are new. And among them is the second cluster of four satellites from O3b Networks that were finally launched on 10 July following a 10-month delay.

O3b eventually plans to have 12 satellites in space; the first four were launched by Arianespace in June 2013, and the second quartet was due to blast off in September 2013 but was postponed because of technical problems. O3b also expected to launch a third batch later in 2014, but Arianespace says this has now been scheduled for the first quarter of 2015.

Now that the company has eight spacecraft in orbit, its constellation can be deployed in its initial configuration and become fully operational.

Unlike standard GEO satellites that operate at around 36,000km away from the planet, O3b's fleet are in a medium Earth orbit around the equator. According to the company, this equatorial orbit will enable it to maintain permanent coverage using a relatively low number of satellites: "Indeed, at a distance of 8,062km, just six satellites are sufficient to achieve constant coverage," states the firm.



Africa now has even more satellite capacity thanks to O3b. After a 10-month delay, the company's second set of four satellites was finally launched in July which means its constellation is now operational.

So far so good – no one would deny that Africa needs all the capacity it can get to feed its ever increasing appetite for communication services. But behind the scenes, fears about possible satellite oversupply on the continent continue to grow.

Demand and supply imbalance

"Yes, we are seeing an oversupply of capacity," says Mohamed Youssif, COO of Asia Broadcast Satellite (ABS). "There are more providers and capacity than the need for satellite. Africa today is served by many satellite operators with beams focused on the continent, and many undersea fibre operators that have penetrated the region extensively."

How has this imbalance come about? Youssif says Africa is in the middle of a boom and bust cycle, similar to that experienced in Latin America 10 years ago, but with a few additional dynamics.

"Going back to the late 2000s, [Africa] was seeing strong demand and a drastic undersupply of capacity which resulted in climbing prices. A number of operators procured satellites that far exceeded the projected demand because of the perceived attractiveness (i.e. growth and pricing) of the market. At the same time, these operators went out to the

major customers and were able to secure their pre-commitment to volumes of capacity that exceeded their near-term needs – and in some cases, at pricing that was far above where the market is now."

Youssif believes that although underlying demand remains strong, it is growing into some of that pre-committed capacity and is therefore dampening effective market growth. "Once demand breaks free of these pre-commitments and takes up the oversupply delivered to the market over the past three years, we'll see the market return to an equilibrium (supply/demand) position. But this is unlikely to happen before the next two to three years."

Intelsat agrees. While its Q3/2013 results report blamed "oversupply from traditional satellite operators and fibre alternatives" as the reason for its slow growth on the continent, the company doesn't regard this as a long-term issue. Grant Marais, regional VP of Africa sales, says: "The near-term influx of capacity into Africa – from both satellite operators and fibre – has led to a near-term supply and demand imbalance. Over the long term, given the increasing demands for reliable broadband connectivity and content delivery, we do not believe that there will be an oversupply of capacity."

That's certainly a belief shared by newer players

planning to enter the African market such as the Russian Satellite Communications Company (RSCC). It's been providing satellite and broadcast services in its home markets since 1967 and is currently renewing its entire orbital fleet. Eight satellites are expected to go up during 2014-2015, and three of them will cover sub-Saharan Africa: *Express-AM6*, *Express-AM7* and *Express-AM8*.

Given its vast experience and stature, RSCC is clearly not going to come into a market that is facing long-term oversupply. "RSCC plans footprints of its future satellites over Africa very carefully ensuring they fit almost all potential applications and services," says Andrey Kirillovich, director of integration services and complex projects. "We have to take into account that different frequency bands are designed to support different applications and services. So [for example], an oversupply of pan-African wide C-band beams does not help to solve the issue of deploying a cost-effective cellular backhaul, banking or enterprise network."

Like ABS, he says the current market situation has arisen because satellite operators are only now launching the solutions they started developing around five years ago, in response to the capacity crunch that existed at the time. "Plus, the entry ticket to the satellite industry has decreased," he adds.

According to Kirillovich, oversupply only exists if you count the total amount of transponders pointed at the region. He believes that many satellite operators planned African coverage for their transponders but their total megahertz numbers became "overwhelmed" because they did not factor in the different capacities needed to service different regions and various applications.

"Is the coverage wide enough to provide connectivity for offshore oil rigs? Are the EIRP levels high enough to make a successful business case for a cellular backhaul project throughout the country or region? A 2dB difference can decrease the TCO for a Ku-band VSAT network greatly," he says.

Restoring equilibrium

While economic vicissitudes make it difficult to predict when capacity demand will exceed supply again, the good news is that many experts do not see the current situation getting any worse. "For sure, some of the satellite industry will pull back from the market. But at the same time, increased demand for 2G/3G services will continue to stimulate demand for conventional satellite capacity," says Youssif.

Intelsat also remains optimistic. Citing Ericsson's latest forecasts for huge mobile data traffic growth in sub-Saharan Africa over the next few years (*see News, May-Jun*), Marais says mobile operators will have to deploy "robust solutions" that provide the required speed and reliability for even the most remote areas.

"Satellite is uniquely positioned to meet these needs due to its ability to economically provide point-to-multipoint connectivity over vast geographic areas. [It] will ensure that network operators are able to meet the skyrocketing demand for data traffic, supporting high-quality customer experiences that will drive stronger bottom lines."

In the 2013 results report mentioned above, Intelsat said it was "closely monitoring" its business in the region. But Marais is quick to point out that the firm's commitment to Africa remains "undeterred" by any short-term challenges, and that it continues to view the continent as a long-term growth opportunity. But he goes on to warn that innovation will be key.

"Satellite providers will need to expand their product portfolios to include high-speed, high bandwidth capacity. Intelsat has responded to this by developing Intelsat *EpicNG*, a high performance, next-generation satellite platform that delivers global high throughput technology without sacrificing user control of service elements and hardware. The greater efficiency of *EpicNG* will change the market dynamics and creates a larger addressable market for our customers and ourselves."

One company that appears unperturbed by concerns about oversupply is O3b. "The African market continues to change rapidly with the growth of capacity from submarine and terrestrial fibre and new GEO satellites," says Omar Trujillo, VP of Africa and Latin America. "Some players might be concerned about this. However, we are delighted and thriving. With the fast growth in many African economies, the arrival of 3G/4G, cheaper handsets, and the continued growth of the oil and gas and mining industries on the continent, the demand for high quality, high-speed communications is growing at an incredible speed."

Like Intelsat, O3b is hoping innovative technology will prove to be the decisive factor in winning greater market share. Trujillo claims his company's unique capability to provide throughputs as high as 1.6Gbps per link, round trip latency of less than 150ms, and steerable beams to deliver capacity where required, will open up a wider market for O3b's services.

"In the traditional IP trunk market in Africa, initial trials with smaller data rates have led to immediate ramping to several hundred Mbps of service in short periods of time. The driver for this is a combination of a competitive price and enabling the MNOs to offer a reliable 3G service to their customers using our platform."



"A number of operators procured satellites that far exceeded the projected demand because of the perceived attractiveness of the market."

Trujillo says some customers were waiting for O3b's service to be in place before launching 3G in remote areas because of the difference it makes to their customers' experiences and the consequential benefit to their brands. "The low latency of our links effectively gives customers a fibre-like experience for web-based applications and, in some cases, applications that do not work over traditional GEO satellites, do work over O3b. Latency is one of the main causes for poor TCP performance. Our satellites deliver latency comparable to, or sometimes better than, long haul fibre."

Those are certainly bold claims. And we'll soon find out how true they are now that O3b is ready to start delivering on all the promises it has been making over the last seven years.

RSCC's Kirillovich also supports the view that getting the technology right is crucial given the current market circumstances. But he also advises satellite operators to put that within the context of a well thought out overall strategy. "Satellite operators should either offer unique footprints targeting certain regions, markets, industries and applications, or participate in the demand creation and go directly to the end user. Look for local partners and ensure lowest TCO for a satellite network – not by damping down price but by technical expertise, smart network design, and assisting the customer in choosing the most cost-effective solution for each case. This is how RSCC is working in Africa."

He adds that the most important question now is how local consumer and business purchasing power will grow: "If we look at the current development of the satcoms and broadcast market, we can see that there is a very strong and clear tendency towards personalisation of services. So the affordability of smartphones and HD TV sets for local communities is crucial. And here, the stability of Africa's economic development plays a much bigger role than the satellites launched by operators."

Broadcast rather than backhaul?

While companies such as Intelsat, O3b, etc, are aiming to capitalise on Africa's continuing mobile boom, many are also launching new satellites with broadcast applications firmly fixed in their sights.

For example, Asia Broadcast Satellite's *ABS-2* blasted off in February and features 89 active C-, Ku- and Ka-band transponders, including six dedicated Ku beams for DTH services. So will all that new satellite capacity coming into Africa get soaked up by broadcasters rather than 'traditional' applications such as cellular backhaul or remote connectivity?

"Across the bands it is true that network or telco services have traditionally been the driver," says Youssif. "But there is expected to be quite a bit of new demand for DTH and video distribution driven by deregulation/new licenses as well as localisation of content. Telecom services and media services should be roughly equal drivers of demand over time."

Intelsat agrees and expects to see demand from the more traditional satellite applications as well as continued demand for capacity in the areas of mobility and media. For instance, earlier this year it announced plans to add another satellite at 68°E

to allow MultiChoice to expand its digital television platform in Africa. Marais says: "Broadcast will remain a significant market going forward, as there is a general increase in the consumption of media. A recent research report focusing on sub-Saharan Africa by Digital TV states that (excluding the South African market which already has an extensive number of pay TV users) the number of satellite TV households will more than double between 2013 and 2020. Satellite is a practical means of delivering channels to rural areas that do not have access to terrestrial infrastructure."

"At the same time, in the broadband business the GSMA forecasts that the number of mobile users in sub-Saharan Africa will reach 346 million by 2017. Coupled with the increased use of data for accessing the internet and social media, this will certainly drive the demand for satellites to bring mobile connectivity to previously unconnected areas as well as serve as an essential backup to microwave and fibre."

But while broadcast definitely represents a demand driver for Africa, Youssif warns that it might be difficult to build up new DTH networks that do not leverage existing high-value content. As a result, he reckons video distribution to a smaller set of headends could provide growth opportunities.

RSCC's Kirillovich is likely to concur here when he says that the future is in the convergence of applications. "Linear TV viewing is decreasing. It is the video content that has the maximum value now, and it is not tied up with the time of viewing. So the main thing today is to deliver the content to the subscriber via IP. This means the main requirement is to provide the customer with broadband internet connectivity – such connectivity is a typical VSAT application. So broadcasting will merge with broadband access. We see this in many other markets and Africa will also follow the global trend."

From a technological perspective, the move towards IP networks facilitates the integration of satellite into terrestrial networks, according to Pier Lion Stoppato, principal technology and commun-

nications consultant with global management, engineering and development consultancy Mott MacDonald. He says the main challenge in rolling out networks in rural parts of Africa is to reduce both the capital and operating costs of base stations and the connectivity to link them to the network. "Fibre deployment is progressing, yet it will still take several years to reach some areas while others areas will never be reached. Meanwhile, the introduction of high throughput satellites using Ka-band would considerably reduce the cost per Mbps."

So if technology and cost trends open the opportunity for the provision of rural mobile through satellite, what can satellite operators do to foster adoption, asks Lion? In answer to his own question, he says: "Mobile operators use satellite to backhaul several base stations only if they have exhausted any other option. This is because satellite is perceived as expensive and requires specific expertise to integrate into their networks."

"Within the telecoms industry, satellite operators are small organisations that normally sell raw bandwidth. However from time to time they venture into providing end users services such as broadband with mixed results. A way for satellite operators to win customers among mobile operators is to be innovative and provide a managed service to extend current mobile networks, as mobile equipment vendors have been doing for several years."

Lion goes on to explain that in the procurement phase this involves undertaking a business analysis based on the mobile operators' traffic patterns. This will evaluate the viability of the investment as well as the provision of a complete turnkey solution that can be easily integrated into existing networks with dynamic allocation of the satellite resources.

"In this way, a pool of resources can be optimally used to serve several networks, billing mobile operators for the actual usage of the airtime. This arrangement is mutually beneficial for mobile and satellite operators. Mobile operators will be able to rapidly extend their networks in rural areas, reducing their commercial risk, gaining new customers and paying just for the

connectivity effectively used. Meanwhile, by selling airtime by the minute, satellite operators will be able to charge a price per megahertz that is higher than selling raw bandwidth."

The promise and potential of HTS

There has already been a great deal written about the pros and cons of fibre in Africa (*also see features: 'Connectivity with strings attached', May-Jun 2014; and 'Is satellite's future in Africa up in the air?' Jan-Feb 2014*). Kirillovich sums up the general view about fibre in the satellite industry: "There comes a point where cable cannot go [in Africa], so in order to move further and deeper into the continent you will need wireless solutions. And satellite is one of them. Satellite extends the reach of broadband technologies, guiding them into the most distant corners of the continent where terrestrial connectivity will never be a cost-effective solution."

In recent years, discussions within the satcoms industry have been dominated by the prospect of high throughput satellites. So is HTS just marketing hype? Or does it really represent game-changing, next-generation technology? ABS believes the latter – but only in certain circumstances.

"4G and IP trunking will stimulate the demand for high throughput satellite solutions (and 2G/3G will also benefit from HTS)," says Youssif. "But there are some applications – video distribution, for example – that are more efficiently served by conventional satellite designs. Satellite operators will profit from deploying high throughput systems intelligently designed for the data applications which drive demand – higher throughput at lower cost."

Intelsat is far more optimistic about the prospect of HTS. But then again it has to be – the company has arguably staked its future on the technology which underpins its *EpicNG* platform.

"Providing technology solutions and offerings designed to deliver carrier-grade, dedicated high-throughput capacity that will meet the continent's increasing bandwidth demands, is the most important factor for consideration," says Marais. "Ku-, C- and Ka-band will all play a role in future communications offerings. But the use of that spectrum will be determined by the end-user's application needs and the amount of throughput that can be delivered to each terminal in their network."

Marais says that *EpicNG* is spectrum agnostic and claims it's able to provide four to five times more capacity than traditional satellites, ranging between 25 to 60Gbps. He adds that at the same time, it reduces the service provider's TCO.

"We designed *EpicNG* as an overlay to our existing satellite fleet and our *IntelsatOne* terrestrial fibre network. This means, unlike with standalone systems, Intelsat's HTS capacity will work seamlessly with our network and provide customers additional options when it comes to satisfying their capacity requirements, regardless of the application."

Intelsat initially plans to launch two HTS satellites that will support its platform. *Intelsat 29e*, expected in 2015, will serve the Americas as well as mobility customers in the North Atlantic. It will be followed



ABS' mission control room. The company believes some applications such as video distribution are much better served by conventional satellite designs rather than high throughput systems.

a year later by *Intelsat 33e* which will provide capacity for Africa, Europe, the Middle East and Asia.

"These initial satellites will cover all of the populated continents and mobility routes, putting enhanced capacity where there is the greatest demand. We have since announced five further *EpicNG* satellites which will provide additional resilience and connectivity for the regions and applications where demand is highest," says Marais.

More capacity on the horizon

Satellite operators can overcome the oversupply issue. In the words of Youssif, the trick is for them to "hang in there for the next five years" as growth in Africa continues and recovers.

He adds: "More affordable smart devices will ensure more consumers have access to content and thus drive the need for capacity. That's why ABS still believes in the African market and our new satellite, *ABS-3A*, is planned for launch at the end of this year. It will have C- and Ku-band capacity over Africa and will be competitively priced, taking into account the current market situation."

ABS has already announced a significant deal for *ABS-3A*. In mid-July, Arabsat (Arab Satellite Communication Organisation) signed a multi-transponder deal covering the lifetime of the satellite. It will use Ku-band capacity to serve customers over North Africa and the Middle East.

Speaking about the ABS agreement, Khalid Balkheyour, the organisation's president and CEO, said: "Arabsat has put in the market a request for proposals for four new satellites at different orbital locations. And yet we continue to see rapid increase in customers' demand on telecommunication and broadcasting services across the region. This deal leverages our capabilities to harness more growth opportunities over the coming three years."

ABS-3A will be located at 3°W and provide expanded capacity connecting Africa, the Middle East, Europe and the Americas. It will be one of the world's first all-electric propulsion satellites and is currently being built by Boeing using its *702SP* platform. ABS says its new spacecraft will offer nearly 8kW of end of life payload power and up to a total of 48 C- and Ku-band transponders.

Meanwhile in June, UAE-based Yahsat (Al Yah Satellite Communications Company) unveiled plans to launch a third satellite in

2016, extending its commercial Ka-band coverage to an additional 17 countries and 600 million users.

Yahsat already offers satellite services across the region via *YIA* and *YIB*. *Al Yah 3* will be a high throughput satellite that will not only expand the company's coverage across Africa but also marks its debut in South America. The satellite aims to provide broadband and internet connectivity to unserved and underserved communities, consumers, enterprises and telecom operators.

More recently, Avanti Communications announced its intention to launch a fifth satellite, promising to offer complete Ka-band coverage over

sub-Saharan Africa (*see News, Sep-Oct*). Planned for launch in 2017, the company says *HYLAS 4* will deliver up to 28GHz of capacity in 66 beams positioned over Africa and Europe.

Africa continues to be seen as a hot market for satellite services and, as ABS' Youssif points out, there is a lot of economic growth that can be best served by the technology. "Over time, the balance will shift toward fibre and terrestrial microwave. But there will always be locations, communities and applications that are best served by satellite. African demand for satellite services will definitely continue to grow far into the future." ■

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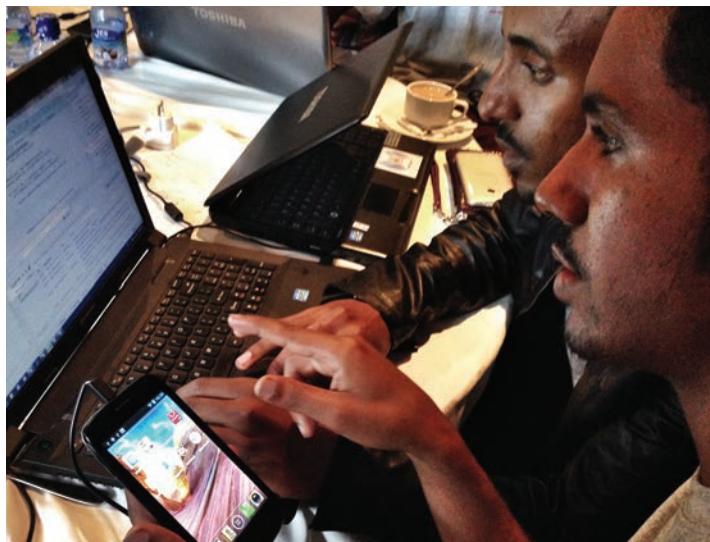
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Africa leads the mobile first world

Developers limber up for a hackathon in Addis Ababa. Most experts agree that local knowledge is the greatest strength for African app creators.

PICTURE COURTESY OF ERIK HERSMAN, USHAHIDI & IHUB, KENYA.

Pre-paid mobile subscriptions, mobile payments, emergency response databases and even cloud computing are just some global applications that owe their existence to African software developers. IAN GRANT finds out more.

In 2008, Kenya erupted in ethnic violence following the controversial re-election of president Mwai Kibaki. In response, a group of citizens developed a website to map incidents of violence and peace efforts throughout the country based on personal reports submitted via the internet and mobile phones. By the time the violence was over, the website had 45,000 users in Kenya, and Ushahidi (kiSwahili for 'testimony') was born.

In citing it as one of 2010's 50 most disruptive companies, *MIT Technology Review* applauded Ushahidi's web platform for making it easy for people anywhere to disseminate and collect information about a crisis: "Users can submit reports by text message, email, or web postings, and the software aggregates and organises the data into a map or timeline."

The company has also launched a product called *Swift River*. This uses algorithms to extract and organise accurate information from the flood of emails, text messages, blog posts and tweets that can seem overwhelming in the first days of a crisis.

Since 2008, Ushahidi's software has been used to coordinate everything from disaster relief following the earthquake that struck Haiti in January 2010, to snow clean-up in New York City during last winter.

Local answers solve world problems

Ushahidi is not the only example of the world taking up African software. In the 1970s an accounting programme developed by a South

African multinational became the skeleton for IBM's mainframe accounting package. More recently, Verisign (and later Symantec) bought Thawte, a digital certificate and internet security specialist, for USD575m from Mark Shuttleworth. That gave the South African the wherewithal to set up Canonical, the firm that underwrites the Ubuntu ecosystem.

By some measures Ubuntu is the world's most widely used Linux operating system, but because anyone can download it for free, accurate figures are hard to come by. According to thecloudmarket.com, 54 per cent of instances hosted by Amazon's *Elastic Compute Cloud (EC2)* platform in 2013 used Ubuntu, and Canonical claims the operating system has been downloaded more than 20 million times.

Amazon has also benefited from African software skills in another way. University of Cape Town graduates Chris Pinkham and Willem Van Biljon led the development of *Amazon EC2* before founding Benguela in California with USD20.75m in venture funding from Sequoia Capital, Accel Partners and VMware. Benguela located its development centre in Cape Town. Its software, *Director*, was designed to make it easier for service providers and enterprises to build, manage and deploy infrastructure as a service (IaaS) offerings similar to *Amazon EC2*. After Benguela changed *Director*'s name to *Nimbla* and joined the OpenStack foundation, Oracle bought the firm to acquire its multi-tenancy technology.

While the world's cloud computing community owes possibly everything to African coding skills, its global payments industry owes lots too, especially when it comes to dealing with unbanked

customers, low-value transactions, and offline situations. The most visible example here is *M-PESA*, the mobile payment system developed by Vodafone and Safaricom that kickstarted mobile banking in Africa. It is now spearheading Vodafone's efforts to bring banking to the unbanked in Eastern Europe and India.

Before joining Pinkham at Amazon, Van Biljon founded Cape Town-based Mosaic. It developed *Postilion*, the first high-end payment transaction switch for commodity hardware and *Windows*. The system is a fully integrated suite of products for financial institutions and payment processors for acquiring, routing and authorising payments, as well as managing the card issuance and merchant-acquiring side of the business. Mosaic became one of the top three payment processing software vendors in the world. It was sold in 2004 to S1 Corp and later acquired by ACI Worldwide for around USD560m in 2012. Van Biljon is now involved with takealot.com, his latest project that is fast becoming South Africa's top e-retailer.

Then there's Clickatell. Founded on a kitchen table in Cape Town to help local banks and consumers verify card-based transactions via SMS, it is now headquartered in California and owned by private equity companies. Clickatell provides bulk SMS facilities on more than 900 networks in 220 countries to firms such as Visa, Intel, Juniper Networks, Zipcar and Skype.

Many mobile markets in developing countries are dominated by subscribers who use a pre-paid system. This too has its roots in Africa. It was developed by

Siemens in the early 1990s in response to a requirement from former Vodacom CEO Alan Knott-Craig. He insisted that mobile telephony had to be cost effective for South African consumers who could not afford regular large amounts on contract. Geoff Hainebach, one of Siemens South Africa's MDs at the time, says: "It had to be easy to buy airtime and secure from fraud."

According to legend, Siemens Telecom SA developed the system against the wishes of its parent company. Only when it proved an enormous success in Africa did Siemens AG support and market it, eventually taking over 50 per cent of the world's pre-paid market.

Under the radar

These examples highlight and prove several important things about the continent's app development ecosystem: (1) it can develop world-class software; (2) necessity is the mother of invention; (3) in Africa, mobile is assumed; (4) a key motive is to develop effective, cheap or free solutions in tune with prevailing social condition; (5) all too often, the African connection is kept quiet.

AppAfrica is a for-profit social network. It is based in Kampala, Nairobi and Philadelphia from where it sets up and runs technology hubs that develop entrepreneurial ventures, many of them app developers. It also funds them and currently has a number of app-based start-ups in its portfolio (see *AppAfrica Fund portfolio table, below*).

"The world is always your customer base. Whether you chose to focus on a niche market initially or forever is a marketing decision," says AppAfrica founder Jon Gosier. "Apart from the same challenges that exist everywhere (like funding and getting users), African developers have the unique challenge of figuring out how to scale across the continent's countries which rarely share similar legal policies and regulations."

Another firm set up to remedy these shortcomings is Cape Venture Partners (CVP). Founded by Geoff Hainebach after he took early retirement from Siemens, CVP was an early supporter of Mosaic,

Benguela, Thawte and Clickatell, among others. He says it is still amazing how many South African IT entrepreneurs and companies have been globally successful. "I'm talking about really major successes, like Nimbula, CCI, Mosaic, Digital Outsource Services, all in the sub-USD1bn class. None of these have recognisable brands."

Digital Outsource Services (DOS) was formerly online betting platform ForwardSlash, and was making more than USD1bn per month in 2004. DOS now maintains a software team in Cape Town to support a global web marketing business.

Ironically, the rest of the world appears to have paid more attention to African apps than Africans themselves. But that is changing. Firms like Google, Microsoft, Orange, Vodafone and others are setting up institutions to train developers, expand the range and availability of local apps, and attract ideas through app competitions. Their motives are not necessarily purely altruistic.

Africans are also re-investing. Locals like Vinny Lingham who established Gyft, has co-founded the Silicon Cape Initiative, a non-profit organisation that aims to build a high-tech cluster in South Africa. Gyft, now owned by First Data Corp, allows people to use their mobile phones instead of plastic cards for low- to medium-value cash gifts. More than 200 retailers have taken it up, including Amazon, Sears, Nike and Victoria's Secret.

Facing up to Facebook

There are two sides to the African apps market: one is for homegrown solutions to local and perhaps global problems; the other is for imported apps like *Facebook*. Internet.Org has recently reported that *Facebook* now has 100 million monthly subscribers in Africa, estimated to be about half the total of the continent's internet users. Internet.org is set up to allow feature phone users to access the social media site for free. Facebook CEO Mark Zuckerberg's pitch to mobile operators is that the free social app will grow traffic, and Airtel and Orange already support it in various African countries.

But the deal is controversial and threatening to MNOs, according to John Strand of mobile consultancy Strand Consulting. "We know that *Facebook* gets all kinds of very intimate insights into user behaviour that it can then sell to brand owners, but what do the MNOs get out of it? Not only are OTT companies such as *Facebook* rendering mobile operators into dumb pipes, but they are making all smartphones into dumb terminals. If all users want is *Facebook*, then there are few ways that operators and phone manufacturers can differentiate with services or hardware."

Strand believes SMS revenue for operators are all but disappearing as *Facebook* enables instant messaging. He warns that voice will also be disintermediated as *Facebook* moves toward VoIP capabilities. "The *Facebook* SIM card is the next step. We can't think of one operator that would not want *Facebook* as an MVNO client."

Zuckerberg has high hopes for his company's USD19bn acquisition of *WhatsApp*, which has

now received all approvals. He told the *Wall Street Journal* that *WhatsApp* could gain two to three billion users once it has access to Facebook's 1.3 billion subscribers.

According to global mobile content trade association MEF, *WhatsApp* is already the most popular app among working professionals in Nigeria. A voice calling service on the application is now expected within weeks, posing a serious threat to mobile operators' already-shrinking voice revenues. Some MNOs are expected to block the service, perhaps harming their data revenues and antagonising their subscribers, as happened with *Skype* in its early days. But there seems to be little escape as the number of ways to disintermediate operators' voice services grows with *WhatsApp*, *Facebook*, *WeChat*, *Viber*, *Skype*, etc.

However, Zuckerberg is entering a market where feature phones, rather than smartphones, still dominate. There are also homegrown apps like the feature phone-based SMS/instant message system *Mxit* which is used by millions in Africa and the Philippines, and was launched last year in India. Like Facebook, *Mxit* helps firms to collect data in markets where very little is known explicitly about consumers. But where Facebook collects the data more or less surreptitiously, *Mxit* tends to be more explicit via the marketing programmes it sells.

What to build?

Nic Haralambous, Motribe's co-founder and former developer until the mobile social network platform was acquired by *Mxit*, says local knowledge is the Africans' great strength: "Our innovation occurs within these folds and therein lies our strength. Someone from outside is going to battle to solve local puzzles."

Now an independent internet consultant and, believe it or not, a socks entrepreneur (see www.nicsocks.com), Haralambous believes the propensity of African app developers to copy existing models is a weakness. "There's a place for the copy and build model to work. Zando (an online fashion shopping portal similar to the UK's ASOS) in South Africa worked well. But very often I've seen local entrepreneurs build apps that copy existing products that have failed (a few Uber clones have come and gone in South Africa)."

He also cautions against treating Africa as a homogeneous market: "Each country offers up an entirely new and unique market and consumer. This is a massive opportunity for any app or business that is trying to break into these countries. The markets that I visit fairly often, like Kenya, Ghana and Nigeria, crave new apps, new products and information online."

But don't think that consumers in Africa will accept shoddy goods. As Haralambous points out, a major threat is "bad execution". AppAfrica's Gosier agrees: "The mistake many developers make is assuming they don't have to focus on quality if they target a niche or local market. These days, everyone has similar expectations of tech: that it works, is easy to use and looks good."



Alcatel One Touch Idol ALPHA

– Beauty is all in the detail

The **Alcatel One Touch Idol ALPHA** is a phone that you won't mistake for any other – it features an outstanding design with a sleek body and it is beautifully framed by unique translucent strips on the top and bottom of the device. It's something for those who value singularity in style and at the same time don't want to spend a fortune on a device.

The Alcatel One Touch Idol ALPHA is an exquisite phone with diamond-cut edges, aluminium mainframe and sides. The strip on the top even lights up to show you pending or missed notifications and incoming calls, a way more impressive way to draw your attention to the phone than a single LED light.

The One Touch Idol ALPHA supports Android 4.4 and has a generous 13 mega-pixel camera and comes with a 4.7-inch IPS LCD display with a resolution of 720 x 1280 pixels translating into a pixel density of 312ppi and the colour temperature is excellent at 6750K making the One

Touch Idol ALPHA screen easy on the eye even during bright light and outdoor viewing. All this is powered by a 1.2 GHZ quad-core processor to ensure effortless navigation.

The One Touch Idol ALPHA has been put together with meticulous attention to detail, and the whole phone feels solid and well thought out and remains one of thinnest phones out there measuring a mere 7.5mm and it feels amazingly light in hand. The One Touch Idol ALPHA is sized to fit well in almost any pocket size.

Altogether, this is clearly a device for those who value a phone that is stylish and unlike any other. The One Touch Idol ALPHA comes in two colour options, one being slate and the other being Champagne. Both colour options give the phone a stylish and glamorous finish to round off what is destined to be a trend setter in 2014.

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That's likely to be tough when local talent is in short supply "I often see a lack of deep skills in the app building space," says Haralambous. "There's a shortage of development resources, design skills and business builders. These all take time to develop and cultivate. There is also a shortage of experienced technology business builders. We're still learning, failing, and trying again. Those who have made it fairly big are doing their level best to plough skills and resources back into Africa. But again, this takes time."

The mobile operators

According to the GSMA, African mobile operators are ambivalent towards local apps. While they're looking for revenue that might accrue from the use of the apps, and they see the social benefits of ones that address societal needs such as health, education, jobs and farming, they don't want the bother, says Julia Burchell, community manager for the GSMA Intelligence's Mobile for Development programme (*also see feature: VAS gets down to business, Mar-Apr.*)

Hainbach sees it differently, and says the cellcos are so big and flush with cash that they can afford to develop lots of applications. But he also points out that their success record has been quite poor. "This is because of their long decision chains which slow decisions in a very fast moving market. Small specialist companies, often start-ups, generally lead each segment."

Gosier also has a slightly different view: "The mobile operators need to realise that you don't win in the app space by being a monopoly, like you do in the connectivity world. Let a thousand flowers bloom and then harvest the best. In other words, enable the ecosystem, let it prosper, then buy products and teams."

He would like to see the MNOs develop a dialogue with the development community, and explains that AppAfrica encourages start-ups to target customers they understand and meet them where they are at. "If you can form a relationship with your customers in this way, they will effectively become your marketing through word of mouth."

Orange tacitly acknowledges that truth in the apps it offers which tend to be global and well-established like *Facebook*, *Wikipedia* and music streaming service *Deezer*. But its focus has been on developing small businesses rather than app developers as such. The operator now runs start-up incubator programmes in Senegal, Mauritius and Niger, and has also recently opened one of its 'Fab' innovation and start-up support centres in Côte d'Ivoire.

Orange prefers candidate firms to be in future-oriented sectors such as ICT, renewable energy and the environment. But the Côte d'Ivoire centre is specifically mobile-oriented. It will host a number of project developers such as *ICT4Dev.ci*. This is a platform for managing agricultural cooperatives composed of an information web portal (*Lôr Bouôr*), a distribution system for agricultural prices via mobile (*Djori Djori*), a vocal booth (*Djassi*), and a virtual market.

Another project is *Samartsell*, a point of sale

and remote management system that enables the automation of inventory, billing with mobile devices, and selling of airtime from cash registers "in order to solve the problems of currency".

Other projects that Orange Fab is supporting in Côte d'Ivoire include *Sycelim* which deals with asset management in insurance and healthcare programmes, and the *Sportif 225* web agency that creates, produces and sells sport-related online and mobile services.

Connection costs

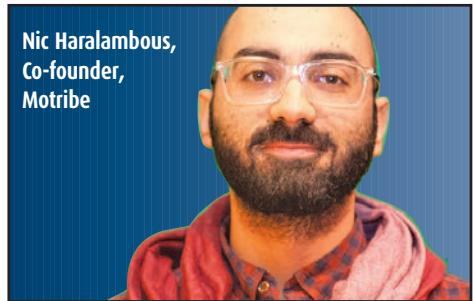
So far so good. However, the Alliance for Affordable Internet says the cost of getting and staying online is a barrier. A4AI, which is associated with the World Wide Web foundation, is one of the world's broadest technology sector coalitions with public, private and NGO bodies. It aims to get broadband prices under five per cent of the average monthly take-home pay in a country, and has signed agreements with the governments of Ghana, Mozambique and Nigeria to help reform policy and their regulatory environments to this end. "If we're serious about creating a thriving app market in Africa, we need to drive connectivity prices down – fast. What's the best route to do this? Surprisingly, the answer is policy," says A4AI executive director Sonia Jorge.

She points out that many African countries are working on policy reforms to tackle barriers to affordable access. For example, Nigeria is pursuing a policy of open access and shared infrastructure in order to drive innovation in business models that will increase access and demand for broadband. In Kenya, the development of a national backbone network and a technology- and service-neutral licensing framework resulted in decreased broadband prices and increased demand for mobile broadband services and applications like *M-PESA*.

A4AI recommends governments do more to encourage the development of a successful local app market. Actions include offering technical training, encouraging universities to become centres of excellence, providing subsidies to create incubators like Nigeria's Co-Creation Hub, and using government purchasing power to aggregate demand for apps and innovative services, and so create a market for relevant apps.

That's going to be hard while governments milk the communications sector with taxes (*also see GSMA renews calls to cut telecom taxes, Wireless Business, Sep-Oct*). Recently, Zimbabwe slapped a 25 per cent tax on handsets and a five per cent tax on top up charges. Jorge says: "[This] is quite unfortunate and completely contrary to good practices in the sector. In fact, such a decision will most likely impact adoption, and consequently growth in the sector."

Econet Wireless Zimbabwe has tried to shelter customers from the full brunt of government interference. In the company's 2014 annual report CEO Douglas Mboweni noted that Econet's strategic investment in Steward Bank had created "unique leverage" for the business to drive growth in broadband and overlay services. These include the *EcoCash* mobile payments business and



**Nic Haralambous,
Co-founder,
Motribe**

"Local knowledge is our greatest asset. Our innovation occurs within these folds and therein lies our strength."

providing credit to fund two-year contracts on smartphones. "*EcoCash* [which grew 307 per cent in a year] would not be where it is today had it not been for the decision to invest in the bank," said Mboweni. "The bank is also critical in driving smartphone penetration into the market through device financing schemes. The contribution of the bank is therefore quite pivotal to the long-term growth prospects of the business."

And he adds that it's working: "The introduction of various bundled data packages was hugely successful, with a high uptake of our *Facebook* and *WhatsApp* bundles. During the year, free browsing on major educational sites was also introduced, increasing brand loyalty."

As pernicious as governments can be, they can also be hugely effective in mobilising a range of actors to achieve social goals. One such scheme is the *Wazazi Nipendeni* (*Love me, parents*) SMS system. This supports Tanzanian mothers-to-be with high grade information about their pregnancy in the hope of cutting the annual infant mortality rate which is now at 48,000. The US and Tanzanian governments together with various local and US agencies put up an initial USD750,000 with Vodacom Tanzania to kickstart the project in 2012. Within three months it had 225,000 women as users and had sent 18 million text messages. Now with nearly 500,000 users, the scheme was launched formally in February this year.

The above shows Africans are more than capable of developing apps that solve local problems and, in passing, create world markets. As Hainbach says: "Software is becoming device-agnostic as it moves into the cloud, so it is very much a global business. The targeted market segment would determine the geography of the market. Generally though, with several exceptions, entrepreneurs target a problem, most of which are local, and some of these become regional or even global, such as *M-PESA*."

Only China has managed to create, in Alibaba, a tech company to rival Google and Facebook in value. Africa seems to have the talent and access to money. But who has the vision and the ambition to take it all the way? ■

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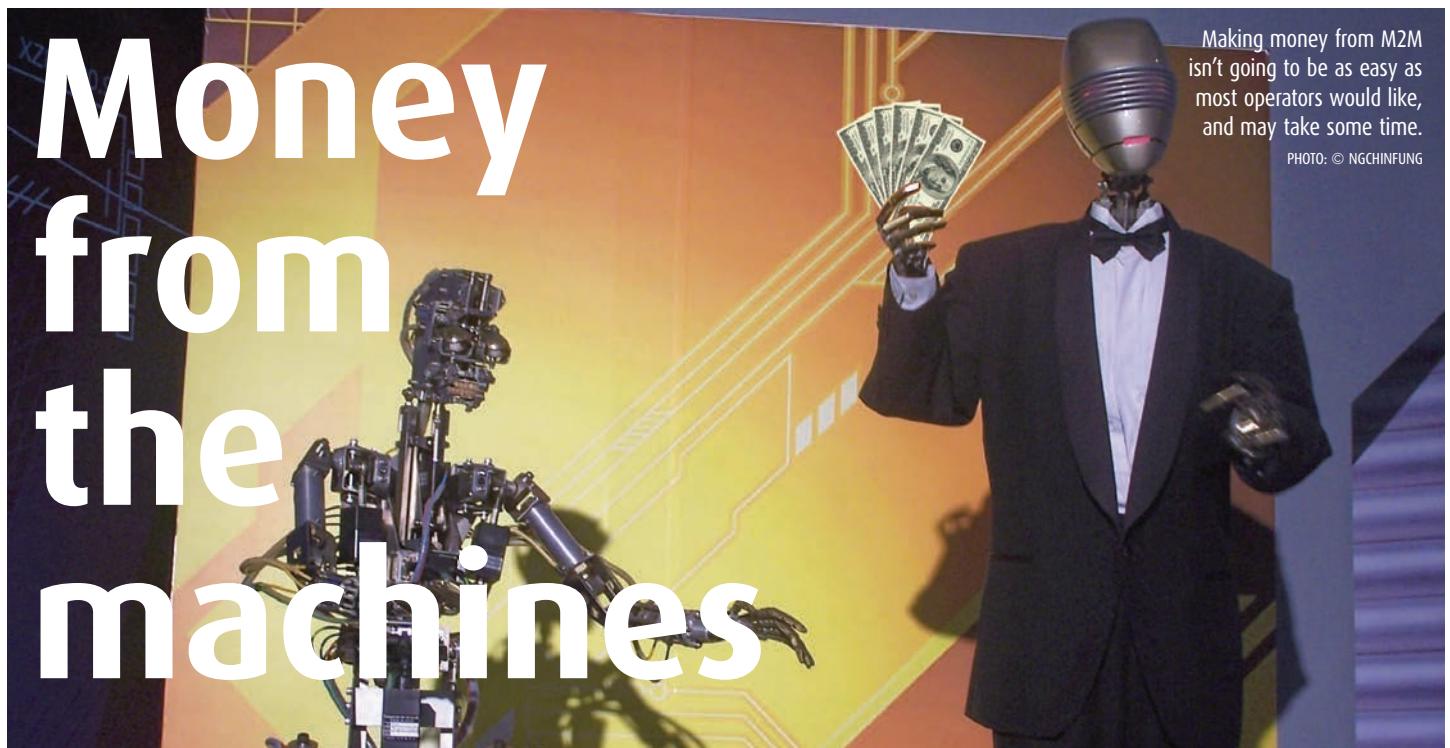
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A vertical strip on the right side of the page features a nighttime aerial photograph of a bridge spanning a body of water. The bridge is illuminated with green lights, and the surrounding area shows the lights of a city at night.

CORNING



Money from the machines

Making money from M2M isn't going to be as easy as most operators would like, and may take some time.

PHOTO: © NGCHINFUNG

It's three years since Ericsson predicted there will be more than 50 billion devices on the internet. But will wireless network operators make profits from them? IAN GRANT gets connected.

The ongoing mystery that surrounds the tragic disappearance of Malaysia Airlines flight MH370 is a warning of what can happen when machines stop talking to each other.

After the plane vanished in March, search and rescue teams were flying 10 hours a day scouring one of the remotest spots in the world for wreckage. Scores of ships have now spent months combing the Southern Indian Ocean for signs of the plane. Satellites have scanned sea and land, hoping to detect traces of the missing plane and its passengers. But all has been to no avail because the aircraft's communications systems had been switched off.

No doubt there will be many lessons to learn once the truth about flight MH370 emerges. But one thing is already clear: in today's ultra-networked world, if it's not online it's almost impossible to find – and the resulting cost in lives and wasted effort is high.

In its *Visual Networking Index* published in February, Cisco predicts that the number of connected devices will grow five-fold to make up 20 per cent of all networked devices (*see graph, opposite page*). It says: "M2M emerges as a key segment of growth for IPv6-capable devices, reaching nearly 600 million by 2018, a 46-fold increase during the forecast period. With its capability to vastly scale IP addresses and manage complex networks, IPv6 is critical in supporting the IoE [Internet of Everything] today and in the future."

Cisco forecasts that M2M traffic will enjoy a CAGR of 113 per cent over the next five years, reaching more than 907,000Tb per month by 2018. Combined traffic from M2M modules and wearable devices will rise from 139Mb per month per device in 2013 to almost 800. Africa and the Middle East will make up about 10 per cent of that traffic (*also see News, Jan-Feb*).

M2M hasn't yet really kicked off in a big way in Africa. There are some metering solutions in place in some parts of the continent, but it's all based on 2G, is low-cost, and often delayed, according to Joachim Dressler, M2M Alliance board member and VP EMEA sales for Sierra Wireless's M2M embedded solutions division.

"In some countries like Morocco and Nigeria, a few M2M solutions based on CDMA are up and running. Other M2M projects I am aware of are for monitoring pipelines and infrastructure, using gateways or industrial modems, but the number of projects is still limited. Some limited railway projects use GSM-R handsets and modems."

But he adds that Africa, and South Africa in particular, is a sleeping giant when it comes to M2M. "South Africa is actually one of the biggest markets worldwide for M2M-based asset tracking and security, and many solutions in use in sub-Saharan Africa are exports from South Africa. There's also a huge demand in Europe and the US for these

solutions – not only for the hardware, but for the entire package including service and expertise."

Dressler says the biggest African M2M market segment is transportation with a share of around 65 per cent, followed by security with 10 per cent. The South African market alone is expected to absorb more than 800,000 modems and modules per year, with Sierra Wireless claiming the lion's share. While most solutions are based on 2G, Dressler believes that 3G is gaining and that the use of 4G/LTE has been delayed by the slow transition to digital TV. Even a relatively slow economy has not slowed M2M growth in South Africa because of the productivity gains it delivers.

Industry structure

At Mobile World Congress (MWC) earlier this year, the GSMA reported that there are now 195 million SIMs in use in M2M applications that depend on cellular networks. This is double the number in 2010, and the current CAGR is 38 per cent. M2M SIMs now account for 2.8 per cent of all the modules on GSM networks. Some 428 mobile network operators, 40 per cent of the total, presently offer a dedicated M2M platform or product.

Of course, the GSMA ignores the estimated 6.5 billion handsets that connect automatically hundreds of times a day to ask if their mobile network has

messages for their owners. It also does not include the millions of robots, lathes, cutting tools, traffic lights, water pumps, weather buoys, earthquake sensors, and other devices which send data about their operating environment and status to other machines that control them or communicate with humans, sometimes to elicit a response.

Many of these system control and data acquisition (SCADA) environments are hard-wired in a closed-loop environment, especially when they are in buildings such as factories or offices, to control production lines or air conditioning and access.

Increasingly, these systems support remote access, often via the internet, Wi-Fi or other wireless technologies. For example, for some years now it has been possible for IT managers to use their *iPhones* or *Android* devices to spin up or decommission virtual machines in their hosted data centres in response to changing processing loads.

The GSMA also ignores a new emerging market – wearable communications. These use mostly short range radio communications like Bluetooth that take signals from sensors such as heart rate or blood sugar monitors and send them to mobile phones, wireless routers or even GPS satellites for onward transmission to websites such as *MapMyRun*, health clinics, or social networks.

The search for standards

Increasingly, M2M communications use wireless for four reasons: the use cases have changed; running ducts and cables is too expensive; wireless is quick and convenient; and more spectrum is available.

There are plenty of practical applications which the GSMA breaks down into: automotive; consumer; connected home; smart cities; healthcare; and smart factories. But there are few standards, especially to support overlaps which are common, particularly when geo-location becomes part of the picture. Here, any attempts to ‘join up’

overlapping systems are likely to intensify debates about privacy and surveillance, and who ‘owns’ the information that results from processing the data.

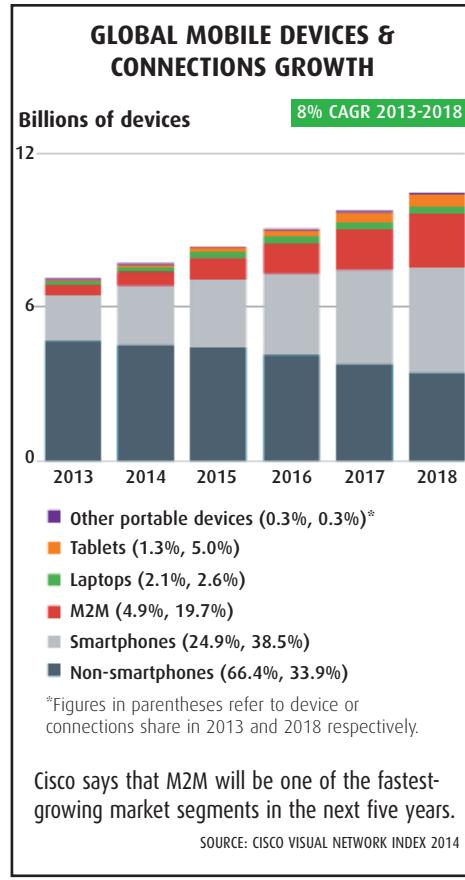
The GSMA’s market segmentation conveniently plays to the strengths of GSM technology. It largely ignores applications that require static, cheap, low power wide area (LPWA) networks.

This is the kind of network proposed by UK-based chipmaker Neul with its Weightless technology (*see Should M2M Become Weightless?, below*). In September, the company was snapped up by Huawei in a deal worth USD25m. The Chinese vendor now owns Neul’s entire assets including its intellectual property

In research commissioned earlier by Neul, M2M consultants Machina Research found a number of use cases for LPWA networks. These include, for instance: metering and monitoring water, gas and electricity supplies, especially where there is no GSM coverage; fire alarms are seldom activated but need to be tested regularly – this could be done remotely; most burglar alarms aggregate messages from sensors to report status via fixed-line or mobile network – having individual connected sensors means it would be harder for thieves to disable alarms and make installation easier and quicker.

Machina also found that 30 per cent of congestion in cities is caused by motorists looking for somewhere to park. Matching waiting cars to empty parking spaces would go a long way to minimising traffic congestion, and this would be easier to do with an LPWA network, it said.

In late October, the Weightless Special Interest Group (SIG) announced that NWave Technologies had joined the group to contribute to the rapid evolution of the recently announced Weightless-N specification. NWave specialises in connectivity technology for the IoT in unlicensed spectrum – specifically the industrial, scientific and medical (ISM) bands below 1GHz.



Weightless-N is said to be a unique open connectivity standard for IoT/M2M applications over these bands. It will utilise ultra narrow band technology to deliver what's claimed to be best in class connectivity solutions that retain all of the core advantages of Weightless technology. The SIG says these include: minimal power consumption that will enable terminal devices to operate in the field for up to ten years on a single AA battery; simple terminal hardware utilising low cost components that will enable modules to be

SHOULD M2M BECOME WEIGHTLESS?

The emergence of white space – the small bands of spectrum between frequencies licensed for TV (and other) broadcasts – as viable media for data communications opens up a new opportunity for network operators.

UK-based chipmaker Neul – now owned by Huawei – has put its Weightless technology, which exploits white space, into the public domain. Neul claims it offers a cheaper alternative to GSM and other mobile radio technologies for most M2M applications.

According to Neul CEO Stan Boland, Weightless is designed for low-power devices which need to last for many years on small batteries, and need to communicate small amounts of information over long distances. He adds that the Weightless Special Interest Group now has more than 1,400 members and the first trial network deployments are happening in 2014, with wide-scale commercial networks planned for 2015.

Boland is hoping Weightless will become the standard for low power wide area (LPWA) networking and is promoting its global adoption. While there are other standards, notably GSM, that can do the same thing, Boland argues that the GSM power requirements are too high, especially for remote applications where coverage may be spotty. And because most M2M applications are static or low mobility, he reckons GSM's mobile capability means systems are “over-engineered” and therefore too costly.

In terms of use cases in Africa, Boland says: “Weightless is ideal for agricultural monitoring, where small, low-cost, battery powered sensors can be placed over agricultural land to determine where irrigation and fertilisation is required. In mining, similar battery-powered sensors can be used to improve safety and efficiency. The expanding conurbations in Africa would benefit greatly from Weightless-enabled traffic and

parking sensors, as well as connected street lighting and waste disposal.”

But is this all just PR and marketing puff? Boland says Gartner currently has the Internet of Things (IoT) at the top of the ‘Hype Cycle’. “Wearable technologies will be a major early segment of the IoT, as will the expansion of traditional M2M applications, such as smart metering, intelligent buildings and smart cities.

“As technologies are standardised and the early markets mature, new technologies and lowering connectivity costs will open up new industry segments, such as consumer electronics and healthcare. Weightless has the potential to be a disruptive enabler for these segments, maintaining the IoT cycle for many years to come.”

Neul plans to offer Weightless development kits and modules from May 2014, with more elements such as commercial chipsets entering the ecosystem in 2015.

deployed for around USD2; and minimised network costs through "excellent" signal propagation characteristics. The latter offers an urban range of 5km to a low cost internally located antenna, and between 20-30km rural range to an external antenna.

Weightless SIG CEO Prof. William Webb said NWave's deep technical experience in LPWAN connectivity will make a significant contribution to the rapid development of Weightless-N: "Bringing proven capability from an existing technology provider to the SIG and merging it with the expertise already established within the group will accelerate the development of Weightless-N as the leading global open standard for machine connectivity over license exempt spectrum".

Version 1.0 of the Weightless-N specification is anticipated by the end of Q1 2015. Commercial deployments of Weightless-N compliant technology are expected shortly after.

There are other wireless technologies such as license-free Wi-Fi and Bluetooth v4.0 which offer low power and are now widely accepted, especially for 'wearable' applications and smartphones.

Experiments with Bluetooth for in-store applications are going commercial. One is couponing. This is the use of a radio beacon to deliver an electronic coupon or discount alert to a customer's mobile phone as he or she wanders the aisles, redeemable at the checkout via an

electronic payment service like *PayPal*. "Retail is going to be the first market to really pop using beacons, but that's just the beginning for Bluetooth Smart-powered beacons," says Bluetooth SIG CMO Suke Jawanda.

While Bluetooth is a short-range consumer technology, for more robust and slightly longer range applications, such as the connected home, ZigBee is finding a following. There is also a host of proprietary technologies such as Synapse's *SNAP* which is claimed to connect short-range and longer haul wireless networks together.

Synapse and Inmarsat are the latest firms to join the 1,000-member International M2M Council (IMC), a new industry body set up to promote M2M communications and present a unified front on issues such as privacy and security. IMC is led by AT&T, Digi International, Iridium, Kore Telematics, Oracle, Orbcomm, Telecom Italia, Telit, and Wyless.

Use cases

Geo-location and asset tracking are two of the most widely used applications of M2M communications. For decades, Inmarsat has tracked maritime vessels via satellite. However, since it went fully live in 1995, the US Department of Defense's GPS has become the most widely used system for location and time information among military and civilian

users. It now has competition from the Russian GLASNOSS and European Galileo systems, as well as newer ones run by India and China.

Early GSM geo-location systems used triangulation from base stations to pinpoint a position. The accuracy of such systems obviously improves with the density of base stations. But when location and other metrics are combined, things start to get really interesting.

GPS has created a field in which innovation has flourished. In-car navigation systems can now be factory-fitted to new vehicles, and wearable GPS systems are on the market as smart watches and dedicated electronic compasses.

Currently, only the largest and most-expensive equipment justifies the cost of data collection and administration. Downtime is costly for operators and those that rent out such items. For example, Rolls Royce uses an engine health management application to track the status of thousands of aircraft engines (such as those on flight MH370) operating worldwide, using on-board sensors and live satellite feeds. In another application, M2M satellite specialist Orbcomm recently acquired Euroscan which specialises in integrated turnkey systems to monitor and ensure temperature compliance throughout the supply chain for the food and pharmaceutical industries.

Terrestrial networks, typically cellular or static mesh wireless networks, can lower opex costs a lot.



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Machina believes that LPWA networks will allow predictive maintenance for lower-cost equipment and Neul would like mobile operators to take up Weightless, even if it's just to share radio masts. But MNOs, with expensive licenses to amortise, are likely to fight them all the way.

For example in March, Vodafone announced that as from 2015 all Audi cars for Europe will have a SIM that will use its network and global M2M service platform to provide customers with in-car navigation, voice communications and 'infotainment' services together with a WLAN hotspot. Vodafone also works on connected car apps with BMW and Hyundai.

This is just the beginning. At a time when parents are worrying about the safety of their children on their way to school, cloud-based M2M vendor ILA Egypt uses an RFID-GPRS integrated smart device installed in school buses. As students enter the bus, it logs their personalised RFID cards and sends automatic text messages to parents and the school administration. Another ILA application simply sends an SMS to the vehicle to disable the power system if it is hijacked.

Given that we are in the early days of ubiquitous M2M communications, there are many rival platforms that seek to integrate all the different elements into a 'white label' product that operators can re-badge as their own.

Billing things

The UN Broadband Commission reports that in the world's 200 biggest cities (of which Africa already has 21) the number of connected devices will increase from an average of 400 per sq km to more than 13,000 per sq km by 2016. Most current BSS and OSS platforms that are required to provision, monitor and bill customers will need, at the very least, an upgrade to cope with this expected increase.

Jasper Wireless works with 15 mobile group partners representing more than 100 national operators. Earlier this year, it launched a global SIM for M2M and IoT devices. The combined platform and SIM allows enterprises to manage and update mobile operator profiles and policies remotely. This includes letting them transfer connected devices from one operator to another to take advantage of local support, comply with international roaming restrictions, address cost constraints, among other things.

Having the flexibility of a system like Jasper's is one thing; making money from it is another. Billing

system vendor CSG International says that as M2M evolves, providers will have to co-exist with "opportunistic" application developers, service aggregators, and device manufacturers.

David Heaps, the firm's SVP for corporate strategy, says CSPs have an "unprecedented" opportunity to foster entire M2M ecosystems nourished by the information they can glean from their advanced networks and subscribers. "Many have recognised the consumerisation of M2M connectivity and have re-focused to take advantage of the digital world of consumers. By using their unique position in the market, CSPs can connect

disparate devices and networks, aggregate high volumes of transaction data, and enable interconnections across many applications."

But he goes on to warn that high data volumes, complex partner relationships, real-time requirements, and data security can challenge even more advanced legacy BSS/OSS systems. As a result, upgrading is now an absolute necessity in order to remain competitive. "Now is the time for CSPs to lay the groundwork for an Internet of Things ecosystem. Such a system, supported by M2M, will allow providers to deliver enhanced value and lead tomorrow's connected society." ■

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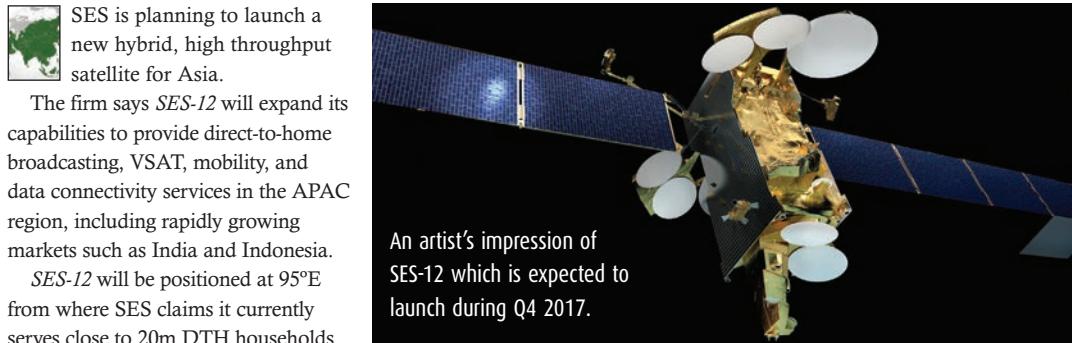
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SES to expand capabilities in Asia



An artist's impression of SES-12 which is expected to launch during Q4 2017.

SES is planning to launch a new hybrid, high throughput satellite for Asia. The firm says *SES-12* will expand its capabilities to provide direct-to-home broadcasting, VSAT, mobility, and data connectivity services in the APAC region, including rapidly growing markets such as India and Indonesia.

SES-12 will be positioned at 95°E from where SES claims it currently serves close to 20m DTH households in India and Indochina. It will replace the company's existing *NSS-6* and be colocated with *SES-8* when it's launched during Q4 2017.

The new satellite will be built by Airbus Defence and Space using the *Eurostar E3000* platform. It will be

equipped with an electric plasma propulsion system for orbit raising and on-orbit manoeuvres.

SES-12 is designed to operate for 15 years with a payload that includes 68 Ku- and eight Ka-band transponders. It will offer what SES describe as "two

distinct but complementary" missions. Firstly, there are 54 (36MHz equivalent) transponders for traditional wide beam coverage. SES says these will provide "state-of-the-art" replacement and growth capacity for its existing DTH, government and VSAT

customers, enabling a "seamless" transition from *NSS-6* to *SES-12*.

In addition, the design provides incremental growth capacity to support new DTH platforms and other services targeting the Asia-Pacific region, says the firm.

The second mission consists of 70 Ku- and 11 Ka-band spot beams. It's claimed these high throughput beams will deliver more than 14GHz for VSAT, enterprise, mobility and government applications.

This mission also includes a Digital Transparent Processor. This provides anti-jamming capabilities as well as increased payload flexibility in order to provide bespoke bandwidth solutions to customers.

Getrak and Wyless partner in Brazil's M2M market

 Getrak and M2M specialist Wyless have teamed up to offer a fully managed end-to-end solution for device, cloud and managed connectivity across all four mobile operators in Brazil.

Getrak provides cloud-based tracking solutions to the country's fleet and telematics markets.

Working with Wyless Brazil subsidiary Wyless TM Data, it aims to create a 'one-stop shop' for device, cloud and network services for its customers that together manage more than 250,000 vehicles.

Getrak CEO Frederico Menegatti says: "We want to generate more

value to the services we provide to our customers by helping them save costs significantly through traffic data management tools and multi-network capability such as the *Wyless Porthos* platform.

"Together with Wyless we will offer Getrak customers a full end-to-end solution for managed telematics services."

The two companies also plan to extend services to other markets and operators in South America.

According to IDC, telematics services account for nearly 40 per cent of Brazil's M2M market which is currently valued at USD2bn.

Vodafone's 3G initiative gains support in rural areas

 Vodafone UK has teamed up with the Countryside Alliance and the National Association of Local Councils (NALC) to encourage more communities to apply to its Rural Open Sure Signal programme.

Vodafone's programme is a community-led initiative. It aims to give 100 rural communities in poor mobile coverage locations across the UK the opportunity to receive 3G mobile access.

Based on 'open femto' technology, it uses units that are about the size of

a domestic broadband box that can be installed on any number of buildings across the community to ensure widespread mobile coverage.

During initial trials, the programme connected 12 rural communities across the UK, from the Shetland Islands off the coast of Scotland to the county of Devon in southwest England.

The Countryside Alliance is a major campaigning organisation on rural issues in the UK. Its head of policy Sarah Lee says: "The importance of good mobile phone and broadband coverage to those

who live and work in rural areas cannot be over emphasised.

"Mobile phones are an essential part of modern life, but many rural businesses and families cannot be sure that they will be able to access their network when they need it most."

The NALC represents 9,000 parish and town councils in England and 80,000 councillors. Its chairman, Ken Browse, adds: "We see fast broadband access as an essential need for the social and economic well-being of neighbourhoods in rural areas as well as urban areas."



A Vodafone Open Sure Signal unit installed on a barn in the northern England county of Cumbria.

Elara goes over-the-top with IDT Global calling app

 Elara Comunicaciones is launching an international calling app for customers in rural and remote villages in south-eastern Mexico. The company says the app will make international phone calls simpler and less expensive.

Elara's large scale satellite network, implemented through a government project in south-east Mexico, provides more than 3,000 towns with voice and data services. The network brings connectivity to citizens, schools, hospitals, and other government institutions in the region for the first time.

The CSP is deploying *VoiceLine* from wholesale voice and payment services provider IDT Global across its Wi-Fi network, enabling international

calling via the app on mobile devices. IDT says claims its white label *VoiceLine* application allows businesses to create new forms of revenue streams and gain new subscribers.

The app comes with both unlimited and pay-as-you-go calling plans, and works over both 3G and Wi-Fi networks.

The firm says this enables customers to use

their existing phone number and contacts. It also includes voicemail services and class 5 telephony features.

Jonathan Nierenberg, IDT's SVP of business development, says: "Our



Elara has VSATs installed and operating in private and public companies throughout Mexico.

application has a simple user interface which makes it easy for the customer to use. Because of its low rates, our app offers customers great value for their money."

Virtual DC secures Deutsche Post app

 Deutsche Post, said to be Europe's largest postal service, is relying on a virtual data centre (VDC) from Interoute for *SIMsme*, its new smartphone messenger app.

Interoute says its VDC in Berlin provides the cloud infrastructure for the app and guarantees smooth operation, regardless of how many people are using it. The company claims it was able to quickly scale up the computing infrastructure it provides to Deutsche Post, adding 30 times the initial computing power provisioned to meet the rising demand for *SIMsme*.

According to Interoute, *SIMsme* users are guaranteed complete control over their personal information. It says the ability to control which geographic VDC zone or zones are used to host a user's data ensures app data stay within German national borders.

SIMsme is secured with end-to-end encryption which has been tested and approved by TÜV IT. In addition, the app has a special feature that allows the user to setup and trigger the automatic self-destruction of confidential messages after a few seconds.

Marco Hauprich, Deutsche Post's SVP of mobile and new media, says:

"We provide the world's best data protection in accordance with strict German laws, without imposing additional expenses on the customer. *SIMsme* is free of charge and as we are not using this opportunity to fund the service through advertisements like other messenger app services, it's also free from advertisements."

Interoute claims to own and operate Europe's largest cloud services platform. This encompasses more than 67,000km of lit fibre, 12 data centres, 10 VDCs and 31 collocation centres, with connections to 195 additional third-party DCs across the continent.

ST Teleport and Eutelsat team-up

 ST Teleport and Eutelsat are combining their expertise to respond to high user demand for connectivity solutions for data and video services in Asia.

ST Teleport is a provider of full-service satellite, fibre and IP communications solutions, and operates a groundstation complex in Singapore (pictured below). Working with Eutelsat, it has completed the installation of a new gateway at the station that connects to *EUTELSAT 70B* which is positioned at 70.5°E.

The two firms say their new gateway is ready to serve data, maritime, media and entertainment clients across a high-performance footprint spanning south-east Asia. This includes Myanmar, Indonesia, the Philippines and Thailand, as well as Australia and south-east Asian waters.

It can also connect to *EUTELSAT 70B*'s African and European beams. Eutelsat claims its satellite has a "unique ability" to offer secure, single hop connectivity between key business hubs, such as Singapore and Frankfurt or Singapore and Nairobi.

For even broader reach across the APAC region, ST Teleport adds that it also has the option of tapping into *EUTELSAT 172A* orbiting at 172°E.



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 China Mobile and Nokia Networks have announced a framework deal for equipment and services worth USD970m. Under the terms of the deal signed in October, Nokia will provide 4G TD-LTE technology including EPC and GSM hardware, software and services to support the operator's 4G rollout in 2014 and 2015. Deliveries under the deal commenced in Q1 of this year. China Mobile aims to build the world's largest TD-LTE network by the end of 2014. More than 500,000 4G BSTs have already deployed.

Telstra and Tata connect

 Telstra reckons its multi-national customers will benefit from "superior connectivity" to and from India thanks to a new network-to-network interconnection (NNI) deal with Tata Communications. The NNI will utilise Tata's 116 PoPs, extending Telstra's reach to Tier 2 and Tier 3 Indian cities such as Jaipur, Surat and Trichy. Telstra says that by leveraging Tata's domestic infrastructure and global subsea fibre network, users will benefit from increased availability and reduced latency, giving them access to the business services they need.

Passenger Wi-Fi system

 Government-owned Queensland Rail will use an end-to-end Wi-Fi solution from Nomad Digital on 75 new trains. The six-car trains are being supplied by Bombardier to increase capacity on commuter services in the Australian state. Queensland Rail operates more than 7,000km of track connecting Brisbane and regional areas such as Cairns, Townsville, Rockhampton, Longreach and Charleville. Nomad claims the passenger Wi-Fi system will be the largest in the southern hemisphere.

TETRA network built for an earthquake zone

 The Venezuelan government has chosen Hytera Mobilfunk to supply and install a TETRA system for the police in Caracas.

Working with its local partners APD and Cobra, the Germany-based PMR specialist – which is a subsidiary of China's Hytera – says it will implement the latest generation TETRA technology.

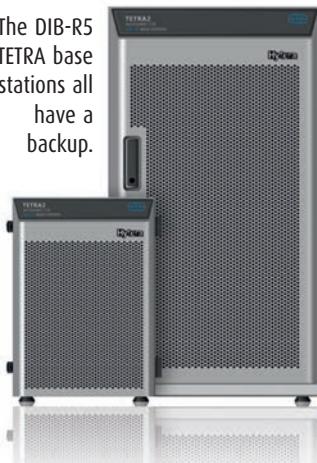
The deployment will feature *DIB-R5* TETRA base stations with support for TEDS (Tetra Enhanced Data Service), as well as the complete range of Hytera's TETRA product portfolio.

Around 4,000 radios will be supplied, including the vendor's *PT580H* handhelds and *MT680* mobile devices.

Hytera says because Caracas is in a region that is at very high risk from earthquakes, redundancies were integrated into the network in case any base station should fail.

The *DIB-R5*s all have a backup base station which is placed at a different location and can take over the radio coverage of the region if needed. The firm says that this ensures the system will be available at any time, even in the case of unforeseeable events.

The *DIB-R5* TETRA base stations all have a backup.



Hypermart deploys PowaTag mobile app to help maintain customer loyalty

 One of Indonesia's biggest retail groups plans to use mobile technology to support its customer loyalty programme.

PT Matahari Putra Prima Tbk (MPPA) operates the Foodmart, Boston Health and Beauty, and Hypermart stores.

It's claimed the latter has the widest network among supermarket operators, with 227 outlets in more than 60 cities across the region.

Working with mobile solutions provider PT Artomoro Prima Internasional, MPPA will implement the *PowaTag* app from Powa Technologies Group across 48 of its

102 Hypermart stores in Indonesia. The app will power coupon distribution and redemption for the *HiCard* customer loyalty programme which is said to have grown to more than three million members and represents over 60 per cent of Hypermart's sales.

PowaTag is a mobile commerce solution that enables shoppers to complete purchases anytime, anywhere, simply by scanning tags on anything from products to billboards.

It will be linked to the *HiCard* app which allows members to redeem loyalty points using their mobiles. They will also be able to acquire coupons and special offers by 'tagging'

in-store promotional material and ads, both in print and online.

Powa Technologies Group CEO Dan Wagner says: "No longer will [customers] have to seek out coupons and offers from newspapers, laboriously clipping and taking them into the store. All that's needed now is a quick capture of the *PowaTag* with their mobile, and numerous coupons are instantly available to them."

Future phases of the deployment include rollouts across Hypermart's entire store network, and additional functionality such as location-based notifications, virtual shopping, and special offers.

OBS to provide connectivity for Tesla cars

 Tesla Motors has chosen Orange Business Services (OBS) to provide wireless connectivity to its fleet of *Model S* vehicles in France.

Using Orange's mobile networks and SIM cards, Tesla will be able to offer its customers in France interactive navigation services, internet radio and web browsing. OBS says it will also be able to provide "seamless" remote diagnostics and over-the-air updates of M2M software.

Tesla Motors is a manufacturer of electric vehicles and power train components, and its goal is to accelerate the world's transition to



The interior of Tesla's Model S. OBS says today's car drivers and passengers want on-demand access to infotainment and navigation services.

sustainable transport. The firm was founded by South Africa born entrepreneur and inventor Elon

Musk, who is perhaps better known for establishing space transport services company SpaceX.

OBS believes electric and connected cars are becoming an increasingly accessible and desired means of transport in a market driven by both environmental and social trends. "Not only do drivers and passengers want safer and cleaner cars, but they want on-demand access to infotainment and navigation services," it says.

The company claims to be a "strong supporter" of sustainable transportation and launched its *Smart Cities and Territories* programme in 2011.

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