AUGUST/SEPTEMBER 2015
Volume 14
Number 4

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IDT

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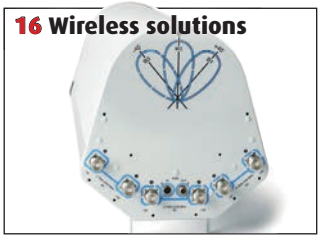

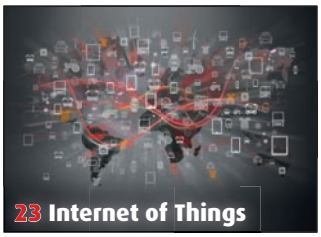

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Africa has world's lowest broadband penetration

RANK	ECONOMY	SUBS. PER 100 CAPITA
25	Libya	80.6
59	Cape Verde	51.3
67	Tunisia	47.6
74	Egypt	43.5
105	Sudan	27.2
106	Morocco	26.8
108	Côte d'Ivoire	24.6
110	Senegal	23.7
112	Algeria	20.8
120	Uganda	14.7
122	Mauritania	14.4*
125	Sierra Leone	13.0*
130	Nigeria	11.7
131	Mali	11.3
135	Congo (Rep.)	10.8*
138	São Tomé & Príncipe	9.8*
139	Burkina Faso	9.6
142	Kenya	9.1
143	Gambia	8.0
146	Liberia	7.6
147	Ethiopia	7.5
162	Malawi	4.1
164	Djibouti	3.2*
168	Benin	2.8
169	Guinea	2.2*
171	South Sudan	1.3
173	Somalia	1.0*
175	Niger	0.9*
177	Burundi	0.5*
178	Central African Republic	0.3*

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

SOURCE: STATE OF BROADBAND REPORT, ITU, SEPTEMBER 2015

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' – 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, Timor Leste 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 *(see left)*. 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.

The union says among the challenges that need to be overcome to expand web access is to create a truly multilingual, multicultural internet, and make services and devices more affordable. The cost-effective rollout of networks into remote and rural areas is also a key obstacle.

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 USFs, 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.

The new satellite 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 *(News, Oct-Nov 2014)*.

ATU supports "no change" position for UHF and C bands

The African Telecommunications Union (ATU) will reject proposed changes to certain spectrum allocations that will be discussed at the ITU's World Radiocommunication Conference 2015 (WRC-15) in Geneva this November.

At their final preparatory meeting held in July in Kenya, ATU members agreed a common position which opposes the allocation of the UHF band (470-694MHz) and the C-band (3600-4200MHz) to mobile services. Each of the continent's sub-regional groups, SADC, ECOWAS and EACO, also support this "no change" position.

Europe – which is in ITU Region 1 along with Africa, the Middle East west of the Persian Gulf including Iraq, the former Soviet Union and Mongolia – is also against any changes to the spectra.

Simon Fell, director of technology and innovation at the European Broadcasting Union, said: "We are pleased to see another continent in ITU Region 1 confirm their support for DTT below 700MHz. It is important that we continue to voice our common position to secure adequate spectrum for the broadcasting industry."

But the ATU did agree that the L-band (1452-1492MHz) should be allocated to mobile services, a move welcomed by the GSMA's deputy chief regulatory officer John Giusti.

"WRC-15 will determine what spectrum bands will be allocated for mobile services. These decisions will determine the future of the mobile internet. This is particularly important for Africa, the world's fastest-growing mobile region, where mobile broadband is often the only way for people to access the internet."

Giusti said the L-band for mobile has the potential for widespread global support at WRC-15, driving economies of scale that will benefit consumers in Africa and elsewhere.

But he warned that more work still needs to be done to ensure there is sufficient spectrum allocated for mobile broadband. Giusti believes increased support for an allocation in the sub-700MHz UHF band, which offers good geographic coverage, will be essential for connecting rural communities in Africa.

8 West B to cover "vast" region

8 West B is the 25th Eutelsat satellite built by Thales Alenia Space. This photo shows the integration of the satellite's fairing during its manufacturing stage.

Eutelsat has successfully launched its 38th satellite. *EUTELSAT 8 West B* blasted off into orbit on board an *Ariane 5* rocket from Kourou, French Guiana on 20 August.

After a series of performance tests, the new satellite will transfer to 7/8°W and is expected to enter full commercial service in early October.

8 West B is primarily designed to serve DTH TV markets in North Africa and the Middle East.

It is equipped with 42 x 36MHz-equivalent Ku-band transponders and 20 x 36MHz-equivalent C-band transponders. The new satellite will also introduce a C-band mission with 10 physical transponders connected to footprints covering Africa and reaching west to South America.

Eutelsat says *8 West B* enables it to meet the demand to broadcast more digital and high definition content to more than 250 million viewers.

"[It] gives us more coverage options, enabling broadcasters to target their audience," said deputy CEO and CCO Michel Azibert. "These features underpin the 100 per cent success in sales of capacity connected to footprints serving a vast region stretching from Morocco to the Gulf."

Azibert added that *8 West B* is the 25th Eutelsat satellite built by Thales Alenia Space and the 30th launched for the company by Arianespace.

Eutelsat plans to offer further coverage across sub-Saharan Africa later this year. It is leasing capacity on the Russian Satellite Communication Company's new *Express-AMU1* that will be launched to 36°E.

This will provide follow-on and expansion capacity for *EUTELSAT 36A*, and will be commercialised under the name *EUTELSAT 36C*.

Wananchi to provide free internet for Nairobi schools

Kenya Education Network and the County Government of Nairobi have teamed up with the Wananchi Group for the provision of free internet in schools. As part of the USD2m *WazED* project, city authorities will leverage Wananchi's fibre infrastructure to help deliver ICT services to an estimated 2,715 schools in Nairobi County.

Initially, the project will be piloted for 15 months in 245 schools. Fibre will be rolled out during the first three months while the rest of the time will be spent on evaluating progress.

The launch of *WazED* follows the government unveiling its *Vision 2030* national broadband strategy to facilitate the creation of a 'digital Kenya'.

Christopher Khaemba, Nairobi County's minister of education, said: "By deploying the free internet programme in schools we believe we are modernising Kenya's classrooms and teaching students new technologies."

He added that the county is keen on promoting emerging trends by implementing e-learning through partnerships with the private sector to invest in telecoms infrastructure.

According to the Wananchi Group, Kenya is the fastest growing ICT hub in the region.

Newtec satellite hub to enable internet access in Moroccan schools – p8

ZTE completes Equatorial Guinea comms institute

ZTE has constructed Equatorial Guinea's first communications training institute. The new facility in Oyala is part of the government's aim of promoting the development of ICT-based education.

The institute features a network-wide communications laboratory built by ZTE to provide an environment for students to practice cutting-edge technologies. It will be used to train communications professionals to work for the government.

The firm says it will also help run the facility with knowledge service support and its extensive operations management experience provided by the ZTE University. Gao Linfeng, ZTE's national representative in Equatorial Guinea, said: "We will work with our partners in the country and Africa to increase investment in ICT education and help more African customers enjoy high-quality education resources."

The company adds that its 'Smart Education' solutions have so far been used in more than 30 countries. In Africa, they support distance learning programmes in Egypt and Mozambique, as well as Ethiopia's National Digital Library.

Econet Wireless Burundi chooses ZTEsoft for consolidated network billing – p9

Liquid and MTN to offer "largest" connectivity footprint

Liquid Telecom and the MTN Group have teamed-up to offer what's claimed to be the largest wireless and fixed network footprint across Africa.

Their partnership covers wholesale, carrier-to-carrier, broadband, enterprise and fixed data services. Each company will be able to access the other's networks in countries on the continent where one of them may not currently have a presence.

MTN's connectivity footprint includes POPs for its global MPLS network which covers 22 countries, while Liquid's fibre stretches 20,000km across Africa and is complemented by its satellite service for rural areas.

The additional countries in which Liquid will now have a presence are: Benin, Cameroon, Congo Brazzaville, Côte d'Ivoire, Ghana, Guinea Bissau, Guinea Republic, Liberia, Nigeria, South Sudan, Sudan and Swaziland. The partnership gives MTN the ability to service its multinational enterprise customers in Burundi, DRC, Tanzania and Zimbabwe.

Together, the two companies say they will be able to provision networks with complex requirements faster, and sell each other's services on the combined network to provide greater choice to all businesses.

Liquid says it will be able to offer enterprise users gigabit speed services accompanied by negotiated SLAs and round-the-clock customer service.

MTN's Elia Tsouros says customers will be able to go beyond the cellco's current footprint.

It adds that the collaboration is in response to the increasing demand from enterprises in West Africa for its broadband service. "We have a well-deserved reputation in East, Central and Southern Africa for providing quality broadband to businesses," claims group CEO Nic Rudnick. "We are laying 100km of new fibre every week, but have decided to partner for the time being in West Africa so that we can immediately meet demand from businesses there."

According to MTN, the partnership furthers its ambition to be the ICT partner of choice for customers looking to expand geographically. Elia Tsouros, the company's enterprise business unit head of global sales, believes it reinforces MTN's "extensive" service offerings both on a national as well as an international scale.

"We will be able to leverage each other's products and services to improve our offerings to carrier and enterprise customers in Africa, the Middle East and Europe."

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Quantis to use Newtec Dialog for enhanced satellite services

Quantis has ordered Newtec's *Dialog* multiservice hub to complement its existing satellite infrastructure and enable more advanced and customised services.

Madrid-based Quantis uses capacity from Avanti and Eutelsat to offer Ka-band services in North Africa and the Middle East. It claims to be one of the few satcoms providers in the region that operates its own hubs in order to manage the end-to-end quality of the services offered to customers.

Nortis – Quantis' subsidiary in Morocco – will use *Dialog* to deliver satellite broadband services in various markets such as maritime, enterprise and M2M. As part of the *GENIE* project, the company has already been awarded a contract by the Ministry of Education. It will provide internet access for students in 4,000 schools while teachers will be able to benefit from courses through distance learning.

Quantis' NOC in Spain operating the Newtec Dialog platform located in Morocco.

Newtec says backhaul is another area which Quantis will be able to address immediately and cost-effectively using *Dialog*. Its says the platform will support MNOs deploying 3G and 4G infrastructure who are hindered because of the lack of fibre or terrestrial infrastructure to backhaul the thousands of BSTs needed for extensive coverage.

Newtec claims its multi-service platform "guarantees" optimal modulation and bandwidth allocation.

The system features *Mx-DMA*, the firm's new patented return link technology for cross-dimensional multiple access. Combined with *HighResCoding*, *Mx-DMA*, is said to incorporate the best features of MF-TDMA and SCPC technologies, enabling services to run even more efficiently over satellite.

■ In a separate deal, UK-based satcoms provider Talia will use *Dialog* to provide better network services and more applications for its growing customer base across Africa, the Middle East, Europe and the Americas.

It will use the platform to address needs in specific target markets, including enterprise, oil and gas, and construction. Talia says its new services are being launched on *Arabsat 5A* and will be deployed to other satellites in the near future.

Partnership to bring m-payment to 25 new countries

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

Kampala-based Beyonic aims to eliminate 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 a roadmap for expansion, 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.

Yahsat completes critical design review of Al Yah 3

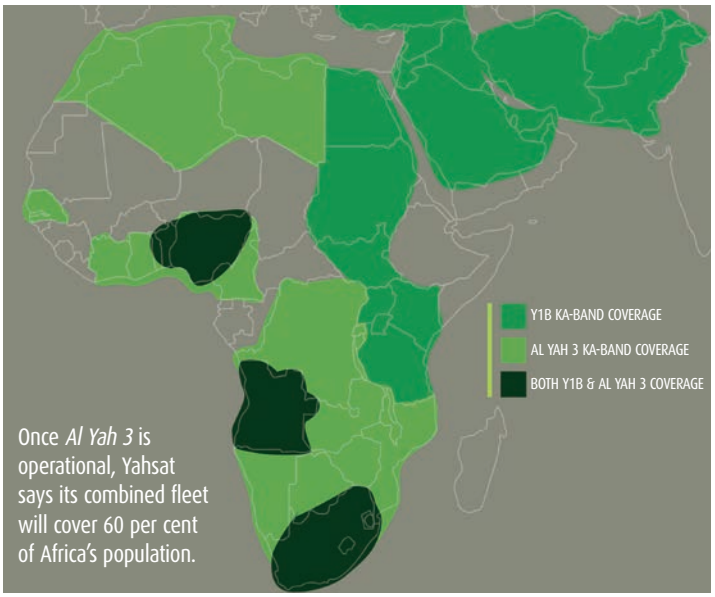
Yahsat says it is now "one step closer" to expanding satellite broadband across the continent.

In August, the UAE-based operator said it had successfully completed the critical design review (CDR) for its third satellite *Al Yah 3 (also see Wireless Business, Sep-Oct 14)*. This means that all specifications and requirements have been captured into the spacecraft's final design, and that its components can now be put together.

As a result, Yahsat says it remains on track to launch the satellite during the final quarter of 2016.

Al Yah 3 is an all Ka-band, high throughput satellite that will be built by Orbital Sciences Corporation using the *GEOStar-3* platform and a hybrid electric propulsion system. Yahsat says it will bring high-speed, affordable satellite broadband services to the African and Brazilian markets, as well as high data rate backhaul links for ISPs and telcos.

Once operational, the operator says its Ka-band footprint will be significantly expanded in Africa. *Al Yah 3* will cover 16 additional markets across the continent and means Yahsat's fleet will cover 60 per cent of the population.



Once *Al Yah 3* is operational, Yahsat says its combined fleet will cover 60 per cent of Africa's population.

COVERAGE ZONES SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

Vodafone Egypt prefab MTX saves on time and money

The three-storey MTX in the Nile Delta.

Vodafone Egypt has built a unique, prefabricated mobile telephone exchange (MTX) in the Nile Delta region.

According to the operator, because mobile networks now offer a greater range of services they need an MTX which offers a more extensive and automated switchboard system to manage all customer calls and data requests.

Vodafone says on average, each one of its MTXs serves one million customers within a defined geographical area at any one time, although they have the capability to manage traffic from up to five million active subscribers.

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, particularly in highly populated regions, without losing any of the resiliency."

Abdelwahab said that presented a challenge because an MTX can take up to two years to build – given increasing consumer demand, Vodafone therefore 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 MTX 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 MTX 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."

Econet converges billing following Burundi merger

Econet Leo will use a convergent billing system from ZTESoft to support its consolidated network in Burundi.

With around three million subscribers, Econet Leo is said to be the country's biggest mobile operator and is the result of a merger between Econet Wireless and U-COM that was finalised earlier this year in July.

Following the combination of the two companies' operations, Econet Wireless needed a convergent billing system to offer its customers a unified experience. It will use *ZSmart cvBS* from ZTESoft, a subsidiary of ZTE Corporation which specialises in OSS/BSS solutions.

The vendor says the latest version of its platform features open and cloud-based architecture designed for easy integration, along with Big Data analytics. It claims this will enable Econet Leo to deliver a higher quality customer experience and manage loyalty, as well as support multiple business models.

ZTE adds that the new billing system also provides the operator with a foundation for long-term business development and business agility for time-to-market demands.

"Customers today expect communication service providers to compete and innovate on new services quickly," says Xiao Zhengcang, GM of *ZSmart BSS* product line. "A fully convergent billing system enables CSPs to provide innovative new services with a unified experience."

Libtelco's migration to IP blossoms with Orchid

Cataleya will deliver a turnkey solution for interconnection, billing, and session and application management to Liberia's incumbent operator, Libtelco (Liberia Telecommunication Corporation).

The foundation for the solution will be Cataleya's *Orchid One* platform which will be used to support the operator's migration from legacy TDM infrastructure to IP networking.

Phase 1 of the modernisation will enable the delivery of both domestic and international VoIP services to local enterprises and government. It will be completed over the next 12 months and will allow international calling from fixed line phones – a first for Liberia. Phase 2 will support the delivery of Unified Communications as a Service (UCaaS) to the country's growing small- and medium-sized businesses.

Libtelco serves local consumers and enterprises as well as Liberia's domestic MNOs. According to GSMA Intelligence, at the end of last year the country had 2.6m mobile connections and a SIM penetration rate of 59 per cent.

Singapore-based Cataleya specialises in IP networking solutions and is a wholly-owned subsidiary of Epsilon Global Communications. Its *Orchid One* platform is also being used by Interconnect Clearinghouse Nigeria as it moves from TDM interconnects to IP. *(Also see News, Jun-Jul 2015.)*

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.

4G tests for Tunisia

Ooredoo is working with Nokia on what it says are the first 4G technology tests in Tunisia. They began at the start of September with Ooredoo deploying pilot networks in two major cities. While the initial results have shown a download speed equal to 69Mbps, the operator claims its 4G technology may exceed 100Mb speed when it's launched in the first half of 2016. Ooredoo's operation in Tunisia was previously known as Tunisiana, but changed following a global rebrand.

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.

BICS IPoSAT solution

BICS has developed an automated optimisation solution to help improve connectivity in Africa. *RouteFlex* aims to provide intelligent and cost-efficient backup via IP over satellite, and is supported by an SDN. BICS claims it enables operators to handle high volumes of IP traffic across satellite by applying end-to-end differential treatment to different types of aggregated data flows during peaks or outages. It also enables dynamic switching between fibre and satellite facilities. The firm says optimisation can be performed across regions, with operators able to move capacity between markets.

Uros adds Africa to mobile Wi-Fi roaming-free zone

Uros has added a dozen new countries to its *Goodspeed* mobile Wi-Fi hotspot service. The Finland-based company says it now covers the majority of the globe and has enhanced its presence in Africa in particular.

The announcement follows a recent partnership with Vodafone to increase *Goodspeed*'s footprint. The first stage of the deal has now been implemented in 12 new countries which include DRC, Ghana, Kenya, Lesotho, Mozambique, South Africa and Tanzania in Africa, as well as Albania, Malta, New Zealand, Romania and Turkey.

Uros claims its service offers "affordable mobile data, helping companies overcome their connectivity challenges". In the new African destinations and New Zealand, it says *Goodspeed* users can now consume up to 500MB of data a day for a flat rate of USD13.99. It adds that the service's fixed and affordable fees "guarantee" predictable mobile data costs, while a secure personal Wi-Fi connection also ensures company data is kept inside the business even when staff are on the go.

The *Goodspeed* hotspot (far left) can accommodate and switch automatically between ten SIM cards (left).

The service is enabled by the *Goodspeed* hotspot which has been designed to accommodate and switch automatically between ten SIM cards. The device and destination SIMs can be purchased from Goodspeed or its official distributors before travelling.

"By enhancing *Goodspeed*'s offering on such a large scale it is a huge acceleration in our campaign to put an end to mobile connectivity issues," says Uros CEO Tommi Uhari. "We can now offer our service in large parts of Africa which is the fastest growing mobile market in the world, and where roaming fees have been checkered."

West African Cable System gets upgrade

The West Africa Cable System (WACS) has been upgraded for the first time since it was commissioned in May 2012.

Phase 1 of the upgrade was completed in July and focused on the 'Express Fibre Pair' (Fibre Pair 1) between South Africa and Portugal. It resulted in the addition of nine 100G wavelengths to the existing 24 10G wavelengths.

Phase 2 is now under way and is due for completion by the end of September. It will see the upgrade of Fibre Pair 2 (South Africa-Nigeria-Portugal), Fibre Pair 3 (South Africa-Angola-DRC-Côte d'Ivoire-Portugal), and Fibre Pair 4 (all landing stations). It will add eight 100G wavelengths to the 32 10G wavelengths that currently exist across the three Fibre Pairs.

At the Swakopmund landing station in Namibia, an additional four 100G wavelengths will be added on top of the existing eight 10G wavelengths.

Swakopmund is significant to WACS as it serves as a transiting station for landlocked countries such as Botswana, Zambia, Zimbabwe and Malawi.

Phase 2 will increase the capacity of the upgrading parties from 11 to 45 per cent of their total entitlement of the WACS system design capacity.

Because there has been significant uptake of the system's bandwidth, the WACS consortium says it had to put out a tender for the upgrade. At the end of last year, it appointed Huawei Marine Networks to carry out the work.

Elitecore platform boosts Wi-Fi networks

Elitecore Technologies' service management platform is being used to support Wi-Fi networks across 10 countries in Africa.

According to the India-based vendor, its platform is enabling the unnamed telcos to extend their data services via a network of Wi-Fi hotspots that integrate with existing 3G mobile infrastructure.

It is being used by one "large telecom group" in Burkina Faso, Congo, DRC, Gabon, Ghana, Niger, Nigeria, Tanzania and Zambia, as well as another operator in Morocco.

Akshat Joshi says Elitecore's modular platform offers seamless integration with existing network infrastructure.

Akshat Joshi, Elitecore's VP of Wi-Fi product management, says: "Elitecore's pre-integrated and modular platform seamlessly integrates with the operator's existing IT and network infrastructure resulting in a quick time to market, faster rollout of services, and hence better capex savings."

The Wi-Fi network has enabled the launch of bundled 3G and Wi-Fi plans, allowing all 3G subscribers to access higher throughput via Wi-Fi using their existing 3G balances. Those without smartphones can also access Wi-Fi via OTP-based authentication.

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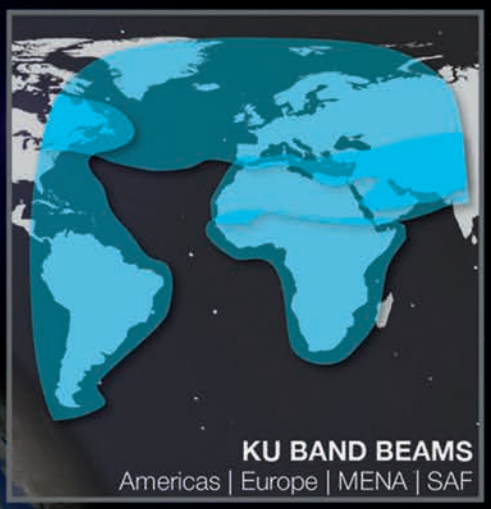

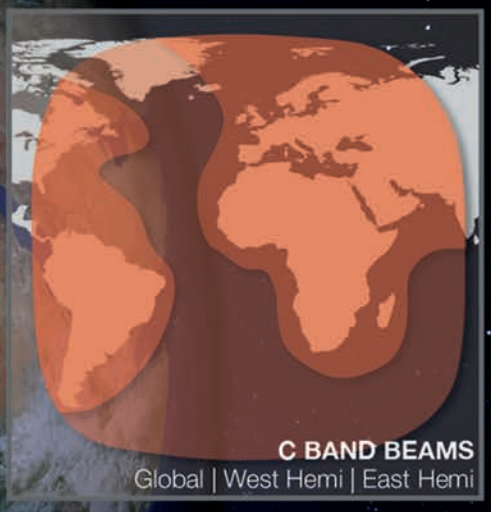

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Satellite rendition courtesy of the Boeing Company

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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.

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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.

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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.

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LPTIC consolidates assets as CEO questions unaccounted for funds

The Libyan Post, Telecommunications and Information Technology Company (LPTIC) has begun a restructuring programme amidst allegations of broken investment promises.

LPTIC is a sovereign holding company that was established for the purpose of developing Libya's ICT sector and investing in telecoms infrastructure both locally and abroad.

In late August, following a directive issued by the country's interim government, the company announced the strategic consolidation of several Libyan-owned shareholdings in mobile and fixed-line operators. It involves the aggregation of assets in Côte d'Ivoire, South Sudan and Uganda that were previously managed by LAP GreenN which is owned by Libyan African Investment Portfolio (LAP).

LPTIC said the restructuring will enable it to "safeguard and stabilise" important African telecoms investments. It said this will be done through the implementation of a renewed management strategy drawing on the skills, procurement and funding synergies of a wider group business.

LPTIC chairman Faisal Gergab added: "Our priority is to ensure that the asset base is operating effectively and sustainably. Once we have achieved this, we will look to explore new opportunities for growth and demonstrate our value to both the Libyan economy as well as other growing economies in the region."

But in the days following LPTIC's announcement, LAP issued a press statement which said that between November 2011 and August 2014, it had awarded funds totalling USD208m to LAP GreenN. It claimed that while it has been able to trace USD118m going to UTL in Uganda, GEMTEL in South Sudan, as well as to operations in Côte d'Ivoire and Sierra Leone, the whereabouts of the remainder are unknown.

"It is not clear to us how the rest was used, as access to our audit firm was declined repeatedly using the current political division as an excuse," alleges LAP CEO Mohsen Derregia.

He added that the total funding provided to LAP GreenN by LAP and the Libyan Investment Authority (LIA) is USD1.45bn of which over USD500m were soft loans. Additionally, LAP GreenN has over USD150m of debt funded by third parties.

According to Derregia, the LIA has made several attempts to save LAP GreenN since 2011. But he believes the "intransigence" of its then management proved a major obstacle.

"It seems to me the current story about LAP GreenN being rescued by LPTIC is just to cover the fact that the promises made to Uganda to provide USD56m of funding to UTL (69 per cent owned by LAP GreenN) during foreign minister [Mohammed al-] Daery's visit to Uganda could not be fulfilled. Uganda has been in touch with us, but we are unable to continue to fund a poorly managed LAP GreenN."

The LIA claims Derregia is no longer LAP CEO and is therefore not authorised to speak on its behalf. But a spokesperson for Derregia says the dispute is due to Libya currently lacking a unified government, and ongoing wrangles between the rival administrations in Tripoli and Tobruk.

Smile secures USD365m to finance LTE network expansion

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.

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

The new funding 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.

The funding will be used to accelerate national network rollouts including products provided by Alcatel Lucent and Ericsson, a full MPLS network, a London POP, and expanded international backhaul services.

Smile CEO Irene Charnley says the aim now is to help subscribers get the most out of 4G 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 *(see Wireless Business, Dec 2014-Jan 2015)*, 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 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 *(see News, p6)*.

Orange increases Méditel holding

Orange has acquired an additional nine per cent in Méditel and now holds 49 per cent of the Moroccan telco's shares. Its board will be composed of five members proposed by Orange and four appointed by Moroccan shareholders.

The value of the deal has not been disclosed. It followed application agreements signed in December 2010 by Orange, Fipar-Holding (the Moroccan Caisse de Dépôt et de Gestion group) and FinanceCom.

Created in 1999, Méditel's networks now include more than 5,400km of fibre, including 870km in Morocco's ten largest urban areas. In addition, the telco is aiming to complete the overhaul of its mobile network this year, extending its 3G coverage to 95 per cent of the population. In March 2015, the local regulator, ARPT, also assigned one of three 4G licenses to Méditel which went on to become the country's first operator to launch an LTE service in June.

MTN joins ACE consortium

The MTN Group is planning to bring the African Coast to Europe (ACE) submarine cable to South Africa after becoming a member of the consortium behind the system.

Orange is the main backer in the USD700m ACE system which will cover 17,000km after its second phase is completed by the end of next year *(see News, May-Jun 2015)*. As part of this second phase, the cable will be extended from São Tomé and Príncipe to Cape Town.

INVESTMENTS, MERGERS & ACQUISITIONS

Date	Buyer	Seller	Item	Price	Notes
1/7/15	Public Investment Corporation	South African Government	Vodacom stake	USD2.3bn	The government had been considering selling its 14% stake for some time as part of plans to raise funding for ailing state power firm Eskom Holdings.
28/7/15	SpeedCast International	SAIT Communications	Company	NA	SAIT Communications specialises in providing L-band satellite services in the southern European maritime market, particularly Greece & Cyprus.
28/7/15	–	IBM	Education training	USD60m	IBM will fund training initiatives over three years in Africa to develop stronger regional capabilities in cloud services, Big Data & analytics.
13/8/15	Keysight Technologies	Anite	Company	USD600m	Keysight says the acquisition strengthens its wireless portfolio & helps expand its software offerings as it transitions to a software-oriented solutions company.
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.

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
30/6/15	Eutelsat	France	FY15	EUR	1,476.4	1,131.7	1,590	Total revenues are up 4.0% YoY. Targets revenue growth of 2-3% for FY 15-16, & will continue to focus its investment policy on high growth markets in Africa, Latin America, Middle East, Asia-Pacific & Russia.
17/7/15	Ericsson	Sweden	2Q15	SEK	60,671	20,135	0.64	41% rise YoY in sales across all divisions in sub-Sahara Africa is in contrast to a weak 1H14. The firm says regional increase is driven by strong data growth as well as positive development of managed services.
21/7/15	Millicom International	Luxembourg	2Q15	USD	1.7 (bn)	561	0.05	African revenue grew to $240m, a QoQ organic growth rate of 15.3%. EBITDA was $52m, a YoY fall of 17.5%, mainly because of difficult trading conditions in Chad & adverse currency movement, particularly in Tanzania.
24/7/15	SES	Luxembourg	1H15	EUR	999.1	740	0.68	Revenues & EBITDA up 6.4 & 6.7% respectively. O3b Networks, in which SES has a 45% interest, has made a productive start to its first full year of commercial operations. Of around 40 committed clients, 25 are now live on the system.
28/7/15	Orange Group	France	1H15	EUR	19.557 (bn)	5.807 (bn)	0.2	4.5 million net additions to mobile customer base in MEA. Began talks in July with Airtel to acquire its operations in Burkina Faso, Chad, Congo Brazzaville & Sierra Leone.
5/8/15	MTN Group	South Africa	1H15	ZAR	69,210	30,274	4.8	Group revenues down 4.9% but subscribers up 3.4% to reach 231m. Difficult regulatory environment & weak macro-economic conditions continue to impact overall performance.
12/8/15	Gilat Satellite Networks	Israel	2Q15	USD	44.3	(2.5)	0.21	EBITDA for 2Q15 was a loss of $2.5m compared with an income of $3.9m in 2Q14. Interim CEO Dov Baharav blamed weaker performances in defence sector & Colombian market.
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.

MTN has acquired an eight per cent stake in ACE, according to the group's GM for network, IT projects and carrier services, John Unterhorst. He says the operator's involvement will facilitate the extension of the cable to South Africa.

"MTN will build and provide the ACE cable landing station and backhaul in South Africa. Until now, MTN's participation in ACE has been through its subsidiaries in Benin, Liberia and Guinea Conakry."

The cellco's investment, which is reportedly worth USD50m, has been committed via the group's wholly owned subsidiary, MTN Dubai Ltd. A rollout is expected during 1Q16.

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 CEO 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...

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 a recently signed international frame agreement, CommScope will supply base station antennas, filters, high-quality coaxial cables and connectors, and other RF network solutions.

Orange Côte d'Ivoire has launched what's claimed to be Africa's first mobile crowdfunding platform. *Collecte* uses *Orange Money* and is offered in partnership with HelloAsso, the French firm that specialises in crowdfunding for charities. By using the platform Orange says individuals and charities can finance personal and fundraising projects by making an appeal through the mobile network. Contributors will be able to make donations using *Orange Money*.

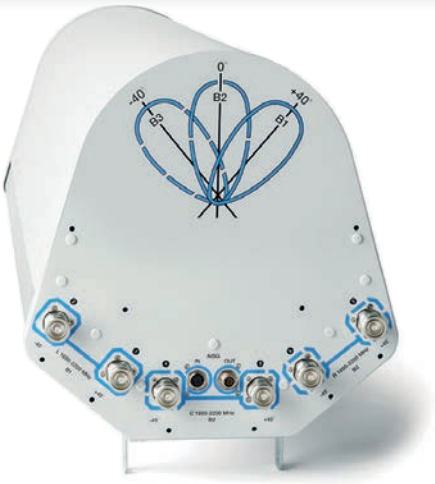
NEC Europe has invested in sub-Saharan ICT group XON. The two firms will combine their local sales expertise to accelerate growth in the telecoms, government, enterprise and energy sectors. Eugene Le Roux, NEC Africa president and MD, says: "Benefits of the deal include the reinforcement of our South African B-BBEE credentials to level 3, and our customers in the region gaining use of XON's network and security operations centres. There is also a wider regional synergy around sharing IP and security competencies."

Microsoft reportedly plans to write off the USD7.4bn it paid to Nokia for its mobile phone business in 2013 and cut 7,800 jobs. According to sources, Microsoft CEO Satya Nadella wrote to employees and told them the company is refocusing its effort in mobile phones. *Bloomberg* said Microsoft still plans to release new handsets, but only at a rate of one or two devices per year.

NEW APPOINTMENTS

Date	Name	New employer	New position	Previous employer	Previous position
20/7/15	Jonathan McKay	CBNL	Chairman	Ubiquisys	Chairman
23/7/15	Abdelkrim Benamar	Astellia	COO & executive committee member	Alcatel-Lucent	VP EMEA
28/7/15	Nitin Madhavan	Neural Technologies	Sales executive for India & Africa	Connectiva Analytics & Insights	Sales
31/7/15	Bart Morselt	VimpelCom	Group head of investor relations	Swisscom	Head of investor relations
1/8/15	Heiko Schlittke	Airtel Gabon	MD	Airtel Malawi	MD
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
11/8/15	Jeremy Povey	Dialogue Group	CFO	Capita Integrated Business Solutions	Finance consultant (interim)
17/8/15	Judd Cain	Tait Communications	Regional manager for EMEA & UK	Tait Communications	Head of global services
24/8/15	Mats Granryd	GSMA	Director general (as from Jan 2016)	Tele2 Group	President & CEO
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	Alassane Diene	Orange Mali	CEO	Orange Guinea	CEO
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
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

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

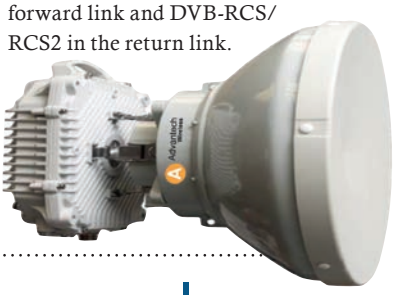
"Simple and versatile" point-to-point IP backhaul

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.

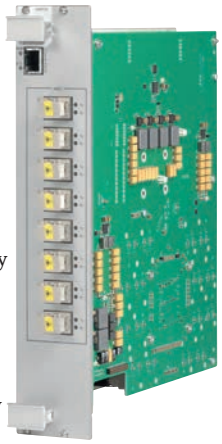
The initial release of the software supports up to 10,000 nodes per server or via the cloud.

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

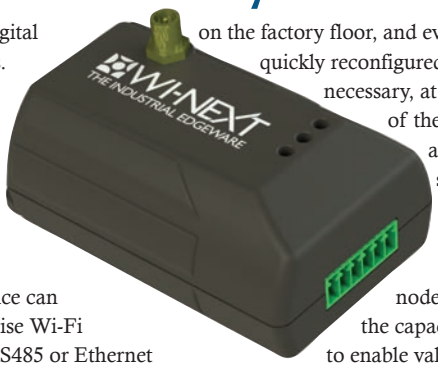
PRODUCT: PT-Fabric

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

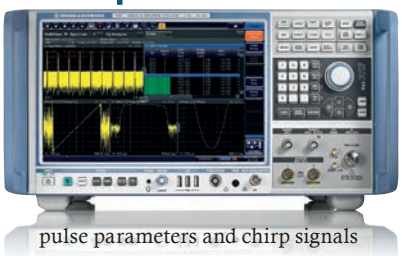
PRODUCT: End Node Digital

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.

Sowing the seeds of next-generation VAS

PHOTO: VODAFONE

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.

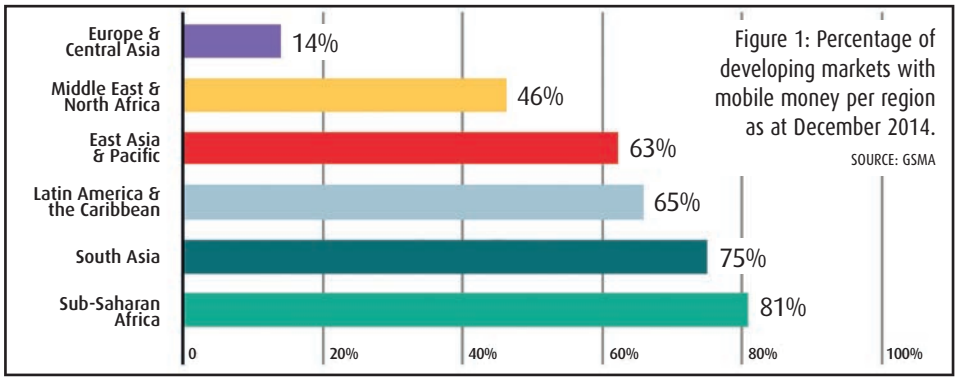


Figure 1: Percentage of developing markets with mobile money per region as at December 2014. SOURCE: GSMA

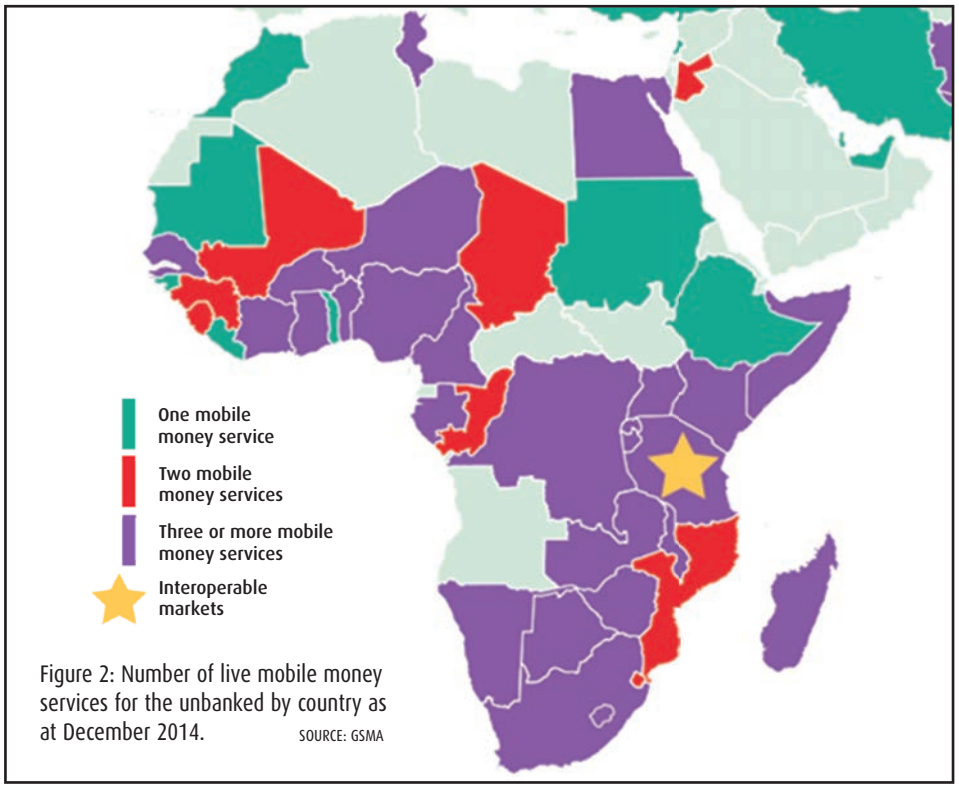


Figure 2: Number of live mobile money services for the unbanked by country as at December 2014. SOURCE: GSMA

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, Acquires Controlling Stake in Rorotika Technologies

Digitata Limited is pleased to announce that they have recently acquired a controlling stake in long-time partner company, Rorotika Technologies (Pty) Ltd. Since its inception in 2008, Digitata Limited has worked hand-in-hand with our partner, Rorotika Technologies, who provides development and support services for Digitata's Dynamic Tariffing™ solution, the first and leading dynamic tariffing™ solution for voice, SMS and data.

Regarding the acquisition of Rorotika Technologies, **Mr Ted Bartlett**, CEO of Digitata Limited said:

"Following years of successful collaboration, the joining of Digitata and Rorotika was a logical next step in the relationship between the two companies, and we look forward to bringing the services and products provided by Rorotika into the Digitata fold and under the Digitata brand. The joining of the two companies will ensure a closer working relationship and will allow us to improve our service to our customers, to expand our product offering and to streamline our operations."

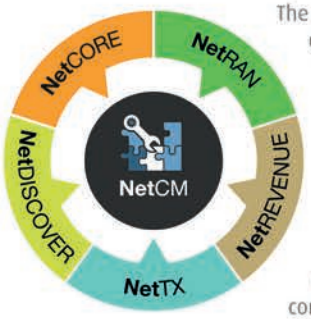
Mr Tinus Neethling, CEO of Rorotika Technologies Limited said:

"Rorotika is pleased to be joining forces with long-time partner, Digitata Limited. The two companies have worked effectively side by side for so long that the success of this venture is already assured, and we look forward to moving ahead under the Digitata banner".

digitata

dynamic tariffing™

The acquisition of Rorotika will ensure improved efficiencies in our world-leading Dynamic Tariffing™ product and service offering. 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 retain profitable revenues, while protecting the quality of the mobile network.



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

These include a sophisticated, vendor-agnostic network configuration management solution (NetCM) from the forward-looking Rorotika Networks (now Digitata Networks) to transparently manage and troubleshoot all major mobile technologies (2G, 3G, LTE, Wi-Fi) and multi-domains (Core, RAN, TX). The solution offers operators cost savings through improved efficiencies gained by automating auditing, planning, optimising, configuration and operational activities.

In addition, innovative Rorotika subsidiary, Rorotika Mobile will now fall under the Digitata brand too. There are clear synergies between this mobile gaming offering and Digitata's own MeMe Mobile offering and the marrying of the two concepts under one brand will facilitate both reach and deep engagement with mobile subscribers in emerging markets, though fun, selected content and competition.

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IMAGE: GSMA

Is Africa ready for the IoT?

Research says there were around 230 million cellular M2M subscriptions globally at the end of 2014. This number is expected to grow substantially in the coming years.

In the machine-to-machine world, data from connected devices is transferred to networks to create the 'Internet of Things'. But will the IoT take-off in Africa? RAHIEL NASIR finds out.

It was Ericsson that first predicted a future of more than 50 billion connected devices by 2020 in a paper published in February 2011. Over the last few years since then, many in the industry have been citing that figure, particularly when it comes to the potential offered by machine-to-machine (M2M) connectivity.

But at the same time, other market observers have criticised Ericsson's forecast as being somewhat exaggerated. Indeed, in its latest *Mobility Report* published in June 2015, the company is now expecting 26 billion connected devices worldwide by 2020. Of these, almost 15 billion will be phones, tablets, laptops and PCs.

While that revised total excludes passive sensors and RFID tags, Ericsson says M2M is expected to show strong growth, driven by new use cases such as in cars, machines and utility metering.

According to the report, there were around 230 million cellular M2M subscriptions globally at the end of 2014, and it says this number will "grow substantially" in the coming years.

Cisco agrees. Its annual Visual Networking Index (VNI) is also used as an industry benchmark and in its latest forecasts for mobile traffic growth published in late May *(see News, Jun-Jul 2015)*, it predicts that global M2M connections will more than triple over the next four years, growing to 10.5 billion by 2019. It adds that annual global M2M IP traffic will increase 15-fold over the period, from 308PB in 2014 to 4.6EB by 2019.

So how does Africa figure in all of this? Cisco reckons M2M traffic in the Middle East and Africa will grow 38-fold from 2014 to 2019 to reach 50PB per month in four years time. Furthermore, it says M2M will account for two per cent of total mobile data traffic in the region by 2019, compared to just one per cent at the end of 2014. The only African country featured in the index is South Africa. Here, it is predicted that M2M traffic will grow at a CAGR of 97 per cent from 2014 to 2019. Cisco says while M2M modules represented 8.68 per cent of device connections in South Africa last year, they will account for 19.1 by 2019.

"Local solutions to local problems"

The ITU believes the Internet of Things (IoT) promises a wealth of new opportunities for economic growth and social development. In June, its members established ITU-T, a new study group that will be responsible for international standards to enable the coordinated development of IoT technologies, including M2M communications

and ubiquitous sensor networks. The union said African experts contributing to ITU-T have identified "numerous" IoT use cases relevant to the continent, and it expects a wide variety of innovators to answer the demand for applications.

"New players can enter the market from the edge of the network, and the key in the IoT sphere will be local solutions to local problems," says Bilel Jalousie, chief of the ITU-T study groups department. So what are those use cases?

TEOCO specialises in planning, analytics and optimisation solutions, and has worked with operators such as Vodafone in Ghana, Orange, as well as with Zain's former operation in Nigeria. Steve Bowker, the firm's VP of technology and strategy, believes M2M does present a very real opportunity in Africa, but in very specific markets.

"Education, health and agriculture in particular are areas where M2M is likely to make a big impact in Africa. However, for certain usage models, M2M in Africa is ahead of other markets. For example, PoS devices in Africa have a multitude of connectivity options in order to make sure payments can be processed."

While luxury cars and fleet vehicles have been tracked using mobile networks for more than ten years in South Africa, Bowker thinks connected cars will generally be far less popular in Africa than elsewhere in the world. *(Also see 'Connected cars to create network traffic jams?', opposite page).*

Econet Wireless is unlikely to agree here. Last year, the Zimbabwean mobile operator announced a new focus on connecting the IoT starting with vehicles. Under its *Connected Cars* initiative, customers can use the Econet network to track the movement of goods and passenger vehicles, monitor driver behaviour, and receive safety alerts, customised fleet management reports, as well as other services.

At the launch of the initiative in October, Econet said its ambition was to connect most of Zimbabwe's more than 1.2 million cars within a few months. While the company has not revealed the precise number of vehicles that have been connected to its network since then, in May it announced an upgrade of the *Connected Cars* platform. Customers now have a more "user friendly" interface to view and monitor their fleet in real-time, and to customise any reports dependent on their particular requirements. Econet claimed this was to meet "increasing" demand for its recently launched fleet management service.

For UK-based M2M specialist Cyan Technology, Africa's IoT will be driven not by cars but by energy. "The US Trade and Development Agency has forecast that South African utility executives will spend USD11 billion on grid modernisation over the next decade," says the company's VP Mark Coyle.

Cyan is collaborating with Adenco Construction to deliver smart energy solutions that will help increase energy security and reduce supply costs in South Africa. Earlier this year, it also signed a deal with Johannesburg-based M2M specialist XLink Communications for the distribution of its smart energy communication technology in

Mteto Nyati, CEO, MTN Group

"In South Africa, the wholesale M2M market – one aspect of the IoT – is already worth an estimated ZAR350 million and is expected to grow to ZAR1.2 billion by 2017."

the region. This has been designed to enable the measurement and control of energy consumption for the metering and lighting markets.

XLink claims that it currently manages M2M solutions for more than 68,000 businesses in Africa, facilitating 35 million monthly connections via its portal. CCO Hymie Marnewick believes the continent needs solutions for the smart monitoring of any remote asset – electricity, manufacturing, generators, etc. – to better manage and utilise valuable resources such as water and electricity, as well as to optimise current human capital.

"In South Africa, we see a huge focus on smart metering. We see new government regulations and [tax] incentives being introduced to encourage better reporting/monitoring of environmental sustainability. This will create the required platforms and focus for the IoT in Africa."

According to Cisco's VNI, the consumer health segment will have the fastest growth in global M2M connections and is forecast to rise 8.6-fold from 2014 to 2019. The implications for this in terms of mHealth applications in Africa is particularly significant.

The World Health Organisation says sub-Saharan Africa is home to 12 per cent of the planet's population but carries 26 per cent of its disease burden. For instance, 90 per cent of the world's malaria cases occur in Africa as do 60 per cent of HIV/AIDS incidences.

In a thought leadership article written last year, Tony Smallwood, Vodacom Business' executive head of machine-to-machine and industry vertical solutions, said M2M is providing the healthcare industry with greater control over medical data and enabling patients to take a more proactive role in their own treatment.

But he warned that while M2M offers "unrivalled opportunities" to get information to the right place at the right time and as quickly as possible, there are several barriers that impact the adoption of mHealth technologies in Africa. Smallwood pointed out that in M2M communication, devices collect and transmit information independently. This justifiably raises concerns over who will be accessing the mHealth data and how secure it is.

"To overcome these, communities would need to be educated on how to use the technology including benefits. Most importantly, before the potential of mHealth can be realised across the continent, individuals need to reach a level of comfort in using the devices and trust that their information is secure and will remain confidential."

He said that one step to resolving the challenge is to take measures to ensure data is stored securely. For example, he said Vodafone secures the data stream through a dedicated M2M platform with no access to the open internet. But in many cases, the data is encrypted by customers themselves which means that not even the M2M service provider has access to it without the required encryption key.

"Another step is to operate a transparent system of access. Inspiring confidence means making people aware that they are in charge, and can control which healthcare providers view which data, and also for how long," said Smallwood.

He added that without building more bureaucracy into systems already weighed down by regulation, it is also vital for national and international policymakers to take an active role. "For example, as smartphones become all-capable devices with an app for everything, it is important to define what constitutes a medical device for the purpose of mHealth."

Will the networks be able to cope?

While Smallwood focuses on the challenges of implementing mHealth applications on an M2M network, others would argue that there are bigger hurdles that have to be overcome before you can even get to that stage.

"The challenges of implementing the IoT are bigger in Africa than elsewhere, notably because of the lack of universal connectivity or secure, inclusive network access," says the ITU's Jamoussi. "International standards will be critical in offering common platforms for innovation by improving interoperability and reducing barriers to market entry."

So doesn't GSM present the solution here? According to Ericsson's *Mobility Report*, 75 per cent of cellular M2M modules today are GSM-only and serve applications that do not require high network throughput.

TEOCO's Bowker agrees and says most M2M applications in developed markets currently use 3G infrastructure (or better) for their data transfer. But he warns that 3G coverage in many African countries is often sketchy at best, and 2G connections severely limit the amount of data that can be transmitted.

"There are two solutions to this – either improve 3G infrastructure or create solutions that can be used even when data bandwidth is extremely limited. The former is unlikely in the short term; instead, we will see applications developed that don't use a great deal of data in order to be useful."

LTE may be vital here. In its *Mobility Report*, Ericsson says LTE modem prices will enable new applications with very low latency requirements. It adds: "New developments and 5G capabilities are expected to extend the range of addressable applications for massive machine-type communications deployments."

But according to Cyan, all types of networking technologies have a role to play in the IoT. Among the wireless options, Coyle says that while Bluetooth and ZigBee transmit signals over shorter distances, Wi-Fi and sub-GHz have a longer range.

"In urban areas, a sub-GHz standard performs most effectively, as the lower the operating frequency, the higher the transmission range for the signal. In simpler terms, operating on a 433MHz frequency ensures that the signal can easily propagate through concrete walls and can reach longer distances.

"Many IoT and M2M devices must continuously be connected to other components of the network and the utilities; a compromise on the range is generally not acceptable. Also, because of their longer range, sub-GHz systems require fewer data collectors to serve the same number of smart meters as compared to ZigBee for example, thus reducing the cost of deployments."

Ericsson largely supports this view. Despite the dominance of GSM, it says more things will be connected through capillary networks using short-range radio to cellular gateways: "This will leverage the ubiquity, security and management of cellular networks. One example is home alarm systems where sensors on doors and windows, as well as motion detectors and fire alarms, all connect to an alarm centre through a cellular gateway."

Getting connected

Africa currently has an internet penetration rate of around 16 per cent and includes eight out of the top 10 countries worldwide with the lowest internet access rates (*also see News, p5*). While this indicates yet another barrier to the IoT, Coyle says it also presents clear opportunities for growth.

"As the continent does not possess the same entrenched infrastructure as Western countries, its cities can be more easily adapted for IoT solutions," he says. "Consulting firm McKinsey estimates that by 2025 Africa will have tripled internet penetration to over 50 per cent, or around 600 million people. The GSMA says this will give Africa the opportunity to 'leapfrog' and go to the latest in innovation and technology at the same time."

Ultimately, it doesn't matter how many billions or millions of connected devices the world is predicted to see in the coming years: the reality is that there is real potential for the IoT in Africa. And if proof was needed, then it came earlier this year in May when MTN, the continent's biggest mobile operator, unveiled what it described as the first truly pan-African IoT platform.

"The IoT/M2M opportunity is real," says MTN Group CEO Mteto Nyati. "It is no longer a matter of if or when IoT/M2M will take off, as we have seen developments in this area from as far back as six to 10 years ago. Reflecting on Supervisory Control and Data Acquisition (SCADA) and the inception of machine-related data communications, it is clear that we have the building blocks and now need to enhance and facilitate greater efficiencies with our own solutions."

MTN claims its IoT platform will provide enterprises in Africa with greater control and advanced management features for their connected devices and SIMs. The company has also launched a global machine-to-machine SIM card and says this gives customers the same rate for M2M activity across its network footprint in Africa.

MTN's IoT platform is now live in South Africa, and its other operating countries are set to follow over the next 12 months. Echoing other commentators here, Nyati says how the Internet of Things is used and what that means for customers are the questions that now need to be asked.

"Africa has a unique set of problems that cannot be compared to other territories. The continent faces issues largely related to health, environmental sustainability, public safety and agriculture. Underpinning these are the constraints faced in relation to connectivity and data costs.

"Therefore, there is certainly an appetite for solutions to address the aforementioned problems. By addressing these we create a viable ecosystem to drive solutions and their adoption. A key focus for MTN in this respect is providing solutions to address the need for basic necessities like clean and drinkable water, driving energy efficiencies, economic inclusion and citizen engagement."

He continues by saying MTN's IoT environment has eased the above mentioned dependencies by providing a dedicated management platform that runs on a dedicated network.

"This allows us to provide a consistent service experience across our footprint and manage costs accordingly. With the addition of an open architecture software development kit and API, we have opened our toolsets to allow the developer community in Africa to build African solutions to address our uniquely African problems."

As part of the IoT platform launch, application developers from across South Africa are participating in MTN Business' first *Mind-2-Machine Challenge*. The initiative aims to identify and enable talented local developers to create scalable and relevant business solutions that solve real-world problems.

Nyati concludes by saying that there's money to be made from the IoT on the continent. "In South Africa, the wholesale M2M market – one aspect of the IoT – is already worth an estimated ZAR350 million and is expected to grow to ZAR1.2 billion by 2017. This means there are significant business opportunities for aspiring developers in South Africa and the rest of the continent. ■

CONNECTED CARS TO CREATE NETWORK TRAFFIC JAMS?

In June, Juniper Research forecast that the telematics sector will continue to outperform all other M2M markets over the next five years in revenue terms, with one-in-five passenger vehicles connected globally by 2019.

That's perhaps not good news given an independent study published earlier this year by Machina Research on behalf of TEOCO. It warned that rush hour traffic will have "grave implications for mobile networks", with certain cells set to experience a 97 per cent increase in data traffic over the next ten years.

Connected cars will be the key driver of this sharp increase in network usage.

"Connected cars, as with other M2M devices, don't behave like smartphones," said Machina Research CEO Matt Hatton. "They represent a very diverse set of challenges to operators through highly varying network traffic patterns at different times of the day."

While connected cars don't present much of a problem in terms of overall data volumes, Hatton pointed out that network resource management is not based on total traffic volume but on particular cell sites during peak times of network use.

"If connected cars regularly cause network traffic spikes in a particular location that can't be met, there are implications for operators in meeting SLAs and delivering a positive quality of experience," he warned.

Connected cars during rush hour will have "grave" implications for MNOs as some cells could see a 97 per cent increase in data traffic over the next ten years.

The report outlined a number of areas that operators must prioritise to cope with the uptake in M2M connections. These include: dynamic network management and optimisation for both RAN and backhaul planning; support for greater diversity in access networks including the management of both licensed and unlicensed spectrum; more sophisticated planning tools; and an increased focus on device management.

It added that a more considered approach to spectrum re-farming will also be required: "M2M devices are more sensitive to spectrum re-farming. They will have lifespans measured in decades and be installed in hard to reach places making them difficult to swap out. This will have a big impact on how operators choose to re-farm their spectrum," said Machina.

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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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"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.

Upgrade for biggest critical comms network in SA

The City of Cape Town has upgraded its TETRA infrastructure using the latest system from Motorola Solutions.

The city's TETRA network is said to be the largest in South Africa. It serves 11,000 public safety, security and utility services, and also provides communications for 2,500 external users from surrounding municipalities.

Motorola's *Dimetra* system was first commissioned by city authorities to provide coverage across the Cape Metropolitan Area (CMA) in 2000. It was last upgraded in 2008, enabling Cape Town to meet its communication requirements for the 2010 World Cup.

In June 2015, Altech Alcom Matomo upgraded the infrastructure's master switching station using *Dimetra IP 8.2*. Motorola says efficiency, safety and incident response time have all now been improved through enhanced network management, security and new location-based capabilities.

The system is set up so that all communications – across a range of radio groups and interconnected with the telephone network – remain secure and private. Encryption ensures those with police radio scanners cannot listen in on conversations, while real-time GPS tracking and mapping enables the command centre to monitor users and instantly dispatch support to their exact locations.

To complete the project, Altech needs to upgrade the 32 remote repeater sites and dedicated microwave infrastructure that links them to the master switch. This is planned to take place over the next three years.

In addition to public safety, Cape Town's TETRA network extension covers key utilities such as the Wemmershoek Dam.

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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.

TETRA steps in after DMR disappoints

When an upgrade to DMR failed to meet its communications needs, engineering firm Subsea 7 is now using TETRA at its spoolbase on the island of Vigra on the northwest coast of Norway.

Subsea 7 produce pipes for the oil and gas industry. Its spoolbase runs 3.7km across the island, and includes a purpose-built deepwater quay area covering 284,505m^2, making it one of the longest facilities of its type.

For several years, the company used an open communication system based on analogue UHF with 10 channels and six repeaters. While this initially worked well, Subsea 7 found that it had unauthorised traffic on the network which disrupted its daily communication and production. As a result, it replaced UHF with a DMR system consisting of five repeaters and 60 hand terminals.

Subsea 7's 3.7km Spoolbase is one of the longest facilities of its type in the world.

But the company soon realised that this new system did not meet its needs, especially in terms of voice quality. It therefore went back to UHF before deciding to invest in TETRA.

Stavanger-based 1-2-3 Communication was called upon to design and commission the solution.

It deployed DAMM's *TetraFlex* system which features intelligent decentralised infrastructure as well as a built-in *Dispatcher* application. TETRA hardware from Sepura, comprising a dispatcher solution and the *STP9000* hand-portables, was also included.

Kenneth Furnes-Røsand, HSE base manager for Subsea7 Spoolbase, says: "The reliable audio clarity of the *STP9000* enables clear and precise communications, a vital requirement in the environment in which we operate. We intend to expand the TETRA system to a larger number of talk groups and users in the months to come."

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.

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.

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

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.

Sierra simplifies IoT with Acceleration

Sierra Wireless has launched what it says is the industry's first integrated service platform that combines Internet of Things (IoT) hardware, cloud, 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 claims it can now provide customers with a comprehensive end-to-end solution that includes the hardware, *AirVantage*, and managed connectivity.

Vodacom's 'data centre on wheels' makes its network more resilient

In what's claimed to be an African first, Vodacom has developed a mobile recovery solution to ensure its network is even more resilient in the case of an unforeseen, catastrophic incident.

The *RAN Mobile Recovery Solution* is essentially two mobile data centres housed on board a lorry. The operator says the solution gives it the ability to restore functionality at any of its South African mobile telephone exchange (MTX) sites which link its RAN to the core network.

"These mobile data centres effectively allow us to recover our site within 48 hours instead of the two years it typically takes to build a new MTX site," says Vodacom network engineering officer Beverly Ngwenya: "We call this a 'hole-in-the-ground' recovery solution because it's used in the very unlikely event that our entire facility's functionality completely disappears."

The mobile data centre carries complete power backup with on-board generators, network equipment, and more.

Testing the new solution required the cellco to simulate the recovery of an entire MTX site. It chose Midrand which provides connectivity to hundreds of thousands of customers in the southern and central parts of Gauteng. Vodacom claims the tests ran smoothly with no loss of service.

To further ensure it is able to meet its 48 hour turnaround time, the company commissioned two solutions. The first, based in Pretoria, services the northern part of the country; the second is in Bloemfontein to ensure quick access to southern areas.

Each recovery solution consists of complete power backup with on-board generators, fire suppression, air conditioning, raised flooring, building management systems, security systems, and network equipment.

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