SEPTEMBER/OCTOBER 2015
Volume 20
Number 3

southern african wireless COMMUNICATIONS

For communications professionals in southern Africa

Because big is just best

- How smartphones are getting smarter
- Will LTE usher in a new age of VAS?
- BSS – not just another managed service

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to find out more about IDT**

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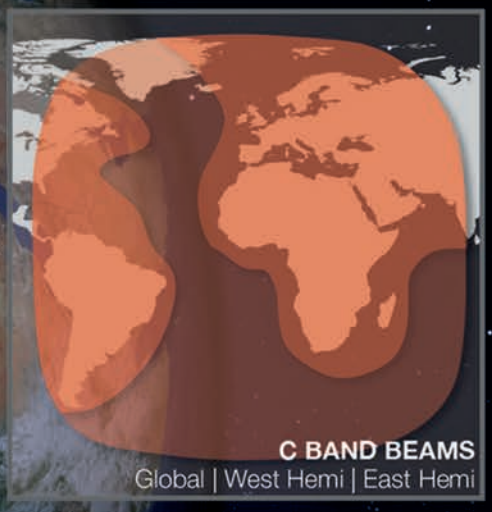

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Satellite rendition courtesy of the Boeing Company

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Eutelsat and Facebook to expand broadband in Africa using AMOS-6

Eutelsat Communications and Facebook have joined forces on a new initiative to connect more people in Africa to broadband. Under a multi-year agreement with Spacecom, the two companies will utilise the entire broadband payload on the future *AMOS-6* satellite. They will build a dedicated system comprising satellite capacity, gateways and terminals to accelerate data connectivity in sub-Saharan Africa.

Scheduled to start service in the second half of 2016, *AMOS-6*'s high throughput satellite architecture is expected to contribute to additional gains in cost efficiency.

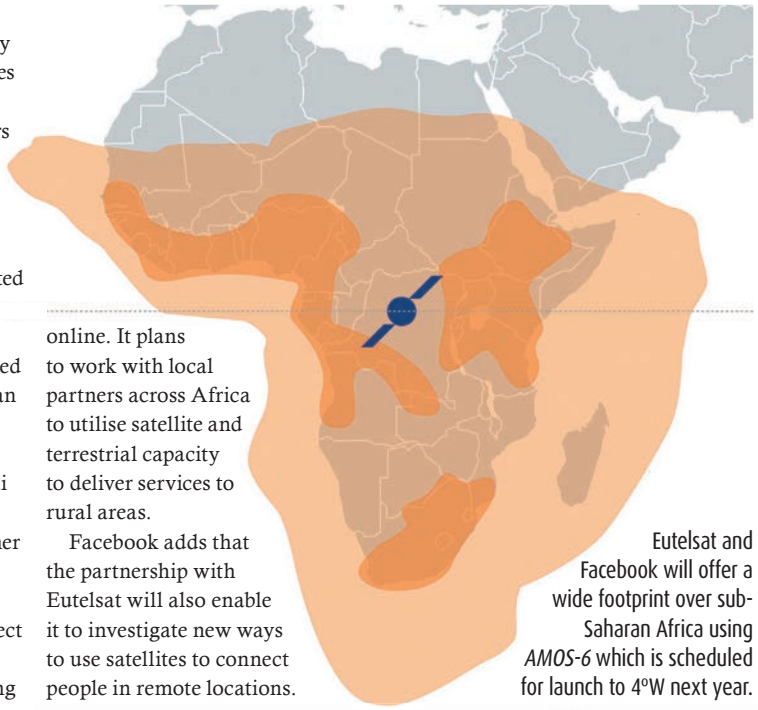
Spacecom says the satellite's Ka-band payload is configured with high gain spot beams covering large parts of West, East and Southern Africa, and is said to be optimised for community and direct-to-user internet access using affordable, off-the-shelf customer equipment.

Under their agreement, Eutelsat and Facebook will share the capacity and will each deploy internet services designed to relieve pent-up demand for connectivity from the many users in Africa beyond the range of fixed and mobile terrestrial networks.

Eutelsat says the capacity will enable it to step up its broadband activity in the region that was initiated using Ku-band satellites to serve professional users. The operator is establishing a new company based in London that will steer its African broadband vision and business. It will be led by Laurent Grimaldi, founder and former CEO of Tiscali International Network, and will focus on serving premium consumer and professional segments.

For Facebook, the initiative is a continuation of its *Internet.org* project that aims to address the barriers that are keeping people from getting online. It plans to work with local partners across Africa to utilise satellite and terrestrial capacity to deliver services to rural areas.

Facebook adds that the partnership with Eutelsat will also enable it to investigate new ways to use satellites to connect people in remote locations.



Eutelsat and Facebook will offer a wide footprint over sub-Saharan Africa using *AMOS-6* which is scheduled for launch to 4°W next year.

Cell C turns Wi-Fi hotspots into a 'base stations'

South African mobile operator Cell C has developed a revolutionary new Wi-Fi calling service. Following months of testing, the company launched *Wi-Fi Calling* to its entire customer base on 1 October.

According to the operator, the service effectively turns any Wi-Fi hotspot into a Cell C base station. It says this gives subscribers extended coverage, wherever they are, enabling them to make calls and send texts "seamlessly" over the Wi-Fi network.

Cell C is South Africa's third MNO. The company's CEO Jose Dos Santos says: "With thousands of Wi-Fi hotspots nationally and millions more internationally, this service will really provide customers with an affordable mobile service anywhere in the world."

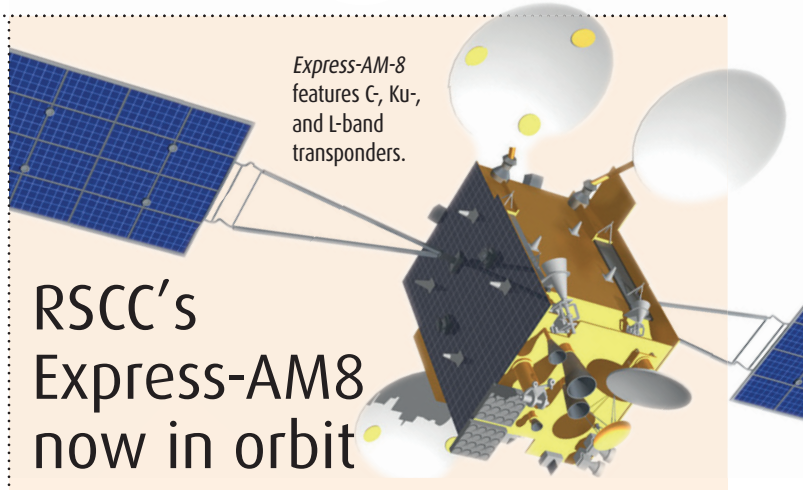
Cell C CEO Jose Dos Santos says *Wi-Fi Calling* will provide an affordable mobile service anywhere in the world.

The operator adds that when using the service outside South Africa, customers will be able to use any Wi-Fi hotspot to make any call to any network at their local Cell C tariff plan rates. In addition, it will not cost anything to receive a call.

Cell C developed *Wi-Fi Calling* with global vendors such as Atos, Huawei and Lydrasoft who worked closely with equipment vendors. It launched the new service with the recently released *AG Style* handset (*see p21*), and other devices from AG, Huawei, Samsung and ZTE are planned.

The firm says it expects to see a "dramatic" increase in the number of supported devices given that its platform allows for handset providers to rollout their Wi-Fi offering in a matter of weeks. "We're already in talks with the other handset manufacturers about *Wi-Fi Calling* and the release date of this functionality on their devices," says Dos Santos.

Cell C pumps billions into network upgrade – Wireless Business, p15



Express-AM8 features C-, Ku-, and L-band transponders.

RSCC's Express-AM8 now in orbit

The Russian Satellite Communications Company (RSCC) has launched another satellite aimed at Africa.

Following lift-off from the Baikonur Cosmodrome on 14 September, a *Proton-M/Block DM-03* rocket successfully placed *Express-AM8* into a geostationary orbit.

The spacecraft is now under the control of RSCC specialists who are checking its functionality, testing all systems, and deploying onboard equipment before commissioning it for operations.

Express-AM8 will be stationed in geostationary orbit at 14°W to provide what RSCC describes as "state-of-the-art" communications and broadcasting services to users in European Russia, Europe, Africa, the Middle East and Latin America. The satellite is equipped with 24 C-, 16 Ku-, and two L- band transponders, and has been designed with an operational life of 15 years.

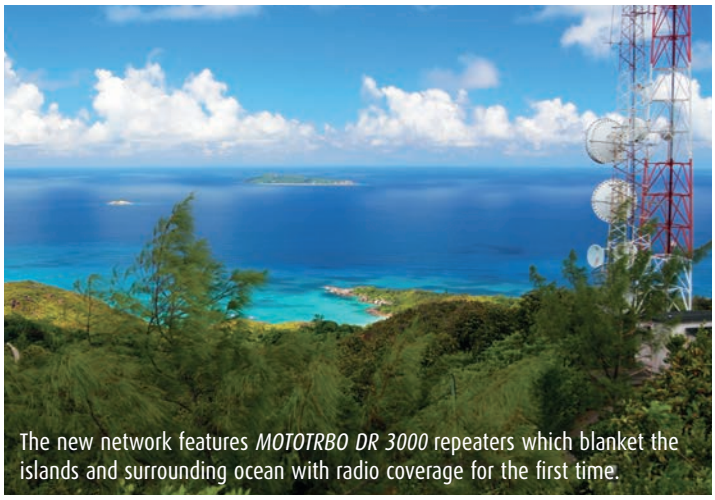
RSCC CEO Yuri Prokhorov says: "*Express-AM8* paves the way for RSCC to the regional market of Latin America, and provides additional opportunities to develop business in Africa, Europe and the Middle East."

The operator's first satellite for Africa was *Express-AM6* which was launched in October 2014.

Seychelles Police call in Motorola

The Seychelles Police will use a Motorola Solutions' *MOTOTRBO* system for critical communications and improved dispatch of officers across land and sea for rapid response to criminal activities.

The Indian Ocean region that is home to the 115 islands in the Seychelles faces the constant threat of pirates hijacking local fishing boats, and organised crime gangs using the many isolated beaches to traffic illegal drugs. But According to Motorola, patrolling the area has been an ongoing challenge for the police where mountainous island terrain severely disrupts analogue radio and cellular coverage.



The new network features *MOTOTRBO DR 3000* repeaters which blanket the islands and surrounding ocean with radio coverage for the first time.

Designed and installed by UK-based Communication Specialists (Comm Spec), the *MOTOTRBO* radio system now connects more than 800 police officers with dispatch at headquarters in Victoria, the Seychelles' capital. Comm Spec extended the reach of the network using *DR 3000* repeaters which provide more than 30,000km^2 of radio coverage, blanketing the islands and surrounding ocean for the first time.

Officers have been equipped with *DP3601* portable two-way radios which Motorola says offer reliable integrated data communications and enhanced voice capability, while police vehicles have been installed with *DM4401* mobiles. Comm-Spec also introduced the VHF version of the *MOTOTRBO DP4801* to the force's radio fleet. This integrates GPS and is also claimed to deliver best-in-class audio. According to Motorola, all the radios deliver advanced location-based services including geo-fencing, enabling the control centre to track, monitor and – should an officer's status unexpectedly change – respond quickly throughout the islands.

Using the *TRBOnet Communication System*, an application developed specifically for public safety dispatch centres, the Seychelles Police are also able to link multiple agencies or departments at the touch of a button, making response during emergency situations quick and effective.

Motorola says the investment in the digital system is helping to reduce unplanned costs for the police. Previously, when analogue radios failed to connect, officers would rely on their personal mobiles to call headquarters, despite often poor cellular coverage and the high costs incurred.

Intelsat to support broadband services in Mozambique

Empresa Nacional de Telecomunicações de Moçambique (ENTM) will deliver broadband connectivity to enterprises and provide cellular backhaul to support residents in remote areas of Mozambique with the help of Intelsat.

Under a multi-year agreement, ENTM will use C- band capacity on *Intelsat 902* at 62.0°E to provide dual band connectivity for local mobile operators as well as for its own transport network.

According to Intelsat, for a country such as Mozambique that is susceptible to heavy rainfall and flooding, C-band spectrum is particularly useful given its known performance and durability in adverse weather conditions.

"Our customers expect and deserve fast, reliable and continuous broadband connectivity regardless of location or weather," said ENTM CEO Zainadin Dalsuco. "By partnering with Intelsat, we can quickly scale our existing network to meet the increasing broadband demands in the remote areas of Mozambique and ensure that our network infrastructure is robust enough to retain and, as needed, quickly restore service to local cellular operators and their customers throughout the country."

CEO Zainadin Dalsuco says Intelsat will help ENTM to quickly scale its network.

Intelsat adds that with mobile penetration rates in the country at 69 per cent, its partnership with ENTM will enable the operator to provide a reliable and always-on broadband service that will enhance customer satisfaction.

ENTM is a subsidiary of TDM which was created in 1981 as a result of a split from the national postal services. In 1997, the operator introduced Mozambique's first GSM service with the launch of Moçambique Celular (MCel). Today, TDM provides a variety of services throughout the country including voice, ISDN, data, retail internet based on CDMA and ADSL, cable TV, as well wholesale internet and transit transmission to the region.

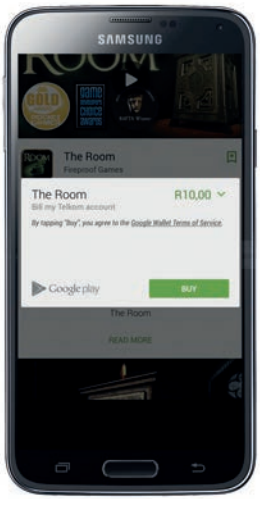
Telkom in African first with carrier billing for app store

In what's claimed to be a first for the continent, South Africa's Telkom has launched a carrier billing service for the *Google Play* app store. The operator is using the *Bango Payment Platform* to give its *Android* customers access to a universal payment method.

UK-based Bango says *Android* currently dominates Africa's smart-phone market *(also see feature, pp18-22)*. It says Telkom subscribers using devices with Google's OS can now purchase their apps and other digital content using one-click carrier billing. The costs are charged to their bills or deducted from airtime, without the need for a credit card or to register personal details. Bango says this gives customers with limited or no access to other payment methods the ability to make purchases in the *Play* store.

The company believes carrier billing is emerging as a "vital enabler" of mobile commerce globally. Bango claims that where the service is introduced to fast-growing emerging markets such as Africa, it routinely sees increases in digital content sales of 300 to 400 per cent. It adds that Amazon, BlackBerry, Microsoft, Mozilla and Samsung all use the *Bango Payment Platform* to provide carrier billing for their customers.

"Bango has long understood that Africa is a key growth market for our frictionless payment technology," says Bango CEO Ray Anderson.



"Launching the best payment experience, for the world's most popular app store and in Africa's largest market, is a proud milestone for Bango and our partner Telkom SA."

Subscribers can now purchase digital content from *Google Play* using one-click carrier billing.

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Paratus Telecom upgrades metro network in Namibia

Paratus Telecom is using Infinera's *TM-Series* WDM system for its metro network in Windhoek. It's claimed the upgrade provides the operator with an optimised 10Gbps transport solution upgradeable to 100Gbps.

With its acquisition of local voice company VOX in 2014 *(see Wireless Business, Jan-Feb 2015)*, Paratus claims it has experienced "immense growth" in converged data traffic requiring next-generation network technology built on an advanced fibre-optic infrastructure.

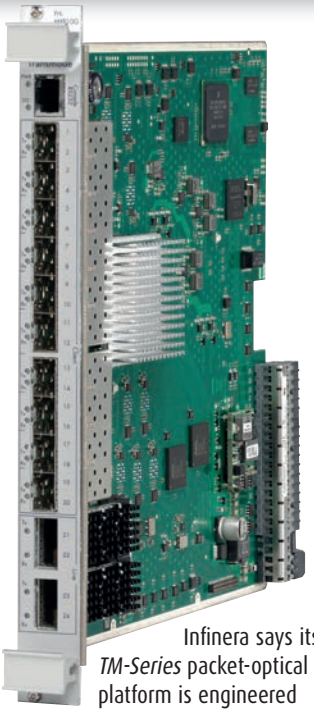
"The *TM-Series* packet-optical network solution effectively addresses our bandwidth requirements to keep up with the rapid growth in converged network services," says Samantha Geyser, the operator's executive of planning. "Built with the operator in mind, the [platform] increases bandwidth, flexibility and functionality of our new metro WDM transport network. This allows Paratus to take advantage of cost-efficient Ethernet services, ultra-low latency and low power consumption."

Infinera worked with its regional partner, Pretoria-based Adcomtec, on the network upgrade, collaborating to supply the network solution and ongoing maintenance services.

According to Infinera, the *TM-Series* packet-optical platform provides multi-service capabilities including MEF 2.0 certified Ethernet services, MPLS-Transport Profile and optical transport network (OTN) aggregation engineered for enterprise services, mobile fronthaul and metro aggregation applications.

Paratus Telecom was originally founded as Internet Technologies Namibia in 2005 and was the country's first, privately owned and 100 per cent Namibian telco. Its network now extends nationwide with additional international PoPs in Johannesburg, Portugal and the UK.

In 2012, the operator gained a Class Comprehensive Telecommunications Service License, following further expansion of its 4G, national and international networks.



Infinera says its *TM-Series* packet-optical platform is engineered for enterprise services, mobile fronthaul and metro aggregation applications.

Gilat offers next-gen HTS services ahead of Intelsat launch

Gilat Satcom says it can provide customers in Africa with a high throughput satellite (HTS) service today, one year ahead of Intelsat's launch of its *EpicNG* platform.

EpicNG is Intelsat's much-vaunted high-performance platform for HTS and will be available in Africa in 2016 following the launch of *IS-33e* and *IS-36*.

Gilat Satcoms is now offering customers *Epic* contracts which provide HTS cost per MB on existing satellites and an automatic upgrade to Intelsat's service once it goes live. The company says this "innovative" approach to HTS will mean that its customers will be amongst the first to benefit from the new satellites.

The firm adds that users will not need to redirect antennas or replace equipment to access the superfast speeds that the platform promises.

Eran Yoran, Gilat Satcom's director of marketing and business development, says: "We are always saying that the future is coming – get connected. Today is about helping our customers to take a giant step forward by providing them with the new Intelsat *Epic* HTS service, about a year before the first [satellite]."

Gilat Satcom's Eran Yoran reckons his company is helping customers take a "giant step forward".

Gilat Satcoms claims to be one of Africa's fast-growing providers of broadband over both satellite and fibre. It operates three international teleports in Europe and the Middle East, fourteen hubs/PoPs in Africa, two PoPs in Europe, and one in the US. In addition, the company is a shareholder in WACS as well as in WIOCC which operates EASSy.

PCCW Global unveils new South African VoD service

PCCW Global has launched new internet-based video on demand (VoD) entertainment service for South Africa.

ONTAPtv.com offers a variety of international TV series, movies, local dramas and lifestyle programmes, and also enables subscribers to rent Hollywood blockbusters. Content can be streamed to PCs and Macs, using what PCCW claims is "advanced" adaptive bit rate technology. Content can also be streamed or downloaded to *Android-* or *iOS-based* devices.

Lindsay Servian, head of the new service, says: "Customers are able to access *ONTAPtv.com* through any data provider. However, we have negotiated highly cost-effective data bundles for exclusive *ONTAPtv.com* use in AlwaysOn *Super Wi-Fi* locations nationwide including shopping malls, hotels, hospitals and transport locations."

The company says *ONTAPtv.com* will enable users to stream world-class content, and download it for offline viewing across a range of different platforms.

ONTAPtv.com's packages start from ZAR39 (USD3) per month, or customers can subscribe to blockbuster movies from ZAR15 (USD1.14) for a 48-hour rental.

PCCW Global is the international operating division of Hong Kong telco HKT. It first invested in South Africa in 2012 through the acquisition of satellite services provider Gateway, and claims the launch of *ONTAPtv.com* demonstrate its further commitment to the country.

"This is a major VoD innovation in South Africa, and we believe it will greatly expand the number of customers who will now be able to enjoy the service, and at a highly affordable price," says Servian.

Broadlink brings connectivity to 2,500 learners

Teachers are shown 3P Learning's *Mathletics* online learning platform at the Southview High School.

Two South African schools have been given wireless connectivity services for the next 18 months thanks to network integrator Broadlink.

While the Mpheti Mahlatsi Secondary School in Orange Farm and Southview High School in Lenasia had access to computers and some tablets, a lack of sufficient funding remained a stumbling block in providing a stable internet connection in order to make use of online education programmes.

The schools now have an uncapped 5Mbps wireless DSL service worth around ZAR198,000 (USD14,878) as part of a joint partnership with 3P Learning, an Australia-based international organisation that facilitates online learning platforms specialising in maths and literacy.

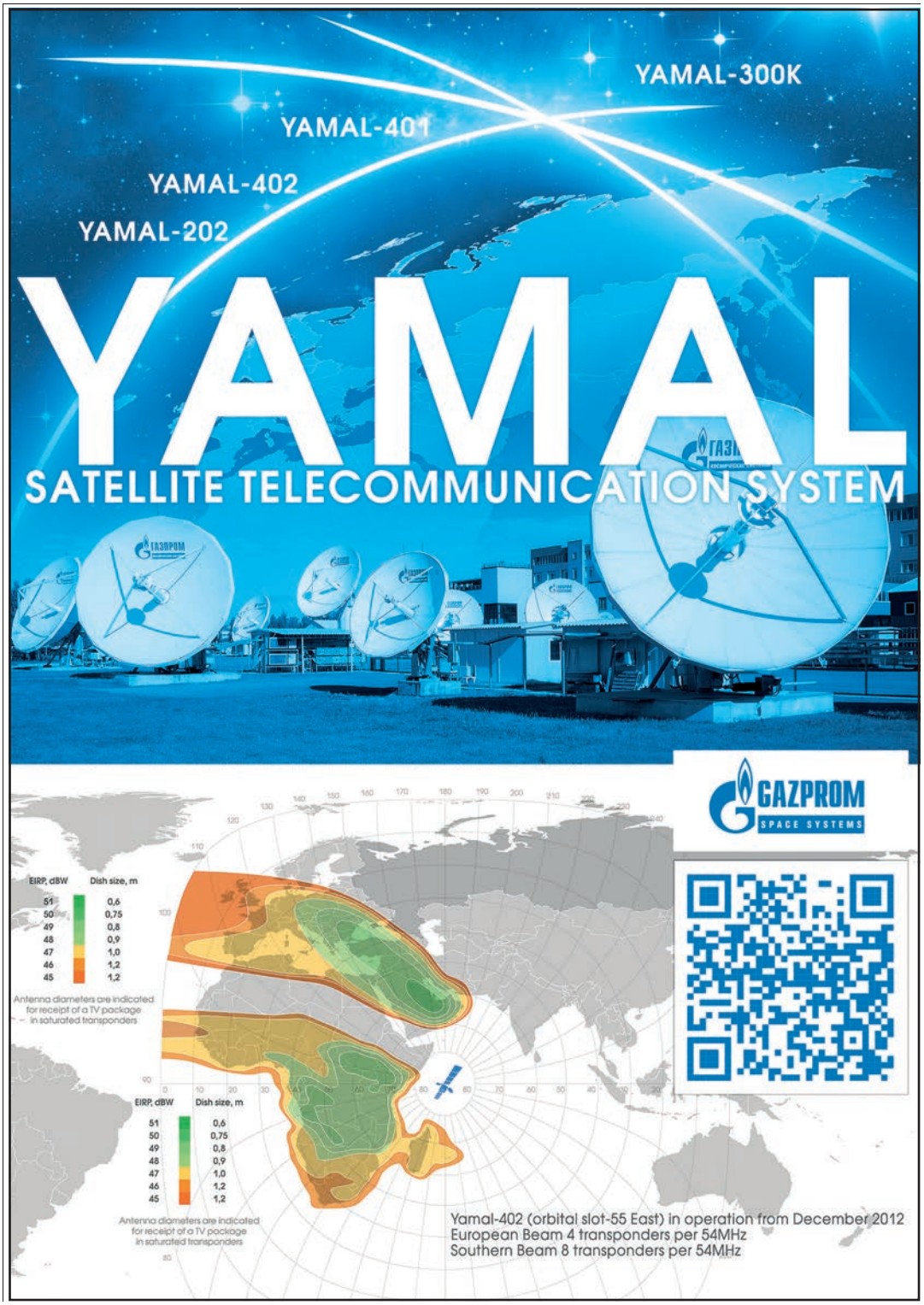
Broadlink also donated ZAR100,000 towards the license fees for *Mathletics*, 3P Learning's maths content programme.

Nicole van Niekerk, Broadlink's marketing head, says: "Without the internet it was difficult to run online education programmes such as these, which are meant to help bridge the gap between the requirements for more connected and paperless education and the materials that can make that a reality."

Broadlink adds that it fast-tracked the installations at both schools in less than a month so that 3P Learning could begin orientating teachers on the platform and pupils were able to start using it as soon as possible.

The organisation's spokesperson Penny Andrew says Broadlink's investment will help promote quality education and better prepare pupils for life after school.

Johannesburg-based Broadlink provides a variety of connectivity solutions to South African businesses and ISPs using licensed spectrum and its own carrier-grade network. They include metro Ethernet services, fixed and wireless last mile, broadband and internet access, and voice solutions. In 2014, the company also launched its own VSAT platform and teleport facility as part of plans to grow business beyond South Africa.



Partners to bring mobile money to 25 countries

Beyonic claims it will become Africa's largest mobile money aggregator following a partnership with Mobile Accord.

Kampala-based Beyonic aims to wipe out what it describes as the "rampant" use of cash in emerging markets. It has developed an online platform that enables businesses to quickly deploy, track and manage two-way mobile money payments over multiple mobile carriers using a single, easy-to-use system.

As a result, Beyonic says firms making mobile payments no longer need to connect individually to every carrier they want to send money through, thus saving time particularly if they are operating in multiple countries.

The platform is already integrated with MTN's and Airtel's mobile money systems in Uganda, as well as with Safaricom's *M-PESA* in Kenya. Beyonic will now leverage Mobile Accord's expertise in building mobile solutions and relationships with leading mobile carriers to expand its reach to 25 additional countries. The two partners will work to implement an expansion plan, starting with 10 key markets: Côte D'Ivoire, Ghana, Liberia, Malawi, Mozambique, Niger, Rwanda, Sierra Leone, Tanzania and Zambia.

Beyonic adds that by using its online interface, NGOs and businesses can easily utilise mobile money to manage payments to employees, aid beneficiaries and vendors. It says the platform has enabled organisations such as Save the Children, Educate!, and Innovations for Poverty Action to reduce the need for cash payments and increase operational efficiency.

Ericsson manages BSS platform for MTN

MTN will use Ericsson's *Order to Cash* BSS platform to standardise the customer experience of its products and services in all 22 countries where it is operational.

As part of the agreement, Ericsson will be responsible for the replacement of all legacy infrastructure with its new *Charging System*, along with its *Multi Activation and Multi Mediation* software.

According to the vendor, *Multi Mediation* supports the retrieval and processing of user data from all network nodes. The data can then be made available to the relevant IT back-end systems and billed in real-time. It adds that *Multi Activation* provides MTN with fully automated real-time fulfilment capabilities.

MTN says the new BSS platform will enable subscribers to activate new services more efficiently and to better monitor their data costs and usage. In addition, it's claimed the operator will be able to deal with customer complaints more efficiently.

Ericsson will support, operate and manage the suite of products. It says this managed services approach will ensure the benefits of the BSS platform are realised across all MTN operations, allowing for an "agile" launch of differentiated services and thus increasing the company's capacity for innovation and speed.

MTN says the new *Charging System* will enable a host of new services such as catalogue orchestrated charging, flexible refill and community charging, among several other different voice and data offerings.

MTN has worked with Ericsson for many years, and has used the Swedish vendor's real-time charging capabilities since 1996.

What to look for in a managed BSS provider – Industry View, p29-30

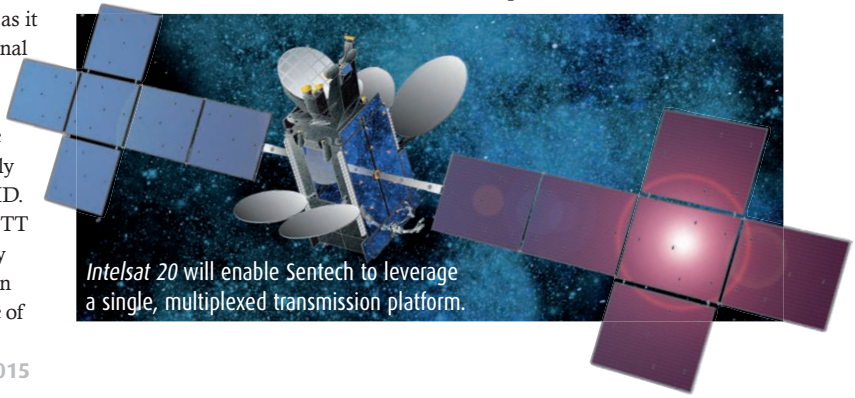
Sentech delivers DTH & DTT via Intelsat 20

Broadcasting signal distributor Sentech will continue to leverage Ku-band capacity on *Intelsat 20* to cost-effectively expand and enhance its DTH and DTT services in Africa.

Under a recently renewed multi-year contract, the company says *IS-20* will enable it to leverage a single, multiplexed transmission platform that will maximise its efficiency as it distributes DTH as well as national DTT programming to viewers in South Africa. The satellite orbits at 68.5°E and will provide Sentech with a selection of nearly 500 channels, 31 of which are HD.

Intelsat claims its "proven" DTT solutions in Africa are backed by advanced coding and modulation techniques that enable efficient use of bandwidth and improved reception quality. Rhys Morgan, the company's interim sales manager for the region, says: "*Intelsat 20* reaches more viewers in Africa than any other DTH platform, making it an ideal video neighbourhood to support Sentech's growing business need. Our ability to support and deploy both DTH and DTT transmissions will enable Sentech to continue its customers' seamless migration to DTT."

As well as providing transmission services to broadcasters in South Africa, state-owned Sentech also uses its infrastructure and data communications platforms to support the country's telecoms sector and mobile providers.



Intelsat 20 will enable Sentech to leverage a single, multiplexed transmission platform.

New fibre in Angola

Alcatel-Lucent Submarine Networks has been commissioned to build the 1,900km Sonangol Offshore Optical Cable system in Angola. The network will connect to landing points at four locations along the coast, and promises to give the country's oil and gas industry "very large" offshore data bandwidth with low latency. A high-speed connection will also be established between Luanda and Cabinda. Construction is scheduled to start during the second half of 2016.

ABS-3A goes live

ABS says its "revolutionary"new *ABS-3A* satellite is now in full commercial use. Services covering Africa, the Middle East, Europe and the Americas began at the end of August following the satellite's launch in March 2015 and the successful completion of all in-orbit tests. Built by Boeing, *ABS-3A* is one of the world's first satellites to use an all-electric propulsion system which makes it more cost effective to launch and operate. It features 48 C- and Ku-band active transponders, and is equipped with high-performance beams to support regional markets.

Free kit with iWayAfrica

iWayAfrica is now offering free equipment with its Ka-band VSAT service in Zimbabwe. The ISP claims it is removing the "huge barrier" to entry for customers who require VSAT services by offering 12 or 24-month contracts with free kit subject to a nominal standard installation charge of USD155. iWayAfrica says the setup fee factors in the newly approved USD20 annual Ka-band license fee which came into effect in August. Monthly service charges for home users start at USD80 for 1Mbps with a 15GB data cap. All service plans include free browsing daily from 11pm to 6am.

Broadband critical for "humanity and the planet"

Broadband internet is failing to reach those who could benefit most, according to the 2015 edition of the ITU's *State of Broadband* report. It says while broadband internet access is reaching near saturation in the world's rich nations, it is not advancing fast in the developing world.

The report reveals that 57 per cent of the world's population remains offline. The situation in the 48 UN-designated Least Developed Countries (LDCs) – which mostly include African nations – is particularly critical, with more than 90 per cent of people without any kind of internet connectivity. The lowest levels of internet access are mostly found in sub-Saharan Africa, with internet available to less than two per cent of the population in Guinea, Somalia, Burundi and Eritrea.

In its table of 189 member states with active mobile-broadband subscriptions per 100 inhabitants, the ITU ranks the top three countries as Macao (China), Singapore and Kuwait, respectively. Libya is the first African nation to appear in the table, followed by Ghana, Cape Verde and Botswana *(see table below)*. Cameroon, Chad, Equatorial Guinea, Eritrea, Gabon and Guinea-Bissau all ranked at the bottom with a zero or an estimated zero number of active mobile-broadband subscriptions per capita.

ITU secretary-general Houlin Zhao said. "The market has done its work connecting the world's wealthier nations, where a strong business case for network roll out can easily be made. Our important challenge now is to find ways of getting online the four billion people who still lack the benefits of internet connectivity, and this will be a primary focus of the commission going forward."

The union says among the hurdles that need to be overcome to expand web access and accommodate the next four billion people is to create a truly multilingual, multicultural internet, and make services and devices more affordable.

A key obstacle remains the cost-effective rollout of networks into remote and rural areas. The ITU says one factor contributing to the slowing of internet growth is that the business case for service providers is less compelling for the areas in which the remaining 57 per cent of unconnected people live. It cites the World Bank which calls for the private sector to take the lead in providing internet infrastructure and services, but notes that public investment or intervention is sometimes justified where the private sector is unable to provide affordable access.

The union also recommends levies on operators to finance universal service funds, mandatory infrastructure sharing, and government-led national strategies. Research conducted for the UN's Broadband Commission in 2013 suggested that the introduction or adoption of a broadband plan is associated with an average 7.4 per cent increase in mobile broadband penetration.

ICT key to sustainable development

The Broadband Commission says the power of broadband to leapfrog development roadblocks and bring access to education, healthcare and employment opportunities means that the rollout of high-speed ICT networks should now be at the top of every country's sustainable development strategy.

RANK	ECONOMY	SUBS PER 100 CAPITA	RANK	ECONOMY	SUBS PER 100 CAPITA	RANK	ECONOMY	SUBS PER 100 CAPITA
25	Libya	80.6	122	Mauritania	14.4*	164	Djibouti	3.2*
59	Cape Verde	51.3	125	Sierra Leone	13.0*	166	Tanzania	3.0*
61	Botswana	49.7	129	Seychelles	12.7	167	Mozambique	3.0
67	Tunisia	47.6	130	Nigeria	11.7	168	Benin	2.8
69	South Africa	46.7	131	Mali	11.3	169	Guinea	2.2*
74	Egypt	43.5	133	Rwanda	11.1	171	South Sudan	1.3
80	Zimbabwe	39.2	135	Congo (Republic)	10.8*	173	Somalia	1.0*
83	Namibia	35.5	138	São Tomé & Príncipe	9.8*	174	Zambia	1.0
91	Lesotho	32.8	139	Burkina Faso	9.6	175	Niger	0.9*
92	Mauritius	31.8	142	Kenya	9.1	177	Burundi	0.5*
105	Sudan	27.2	143	Gambia	8.0	178	Central African Rep.	0.3*
106	Morocco	26.8	144	Swaziland	8.0*	181	Cameroon	0.0
108	Côte d'Ivoire	24.6	145	DRC	7.9	182	Chad	0.0
110	Senegal	23.7	146	Liberia	7.6	183	Equatorial Guinea	0.0*
112	Algeria	20.8	147	Ethiopia	7.5	184	Eritrea	0.0*
117	Angola	16.4	152	Madagascar	6.1	185	Gabon	0.0*
120	Uganda	14.7	162	Malawi	4.1	186	Guinea-Bissau	0.0*

Active mobile-broadband subscriptions per 100 people in African ITU member states, 2014. *ITU estimate.

SOURCE: ITU STATE OF BROADBAND REPORT, SEPTEMBER 2015

Rwandan president Paul Kagame currently co-chairs the UN's Broadband Commission, and believes putting technology at the heart of development is crucial.

© ITU/B.HIDER

At a meeting held in New York in late September, the organisation announced the adoption of the 17 Sustainable Development Goals (SDGs) that are part of the UN's *2030 Agenda for Sustainable Development*. Twenty-two new members have now joined the commission. They come from a range of sectors including the global technology industry, government ministers, leaders in education and healthcare, and two additional UN bodies, UNESCO and Global Pulse.

"The SDGs will stimulate action over the next fifteen years in areas of critical importance for humanity and the planet," said Zhao. "All three pillars of sustainable development – economic development, social inclusion and environmental protection – need ICTs as key catalysts. That is why the commission believes that ICTs, and particularly broadband, will be absolutely crucial for achieving the SDGs."

Over the next 15 years, the 17 SDGs aim to cover a variety of issues concerning health, universal education, climate change, the end of poverty, hunger and inequalities, amongst others. The targets also include building resilient infrastructure, the promotion of inclusive and sustainable industrialisation and the fostering of innovation.

The SDGs now replace the UN's 15-year Millennium Development Goals that were adopted at the turn of the century. In terms of internet access, the MDGs have clearly not worked – while the proportion of households in the developing world with access is now more than 34.1 per cent, it remains well short of the commission's target of 40 per cent by 2015. In sub-Saharan Africa, only one-in-nine households is connected.

Rwandan president Paul Kagame, who currently co-chairs the Broadband Commission, stressed the importance of putting technology at the heart of development. "Fewer than seven per cent of households in the LDCs are connected. This is a problem, of course, but it is also means there is a lot of room for growth. In Africa, we are determined to seize this opportunity. An example is the *Smart Africa* initiative which encourages nations to invest more in infrastructure, innovation and entrepreneurship."

Because Big is Always Best

Africa links to USA

During the last 40 years the US foreign-born population from Africa has roughly doubled each decade according to a recent US Census Bureau brief. Numbers have increased from approximately 80,000 in 1970 to 1.6 million in 2012 and are currently at 5% of USA foreign born. African foreign born face similar challenges to other immigrants, how to call and send money to friends and family back home.

Be the BOSS

BOSS Revolution delivers communications and financial services that allow foreign-born customers to stay in touch and share resources with their loved ones around the world. Under the BOSS Revolution brand, IDT Retail has a global distribution network generating billions of retail minutes and millions of transactions every month. In the USA, through a presence across tens of thousands of retailers, BOSS Revolution's size and scale allows it to penetrate the states where African-born demographics have their highest geographic distribution – New York, California, Texas and Maryland. Partnering with BOSS Revolution can grow your African business.

Grow your business

Globally 25 Billion minutes are terminated into Africa and over $40 Billion of money transfers are transacted every year, are you receiving your share? BOSS Revolution can grow your business by extending your reach into the core USA marketplace. In addition to our presence across tens of thousands of retailers, BOSS Revolution works really closely with our partners on connectivity, product advancements and co-marketing activities driving constant ongoing innovation.

Work with IDT

IDT's Carrier and Retail businesses have a unique and linked relationship transferring value from foreign-born consumers to international telecoms providers and back again.

IDT Carrier Services is one of the largest global carriers of international voice traffic, generating over 30 billion minutes last year. Owning both sides of the business model – the retail and international carrier businesses – provides greater control, flexibility and an exciting platform to explore new buy and sell voice transactions as well as new and exciting opportunities to grow your nonvoice business initiatives.

So enhance your voice business and grow your financial service opportunities in the USA. Leverage BOSS Revolution's African reach in the US marketplace.

www.idtcarrierservices.com

BOSS REVOLUTION
unite your worlds

IDT

Smile secures USD365m to fund LTE network expansion in Africa

Smile Telecoms has raised USD365m of debt and equity financing to expand its existing LTE portfolio and launch a new broadband network in the DRC early next year.

The new financing comprises USD50m of equity raised from the Public Investment Corporation (PIC) on behalf of the South African Government Employees Pension Fund. The remaining USD315m is a multi-tranche debt facility led by the African Export-Import Bank with participation from: the Development Bank of Southern Africa; Diamond Bank; Ecobank Nigeria; the Industrial Development Corporation of South Africa; the PIC; and Standard Chartered Bank.

Smile currently owns and operates LTE networks using 800MHz spectrum in Nigeria, Tanzania and Uganda. The operator's aim is to deliver superior voice services and have national coverage in each country by the end of 2015 that is comparable to the largest 3G networks in their respective markets.

Smile CEO Irene Charnley says the aim now is to help subscribers get the most out of 4G services.

It will use the new funding to accelerate rollouts including products provided by Alcatel Lucent and Ericsson, and develop a full MPLS network, a London POP and expanded international backhaul services.

The deal is said to be one of the largest capital raises ever for an African telco, and brings the total funding committed to Smile since its founding in 2007 to approximately USD600m.

Smile CEO Irene Charnley says: "Our priority is to [now] ensure that our customers experience and benefit from the power of high speed mobile broadband compared to the narrowband services available to date, including how to effectively manage the superior experience in terms of data consumption."

Global investors back Afrimax

The Afrimax Group has secured USD120m of growth funding from a consortium of investors to accelerate the rollout of its LTE led business model across multiple African markets.

The consortium is led by Tokyo-based multinational Mitsui & Co. Other backers include Torreal, one of Spain's largest private investment firms, in addition to existing shareholders Four G Capital and the International Finance Corporation.

Afrimax is aiming to build the largest portfolio of 4G wireless broadband networks across sub-Saharan Africa. It already has 4G licenses covering 12 countries and 222 million people, and says further licenses are being acquired.

Following a framework agreement with Vodacom last year, Afrimax launched Vodafone Uganda in February 2015, combining the deployment of new high-speed 4G networks with the use of existing infrastructure for 2G and 3G services.

Liquid Telecom to provide fibre connectivity to Airtel

A new framework agreement will enable Airtel to use Liquid Telecom's 20,000km fibre network in Africa and benefit from new fibre routes on an ongoing basis. The operator claims this will allow it to rapidly connect its mobile base stations and enterprise customers with unlimited capacity.

According to Liquid, its tie-up with Airtel answers the need for mobile operators to increase the internet speed delivered over their mobile

Airtel Africa CEO Christian de Faria says the agreement will deliver end-to-end fibre to 3G and 4G base stations.

broadband networks. Group CEO Nic Rudnick says: "Mobile operators are relying on internet access and data services to grow their revenues. MNOs, and in particular Airtel, have managed to attract a large number of customers on their 3G and 4G networks and now need to strengthen their backhaul to deliver a superfast internet access service."

Airtel Africa believes the partnership with Liquid is a "milestone" in providing fast broadband services to customers in a cost-effective way. CEO Christian de Faria says: "Airtel has invested significantly in mobile broadband technology across its African footprint and this agreement will deliver end-to-end fibre connectivity to our 3G and 4G base stations."

Airtel Africa has operations in Burkina Faso, Chad, Congo Republic, DRC, Gabon, Ghana, Kenya, Malawi, Madagascar, Niger, Nigeria, Rwanda, Seychelles, Sierra Leone, Tanzania, Uganda and Zambia. It is currently in non-binding talks about a possible sale of its networks in Burkina Faso, Chad, Congo and Sierra Leone to Orange.

This latest deal for Liquid follows its earlier announcement of a partnership with MTN *(News, Jul-Aug issue)*.

Telkom-BCX merger approved

Following a recommendation from South Africa's Competition Commission earlier this year, the country's Competition Tribunal has now approved Telkom's proposed acquisition of ICT services provider Business Connexion (BCX).

Telkom believes the proposed deal will benefit both companies' customers in South Africa as well as elsewhere on the continent. Group CEO Sipho Maseko says: "As a result of this transaction, Telkom will be able to grow beyond its core business of connectivity by expanding into ICT services, while reinforcing our connectivity offering and enhancing convergence strategy."

BCX is said to be one of the largest ICT services providers listed on the Johannesburg Stock Exchange when measured in terms of turnover, total assets and staff complement. The company employs more than 6,700 people in Africa, and has annual revenues in excess of ZAR6bn.

The firm claims to have "very strong" capabilities in managed IT infrastructure such as data centres, cloud-based services and application development. It reckons the merger with Telkom will improve the customer value propositions of both companies through a greater ability to provide integrated end-to-end ICT solutions and a more global and competitive offering.

Once Telkom has acquired BCX's entire issued share capital, the latter will de-list from the Johannesburg Stock Exchange. Final approval for the transaction will now be sought from the Takeover Regulations Panel and the stock exchange.

Cell C pumps billions into Western Cape

As part of its ongoing network projects across South Africa, Cell C says it will have invested ZAR427m (USD32m) into its Western Cape infrastructure between June and December this year.

Earlier this year, Cell C announced a three-year rollout plan and says it is well ahead of schedule with the first stage of its LTE deployments in KwaZulu-Natal (KZN) and Gauteng now complete. Deployment in the Western Cape has been pushed forward and 200 4G sites are expected to be live before mid-December.

The operator plans to spend a further ZAR6bn over the next two years to roll out LTE in other provinces and extend coverage to other parts of Gauteng and KZN in 2016 and 2017.

Cell C has been carrying out ongoing capacity upgrades and new infrastructure rollouts across the region since June this year. The RAN upgrade project under way in the Western Cape aims to increase stability and capacity on all the sites where new equipment is installed. This will be coupled with a project to decrease the effects of radio interference which the operator says has become common in the Cape.

"While we had only expected to begin LTE rollout in this region from 2016, the successful and timeous rollout of the service in Gauteng has meant that we can push our rollout in

the Western Cape forward," said Cell C CEO Jose Dos Santos.

He added that around 80 per cent of existing and new 3G sites in the Western Cape will also be enabled for Dual Carrier technology. This allows sites to use more than one band of spectrum, thus increasing network bandwidth and speeds for customers.

MVNOs in Zambia

The Zambia Information and Communications Authority (ZICTA) has launched a public consultation about the licensing of MVNOs in the country.

In a press statement issued in September, the regulator said: "The communication sector in Zambia has grown since the liberalisation of the economy in the early 1990s. MNOs were introduced during the second half of the 1990s and by 2003 there were three entities competing in the mobile sector. The scenario has not changed over a decade later."

Of the three cellcos currently operating in the country, MTN Zambia and Airtel have 85 per cent of the market whilst the remaining 15 per cent is held by state-owned Zamtel.

According to ZICTA, mobile subscriptions in the country fell by three percent to 10.1 million in 2014. This compares to 10.3 million in 2014 and 10.5 million in 2012. It said the fall was mainly due to SIM card registration carried out last year.

The authority said that mobile penetration levels stood at 65 per cent in 2014 which was not good enough for the sector. "This therefore posed a challenge to ZICTA to ensure that interventions were made to accelerate growth. There has been deceleration in growth of annual subscribers in the global mobile industry [that] has resulted in stagnation in revenues from the telecommunication industry."

ZICTA is now seeking to explore the option of licensing MVNOs to enhance the mobile industry's performance and increase growth. It says that none of the country's MNOs have any current plans to change their business models in order to be more efficient and reduce operational costs. As a result, the authority believes the introduction of MVNOs could bring some benefits to the market as the existing operators compete to increase their share.

ZICTA added that the existing MNOs could voice concerns regarding the licensing of MVNOs. These include: the "cannibalisation" of their market share by MVNOs; a backlash from poor MVNO performance; and an adverse selection of MVNOs for partnering purposes.

The regulator closed its public consultation on 9 October and will now take public comments into account before deciding on whether the Zambian ICT market is ready for the introduction of MVNOs.

Gilat Satellite Networks restructures to capitalise on market opportunities

Gilat Satellite Networks (GSN) is streamlining its organisation in an effort to take advantage of market growth opportunities. Dov Baharav, the company's chairman and interim CEO, said: "We are witnessing several trends in the industry accelerate, including: a shift to HTS; an enhanced need for comprehensive services and turnkey solutions; the growth of rural broadband internet – as demonstrated by Facebook's new initiative for Africa [*see News p5*]; deployment of HTS in China; and in-flight connectivity (IFC)."

As a result, GSN plans to shift its focus to better support these growth drivers. Baharav said the company will continue to develop "meaningful partnerships" with HTS operators, concentrate on developing its new dual band Ka/Ku terminal to serve the IFC market, identify additional markets to bring broadband to rural areas, and enhance its offering to provide "comprehensive" turnkey solutions to telcos and large enterprises.

GSN's Commercial division will continue to address the HTS market but will also work to drive broader solutions. Its Strategic Initiatives division will encompass IFC activity, Wavestream (GSN's solid state amplifier subsidiary), Defence, and

INVESTMENTS, MERGERS & ACQUISITIONS

Date	Buyer	Seller	Item	Price	Notes
8/9/15	CommScope	Airvana	Company	NA	Acquisition of the US-based provider of LTE & 3G small cell solutions will expand CommScope's capabilities in providing indoor wireless capacity & coverage.
30/9/15	Sterlite Technologies	Elitecore Technologies	Company	NA	Part of the Vedanta Group, Sterlite says the acquisition enables it to offer software solutions for OSS, BSS & revenue management.

NEW APPOINTMENTS

Date	Name	New employer	New position	Previous employer	Previous position
1/8/15	Charles Kamoto	Airtel Malawi	Acting MD	Airtel Malawi	CCO
6/8/15	Emmanuel Hamez	Econet Leo (Burundi)	CEO	Expresso Telecom, Senegal	CEO
6/8/15	Darlington Mandivenga	Econet Wireless	Deputy group CEO	Econet Leo (Burundi)	Acting CEO
9/8/15	Teddy Bhullar	Emtel Mauritius	TBC	Airtel Rwanda	MD
9/8/15	Tano Ware	Airtel Rwanda	Acting MD	Airtel Rwanda	Finance director
26/8/15	Cynthia Gordon	Millicom	CEO & EVP Africa division	Ooredoo	Group CCO
1/9/15	Nick Walden	Infinera	SVP, EMEA sales	Ciena EMEA	VP & MD, carrier business
3/9/15	Eric Bouquillon	Orange Guinea	CEO	Orange Réunion & Mayotte	CEO & GM
3/9/15	Thierry Marigny	Sonatel	Deputy CEO	Orange Group	Global brand VP
2/9/15	Mitchell Klein	Z-Wave Alliance	Executive director	Universal Remote Control	Senior executive
10/9/15	Steve Richeso	Advantech Wireless	SVP, global sales & Business development	Harris Corporation	Senior director, business development
28/9/15	Santosh Desai	MEASAT	Sales director – Africa	Bharti Airtel	Business head – IBS
1/10/15	Bruno Mettling	Orange	Deputy CEO, Africa & Middle East	Orange	Deputy CEO, HR
1/10/15	Marc Rennard	Orange	Deputy CEO, MFS & customer experience	Orange	EVP MEA & Asia
1/10/15	Jean-Marc Vignolles	Orange	COO, Africa & Middle East	Orange Spain	CEO
8/10/15	Mandana Javaheri	Savvius	CTO	Savvius	Senior product & programme manager
8/10/15	Richard Swardh	Comtech ED Data	VP, market development	Ericsson	Business development director

the Chinese market which will benefit from special attention.

The adjustments will result in several changes to the company's management team. CFO Yuval Ronen has decided to leave and will be replaced by Adi Sfadi in December. Sfadi has previously served as a CFO with Starhome-Mach and also Radvision.

"With the structural change and our promising strategic opportunities, I am confident we will achieve profitable growth in 2016 and beyond," said Baharav.

Digitata now controls Rorotika

Digitata has acquired a controlling stake in Rorotika Technologies. The value of the deal has not been disclosed.

Since its inception in 2008, Digitata has worked closely with South Africa-based Rorotika Technologies which provides development and support services for its *Dynamic Tariffing* solution for voice, SMS and data. Digitata executive vice chairman Ted Bartlett

The merger was the "logical next step", according to Digitata's Ted Bartlett

believes the merger was a "logical next step" in the relationship between the two companies. "The joining of the two will ensure a closer working relationship and will allow us to improve our service to our customers, expand our product offering and streamline our operations."

As well as offering improved efficiencies in its *Dynamic Tariffing* service, Digitata reckons the acquisition also brings other lines of business that will be of interest and benefit to MNOs. These include *NetCM*, Rorotika's vendor-agnostic network configuration management solution.

In addition, Rorotika's Mobile subsidiary will also now fall under the Digitata brand. It has developed a USSD-based mobile gaming platform which it claims can be used by MNOs and brands to unlock revenue.

"There are clear synergies between this mobile gaming offering and Digitata's own *MeMe Mobile* offering," states Digitata.

IN BRIEF...

Following approval from South Africa's competition commission for its acquisition of Neotel *(see Wireless Business, Jul-Aug)* earlier this year, Vodacom is now reportedly facing court action brought about by Cell C and MTN. The operators claim South Africa's regulator ICASA followed unlawful procedures when it gave the go ahead to the deal, and believe the acquisition will adversely affect competition. Telkom has also filed a court application asking for ICASA's decision to be set aside.

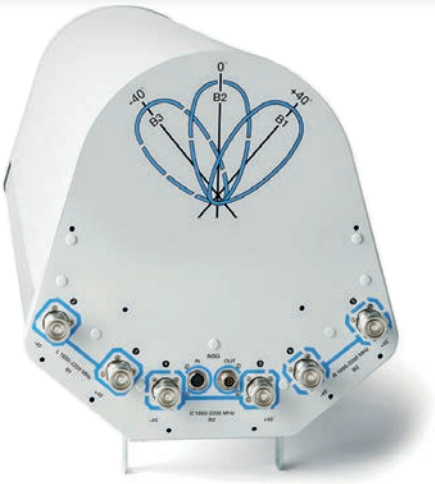
Econet Wireless has formed a new business unit that will, among other things, oversee the potential listing of Liquid Telecom. Econet says an IPO for its satellite and broadband division would give it the ability to raise permanent, public capital to further expand its network. Tony Worthington, the former global head of telecoms, media and technology at Standard Chartered Bank, has joined Econet Global's executive team and will be the new unit's MD. Worthington will also serve as a non-executive director of Liquid Telecom UK.

Etisalat will use CommScope's products and services to upgrade its wireless networks and deploy new technologies across the Middle East and Africa, including LTE in selected markets. As part of an international frame agreement, CommScope will supply base station antennas, filters, high-quality coaxial cables and connectors, and other RF network solutions.

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
5/8/15	Motorola Solutions	US	2Q15	USD	1.4 (bn)	NA	0.72	Overall product sales fell two per cent due to forex issues & weakness in Europe, Africa & Latin America. Company intends to commence tender offer to repurchase up to $2bn of common stock.
10/8/15	Globalstar	US	2Q15	USD	23.0	3.2	NA	YoY revenues down by USD1m. Increased service revenue due to 12% growth in total subscriber base was offset by a decrease in income generated from equipment sales.
13/8/15	Singtel	Singapore	1Q16	SGD	942	NA	NA	Group recorded a net exceptional gain of S$47m with divestment gains from venture investments & Airtel Africa's tower assets.
1/9/15	ZTE	China	1H15	RMB	45.9 (bn)	NA	0.47	43.1% profit rise was helped by increased international orders for LTE equipment. Strong orders also reported for optical transport networks & broadband systems.
16/9/15	Avanti Communications	UK	FY15	USD	85.2	16.0	NA	YoY revenue up 29.9% helped by contract wins with key target customers including SENTECH, Tanzania Telecoms Company & Orange Telkom Kenya. HYLAS 4 on track for 2017 launch.
30/9/15	Aviat Networks	US	FY15	USD	335.9	(11.0)	NA	YoY earnings in Africa & the Middle East down from $108.9m in 2014 to $97.1m in 2015.

Antenna capacity boosted with new lens technology



CommScope has developed a new antenna to help wireless operators relieve overloaded cell sites and support high concentrations of subscribers in special venues.

The *Tri-Beam* antenna uses new lens technology that focuses antenna signals like a magnifying glass into three narrow beams, sculpting an overloaded sector into three sectors.

According to CommScope, the result is nearly three times the capacity as the original sector without adding a new cell site. It adds that when deployed in cell clusters, the antenna can achieve up to four times the capacity with the optimised overlap between cells.

With 4dB more gain than a standard single-beam antenna, the *Tri-Beam* is said to optimise sector roll-off. CommScope claims it provides more than double the signal strength inside of the sector, resulting in better building penetration and at least 4dB better signal to noise ratio.

The company pairs the *Tri-Beam* with RET (remote electrical tilt) to offer maximum flexibility for optimising each beam.

Part of the its Andrew portfolio of wireless solutions, CommScope developed the *Tri-Beam* in partnership with RF lens specialist Matsing. It says the meta materials used for the dielectric lens reduce its weight by about 90 per cent, making it viable for tower mounting. The firm adds that the antenna features better wind loading thanks to its rounded form factor.

MANUFACTURER: CommScope

PRODUCT: Tri-Beam antenna

MORE INFORMATION: www.commscope.com

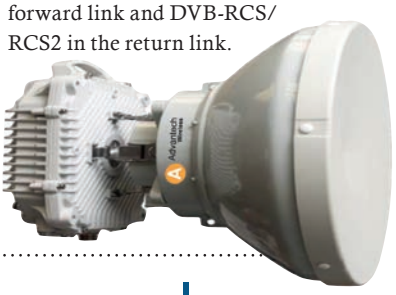
"Simple and versatile" point-to-point IP backhaul

Advantech Wireless describes its new *Transcend 900* as a "simple and versatile" point-to-point IP backhaul solution. It says the compact, all outdoor microwave radio is designed to provide low latency and power consumption, and can operate over a wide temperature range and in all weather conditions.

The *Transcend 900* features PoE and optional coaxial (N-type F) power connection, up to 1024 QAM, and 900Mbps uncompressed full duplex throughput with errorless ACM.

Advantech Wireless says it supports high availability and reliability based on licensed frequency bands from 6GHz to 23GHz, and unlicensed frequency bands at 5.8GHz, 10.5GHz, 17GHz and 24GHz. There's also network synchronisation with SyncE and an optional SFP slot for optical GE.

In a separate product announcement, the company has also added a new VSAT terminal aimed at broadcasters. The *VR7400* supports DVB-S2 SCPC point-to-point /multipoint operation. Advantech Wireless says it provides a two-way VSAT system with the high bandwidth efficiency of DVB-S2 in both directions, or can work as part of a star DVB-RCS network supporting DVB-S2 in the forward link and DVB-RCS/RCS2 in the return link.



MANUFACTURER: Advantech Wireless

PRODUCT: Transcend 900

MORE INFORMATION: www.advantechwireless.com

DMR handset certified for hazardous environments

Hytera has added a new radio to its range of intrinsically safe DMR handhelds. The *PD715 Ex* operates without display and keypad and has been developed as an inexpensive alternative to the vendor's fully equipped *PD795 Ex*.

Like its stablemate, the new *PD715 Ex* supports the DMR standard as well as classic analogue mobile radio. Hytera says it can also be used in DMR trunked radio systems as well as in its *XPT* mobile radio solution.

The firm adds that the *PD715 Ex* is certified in accordance with the European ATEX standard, which makes it the ideal radio for users who are working in particularly hazardous environments.

It has an IP67 rating for protection against dust and moisture, and is also said to be especially robust and reliable in accordance with the MIL-STD-80 C/D/E/D/G US military standard.

MANUFACTURER: Hytera

PRODUCT: PD715 Ex

MORE INFORMATION: www.hytera-mobilfunk.com

Network manager also has WLAN controller

Proxim Wireless has introduced *ProximVision Advanced*, a carrier-class network management system (NMS) that combines WLAN controllers.

It aims to provide seamless command over a hetnet RAN deployment via a single software platform. *PVA* offers detailed fault reporting and support for all of Proxim's radio products including APs, backhaul links, and point-to-multipoint solutions.

The system includes common controller features such as topology maps for a visual representation of the network, the ability to perform software updates and configure all network elements in a single keystroke, and detailed accounting of what has been deployed.

It also includes the critical feature support needed for deploying hetnets. For instance, Proxim says *PVA* removes the NMS as a single point of failure by supporting redundant servers and databases. It includes a full REST API implementation allowing users to define precisely the interface to higher level NMS or back office systems.

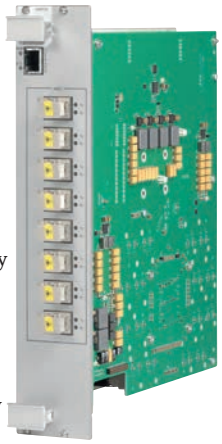
The initial release of the software supports up to 10,000 nodes per server or via the cloud.

MANUFACTURER: Proxim

PRODUCT: PVA

MORE INFORMATION: www.proxim.com

Next generation terabit packet transport switch



Transmode's *PT-Fabric* is a modular terabit switching solution that aims to take packet transport and Ethernet switching in metro networks to terabit levels and 100G.

It extends the company's native packet optical architecture to terabit switching with a new optical front-plane-equipped *EMXP III* switching unit *(pictured)*. It's claimed this supports up to 960Gbps of switching in a single module.

Transmode – which was recently acquired by Infinera – says the innovative optical frontplane takes vertical cavity surface emitting laser (VSEL) technology used in supercomputing and brings it to data transport equipment for the first time. The frontplane is used to create the *PT-Fabric* by interconnecting the *EMXP III* switch with 10G and 100G I/O modules or directly to local third-party switches or routers.

The company adds that the frontplane enables the *PT-Fabric* to be deployed in any combination of available slots in single or multiple *TM Series* chassis, such as its *TM-301*. Multiple switches can be deployed in a single chassis giving a total of 4Tb of switching.

Other features include power consumption as low as 20W per 100G when equipped with eight 100G ports, and very high switching density.

MANUFACTURER: Transmode

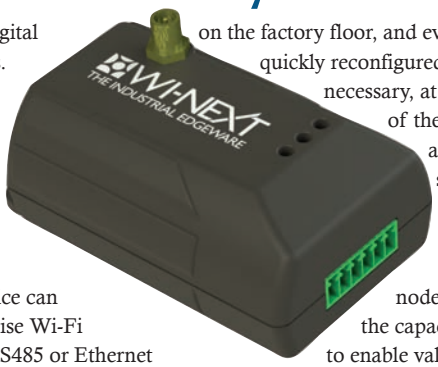
PRODUCT: PT-Fabric

MORE INFORMATION:
www.transmode.com

IIOT device connects machinery via Wi-Fi

Industrial Wi-Fi specialist Wi-NEXT reckons its new *End Node Digital* is currently the only device that can connect Modbus, CANbus, Profibus and general digital machinery for the IIoT (Industrial Internet of Things) via a Wi-Fi network.

The node is said to offer a low-power affordable Wi-Fi appliance that allows easy interconnections to a wide variety of digital industrial machines. Wi-NEXT says this turns them into intelligent assets that can be easily monitored, controlled and optimised.



It claims the device can connect to on-premise Wi-Fi infrastructure via RS485 or Ethernet ports in a flexible, energy-efficient way, with a very low impact on the deployment or overall project cost.

With the *End Node Digital*, the vendor says a wide variety of digital machines can be installed anywhere on the factory floor, and even quickly reconfigured when necessary, at a fraction of the cost of alternative solutions on the market.

The node also has the capacity to enable value-added services such as predictive maintenance, energy efficiency audits, and usage reports, plus handle the ever-increasing data transmission via what's described as "state-of-the art" open-standards.

MANUFACTURER: Wi-NEXT

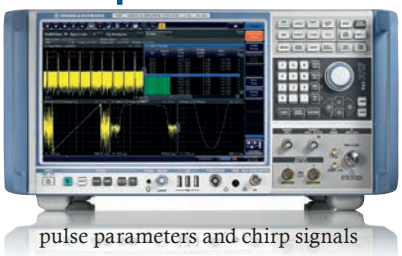
PRODUCT: End Node Digital

MORE INFORMATION:
www.wi-next.com/products

Analyse broadband and signals up to 85GHz

The *FSW85* signal and spectrum analyser is the only instrument on the market to cover the 2Hz to 85GHz range in a single sweep, claims Rohde & Schwarz (R&S). It says this makes it possible for users to test baseband and RF with a single analyser.

According to the company, since no external harmonic mixers are required, the device makes the test setup much simpler. It says an internal pre-selection suppresses the image frequency and other spurious emissions that commonly occur during harmonic mixing.



When combined with R&S' *FSW-B2000* option and its RTO oscilloscope, the *FSW85* can achieve an analysis bandwidth of 2GHz. This is said to enable developers to analyse broadband signals for 5G next-generation mobile communications signals, or complex pulse parameters and chirp signals for radar systems.

R&S adds that the unit offers easy touchscreen operation with clear diagrams and a flat menu structure. Various measurements can be displayed simultaneously in separate windows on the large 31cm screen to simplify interpretation of results.

MANUFACTURER:
Rohde & Schwarz

PRODUCT: FSW85

MORE INFORMATION:
www.rohde-schwarz.com

ALSO LOOK OUT FOR

Hybrid Mesh technology for commercial IoT applications

Greenvity Communications reckons it's come up with unique mesh networking technology that provides a highly reliable communications link for commercial building and industrial applications.

The US-based company says its patented *Hybrid Mesh* technology on a single chip utilises mixed-medium IEEE 802.15.4 wireless and wide-band powerline communication (PLC). It claims this enables always-connected links that penetrate concrete walls and cover entire buildings.

The first technology of its kind in the industry, Greenvity says *Hybrid Mesh* supports multiple hops for range extension, bridging and self-healing.

According to the firm, current standard methods of mesh networking have been wireless only or single medium, presenting a challenge when concrete walls degrade wireless signals and inhibit communication throughout the building.

Greenvity CEO Hung Nguyen says: "Lighting and security applications require a higher level of link reliability than other IoT products and the communication between these devices needs to be virtually always-connected."

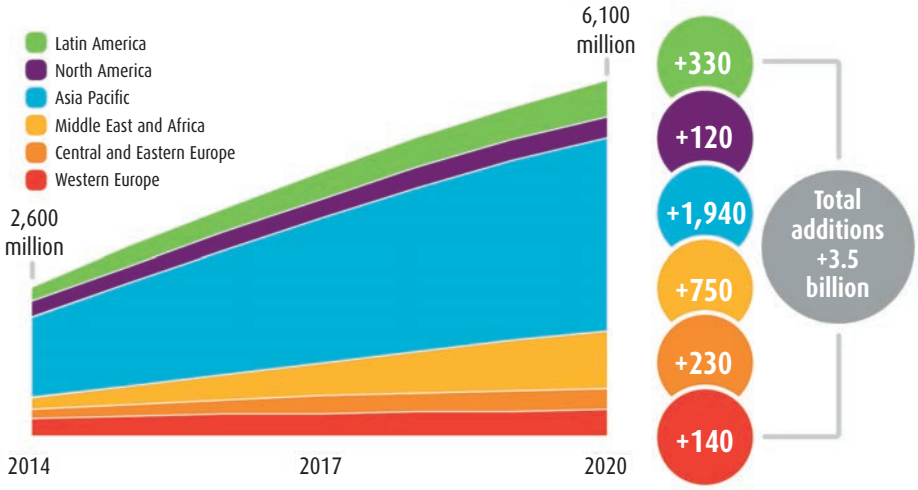
Combining the best of both wireless and PLC, modules with *Hybrid Mesh* networking rely on an algorithm to make dynamic decisions on whether powerline or wireless is the better medium in the current environment.

Each node repeats the same data to the next node, selecting PLC when wireless strength is weak, and choosing wireless when the PLC signal is degraded due to circuit breakers or noise.

The first Greenvity modules with *Hybrid Mesh* operation are the GV7011-MOD for commercial and industrial applications, and the GV-LED-11 smart LED controller and general IoT controller.

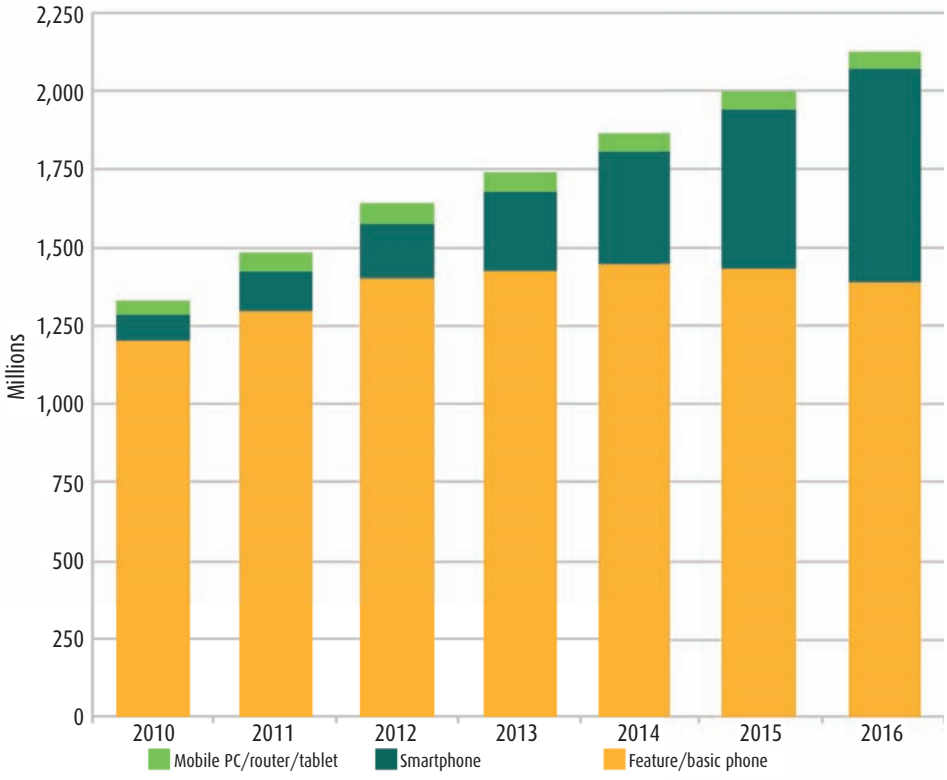
Smart operators

With more MNOs now relying on data revenues to prop up flagging ARPUs, RAHIEL NASIR looks at what the continent's smartphone market has to offer.



Almost 80 per cent of smartphone subscriptions added during 2015–2020 will be from Asia Pacific, the Middle East and Africa.

SOURCE: © ERICSSON (JUNE 2015)



Mobile subscriptions split per device in Central Europe, Middle East and Africa.

SOURCE: © ERICSSON (JUNE 2015)

Global mobile penetration reached 99 per cent in the first quarter of this year, according to Ericsson's latest annual *Mobility Report* published in June. Smartphones accounted for almost 75 per cent of all mobiles sold worldwide during 1Q15, compared to around 65 per cent in 1Q14. "2014 saw more than 700 million smartphone subscriptions added, due to the addition of new subscribers and existing subscribers exchanging their basic phones for smartphones," said the report. "It took over five years to reach the first billion smartphone subscriptions, a milestone that was hit in 2012, and less than two years to reach the second billion."

Ericsson believes that due to greater affordability in developing markets such as Africa, the number of smartphone subscriptions will surpass those for basic phones by 2016. This looks likely. In its *Mobile Phone Tracker* data for the second quarter of the year released in August, International Data Corporation (IDC) forecasts that smartphone shipments in the Middle East and Africa will reach 165 million units by the end of 2015. The global technology consulting firm said more than 41.9 million units of smartphones were shipped in the MEA region during the quarter, representing a year-on-year increase of 60.2 per cent (compared to 2Q14).

In Africa, 54.1 per cent of the handsets shipped during 2Q15 were smartphones. IDC said this was at the expense of feature phones which suffered year-on-year declines of around 25 per cent in Africa and 24 per cent in the MEA region as a whole.

Kenya, Nigeria and South Africa contributed significantly to the overall growth seen in Africa, with year-on-year growth of 46, 99 and 49 per cent respectively. Together, IDC said these three countries accounted for 27 per cent of all smartphone shipments across the continent during the second quarter.

The tracker also revealed that Samsung, Tecno and Huawei are currently the top smartphone vendors in Africa with a combined 44 per cent share of shipments. Huawei has now replaced Apple from the top three list in the previous quarter.

In terms of total mobile shipments which include feature phones as well as smartphones, Samsung, Tecno, Nokia, Alcatel and Huawei currently represent the top five vendors in Africa

with a combined market share of 53.9 per cent. The remaining 46.1 per cent is made up of other vendors. Nabila Popal, IDC's *Mobile Phone Tracker* research manager for MEA and Turkey, said: "Africa is witnessing a huge growth in many new vendors that did not exist a year before, such as Lenovo, X-Tigi and Condor Electronics, each now shipping over half a million units a quarter. There is rapid growth of 89.5 per cent in volume from Q2 2014 in the smartphone market. This has resulted in smartphone penetration on the continent to increase to 54.1 per cent from just 31.8 per cent a year ago in Q2 2014."

Like Ericsson, IDC said the region's smartphone growth is largely being driven by the emergence of low-priced devices. These are primarily powered by Google's *Android* operating system. In Africa, the platform currently represents 92.6 per cent of the market while the others have shown declines – *Windows Phone* now accounts for 3.3 per cent, Apple *iOS* 2.8 per cent, and BlackBerry 1.3 per cent.

Android is said to be particularly dominant in the low to mid-priced market – just over 45 per cent of smartphones shipped across Africa in 1Q15 were below USD100, while almost 75 per cent were under USD200. Popal reckons this price bracket seems to be the 'sweet spot' for most vendors launching in the region, as well as for established ones looking to increase their shares by targeting the lower end of the market.

"This has resulted in phones priced under USD200 accounting for about 36 per cent of the Middle East smartphone market, while at the other end of the spectrum the USD450+ price band has seen its share fall from 25 per cent in Africa and 48 per cent in the Middle East a year ago, to 14 and 34 per cent [respectively] today," she said.

Ericsson's report stated that the total number of global mobile subscriptions in 1Q15 was around 7.2 billion and are growing by 1.5 per cent quarter-on-quarter. Seventy-five per cent of that growth in the first quarter came from Africa and Asia, and Ericsson expects this pattern to continue to 2020. It said the strong growth particularly in MEA is due to a young and increasing population, as well as rising GDP. Africa's current mobile penetration rate of 78 per cent, the lowest compared to other regions, also indicates room for growth.

The report added that 80 per cent of mobile subscriptions in Africa were GSM/EDGE-only in 2014. Of the rest, most were WCDMA/GSM while a small proportion were just CDMA. In sub-Saharan Africa, Ericsson said GSM/EDGE-only subscriptions will remain predominant up to 2020, due to the high number of lower income consumers using 2G-enabled handsets. However, it predicts that over the next five years, WCDMA/GSM will fall to 55 per cent as LTE/WCDMA/GSM and LTE/CDMA begin to rise.

In September, the Global mobile Suppliers Association (GSA) confirmed that worldwide LTE subscriptions continue to grow faster than any other mobile communications system

GENERATION	UNITS SHIPPED		SHARE %	
	2Q14	2Q15	2Q14	2Q15
2.5G			41.8	31.9
2G			26.0	23.5
3G			27.2	35.6
4G			5.0	9.0
TOTAL	39.0m	43.5m	47.3	52.7

Mobile phone shipments in Africa according to cellular technology. SOURCE: IDC MOBILE PHONE TRACKER, 2Q15

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Left: the *Phantom 5* is Tecno's latest flagship device for Africa. Right: the Samsung *Galaxy S6 edge+* with its innovative edge touchscreen. Below: the *Style* from Johannesburg-based AG.

technology. It said there were 755 million LTE subscriptions globally by the end of June 2015. But while APAC leads with around 390 million LTE subscribers as at 2Q15, MEA trails at around 25 million. That's despite most African countries either having seen the launch of commercial LTE networks or still progressing/piloting deployments. According to GSA data, some notable areas where there currently seems to be no LTE activity include parts of Western Africa such as Mali, Mauritania and Niger, as well as Eritrea and Mozambique in the East, and CAR and Congo Brazzaville in Central Africa.

Nonetheless, IDC's Popal said there is currently a boom in 3G- and 4G-enabled devices on the continent, with 3G increasing in volume by almost 45 per cent and 4G increasing by 100 per cent from 2Q14 to capture a 35.6 and nine per cent share respectively *(see Mobile shipments in Africa according to cellular technology, previous page)*.

The cost of network expansions aside, it could be argued that a lack of affordable devices as well as locally relevant online content hinders the rollout of mobile broadband technologies such as LTE. Or should operators take the approach of 'if you build it, they will come'? That's what

Nabila Popal, Research manager, MEA & Turkey, IDC

"Africa is witnessing a huge growth in many new vendors that did not exist a year before... This has resulted in smartphone penetration on the continent to increase to 54.1 per cent from just 31.8 per cent a year ago."

Dhiraagu, for example, has done in the Maldives. Earlier this year the MNO launched the first commercial LTE-A service on the islands while admitting that there were very few handsets in the country's market that supported the technology. Dhiraagu, which claims to be the largest telco in the Maldives, said its aim was to be a "front runner" in introducing the latest mobile broadband technologies.

Spoilt for choice

Of course in Africa there is certainly no lack of handsets. With all the world's major vendors beating a path to the continent's markets, as well as devices developed especially for the region, it could be argued that local consumers have never had it so good when it comes to new mobiles.

For example, established in Hong Kong nine years ago, Tecno Telecom is now one of world's largest mobile phone makers, and in 2008 it made a decision to focus on Africa as its key market. As testified by IDC above, Tecno continues to be one of the continent's top three mobile phone brands and the company is aiming to consolidate its position with the recent launch of its flagship handset, the *Phantom 5*.

The dual SIM smartphone uses *Android 5.1* and supports 4G (LTE-FDD Band 3/7/20) and 3G (WCDMA 900MHz/2100MHz). It has an internal 3GB RAM as well as a 32GB ROM, a 5.5-inch full HD screen, an eight megapixel front camera plus a 13 megapixel back camera. The *Phantom 5* also features a fingerprint scanner which means users don't need to set a password to protect their privacy.

TECNO has also introduced its *Camon* range of phones which include the *C8* that is designed to capture "perfect" pictures even in low light, and the *C5* which is additionally 4G-enabled.

Another firm focusing on the continent is Johannesburg-based AG Mobile. It was setup in 2007 by a group of South Africans with a vision to offer mobile devices and smartphones "for Africans by Africans". The company says: "Our handsets hold their own among devices of their class, each manufactured according to high-level specifications, which make them not only good-looking but highly functional too."

Among the company's latest devices is the *AG Style* smartphone which has a MediaTek *MT6582* quad-core 1.3GHz processor, and pre-loaded apps such as *WhatsApp*, *Facebook*, *WeChat*, *Instagram*, *BBM* and *Playstore*. It will also be one of the first devices to support Cell C's new *Wi-Fi Calling* service in South Africa *(see News, p5)*.

With 3G connectivity and *Android 4.4 KitKat*, the *Style* features an 8MP back camera, a 2MP 'selfie' camera, and a five-inch FWVGA display. It offers 10 days of standby time and four hours of talk time.

The big news from Samsung's mobile phone division is the *Galaxy S6 edge+* and *Galaxy Note5*. With increased 4GB RAM, the manufacturer claims its new smartphones offer the "most powerful" capacity and processing power on the market. Both devices also feature a curved 5.7-inch Quad HD Super AMOLED screen to provide what the company describes as a "more immersive" multimedia experience as well as "more productivity on-the-go".

The *Galaxy S6 edge+* has Samsung's new 'Apps edge' which allows users to access their favourite apps by swiping the edge display. There's also 'People edge' – from the edge screen, users can quickly find their preset contacts and call or send messages to them directly.

The *Galaxy Note5* includes an all new *S Pen* that is said to offer improved writing capabilities and a variety of practical applications. Users can now quickly jot down ideas or information when the screen is off without even unlocking the phone. They can also annotate PDF files and capture lengthy web articles or long images simultaneously via the 'Scroll capture' feature.

Both devices support 4G, use *Android*, and have 32GB or

64GB storage options. They also offer 4K (Ultra HD) video filming and 'Live Broadcast' which lets users instantly stream live, full HD video, straight from the phone.

Other features include Samsung's fast wired and wireless charging technology. With wired charging, the company says the devices can be fully charged in approximately 90 minutes, while using its latest wireless charger each can be fully powered in around two hours.

A fingerprint sensor, 32/64/128GB storage capacity, 5.7-inch WQHD AMOLED display, and an 8MP front facing camera with Google's HDR+ technology are also included.

ZTE is also including pressure sensitive devices as part of its latest flagship series of smartphones. The new *AXON* range includes the *mini* which was claimed to be the world's first smartphone with the enhanced touchscreen functionality when it was first unveiled in July.

With a body made from Boeing 787 aircraft-grade aluminium-titanium alloy, ZTE says the *mini* has both a "premium look and feel". The handset is 3.5mm thin and 70mm wide, and has a 5.2-inch Super AMOLED full HD curved-edge screen.

Other features include a Qualcomm *Snapdragon 616* octa-core processor and *Adreno 405* GPU, 3GB RAM, 32GB ROM, and support for three different biometric authentication options: fingerprint, voice control and eye-scan.

Apple unveiled its latest *iPhone* models earlier this year, and at the time of writing they were expected to make their debut on the continent with MTN South Africa in mid-October, and Cell C, Vodacom and other operators following soon.

Like Huawei's *Mate S* and ZTE's *AXON mini*, the *iPhone 6s* and *iPhone 6s Plus* also feature pressure sensitive technology which Apple calls '3D Touch'.

They also introduce *Live Photos* which, according to the manufacturer, brings "still images to life", although some critics have joked that this is called video and has been available on phones for years.

The new *iPhones* feature Apple's A9 chip which the company claims is the "most advanced" ever in a smartphone, delivering faster performance and "great" battery life.

It adds that the devices are designed with the "strongest" glass on any smartphone, as well as *7000 series* aluminium – the same alloy said to be used in the aerospace industry. ■

Dealing with the pressure

Huawei reckons its new flagship device ushers in a "new era for human-machine interaction" as it redefines how touch technology is incorporated into smartphones. The *Mate S* features *Fingerprint Sense 2.0*, an upgraded version of the advanced chip level security and single-tap unlock technology used on Huawei's *Mate 7*. It's claimed this is now faster, more sensitive, and has more accurate self-learning functions to improve recognition speeds by 100 per cent. In the *Mate S*, the fingerprint sensor is used for more than just privacy. It allows users to control notifications, scroll through photos, take selfies, answer calls, and even dismiss alarms quickly.

The smartphone also uses an advanced version of Huawei's *Knuckle Sense* technology, providing a host of new features and functionality at the tap of a knuckle. For instance, users can quickly switch between apps by drawing a shortcut letter on the screen, such as a 'c' to activate the camera, 'm' to listen to music, or 'e' to surf the internet. Personalised knuckle shortcuts can also be created.

Huawei says another innovative feature is the *Mate S*' pressure sensitive touch technology (available in selected markets to be confirmed). This perceives different levels of pressure on the screen allowing the user to complete different actions – such as zooming into photos or launching an app – by applying increasing pressure.

Huawei expects more new and unique pressure sensitive touch applications to become available.

Separately, the company has teamed up with Google to unveil what's claimed to be the "ultimate" premium smartphone. The *Nexus 6P* has *Android 6.0 Marshmallow*, Google's latest operating system for mobile devices, as well as the latest version of the octa-core Qualcomm *Snapdragon 810 v2.1* processor.

The device is equipped with the reversible USB Type-C port, and Huawei claims the included Type-C fast charger gives up to seven hours of battery life from a 10-minute charge.

The two partners reckon the *Nexus 6P* offers the best all-around camera which is ideal not only for outdoor photography but also in conditions where the lighting is less than ideal. They say the larger 1.55um pixels capture more light even in the dimmest conditions to produce "stunning details and sharp images". The device is also capable of recording 4K and high-frame-rate slow-motion videos.

Top: Huawei's *Mate S*. Right: the ZTE *Axon*. Far right: Apple's latest *iPhone 6* and *iPhone 6 Plus*.

PHOTO: VODAFONE

Sowing the seeds of next-generation VAS

Vodafone has identified six mobile services which it says could boost the incomes of 70 million farmers by USD9bn over the next five years.

Will the advent of LTE boost the availability of value-added services in Africa? DAVE HOWELL finds out.

Based on forecasts from TechNavio, the worldwide mobile VAS market will grow at a CAGR of 10.62 per cent from 2013-2018. What began with non-voice services such as SMS and MMS now includes mobile banking and more.

According to Tecnotree, which specialises in telecom IT solutions for the management of products, customers and revenue, 4G/LTE is currently being planned or is in its initial phases in Africa, and although the continent is a bit behind in its development, the technology will bring more opportunities for mobile operators.

"In Europe, for example, mobile broadband is a serious threat for the fixed line ISPs providing cable connectivity and is quite rapidly replacing landlines," says Pekka Kangas, the company's business development director. "On the VAS side, the extended bandwidth is enabling the delivery of richer content, more applications, etc. This means that the role of the operator can continue to go in the direction of bit pipe providers."

That may be true if the MNOs let that happen. What's clear however is that the development of fast access thanks to LTE is the foundation onto which all next-generation VAS will be built. For instance, Chris Halbard, EVP of Synchronoss, says LTE's faster speeds and greater capacity significantly changes the ways in which subscribers can use their mobile devices. "These faster speeds and lower latency gives a better experience for dense data services, like real-time video and apps, while also providing sufficient bandwidth to enable strong security without undermining performance."

Synchronoss provides personal cloud solutions and software-based activation for connected devices across the globe using its patented technology. Halbard believes the advent of LTE provides mobile operators with the perfect opportunity to use the cloud as a low-cost VAS for subscribers. More on that later.

Follow the money

Mobile financial services (MFS) have been a focus for VAS providers across developing regions that are driven by the need to 'bank the unbanked'.

In its *State of the Industry – Mobile Financial Services for the Unbanked* report published last year, the GSM Association says services are now available in 61 per cent of the world's developing countries *(see Figure 1: Percentage of developing markets with mobile money per region)*. While half of all launches in 2014 occurred outside the continent, sub-Saharan Africa still accounts for 53 per cent of live services globally *(also see Figure 2: Number of live mobile money services for the unbanked by country)*.

Banking is clearly a focus for VAS across Africa. For instance, there are 174 million mobile phone owners in Nigeria, but 57 per cent do not have access to formal financial services according to research by the Grameen Foundation. It also found that only 0.1 per cent of adults actively use mobile money. Airtel Nigeria CEO Segun Ogunsanya says: "The overwhelming majority of the adult population is unbanked. However, mobile penetration is approximately 78 per cent. The market opportunity for mobile money is therefore vast."

Despite that, it is still illegal in some countries, such as Uganda and Ghana, for telcos to offer financial services. This clearly has to change if the real power of mobile banking as a VAS is to take hold across a greater part of the region.

Having said that, there is no doubt that Africa is leading the way when it comes to MFS, and operators elsewhere in the world are now beginning to follow the examples of some of the continent's operators who have created intra-country 'remittance corridors' between their

operations, or made their mobile money services interoperable with another. The latter include Airtel, MTN and Vodafone, but it was Tigo in Tanzania that was the first.

Since 2014, *Tigo Pesa*'s four million customers in Tanzania have been able to exchange funds with Airtel's and Zantel's mobile money subscribers. Earlier this year, the interoperability was extended and now includes the country's six million Vodacom *M-PESA* users. This means mobile money customers in Tanzania are the first in Africa to be able to transact with users of all their country's mobile money networks.

Tigo – which is a subsidiary of Luxembourg telco Millicom – is using Mahindra Comviva's *Mobiquity Money* platform for its interoperable services. Mahindra Comviva claims the secure, reliable and fast platform simplifies off-net money transfers. According to the vendor, *Mobiquity Money* is designed to seamlessly integrate consumer touch points with a wide ecosystem of banks, billers, merchants and third-party payment systems, creating a convergence powered by interoperability.

As well as delivering convenience to consumers, Mahindra Comviva says the solution enables financial service providers to acquire new customers, create long-term loyalty with existing ones, and seize new revenue opportunities to expand their market footprint.

Leveraging technology

Synchronoss believes the cloud can help operators realise LTE's potential. But Halbard warns that it's up to operators to develop and roll out new and innovative features and services that maximise 4G's extra speed and capacity, while also delivering the smooth, high-quality experience that subscribers expect.

He continues by saying operators who provide cloud services to their subscribers enjoy better results than those that haven't, in terms of increased service uptake, higher data usage and improved subscriber loyalty. And it doesn't end there.

"Operators with their own self-branded cloud solution can provide innovative features and products that complement their storage offerings, such as mobile music sharing and media streaming services. These extra services lower churn rates, since customers have little or no reason to move to OTT players who offer similar services."

He points out that what's important for the operator is to offer a broad range of VAS that appeal to an equally broad range of audiences.

Synchronoss has developed a white-label cloud platform which it says can be used by operators to optimise wholesale business, provision subscribers with new smartphones, and also provide them with their own personal cloud-based backup and storage service for mobile data.

The vendor says its network and device activation service solutions are carrier-grade SaaS platforms. It claims they enable MNOs and OEMs to activate and provision new devices and service bundles for users, seamlessly and automatically.

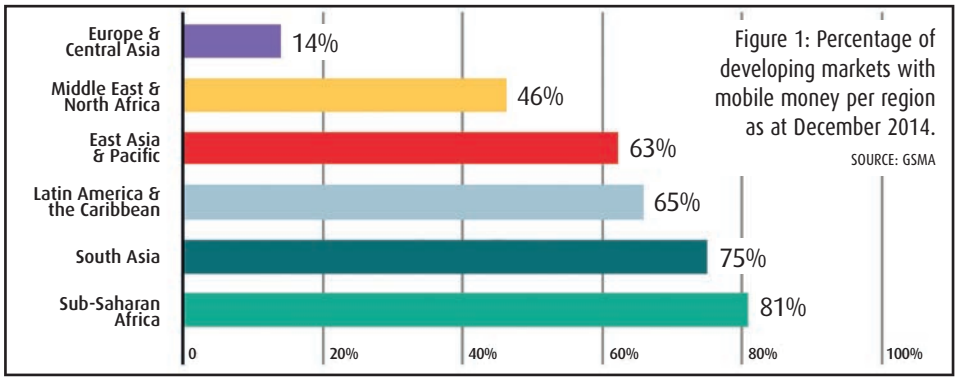

Figure 1: Percentage of developing markets with mobile money per region as at December 2014. SOURCE: GSMA

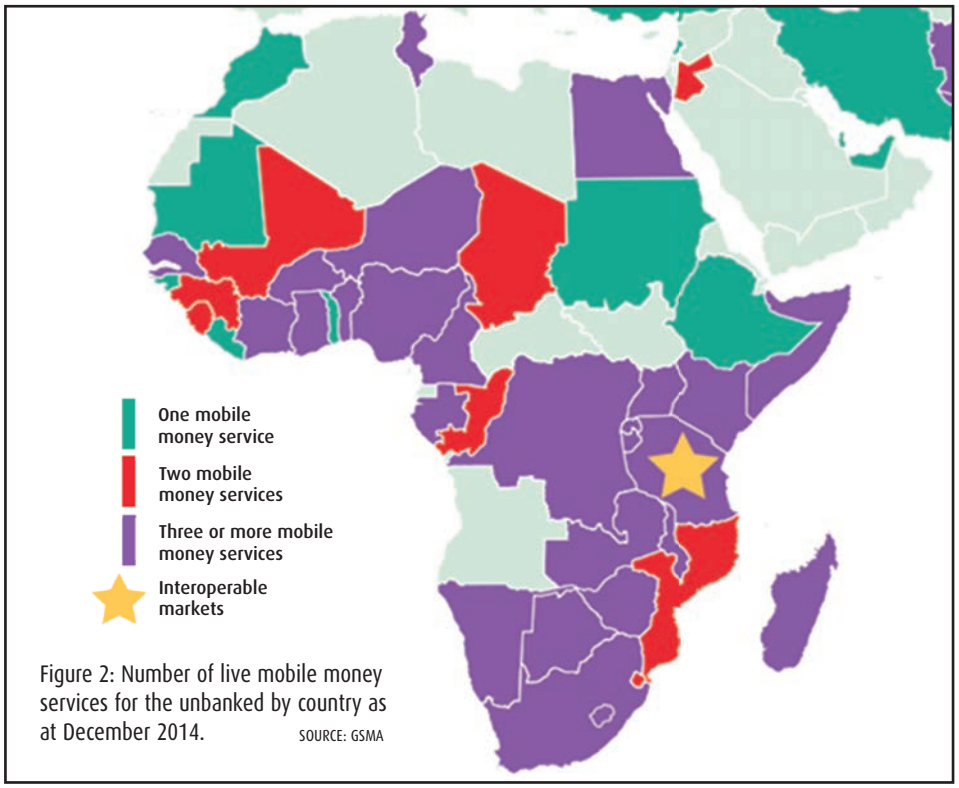

Figure 2: Number of live mobile money services for the unbanked by country as at December 2014. SOURCE: GSMA

Huawei has also set its sights on the cloud in Africa. Earlier this year at the annual *VAS Africa* summit in July, it launched its *Digital inCloud* Eastern and Southern Africa regional centre. The company reckons its solution will facilitate ease of distribution and trade between consumer, carriers, and partners of digital products/services in Africa.

"This facilitation will be achieved through improved content aggregation, and better management of local and global digital content," said Felix Tang, Huawei's director of Eastern and Southern region, carrier software department.

According to Tang, the *inCloud* centre will build Africa's digital ecosystem through the cooperation of operators and local and global partners.

Huawei is partnering with MTN in South Africa and Safaricom in Kenya. The firm believes this localised business operation promotes African carriers and partners to develop digital products and services enabling them to compete globally. "Huawei helps operators and partners generate revenue securely and in a transparent manner," said Tang. "Through global partner agreements, Huawei brings the best channels to distribute local digital content globally."

Worldwide, it's claimed *inCloud* has aggregated more than 2,000 partners with digital content that includes music, mobile games, videos, open APIs, traffic monetisation, B2B cloud and M2M.

However, cloud isn't the only solution available to MNOs when it comes to delivering VAS via LTE. Rich Communication Services (RCS) represent the evolution of operator messaging from legacy circuit switched services such as SMS/MMS to one that is IP-based.

Openmind Networks offers a single platform enabling customers to deliver VAS such as RCS. It points out that as LTE infrastructure becomes more widespread across key mobile economies, RCS enable operators to offer many of the features that users have come to expect from OTT players, including presence and location information capabilities.

Derek McElhinney, the company's senior consultant, says: "RCS over LTE enables the best quality of experience and drives greater data usage (LTE users consume a lot more data). Furthermore, the real business case for RCS lies in the evolution of operator services in order to stay relevant to their users in the face of stiff

competition from OTT messaging players. It is this relevance that is of the highest importance."

McElhinney says operators can deploy RCS either as a hosted platform or build it in their own network. "One of the advantages of using a cloud-based hosted platform in emerging markets such as Africa is that operators can begin to develop, test and deploy new richer services very quickly, with minimal disruption and cost."

He adds that other operators may opt to build their own RCS platforms as part of an ongoing infrastructure investment. For example, many are already making investments in IMS platforms to support VoLTE which shares the same investment and capabilities as RCS.

"Embracing VoLTE enables voice, data and video services to be more cost effectively and simply delivered over a single IP network. If an operator has made this initial investment in IMS for VoLTE, it is then a straightforward and affordable process to install an RCS application server into the network," says McElhinney.

But will any of this work in developing markets that are still dominated by pre-paid basic or feature phone users? If the future of VAS depends upon LTE then greater smartphone penetration is essential for its success. However, as McElhinney points out, another advantage of RCS is that full LTE coverage is not a pre-requisite for deployment. He says richer communications can be deployed over 2G and 3G, allowing operators to get a headstart instead of waiting for 4G to succeed.

The GSMA adds that in terms of MFS, the diversification of the types of interfaces customers can use to access mobile money accounts can help providers to target different market segments.

For example, in its report above, the association states that the IVR interface can be adapted to numerous local languages and dialects, thus helping providers target illiterate communities as well as people who aren't comfortable interacting with data services (typically USSD) on a mobile.

Furthermore, the GSMA says well-designed apps can "dramatically improve" user experience by providing rich user interfaces and enhanced functionality. "Apps are also helping operators to target the growing segment of smartphones users in developing markets. As low-cost smartphones and data packages become more widely available, the number of operators offering mobile money apps is likely to increase."

VAS in action

Mobile financial services are key VAS applications in emerging market today. But as mobile data penetration increases, VAS will continue to reach into other areas such as entertainment and enterprise applications.

While Tecnotree's Kangas believes VAS are not about apps, he says it's quite obvious that operators will need to think carefully about incorporating their own apps for various handset platforms. "These clients could include self-care apps, opening new horizons for end users by managing their own preferences and services. While they could be considered as VAS, the nature of these apps is more in the care/CLM/BSS side of the operator business."

Apps aside, the challenge for operators is that they now need to take the massive installed mobile user base and expand with VAS to create a new environment for growth.

"Within many operators, cooperation is needed internally, and recent organisational trends have caused deep silos in their internal operations/communications," says Kangas. "It is clear that VAS vendors today struggle slightly in 'mingling' between operator organisations, and some VAS vendors have needed to bring various different operator functions to the same table."

One of those functions has now grown to include data analytics. France-based Intersec specialises in solutions for mobile operators to leverage 'Big Data' and capture and monetise their subscriber information. The company's CMO Laurent Michel says that as the world becomes increasingly mobile and connected, our way of communicating and consuming media and services is radically changing.

"What is considered a comfort service today will become a must-have tomorrow. LTE holds strong promises of value development by being the key enabler to increase the share of VAS in revenue mix beyond the usual ~10 per cent we experienced in the 2G/3G era.

"Whether it will be achieved depends on the telecom operators' ability to design new business models that value LTE beyond the sole argument of speed. Operators should take advantage of the LTE capacity by working with other industries (e.g. healthcare, financial, transportation, etc.) to create new VAS products for subscribers and for new revenue streams."

One of the advantages of analysing subscriber behaviour is that it enables MNOs to target specific customers with specific services. For example, Bharti Airtel's *TraceMate+* service is aimed at enterprise users, enabling them to track employees and corporate resources via their mobile phones. It is based on Telenity's *CanVAS SmartTrail* platform which utilises mobile network-based positioning technologies to determine and track the location of selected cellphones that have been registered to the *TraceMate+* service.

CanVAS SmartTrail provides enterprises with an administrative account to add, delete and modify information about the mobile phones to be traced. An interactive GUI presents an instant snapshot of the current location of all registered employees through a heat map-style window.

Service administrators can zoom in and out of the map to get a more detailed view of teams and individuals. They can create multiple 'geofence' areas to receive automatic email alerts when a tracked resource 'enters' or 'exits' these areas. Historical location information of a selected employee is also drawn on the map showing the details of the routes he/she has taken with timestamp information.

Telenity points out that to protect employee privacy, the solution enables selection of the days and hours for tracing and limits the location visibility to working hours only.

The real value of VAS

What differentiates the significance of mobile technologies in developing markets compared to developed ones is that they have a proven socio-economic impact. This is where VAS really comes into it's own in the developing world.

For example, earlier this year Vodafone published research which concluded that the introduction of six simple mobile services could boost the incomes of small-scale farmers by an average of USD128 a year. According to the study, which was conducted with Accenture Strategy, six mobile services offer the potential to transform farmers' lives and livelihoods:

Agricultural information services to provide early warnings of weather events, information on the best times to harvest, and advice on crop techniques to enhance yields. The services could increase farmers' annual incomes by an average of USD89 a year in 2020.

Receipt services to provide greater transparency in daily commodity supply chains, allowing farmers to raise their incomes by improving efficiency and eliminating fraud.

Payments and loans enabling farmers to access simple and secure financial products and services using mobile money payment systems such as *M-Pesa*. The operator says access to highly cost-effective micro-finance and quick and transparent electronic payment systems could provide an annual benefit of USD690 for some farmers in 2020, representing a 39 per cent increase in their average farming incomes.

Field auditing to enable the monitoring of quality, sustainability and certification requirements. This allows farmers to move away from paper records and adopt instead electronic reporting via tablets and mobile data, greatly enhancing efficiency and potentially increasing annual average income by USD612 for some.

Supply chain networking enabling small-scale producers to transact with local cooperatives through simple but robust information services and mobile money systems. These could boost some farmers' annual incomes by USD271 in 2020.

Smartphone-enabled services to provide deeper functionality and richer sources of information than is possible using basic SMS and voicemail services. These could lead to an increase in average annual farming incomes of USD675 for more than four million farmers in 2020.

While Vodafone's research focused on India, Serpil Timuray, Vodafone Group's regional chief executive for MEA and APAC, said: "One-third of humanity relies on food grown by 500 million smallholder farmers with less than two hectares of land. Mobile has a critically important role to play in increasing agricultural resilience and enhancing quality of life for some of the poorest people on Earth." ■

Digitata, Leader in Dynamic Tariffing™, Appoints New Group CEO, Following Acquisition of Controlling Stake in Rorotika

Digitata Limited is pleased to announce the appointment of Mr Tinus Neethling as the new Group CEO of Digitata Limited. Tinus was formerly the CEO of Rorotika Technologies, in which Digitata Limited recently acquired a controlling stake.

Regarding his appointment as Group CEO, Tinus said:

"These are exciting times for Digitata and I am delighted to have the privilege of leading the company through them. Having served in both Digitata and Rorotika in the past, I understand the product range of both companies and their synergies. I will be restructuring the company so as to combine the products and service offerings into streams that will meet the needs of our customers and enable aggressive expansion into new territories."

Digitata's new structure involves four distinct streams: Digitata Dynamic Tariffing™, Digitata Networks, Digitata Insights and Digitata Innovation

digitata

Digitata Dynamic Tariffing™ is the established face of Digitata, with its world-leading Dynamic Tariffing™ System for voice, SMS and data. For over 7 years Dynamic Tariffing™ has provided mobile network operators with a unique platform to attract new customers, retain the existing customer base and ensure profitable revenues, while protecting the quality of the mobile network.

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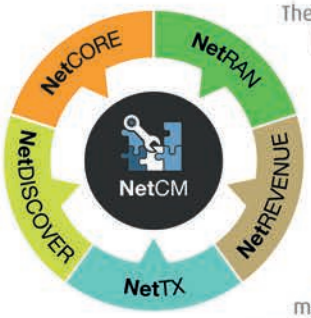
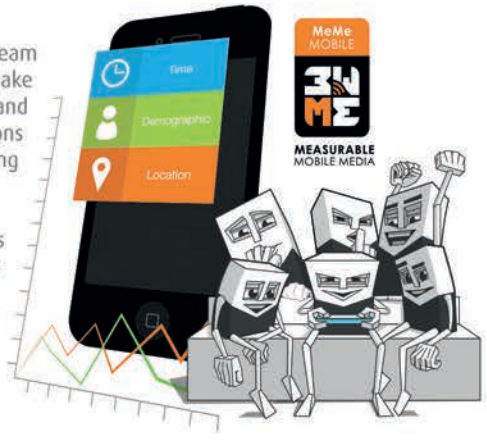


The acquisition of Rorotika Technologies also brought with it other lines of business that will be of interest and benefit to Digitata's Mobile Network Operator customers.

Digitata Networks, a subsidiary of Rorotika Technologies, provides a sophisticated, vendor-agnostic network configuration management offering (NetCM) to transparently manage and troubleshoot all major mobile technologies (2G, 3G, LTE, Wi-Fi) and multi-domains (Core, RAN, TX).

Digitata Insights is the fun face of the company. This stream marries product offerings from Digitata and Rorotika to take advantage of synergies between Digitata's MeMe Mobile offering and Rorotika's mobile gaming platform. Digitata Insights provides innovative mobile solutions focusing on mobile engagement mechanisms, which incorporate gamification and advertising strategies to create extended, emotional and valuable customer engagements.



Digitata Innovation is our "dream stream" that develops new innovations and handles prototypes and related patents. Current products being incubated and developed in the Digitata Innovation wing include Glovent's GloPortal and SnapTariff, and extensive work is being done in the area of "Big Data".

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A managed service provider who offers BSS must be able to understand the intricacies of a billing system and all the functions it supports.

Don't be a sheep when it comes to BaaS

Should you follow the industry trend of handing over your BSS to a managed service provider? ALAM GILL explains what 'Billing as a Service' should really mean.

Globally, recognition of the part that improved communications plays in delivering economic growth during a time of worldwide recession has led to several governments taking action to increase the take-up of high-speed broadband services. But at what price? After more than 20 years working with telecom companies across the globe, I can speak from experience when I say the world is littered with failed billing projects.

Common symptoms of such projects include: constant delays; significant cost overruns; unrealised potential of strategic platforms that become legacy replicas; and continual scope versus change management angst and disputes between service providers and their system integrators/vendors.

Despite these common multiple symptoms, what is interesting is that most stem from a single common root cause.

Often, billing projects tend to focus on 'managing to requirements'. Enormous amounts of energy and effort are spent on capturing and managing specific requirements, rather than focusing on business outcomes such as delivering tangible improvements in 'time to market' and managing and expanding customer experience. This means if requirements are not 100 per cent accurate and complete, then the basis of the project is fundamentally unstable.

More importantly, by managing purely for requirements, service providers and system integrators fall into the trap of being bound to carefully crafted sets of words which always tend to favour one party over another and also assume a constant and non-changing world. And therein lies the fundamental problem: billing transformations take time and time means change; yet requirements are static and fixed.

This is why managed service providers (MSPs) in general aim to shift the focus from 'delivering to requirements' to 'delivering to business outcomes'. Creating a world-class billing capability fit for today's business requirements and future innovation is a journey, not a point in time solution.

Delivering business outcomes

BSS applications, and billing systems in particular, are an integral part of the business. So naturally, many critical business outcomes are directly tied to such platforms. The effectiveness of the billing system can impact the ability of service providers to launch timely offerings, and almost always has a direct correlation with customer satisfaction.

For example, improving the billing experience has a huge impact on an organisation's net promoter score, which measures customer loyalty and the likelihood that he or she will recommend your products and services to a friend or colleague.

So unlike system integrators (SIs) and independent software vendors (ISVs), MSPs tend to take a holistic view of the business. They start with a clear understanding of the challenges and the expected outcomes to deliver solutions and services that are 'fit for use' rather than just conform to requirements.

More so, effective MSPs understand the need and value of innovation, and recognise that

the world is forever evolving. Hence, they tend to ensure that business outcomes incorporate continuous innovation and ongoing service improvement as part of their core offering.

So the real question is, can any MSP truly deliver billing as a managed service?

Are all MSPs equal?

The simple answer is no. Generally speaking, while most people would visit their general medical practitioner for a check-up and/or to address minor ailments, no sane person has ever agreed to have heart surgery performed by anyone other than a specialised heart surgeon. In this respect, the approach to using a billing platform as a managed service is no different.

BSS, and especially billing systems, hold the heart of the organisation (i.e. the product model) and pump the events continuously from downstream systems and through to upstream systems and direct users. They are the central nervous system of telecom operations and impact key business success factors such as time to market, customer satisfaction and of course, profitability. As a result, in-depth, specific expertise is needed to get the billing system right.

So handing over the transformation of the billing domain to a generic MSP is no different to asking a general medical practitioner to perform open heart surgery. While they might be familiar with key concepts and processes, they lack the intimate understanding and experience that a specialist surgeon possesses.

How can a generic MSP truly understand the intricacies of the billing system and services if it doesn't live and breathe this for many years across many customers? How can it manage to deliver business outcomes if it doesn't have an inherent understanding of the billing domain and how it affects customer satisfaction?

More importantly, how can an MSP contribute to innovation and deliver continuous service improvement if it is not investing R&D money into billing technology roadmaps? BSS specialists have defined frameworks and models that anticipate billing issues and proactively aim to eradicate them based on years of best practice.

The reality is this: generic MSPs will strive to deliver business outcomes, and will most likely deliver cost optimisation across a broad cross-section of the organisation. However, they will not be able to exploit and enhance the fundamental business outcomes that are critical in today's digital era, such as time-to-market, customer satisfaction and service predictability/agility. To realise these benefits requires a deep understanding of billing technology and billing services to assess, baseline, and continually improve billing service maturity.

'BaaS' – what should it really mean?

'Billing as a Service' (BaaS) invokes connotations of cloud-based billing solutions. However, what it should mean is something much broader and yet much more specialised. It should encompass:

- The agility that a SaaS cloud solution implies but with the ability to be delivered on any platform, hosted or otherwise
- Quality management frameworks and risk management models that control and assure billing specific conditions
- Billing domain knowledge and best practices founded on years of global operations and billing technology experiences
- An inherent understanding of billing pain points, and a proactive approach to continually improve billing maturity
- An internal ongoing investment in billing technology and operational best practices to ensure continual innovation and service improvement
- A service-oriented billing approach able to capitalise on the digital era

The billing system is one of the best places to leverage managed services and a service-oriented approach. No other system touches the customer experience so frequently, nor has the potential to significantly improve the customer interaction and time-to-market.

But just focusing on the billing system as a piece of technology won't get you there – consideration of the entire ecosystem of people, processes and technology as a whole must be at the forefront of any managed services endeavour.

Today's digital world requires a new way of thinking about all of these three elements as enablers of the customer journey, and that's where the next generation of managed services, the service-oriented approach, fits in. This approach is built upon collaboration of stakeholders from across the business (not just IT), and looks to solve business problems without creating new ones.

A new business model is emerging in leading telcos. They have created an 'innovation team' comprised of marketing, IT, product management and the MSP to identify business objectives, establish common goals, and proactively identify issues that can thwart results.

The service-oriented approach can create dramatic and meaningful results for the business. A great recent example is work CSG performed for one of its managed services clients who wanted to shorten the amount of time it took to create and launch a new product. CSG helped the provider look across the entire process of launching a product to identify the gaps and address each one. With this more agile, holistic approach, the provider was empowered to release four to five new offerings every week.

This transformation didn't happen overnight, and it didn't look to a single technology for the answer. Instead, it required collaborating with all of the company's relevant stakeholders, mapping out a process, and optimising the right systems to make it all happen.

The service-oriented approach also puts the customer at the centre of the business, and explores every opportunity to build better interactions, create loyalty and build new revenue streams.

While technology can address parts of the interaction it often overlooks the whole. The marketing department may want to launch a new service, but how will that new service impact core systems such as ordering, billing and everything in between? And most importantly, what type of experience will the customer have? How do we make the customer journey a smooth and fast one?

A service-driven approach looks at the entire process from beginning to end and maps the technology to that process. It understands how all systems interrelate across the whole experience – not just one point along the journey.

Thirdly, the approach focuses on putting in place the people, processes and technology to work in harmony instead of in silos. It's people – and their skills and expertise – that bring new products to life, create innovative opportunities and enable faster time to market. Processes and technologies help bring those ideas to fruition. Businesses must take into account all three to support new digital services and meet customer expectations.

Africa's growing need for a holistic view

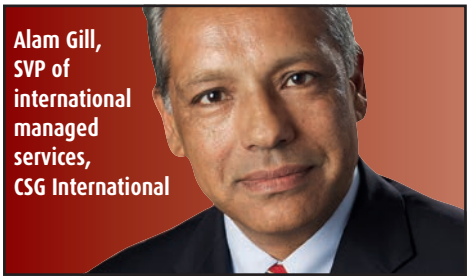
Nowhere is digital transformation poised to trigger dramatic changes than in Africa, where mobile and internet penetration has remained lower than in the rest of the world.

The continent's telecoms market is still in its early stages of development but it is also one of the fastest-growing. Since the 2000s, mobile telephone services in Africa have boomed, and their use is now substantially more widespread than fixed line telephony.

But while the region's mobile subscription rate is now over 50 per cent and rapidly growing, national and regional differences are substantial. West Africa holds a 30 per cent mobile rate and Central Africa is below 20 per cent. North and South Africa raise the continental average.

The continent is poised to undergo significant growth as existing barriers to bandwidth have kept penetration in some isolated geographical areas low. And soon, the geographical disparities in mobile usage across the region will be a thing of the past. Mobile penetration rates and internet usage are expected to skyrocket as companies like OneWeb works toward its goal of providing global internet broadband service to individual consumers through a proposed constellation of approximately 700 low-orbit satellites as early as 2019 (*see News, Jun-Jul 2015*).

Amidst all of this change, the timing is perfect to explore a service-oriented approach to designing teams, business processes and systems that will prepare operators for success as the market grows. ■



Alam Gill, SVP of international managed services, CSG International

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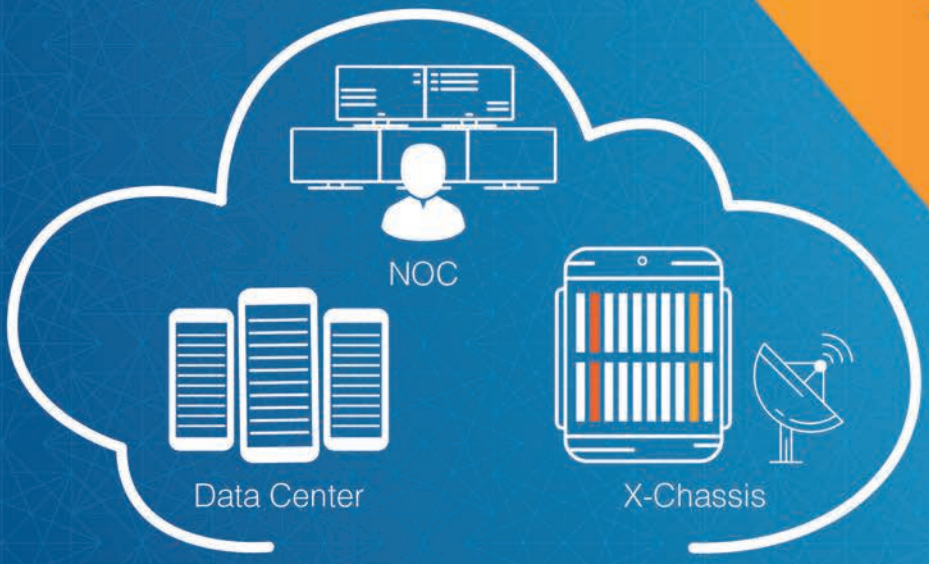

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"Clear connection" between wireless devices and cancer

Radiation from wireless devices could be the link to health risks such as various neuro-degenerative diseases and cancer, according to a recent study.

Writing in a review article published in *Electromagnetic Biology and Medicine* by the Taylor and Francis Group, Dr. Igor Yakymenko of Ukraine's National Academy of Sciences explores experimental data on a metabolic imbalance caused by low-intensity RF radiation in living cells. Also known as oxidative stress, this is described as an imbalance between the production of reactive oxygen species (ROS) and antioxidant defence.

According to the study, the oxidative stress due to RFR exposure could explain not only cancer but also other minor disorders such as headaches, fatigue and skin irritation, which could develop after long-term RFR exposure.

The article explains that ROS are often produced in cells due to aggressive environments, and can also be provoked by "ordinary wireless radiation". As a result Yakymenko and his colleagues say a precautionary approach is now needed in using wireless technologies.

However, other experts have dismissed the study as yet more scaremongering. For instance, Dr. Steven Novella, an academic neurologist at the Yale University School of Medicine in the US, says Yakymenko and his team have only looked at literature and proclaimed that it confirms what they already believed. He points out that they have not presented any new data, or conducted any experiments or an observational study.

Writing in the online forum, *The Skeptics Guide To The Universe*, Novella says: "This review does not look at studies which examine whether or not there is an actual increase in brain cancer or other illness associated with cell phone use. While there are still minority dissenters, there is a growing consensus among scientists that cell phone use does not cause brain cancer. Most reassuring is that, as cell phone use has skyrocketed over the last 20 years, the incidence of brain cancer has not budged."

Reliance Group aims to boost IoT in India

Reliance Group has its sights set on developing the Internet of Things (IoT) in India as part of two new partnerships.

Reliance Energy, the power distribution arm of Reliance Infrastructure, annually distributes more than seven billion units of electricity to its 2.9 million consumers spread across 400km^2 in Mumbai and its surrounding areas.

It is working with Swedish vendor Connode on building a smart sustainable city network that will connect smart meters, streetlights and distribution automation equipment using Intel's *IOT Gateways* and the *Connode 4* IPv6-based wireless mesh system.

The system aims to provide a highly flexible and cost-effective total communications solution that will be easy to deploy and efficient to operate, and can grow in functionality as the market develops."

Under a second partnership, Reliance Communications (RCOM) will use Jasper's *Control Center* platform in conjunction with its 11 data centres and global *Cloud Exchange (Cloud X)* service. RCOM recently launched five *Cloud X* nodes in Delhi, Mumbai, Chennai, Bangalore and Hyderabad.

By using *Control Center*, it aims to give more than 39,000 enterprise customers the ability to quickly and cost-effectively launch IoT services.

Reliance Group companies will be the anchor clients on the IoT platform, but discussions are also under way with several organisations and state governments across India for further deployments.

YahClick launches Ka-band broadband in Pakistan

Yahsat has officially launched its *YahClick* satellite broadband service in Pakistan. The UAE-based operator says consumers anywhere in the country, including places where terrestrial infrastructure is currently not yet available, will now be able to instantly connect to broadband via a small satellite dish and modem, without the "frustration" of congested networks.

YahClick uses Ka-band connectivity via Yahsat's *Y1A* satellite that was launched in 2011 and *Y1B* which went up a year later. The service is already being used to link more than 154 ATMs for many of Pakistan's leading banks serving its most isolated locations, as well as for connecting 1,600 students and supporting election offices in remote areas.

Yahsat CEO Masood Mahmood claims "exceptional" demand has led to *YahClick*'s rapid growth to become the largest satellite internet provider in Africa and a dominant player in the Afghan market.

He adds: "Our consumer launch in Pakistan is a significant milestone for *YahClick*. Regulatory approval by the Pakistani authorities for consumer use paves the way for us to continue our global growth strategy in this promising market."

Clicksat will distribute the service in the country, and also offer operational and customer care.

Part of REDtone Pakistan, Clicksat is said to be one of the fastest growing satellite solution companies in Southern Asia, deploying more than 300 VSATs across the region last year.

Secure and reliable comms for Indonesian mines

Indonesia's second-largest coal mining contractor, BUMA, will use DAMM´s TETRA solutions for critical radio communication in the open pit mine of Kideco.

According to DAMM, the single most important challenge for BUMA was to secure reliable and failsafe communication at anytime. As a result, it provided a dual carrier multi node outdoor *TetraFlex* system with built-in applications such as dispatcher, voice and application gateways. It also included the *Group Bridge* application to bridge TETRA to existing analogue networks already operating in Indonesian mines.

The company says *TetraFlex* offers integrated cross-platform technology solutions for critical communication. Optimised for direct installation in harsh environments, the system's outdoor base station features an IP65 enclosure and offers full redundancy. DAMM says the platform's 100 per cent IP-based distributed architecture also gives full flexibility in site and capacity expansions, even during operation.

The Danish-based vendor adds that its system was a "clear choice" for BUMA as it offers easy integration to third party applications such as AVL. To fulfil the need for non-critical voice and data communication, the company says it also provided its *TetraFlex Android Client* enabling TETRA on soft terminals, in this case via Wi-Fi.

S. Jagyantama, MD of DAMM's Indonesian partner Wellracom Group, adds: "*TetraFlex* offers a reliable, decentralised architecture, and provides easy access with an open API."

DAMM's TetraFlex outdoor base station is optimised for direct installation in harsh environments and has an IP65 enclosure.

Advanced LTE with the help of ZTE

Smartfren, the first Indonesian carrier to operate both hybrid LTE and CDMA networks, has gone live with new LTE-A services covering 22 cities across the country.

Following the national government authorising the use of 1800MHz spectrum for 4G, Indonesia's five largest cellcos – Telkomsel, Indosat, XL Axiata, Hutchison's 3 and Smartfren – have all been racing to roll out LTE services in various cities.

Smartfren's LTE-A network was switched on in August in Jakarta.

Smartfren has opened new galleries, such as this one in Jakarta, to showcase its 4G products and services.

This followed a successful trial period and the June launch of its *Andromax* range of 4G smartphones and LTE compatible portable Wi-Fi devices.

The operator has deployed ZTE's evolved node B (eNB), *Cloud Radio* network coordination system, and evolved high rate packet data to deliver what's claimed to be the "best user experience possible".

The network supports both the FDD-LTE and TDD-LTE standards. Smartfren CTO Christian Daigneault says: "We leverage both TDD and FDD technologies to get best of both worlds: high capacity and throughput on TDD at 2300MHz, and large coverage with FDD at 850MHz."

In 2011, Smartfren became the world's first mobile operator to launch CDMA EV-DO Rev.B technology.

By using products such as its *Universal Subscriber Profile Platform*, ZTE says the operator's core nodes in both its CDMA and LTE networks are "highly integrated" to provide a unified user database, policy control and charging policies.The company claims this allows LTE to be deployed rapidly, facilitating maintenance and operation of 3G and 4G networks in the future, as well as lowering opex.

Satellite efficiency record

Intelsat and Newtec say they have achieved a world first for the amount of throughput in a single satellite transponder.

In a demonstration conducted at Intelsat's Fuchsstadt teleport in Germany, engineers from the two firms used Newtec's *MDM6000* satellite modem with built-in all digital Bandwidth Cancellation (BWC) to put 20Mbps into 2MHz.

Newtec says its modem combines a number of elements to improve efficiencies currently available on the market and lower overall TCO. It includes new modulation and FEC codes up to 256 APSK in the DVB-S2X standard, while embedded technologies bring the satellite link to full efficiency.

The firm claims adding built-in BWC – which allows transmission of two carriers in an overlay fashion – as well as optional network optimisation technologies, improves the performance even more for any point-to-point application.

Newtec reckons the achievement demonstrates its modem's "unparalleled" efficiency at any rate, whether on a low-speed voice or data connection, or for medium-speed backhaul links all the way up to ultra high-speed trunks.

"With a spectral efficiency of more than 10bps per Hz, one can, for example, handle a bidirectional E1 in just 400kHz," says Dave Suffys, product manager for IP modems.

Vodafone Egypt builds unique MTX

Vodafone Egypt has built a pre-fabricated mobile telephone exchange (MTX) in the Nile Delta region.

Because networks now offer a greater range of services, Vodafone says MNOs need an MTX that offers a more extensive and automated switchboard system to manage all customer calls and data requests.

Writing in a co-authored blog, Ahmed Abdelwahab, Vodafone Egypt's MTX planning and optimisation expert, said: "In Egypt, the amount of mobile data being used by our customers has been growing by over 20 per cent per quarter over the past two years. As a result, the business needed to quickly and cost effectively increase the number of MTX units in its network."

The three-storey MTX in the Nile Delta.

However, an MTX can take up to two years to build, and given the increasing consumer demand, Vodafone needed a faster solution.

While an MTX is usually built where it is to be deployed, the operator decided to try something different with a prefabricated exchange in the Nile Delta region, Egypt's most populous area where a high percentage of mobile traffic is concentrated.

Vodafone says its engineers created a three-storey, 400m^2 building that was ready to ship in 12 weeks and operational in six months. All the components for the facility were manufactured and tested in advance before being sent in containers to the site, ready for assembly.

"We designed the new mobile exchange and set up the industrial processes and machinery in the factory so that everything would be replicable," writes Abdelwahab. "Our prefabricated MTX will not be a one-off. Building more, even if different sized units are required, will be straightforward and rapid."

Bonding solution provides diverse connectivity on world's longest ship

With an overall length of 382m *Pioneering Spirit* is the world's largest twin-hulled vessel and is also the widest at 124m. Owned by Allseas, the USD2.3bn ship is ostensibly a crane platform and will be used for the decommissioning of Shell's 24,000-ton Brent Delta oil rig off the coast of Scotland.

Instead of using VSAT, Allseas felt that additional diversity and communication redundancy was needed to supplement *Pioneering Spirit*'s existing ship-to-shore communications.

At the core of its new system is the *Balance 710* from internet load balancing and VPN bonding solutions specialist Peplink. To maximise WAN diversity, two of the vendor's *MAX HD2* IP 67 rated routers are used and placed on each side of the vessel spread 300m apart to maximise signal reception.

Peplink says this setup is designed to maintain a continuous link and is also configured to prioritise the most affordable WAN connections.

With a length of 382m, the Pioneering Spirit now has the widest area network on the open seas.

PHOTO: FaceMePLS from The Hague, The Netherlands. Licensed under CC BY 2.0 via Commons

At shore, *Pioneering Spirit* initially connects using point-to-point Wi-Fi or cellular connections provided by the routers if this is unavailable. When the vessel moves out of all terrestrial coverage, VSAT takes over with tethered data via an Iridium satellite phone as an additional failover option.

Tier IV data centre supports hybrid broadband network

Flexenclosure will build Myanmar's first Tier IV data centre for broadband service provider Burst Networks.

Headquartered in Singapore, Burst will deliver enterprise broadband services from its teleport in Myanmar. As as well a data centre, the site will also include a NOC connecting a hybrid network of local fibre and satellite infrastructure that supports C-, Ku- and Ka-band frequencies.

Under a multi-million dollar contract, the operator will use *eCentre*, Flexenclosure's customised pre-fabricated modular data centre. It will be assembled in the Thilawa Special Economic Zone on the outskirts of Yangon, and as a Tier IV facility it will be certified to host mission critical systems. The classification also means that all HVAC systems are independently dual-powered for redundancy, and their fully fault-tolerant site infrastructure gives an availability of 99.995 per cent.

The facility will have a total area of 330m^2 consisting of a 220m^2 data centre and a 110m^2 energy centre. It will support a total of 72 racks with two secure pods, two secure cages, two 'meet me' rooms, and 40 racks in a common data centre area. Power is designed for a total IT load of 150kW, with 2N+1 power redundancy.

The modular, pre-fabricated data centre will be built at Flexenclosure's factory in Vara, Sweden ready for deployment in Myanmar in early 2016.

Orange plans IoT in 2016

Orange plans to begin rolling out an Internet of Things (IoT) network early next year that will eventually cover the whole of metropolitan France. Since May, the telco has been experimenting with LoRa (long range) technology in a trial conducted with more than 30 business partners in Grenoble. It says this was carried out under real conditions to test the network's main uses – collecting data from sensors, controlling objects, regularly locating objects, etc. In addition, Orange says it is also continuing the work on the standardisation of future 2G/4G networks for the IoT which will be operational in 2017, and for 5G by 2022.

LTE-A FDD/TDD first

Swisscom has demonstrated Europe's first fully commercial LTE-A three-carrier aggregation solution combining both FDD and TDD modes. The demo featured two TDD carriers each with 20MHz in the 2.6GHz band and one FDD carrier with 15MHz in the 2.1GHz band. Swisscom says this set-up achieved a maximum downlink of 335Mbps. The live demo was supported by Ericsson's RAN software and hardware and Qualcomm's *Snapdragon X12* LTE modem. The operator plans to roll out a service in metropolitan areas by summer 2016 to coincide with three-carrier FDD/TDD smartphone availability.

Bangladesh bus Wi-Fi

In what's claimed to be a first in Bangladesh, Green Line bus passengers on the Dhaka-Cox's Bazaar and Dhaka-Sylhet routes will be able to access the internet via Wi-Fi connectivity provided through Grameenphone's 3G devices. Green Line says it plans to introduce the service across all its routes in the future. Grameenphone states its ambition is to provide "internet for all" in Bangladesh.

Massive network overhaul in India

Telenor's Indian subsidiary will work with Huawei in what's said to be one of the largest single network modernisation deals.

With licenses in Assam and operations in UP (West), UP (East), Bihar (including Jharkhand), Andhra Pradesh, Maharashtra and Gujarat, Uninor says it covers more than 50 per cent of India's population.

In August, it announced a deal with Huawei India to modernise its entire telecom network. It says all 24,000 base stations will be swapped for new, state-of-the-art equipment that is efficient and future ready.

The project will be spread over three years and also involves Huawei becoming Uninor's managed services partner. The vendor says its managed services delivery system includes integrating multi-vendors, planning and optimisation, maintenance, and customer experience management.

According to Uninor, this is the largest agreement of its kind in the Indian telecoms industry and also within the Telenor Group. It says the modernisation will enhance network capacity to offer "superior" experience on voice as well as any advanced internet service.

The operator also plans to deploy green energy solutions. These include Huawei's latest single RAN base stations which promise to lower power consumption, increase spectral efficiency, optimise network cost, and improve indoor coverage.

Sierra simplifies IoT with Acceleration

Sierra Wireless has launched what it claims is the industry's first integrated service platform that combines cloud, Internet of Things (IoT) hardware, and managed connectivity services to support worldwide deployments.

The new *IoT Acceleration Platform* is said to be unique because it provides global multi-operator coverage by combining SIMs from Sierra Wireless and third-parties, all managed by a single connectivity system.

In addition, Sierra says it has natively connected its *AirVantage* cloud platform to Google's cloud-based services which support the creation of anything from simple websites to complex applications.

Customers can collect and store sensor data in the *Google Cloud Platform* and use the tools it provides to build custom analytics, Big Data, or IoT applications.

Sierra reckons this will enable them to leverage the data collected from the devices and their connected assets in a broader context, thus increasing its value.

As a result, the company reckons it can now provide customers with what it describes as a "comprehensive end-to-end solution" that includes the hardware, *AirVantage*, as well as managed connectivity.

Emmanuel Walckenaer, Sierra Wireless' SVP of cloud and connectivity services, says reducing the complexity in building and deploying IoT connectivity solutions is critical for users: "Our fully integrated *IoT Acceleration Platform* is designed to empower customer innovation and get IoT solutions to market faster with the ability to scale and grow quickly."

Sierra Wireless' Emmanuel Walckenaer says reducing IoT complexity will help customers get products and services to market quickly.

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