



Telco Strategies 2014

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17th Annual Telecom Asia Awards

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Navigating the iceberg field

Radical change required as telcos enter treacherous waters in 2014

Inside:



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Hong Kong gets its spectrum priorities wrong

What is it about Hong Kong and spectrum licenses these days?

The Executive Council (ExCo) caused an uproar in October by awarding two new free-to-air broadcast television licenses – one to PCCW, the other to Wharf-owned i-Cable – while denying a third license to Ricky Wong's HKTV, despite the recommendation of the Communications Authority (CA) that all three applicants be granted a license.

A month later, the CA announced it would go ahead with a plan to recall a third of allocated 2.1-GHz spectrum from the city's existing four 3G licensees (CSL, HKT, Hutchison and SmarTone) when their licenses expire in October 2016 to create a fifth 3G license for auction – which existing licensees say will wreck service performance and raise costs for consumers.

The former decision has caused far more public outcry for a number of reasons, from the slow and unsatisfactory explanations from ExCo to the fact that Chief Executive C.Y. Leung has been under political fire for just about every decision his administration has made from Day 1.

The 3G licensing decision hasn't received as much attention or public criticism – which is ironic, since it could have far wider consequences for consumers.

The incumbents have argued – via two studies from Plum Consulting – that confiscating a third of 3G spectrum would degrade service performance by almost 40% during peak periods, and would require serious network upgrades to make up for the lost capacity, which will be passed on to consumers.

The CA essentially rejected Plum's findings, saying they failed to include the existence of 4G into their calculations, and that by the time the 3G licenses expire in 2016, cellcos will have plenty of mobile data capacity once you factor in things like 4G, 2G refarming and Wi-Fi offload.

Technically, the CA does have a point. Between the prevalence of 4G, multimode devices and smarter Wi-Fi offload in 2016, 3G data networks may not be under as much

pressure as they are now. And even if they are, cellcos would have to invest in network upgrades to keep up with demand in any case.

However, it's worth remembering that mobile data usage is fully expected to go off the charts in the next few years. In Hong Kong it's already pretty high. And Hong Kong's networks are designed to fall back to HSPA+ when LTE is unavailable – and HSPA+ will have a third less frequency to rely on in three years. And Wi-Fi offload can only help so much. Consequently, cellcos need every last Hertz of spectrum they can get their hands on.

Lower prices vs quality

It's possible the CA has taken that into account and isn't that worried about it. Indeed, whatever data volumes they're expecting, the regulator fully admits that the policy will result in some service degradation, but that it won't be too serious (around 18% maximum), and that consumers won't mind because the trade-off will be more competition, and thus more affordable services.

The problem with that argument is that Hong Kong is already widely recognized as one of the most competitive mobile markets in the world – and that's before you factor in the new non-traditional competition coming from OTT service providers. Adding a fifth 3G player arguably won't make much more of a difference.

More to the point, the CA's position assumes customers care more about price than they do about service quality. That's a fool's bet when you consider just how central smart devices and apps have already become in the lives of many mobile users, and how much more integrated these services will become in the next few years as devices evolve from communications tools to intelligent location-aware avatars of ourselves in the digital marketplace. Today's smartphone and tablet users (in Hong Kong and elsewhere) will only accept so much service degradation. In 2016, they'll accept even less.

So if the CA thinks mobile consumers will benefit from this policy, perhaps it's because they don't have a full appreciation of just what consumers want. **TA**



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The Communication Authority's position assumes customers care more about price than they do about service quality

Cloud Radio: the next step in wireless evolution

By Chen Zhiping and Duan Xiaowei

This new solution from ZTE taps the power of the cloud to boost performance

The software defined radio (SDR) base station system is gaining traction among mobile operators worldwide. Its release moved the wireless market, arousing questions such as “what is the real SDR?”, and “what is the better choice – SDR, multiple standard radio or multiple band radio?”

Today, multimode capability and smooth evolution have become the basic technical requirements of mobile operators around the world.

In 2008 ZTE released the SDR base station system in which, compared to a traditional base station, the baseband unit has flexible multimode capability and the function of RF unit is re-definable via software reload. Thus, one hardware set could support multiple wireless standards, or support smooth evolution from 2G to 3G/4G standard, allowing the coexistence of multiple standards and multiple bands. As a result, the network structure is simplified and the network total cost of ownership is greatly reduced.

As the deployment of commercial LTE networks in Europe, America, and Asia Pacific gains pace, operators are looking for an innovative solution that can efficiently solve the interference problem of their 4G networks, and break through the limitation of the existing collaboration technology.

ZTE's 4G-oriented Cloud Radio solution, officially released during the Mobile World Congress last February, answers the call. The Cloud Radio solution has two major innovations – cloud collaboration and cloud scheduling.

Cloud collaboration, through the multi-level collaboration mechanism, and the boundlessness collaboration concept, can intelligently select the best collaborative mode, dynamically adapt to transmission conditions of the bearer network, and “translate” the wireline bearing bandwidth to the wireless coordination performance to the maximum extent. In this way, the overall network performance is enhanced and the cell-edge user performance is nearly doubled, allowing users to enjoy smooth experience in the LTE network.

ZTE's cloud collaboration could decouple LTE access network construction from bearer network upgrade, and can obtain the best wireless collaboration performance at any stage. Thus, it's not necessary to invest heavily in the bearer network modernization at the early stage of LTE deployment since operators can still achieve decent performance gains

with existing bearer networks. With ZTE's Cloud Radio solution, operators can even achieve almost equivalent collaboration performance in the good PTN bearer network as that in the dark fiber bearer network.

The standard inter-cell interference collaboration mechanism has no centralized control node. Base stations exchange limited interference information among each other through X2 interfaces, and conduct air interface resource scheduling and interference collaboration based on this information. In this way, interference optimization is limited in small scope and the efficiency is very low.

Cloud scheduling uses a two-level scheduling mechanism – centralized scheduler and distributed scheduler. The centralized scheduler collects the interference, load, user distribution, and interference location information reported by each base station, selects the best resource allocation policy after a global analysis, and gives cell-level macro-level scheduling instructions.

Then, each base station implements local user-level scheduling according to the scheduler's instructions. In this way, the most efficient resource allocation and interference collaboration can be achieved, and the inter-cell interference problem is perfectly solved with little increase in bearer network bandwidth.

Cloud scheduling is an enhancement version of standard ICIC technology, with improvements in network-level resource scheduling and real-time interference coordination.

By far, ZTE's Cloud Radio solution is the most cutting-edge concept in mobile communications field and the most complete collaboration solution for the wireless access network. It could inherit the great advantages of the SDR platform and write a new chapter in LTE network performance enhancement in the next five years.



For more information, please visit www.zte.com.cn.

Myanmar enters the information age

Myanmar may be lacking in telecom infrastructure, but that situation is changing quickly. The government and the nation's new telecom licensees are racing ahead with rollout projects.

The UAE's Ooredoo, which won one of two nationwide telecom licenses during a competitive tender earlier this year, announced in early December that it has signed an agreement with Jamaica's Digicel to help support its rollout plans.

Digicel Asian Holdings, a consortium consisting of Digicel and Myanmar-based YSH Finance, announced it has signed an agreement with Ooredoo Myanmar to deploy and lease telecom towers in the market.

Construction will be conducted through Digicel Asian Holdings' Myanmar company, Myanmar Tower Company. Multi-tenancy towers will be constructed to allow other telecom operators to take advantage of the infrastructure.

Digicel Group has operations in 31 markets in APAC, the Caribbean and Central America. The company was one of the shortlisted bidders in the Myanmar license tender, but was beaten out by Ooredoo and Norway's Telenor.

Both Ooredoo and Telenor have pledged to rolling out mobile networks covering at least 80% of the nation's population within five years of receiving their licenses.

Separately, Japanese heavyweights NTT Com, NEC and Sumitomo announced they have completed construction work for a joint network infrastructure project aimed at helping bring Myanmar's communications infrastructure up to par with competing markets.

The Japanese trio were awarded the contract in May by a Myanmar ministry. Under the deal, the companies have deployed a 30 Gbps core optical network between three major Myanmar cities, 50 LTE base stations, a virtualized EPC and more backbone infrastructure. According to the companies, the new infrastructure can support simultaneous use by 40,000 LTE subscribers, 1.5 million fixed telephone customers and one million internet users.

NEC, NTT Com and Sumitomo will provide operational support for the infrastructure until mid-January 2014, when the contract concludes. The project made use of 1.71 billion yen (\$16.7 million) in development assistance granted to Myanmar by the Japan International Cooperation Agency. **TA**

– Dylan Bushell-Embling

STATSNAP

Half of planes to offer wireless connectivity by 2022: IHS

By the end of the year around 21% of the world's planes will be equipped with wireless connectivity, and this percentage is set to soar due to the loosening of restrictions on device usage during US flights.

IHS forecasts that 4,048 planes will be offering Wi-Fi or cellular connections to travellers by the end of the year. By 2022, the firm expects half of all commercial aircraft to provide connectivity.

"The rising availability of in-flight wireless connectivity comes at a time when the US Federal Aviation Administration's (FAA) moves to loosen its rules for the usage of electronic devices on flights," said Heath Lockett, senior analyst for aerospace at IHS.

"The proportion of passengers actually connecting to wireless services on board is still very low, averaging in the single-digit percentages. The great challenge for airlines now is to inform passengers of the services they offer and to get them to pay for access."

Of the world's connected fleet, approximately 75% offer Wi-Fi only. This is particularly true in North America, where cellular connectivity is banned over the region's airspace.

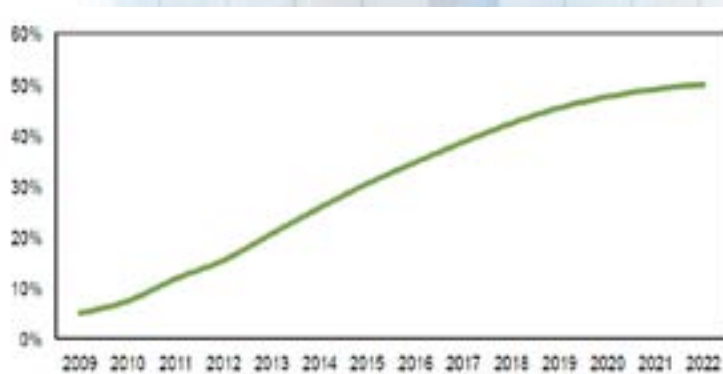
But outside of the region, cellular connectivity is growing, with almost 600 aircraft projected to offer the technology by the end of the year. In-flight mobile calls are still rare, with most passages using their devices for data services and text messaging.

Airlines including Singapore Airlines, Cathay Pacific, Emirates and Qatar Airways have meanwhile opted to provide both Wi-Fi and cellular services.

Combined Wi-Fi/cellular services represent the fastest growing category of in-flight connectivity, with IHS predicting that around 5,000 of the expected 14,000 connected aircraft will include both Wi-Fi and cellular options by 2022.

In-flight wireless installations taking off

Global percentage of commercial aircraft offering Wi-Fi and/or cellular connectivity



Source: IHS

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China awards TD-LTE licenses

After much anticipation, China has finally awarded TD-LTE licenses and associated spectrum to each of the nation's big three mobile operators.

China Mobile was dealt a disadvantageous hand in 3G, being saddled with the under-supported TD-SCDMA standard while its rivals were able to use the more popular W-CDMA and CDMA/EVDO standards.

But now the tables are turned. China Mobile has been driving TD-LTE development, while China Unicom and China Telecom favor FDD LTE. But the Chinese government may not allocate FDD licenses for some time.

Unicom and China Telecom have been handed a dilemma – either invest in an unfamiliar LTE technology and eventually offer dual-mode LTE networks, or hold back until FDD licenses are allocated and risk China Mobile taking an early 4G lead.

In late November, China's Ministry of Industry and Information (MIIT) awarded 270 MHz of TD-LTE spectrum to the three cellcos. China Mobile was allocated 130 MHz of spectrum for its extensive 4G trials, while Unicom and China Telecom were given 40 MHz apiece.

Weeks later, the MIIT awarded 4G licenses to the three carriers, but declared it is holding off on deciding whether to allocate FDD LTE licenses until "conditions are more mature."

The ministry also awarded China Mobile a license to operate fixed-line services, which will allow the mobile giant to compete directly with China Telecom and China Unicom in the booming fixed broadband market.

China Mobile has set the ambitious goal of rolling out TD-LTE to 13 cities - including Beijing, Hangzhou, Guangzhou, Shenzhen, Qingdao, Nanjing, Xiamen, Shanghai, and Chengdu - by the end of 2013.

China Telecom is already building

TD-LTE trial networks, and has indicated it will apply for an FDD license as soon as possible, with an aim of pursuing a hybrid LTE rollout.

The company may have been anticipating this situation, as the company's CEO had revealed plans to go with a hybrid configuration back in August. He also indicated that the company was in ongoing discussions with China Mobile over some form of TD-LTE network sharing agreement.

China Unicom is also reportedly trialing a dual-mode configuration. In a statement issued shortly after the TD-LTE license allocation, Unicom said it "will continue to proactively apply for the launch of an LTE FDD technology test run." **TA**

– *Dylan Bushell-Embling and Fiona Chau*

INSIGHT ONE MONTH'S TELECOM RESEARCH

>> Pay-TV subs set to hit 1b in 2018

The world's pay-TV subscriber base reached 886.5 million during the third quarter, up 6% year-on-year. Service revenues for the quarter totaled \$62.6 billion, ABI Research estimates. The research firm expects the global subscriber base to pass one billion by 2018, generating service revenue of \$229.6 billion. Most of the growth is coming from the BRIC (Brazil, Russia, India and China) markets, which are expected to account for 68% of total net additions by 2018. By contrast, North America's pay-TV subscriber base declined 1% during Q3, with the region's pay-TV industry losing an estimated 1.7 million subscribers. But pay-TV revenue in the region increased 3% year-on-year, thanks to a higher proportion of HD and advanced DVR subscribers stimulating an increase in ARPU. Pay-TV subscribers in Western Europe increased by less than 2% during the quarter, with providers blaming a weak economic environment.

Pay TV ARPU and Revenues
www.abiresearch.com

>> Over 250m smartphones ship in Q3

Over 250 million smartphones shipped during the third quarter, representing an increase of 44% year-on-year. According to Canalys, Samsung maintained its position as the top vendor, with a market share of 34%, compared to second-ranked Apple's 15%. Huawei, Lenovo and LG rounded out the top five. Greater China was the fastest-growing smartphone market during the quarter, with nearly 100 million units shipping across China, Hong Kong and Taiwan. Greater China alone now accounts for 39% of the global smartphone market. In terms of form factor, shipments of large-screen (5-inch or higher) smartphones reached their highest level yet - the 56 million units shipped accounted for 22% of the market in Q3. But phones with screens of 6 inches or above make up just 3% of the above 5-inch subcategory.

Smartphone vendor performance index Q3 2013
www.canalys.com

VoLTE gains traction in APAC

With 4G adoption moving to an inflection point, Asian operators are ramping up their efforts to introduce voice over LTE (VoLTE).

Hong Kong mobile carrier CSL announced it has deployed VoLTE on its 4G network. The company is using a ZTE IMS system for the service. CSL is still testing the technology with Samsung's VoLTE handset and will unveil pricing for the service in the next few months.

CSL isn't the only Hong Kong carrier with VoLTE ambitions. Rival PCCW-HKT has announced plans to launch VoLTE by the end of the year.

On the TD-LTE front, China Mobile and Huawei achieved another milestone in TD-LTE development in late November, announcing they have completed the first international VoLTE call between a TD-LTE and an FDD LTE network. During the trial, the operators demonstrated

both HD voice and video calls over VoLTE to a group of journalists.

China Mobile, NTT DoCoMo and KT separately revealed that they have extended their business tie-up to help accelerate the development of international LTE roaming services between China, Japan and South Korea.

China Mobile collaborated with Huawei to conduct the first national TD-LTE VoLTE call in September.

In early December, Singapore's StarHub separately staked a claim of being the first mobile operator in Southeast Asia to conduct a commercial GSM VoLTE call over its live LTE network. The company conducted the call using VoLTE equipment from NSN that conforms to the GSMA VoLTE IR.92 specification.

The successful test comes nine months after StarHub launched HD voice over 3G, and two months after it announced that its LTE network now provides island-wide street-level coverage. But subscribers to the operators'

respective LTE networks will have to wait a while until VoLTE is commercially available.

CSL announced it expects to launch VoLTE commercially in the first half of 2014. China Mobile has a target of commercializing VoLTE over its TD-LTE network by the end of next year. StarHub is also planning a launch sometime next year. In all cases, the operators are waiting for a range of VoLTE handsets to reach the market. **TA**

– *Dylan Bushell-Embling*

>> VoLTE, NFV drive carrier voice gear market

Sales of carrier IP telephony equipment contracted 2% year-on-year during the first quarter, but would have declined more were it not for strong demand for VoLTE and NFV equipment, Dell'Oro observed. The overall carrier IP telephony market – comprising devices used to serve circuit-switched, VoIP and VoLTE subscribers – reached \$1.6 billion during the quarter. Sales of IP multimedia subsystem (IMS) core, session border controller and voice application server systems grew 55%, nearly offsetting declines in the mature softswitch and media gateway segments. "Wireless voice and messaging infrastructure upgrades are emerging as a catalyst to transform service provider core networks towards a data-center-oriented architecture," Dell'Oro VP of carrier IP telephony Chris DePuy said. "There are a significant number of technology trials underway at leading operators today that are utilizing software-only NFV instances of what today are delivered on hardware-dependent systems."

3Q13 Carrier IP Telephony Quarterly Report
www.delloro.com

>> CEM to be top telco IT priority in '14

Customer experience management (CEM) will be the main driver of the telecom sector's IT investments in 2014, Ovum predicts. Telco IT spending is on track to hit \$60.7 billion by 2017, with operators expected to focus their investments on telecom infrastructure (cloud platforms, server virtualization and BSS/OSS systems to support LTE implementations) and online customer service channels. A survey of senior IT executives shows that operators' top priorities for the next 18 months will be multi-channel integration and service personalization. Over 80% of operators covered by the survey also plan to implement business intelligence and predictive or big data analytics at the network level to help enhance the user experience across the customer lifecycle. "After many years of cost reduction, senior telco IT executives clearly see the need to invest again in CRM projects that will support overall customer experience," Ovum analyst Shagun Bali said.

ICT Enterprise Insights
www.ovum.com

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asian telecoms this month

BEIJING

China allocates TD-LTE spectrum and operating licenses to each mobile operator, putting China Telecom and China Unicom in a position where they'll have to roll out hybrid LTE networks or wait up to a year for FDD allocations.

China Telecom becomes the last of the big three mobile operators to launch NFC-based mobile payment services.

China Mobile re-launches Skype-like VoIP service Jego, which allows customers outside of China to receive free incoming calls on a rented China Mobile number.

China Telecom partners with SAP to jointly market SAP cloud services via a Chinese joint venture owned by the two companies.

HONG KONG

CSL and Hang Seng Bank team up to provide NFC-based mobile payment services to the former's 1010 and one2free mobile customers.

HKBN posts a 9% increase in ebitda for the year ending in August, its first full-year results since it was bought out from former parent City Telecom last year.

BANGKOK

Moody's cuts its corporate family rating on True Corp's credit, warning that the company's free cash flows are unlikely to be enough to fund its near-term capex requirements.

State-owned CAT Telecom blames anti-government protesters for cutting off the power to CAT offices, causing \$10m in damages and sparking a brief internet outage for CAT, TOT and True Corp users.

SINGAPORE

Regulator IDA approves a deal that will temporarily put full ownership of NG-NBN netco OpenNet into the hands of a SingTel subsidiary – but only if SingTel agrees to conditions that will ensure it has no effective control.

IDA separately fines OpenNet \$600k for allegedly breaching its USO and QoS obligations with its well-publicized delays rolling out the national fiber network.

StarHub claims a Southeast Asia first after conducting a commercial GSM VoLTE call over its live LTE network. The company plans to launch the service for its subscribers next year.

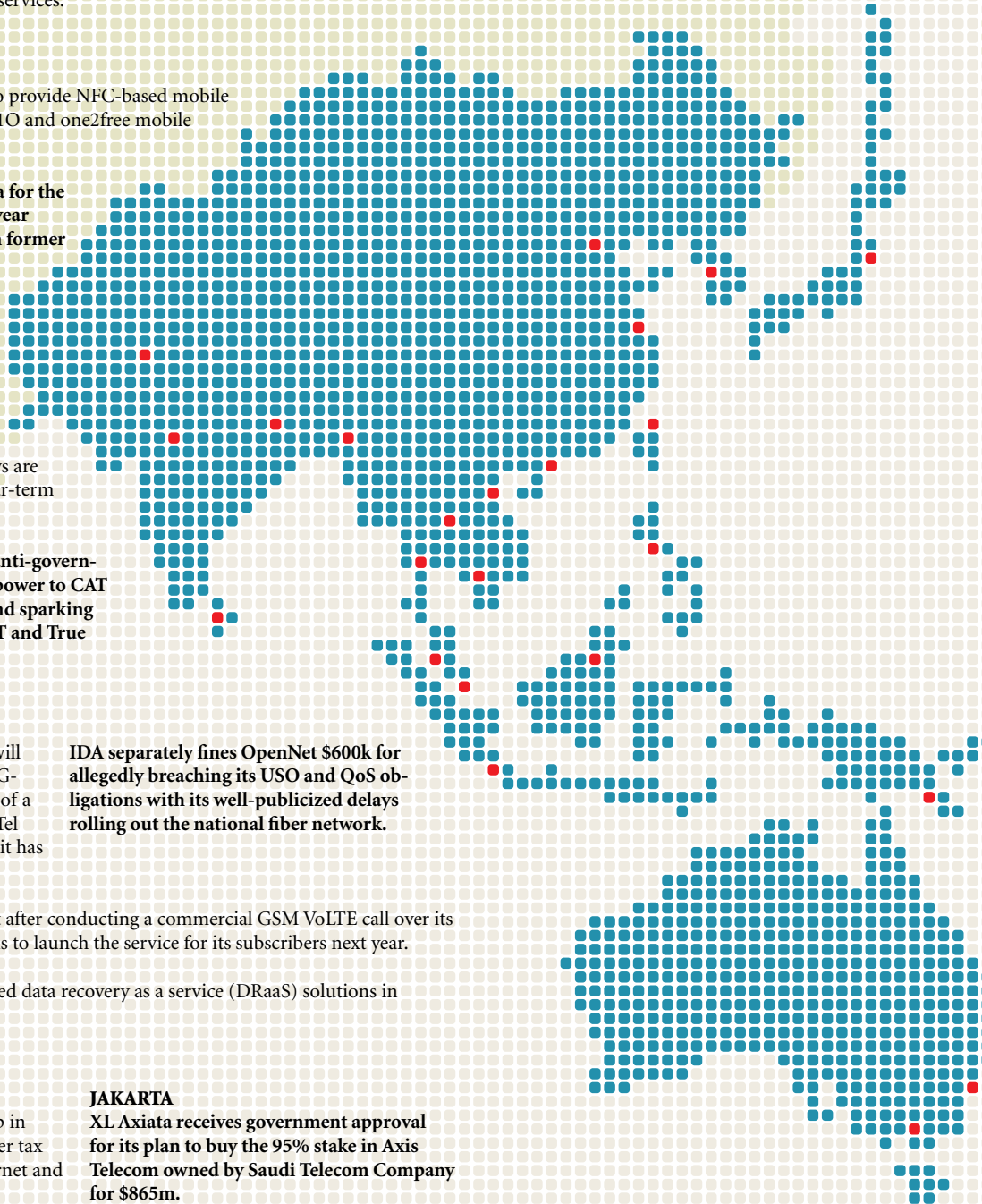
Fujitsu launches a suite of cloud-based data recovery as a service (DRaaS) solutions in Singapore.

KUALA LUMPUR

Telekom Malaysia posts a 20% slump in Q3 profit, with forex losses and higher tax expenses overshadowing strong internet and data service revenue gains.

JAKARTA

XL Axiata receives government approval for its plan to buy the 95% stake in Axis Telecom owned by Saudi Telecom Company for \$865m.



SEOUL

SK Telecom conducts a demonstration of the 225 Mbps LTE-A service it plans to roll out in 2H14, achieving the speed by aggregating 30 MHz of spectrum in the 1.8-GHz and 800-MHz bands.

TOKYO

NTT DoCoMo launches a one-day flat rate international roaming pack for its mobile customers and reveals plans to introduce an international LTE roaming service by end-March 2014.

YANGON

Ooredoo taps a consortium led by Digicel to help provide telecom towers for its ambitious mobile network rollout in Myanmar.

Japan's NTT Com, NEC and Sumitomo complete construction of a telecom infrastructure project for a Myanmar ministry, deploying gear including a 30-Gbps core optical network between three Myanmar cities and 50 LTE base stations.

AUCKLAND

Subsea cable startup Hawaiki Cable signs deals giving it access to a US landing site for its planned 14,000 km trans-Pacific cable.

SYDNEY

NBN Co starts the hunt for ISPs interested in participating in a trial of FTTB technology, as it seeks to fulfill the new government's remit of accelerating the NBN rollout while cutting the costs.

Telstra Global expands its international data center footprint in key global locations, as well as the number of facilities offering its connected colocation service.

DELHI

The Competition Commission of India launches a probe into whether Ericsson is making excessive royalty demands on domestic handset makers for licensing of standards-essential patents.

India prepares to make its third run at re-auctioning 1800-MHz and 900-MHz spectrum vacated from the cancellation of 122 licenses last year.

■ Nokia investors overwhelmingly vote to approve the \$7.4b sale of the company's devices and services business to Microsoft.

■ China Mobile, Huawei and a South Korean operator jointly complete the first international VoLTE call between a TD-LTE and an FDD LTE network.

■ GfK estimates that by September this year, one out of every two handsets shipping in Southeast Asia's emerging markets was a smartphone.

■ Huawei CEO Ren Zhengfei discloses the company's plans to step back from the US infrastructure market, declaring the company does not want to remain caught in the middle of trade disputes between China and the US.

■ BT Global Services goes on a hiring spree to support its international expansion, adding another 400 employees across Asia and MEA.

■ US regulator FCC clears Verizon's planned \$130b buyout of Vodafone's 45% stake in joint-venture Verizon Wireless. Pending shareholder approval, the deal is expected to close next quarter.

■ Telco 2.0 Initiative warns that operators in nine developed markets will lose between \$92b and \$172b in core revenues over the next 5 years due to the OTT threat, vulnerable pricing structures and economic pressures.

■ Informa Telecoms and Media predicts that the global LTE subscriber base will balloon from 188.6m at the end of the year to 1.3b by end-2018.

■ Gartner estimates that smartphones outsold feature phones in Q3 for the second consecutive quarter, accounting for 55% of handset sales.

■ A media futurist predicts that big data will become the Big Oil of the future, taking over as the new force driving the global economy.

■ Aircom International joins a consortium of companies investing in a 5G research facility at the University of Surrey in the UK.

■ Not to be outdone, NSN joins five other industrial partners for a 5G research program being led by New York University.

■ Trend Micro and the ITU announce a partnership aimed at helping better equip the ITU's 193 member states with the tools to fight cybercrime.

■ Akamai arranges to buy cloud security firm Prolexic Technologies for an estimated \$370m to help bolster its own security portfolio.

■ Bell Labs forecasts a 560% surge in data traffic over metro networks by 2017, warning that the swelling demand will require telcos to develop a new type of cloud-optimized network architecture.

■ ZTE joins the ranks of device vendors planning to launch products into the nascent smart watch segment.

■ Speakers at TM Forum's CEM event detail evidence that the traditional call center is quickly ceding ground to online and self-service channels.

■ A survey of APAC firms shows that almost half of companies in the region believe adopting big data can help improve revenues by 25% or more.

Outlook 2014: navigating the iceberg field



Telcos are heading into treacherous waters in 2014 as traditional services and strategies continue to sink. Our annual Outlook charts some of the key radical changes telcos must undergo, and the technologies that can help

Predicting what will happen in the telecoms industry in 2014 is a bit like steering a ship through an iceberg field – you know your chances of hitting something are high, you just hope to hell it doesn't sink you.

C-levels in today's communications service provider are starting to realize that all those years of growth, big revenues and comfortable margins are behind them. Their challenge now is to either decide on a radical new course or take their chances with the traditional routes.

The first option is going to require

some serious convincing of stakeholders and staff, as well as some serious risk-taking. The second will require the preparation of lifeboats, as well as some serious risk-taking.

Looking at the least-risk predictions for 2014, investment in networks will continue, but slow down appreciably as operators come to grips with the benefits of 4G and LTE. The emphasis will swing heavily to optimizing those networks and finding products and services that can take advantage of them and give them a market edge.

Innovation will likely come from outside the CSP, and we will see in-

creased M&A activity of smaller innovators or service providers with unique offerings.

We will also see increased M&A activity of other CSP as markets rationalize down to two or three operators at most. Any more is proving to be an unsupportable model in developed and saturated markets.

Market penetration – or saturation, as I prefer to call it – is going to dramatically change the way CSPs do business, as they will have to swing concentration away from consumers to market sectors and demographics they have tended to ignore. The enterprise sector will get



lots of attention but CSPs will have to invest heavily in products and services to attract them and partner with companies that can help them deliver. Here, we are talking about cloud services, device management (BYOD), security and SDN (where the network becomes an extension of the enterprise not unlike a private cloud).

Also, in the wake of the Snowden revelations there is going to be a massive take-up of data and email encryption technologies, and CSPs are well placed to offer both if they can move quickly enough.

The back office is overdue for a mas-

sive shakeup. The boundaries between OSS and BSS have all but disappeared, and the new child will be IT-centric. There will have to be renewed investment in transforming to less complex ordering and service activation systems, software-driven networks and online charging systems, leading to a fully IP real-time environment.

This in turn will lead to a massive take-up of customer-driven services via self-care portals. This is what customers want and the CSPs that can deliver it best will win market share.

I will reserve judgement on the hype surrounding big data and its use as the

ultimate customer-experience weapon. I'm still uncertain that we can really know or determine what a customer wants based on their history, nor can we do it 'on the fly' without starting to aggravate them. Big data will certainly be big in 2014 but probably not in the way it is being sold today.

We will also see a number of changes on the bridge as the seasoned telco captains start to make way for a fresher, techno-savvy, digital era breed of captain more suited to testing those new sea routes.

– *Tony Poulos*

Telcos must go soft(ware) to survive

Big data and SDN will dramatically change the fortunes of telcos in 2014

Telcos will enter 2014 in bad shape. Their costs are rising as they invest in high-speed broadband networks, and their core revenues are falling as voice, messaging and internet access revenues pass their peak. They are destined for terminal decline unless they latch onto an emerging technology cycle and grow with it. Put simply, they need to become software companies to survive.

Two emerging technologies that could dramatically change the fortunes of telcos in 2014 are big data and software defined networks

Big data refers to data that cannot be analyzed on a traditional database. This data is created from hundreds of sources, including emails, documents, apps, pictures, videos, tweets, and credit card data. Much of it is unstructured, which means it cannot be easily compartmentalized by field. This makes it difficult to analyze because it depends on a machine interpreting nuances that only humans can truly understand. The big money lies in developing big-data analytics engines that can reliably interpret these nuances in real time.

What is interesting is that the big internet champions like Facebook and Google straddle the entire big data value chain: they collect raw data on an industrial scale, they analyze it and they commercialize it.

By contrast telcos are instrumental only in collection of big data. They are less good at analyzing and selling it. In a sense, they sell the raw material, leaving someone else to add the most value to it. To profit from big data, telcos need to invest more in software.

SDN is another technology cycle that telcos can latch on to. SDN is a new architecture for telecom networks in which the emphasis shifts from hardware to software. It transfers the intelligence currently held in a network equipment box to a software layer, enabling the network to be centrally controlled and programmed.

Many telcos are officially bullish about SDN because it has the potential to improve the quality of network services while lowering capital expenditures. But to really profit from SDN technology, telcos need to invest heavily in software engineering to design the

applications that will run on these new networks.

However, there is a problem. SDN technology is classified as network infrastructure, which means it falls under the remit of the regulator. If regulators prevent telcos from profiting from their SDN infrastructure investments, then it will be industry outsiders that profit more from SDN technology. These external beneficiaries will probably include cloud software companies like Facebook, Google, Netflix and Salesforce, which will be able to program networks to enhance their web services.

Therefore, telcos in 2014 need to change their business models, keeping two things in mind. First, they need to move toward software services. And second, they need to restructure their businesses so that their new products and services are not regulated.

– *Cyrus Mewawalla, CM Research*



That's it for voice

As voice ARPUs sink, cellcos will diversify into new areas – and it's already happening

Many years ago in the pre-smartphone boom world, I attended several conferences and symposiums held to discuss the elusive “killer app” that would eventually justify heavy spending on 3G networks and licenses. After endless discussions of several options including LBS, gaming, mobile payments etc. the consensus was that the silver bullet was – ironically – voice services, which

would fund investments in data services that would increase ARPUs by upwards of 50%. Sure enough, in time, when smartphone navigation became user-friendly and content became accessible (largely thanks to Apple) and data pricing became affordable, ARPUs have indeed taken off and 3G and 4G are now widely used and understood consumer concepts.

However this boom in mobile data

usage will inevitably lead to the death of voice services, and we are already seeing examples of this going into 2014.

For example, in the quarter ending September 2011 NTT DoCoMo reported a voice ARPU of 2,280 yen and a packet ARPU of 2,690 yen. Fast forward to two years later, and voice ARPU has fallen to 1,430 yen, a staggering decrease of 37% in two years while even the data ARPU declined slightly to 2,670 yen.

Make-or-break for RCS

With OTT outpacing RCS, time is running out – and time is a luxury cellcos don't have

Undoubtedly you'll be hearing a lot about OTT services in 2014, and with good reason. Apart from the ongoing efforts of old hands like Google, Facebook, Twitter, Skype, WhatsApp, WeChat, Viber et al, we'll be seeing more and more new OTT services popping up in the next 12 months. We'll also start to see new innovations in OTT as HTML5 and WebRTC start ramping up. (And incidentally, those could potentially be as disruptive to existing OTT players as they will be for cellcos.)

You'll also be hearing a lot about what cellcos should do about this – which also means you'll be hearing a lot about Rich Communications Suite (RCS), the initiative from the GSM Association to help cellcos compete with the OTT threat. But while there will be much talk about RCS in 2014, it's not necessarily going to be flattering.

Certainly RCS/joyn hasn't really won over very many operators, although the operators that have adopted it to date are heavy hitters like Telefonica, Orange, SK Telecom, and most recently, Sprint in the US, among others.

However, most operators remain unconvinced that RCS will do them much good. An August 2013 survey from mobilesquared found only 7% of cellcos

see RCS as a good tool for competing against OTT services. The rest are at best uncertain.

There's enough interest to trial it, of course, but not much faith that it will earn them much money, or keep users away from popular OTT apps. More and more cellcos are admitting the futility of fighting OTT and instead looking for partnership opportunities. And there will be plenty of those in 2014 – OTT players are generally keen, and cellcos now have a reasonably good idea of where their strengths lie in a partnership scenario.

It's tempting to predict that 2014 will spell the end of RCS. That's probably overstating the case, if only because OTT partnerships and RCS are not mutually exclusive strategies. However, 2014 is likely to be the year RCS must prove itself. And to do that, at least two things will need to happen.

The first, of course, would be for cellco execs to give keynotes at the next Mobile World Congress in Barcelona revealing stunning and spectacular numbers on RCS/joyn uptake and revenues (which may or may not happen). The second, according to the GSMA, would be further rollouts of IPX.

The argument makes sense on paper. Like SMS, RCS isn't worth much when it's limited to your own subscribers. Once infrastructure is interconnected via IPX, RCS can theoretically realize its full potential. The problem is that – like RCS – IPX is not going to happen overnight. IPX adoption will undoubtedly continue next year, but many operators are waiting for the cluttered and confusing IPX market to shake itself out first.

That's going to take time. And time is a luxury cellcos don't really have in an era where OTT players have been running circles around them, innovating like crazy. In the time it will take IPX to reach critical mass, the OTT landscape will have shifted significantly – and consumer behavior along with it – in unexpected ways. If RCS can't keep up, it won't be of much use to anyone.

– John C. Tanner



This decrease was caused by the rise of LINE, which has substantially diminished MOUs.

With the massive uptake of LINE, KakaoTalk, WeChat, Viber and Skype, similar situations are almost certain to play out across the region in the coming year. Half of the mobile industry's revenue going to OTT platforms is a scary prospect indeed.

So how can this issue be tackled? It

certainly won't be easy, but we are seeing signs of operators preparing for the challenge. NTT DoCoMo itself is now reporting a "smart" ARPU in addition to voice and data to show the growth of new services while SK Telecom is highlighting the growing contribution of "new business" to its revenue. Operators in North Asia are moving towards diversifying into new areas, with NTT DoCoMo even purchasing a chain of

domestic physical cooking studios last month, while China Telecom and other operators are increasingly reaching out to OTT providers.

While business transformation is never easy, it is something that can and must be tackled to prevent a significant contraction in the mobile industry.

– Marc Einstein, industry principal for consumer telecom and digital media, APAC, Frost & Sullivan

Radical back-office overhaul

Telcos need to automate IT systems in order to reduce headcount

Telcos today face a myriad of woes. We're all too familiar with this expanding list. In this issue a year ago, we reported that CSPs were waking up to the fact that the world had changed and they needed to up their game. Reality, we said, was finally setting in.

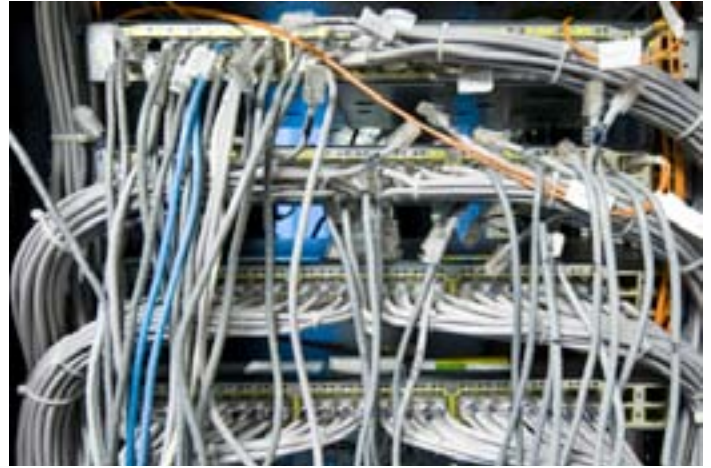
This was supported by our 2012 outlook survey that showed almost of 70% of telcos were planning network upgrades, 77% had IT upgrade initiatives and 50% expected to reduce staff. A year later just a quarter planned to cut staff, less than 40% had IT upgrade plans and 56% expected to upgrade networks.

So while the vast majority recognize that it's crunch time for technology upgrades, most telcos aren't following

76% used call-center assisted channels. At dtac in Thailand call-center contact now accounts for a quarter of the channel mix, down from 34% in 2012. Retail contacts also fell over the last year, as the percentage of inquires going through retail shops dropped to 18% compared to 25% last year.

This changing mix is forcing telcos' hands.

With serious downward pressure on



our outlook survey unfortunately shows will be flat in 2014 at more than 50% of the telcos surveyed.

PwC's Pilbeam reckons operators have two to three years to implement the restructuring. "Wholesale change is required or we'll start to see companies failing within the next few years."

SingTel and DoCoMo each have nearly 23,000 employees, PCCW has almost 20,000 and PLDT has over 36,000. The question is how many can they support in 2015 or 2020 as revenue and margins continue to fall?

Moody's reports that ebitda margins for telcos in the region will fall 0.5-1% next year, even as revenue grows 4% (in line with GDP growth). It predicts capex as a percentage of revenue will decline to around 20% as most firms complete their 3G or 4G rollouts.

This indicates operators aren't currently planning to shift their higher network capex spend to the IT/back-office side. That's unfortunate, because unless they bite the bullet and invest in a back-office overhaul, they're just postponing the pain until the next year when it will be more difficult and costly.

Telcos need to think things through – their survival is at stake.

– *Joseph Waring*

“Wholesale change is required or we'll start to see companies failing within the next few years.”

through on that with concrete action.

Nick Pilbeam, director of PwC's TMT Center of Excellence, said recently that he deals with companies that haven't touched their back-office systems in 10 to 20 years. "One Hong Kong telco just extended the life of a back-office system built in the '70s by another five years."

That approach won't fly for much longer. Technology is drastically changing the way customers engage with operators. Both StarHub and dtac have seen customers' use of self-service channels jump sharply.

StarHub reported that 52% of post-paid customers now use self-help channels compared to 24% in 2011, when

revenue and margins, operators need to make some hard decisions on restructuring their back-office organizations. And time is running out. A radical overhaul of IT is required to reduce headcount. Many analysts say staff cuts of up to 50% are needed to align these organizations with the margin levels they'll face in the near future.

But with the current state of their back-office systems they can't even start to make big cost cuts. It's a Catch 22. They need to automate their IT systems to streamline operations – i.e. moving to online self-care – before they can reduce staffing in call centers and cut back on the number of retail shops. This of course requires IT investment, which

The big case for small-cells

2014 will herald new strategies for enabling large-scale small-cell deployments

As mobile broadband demand increases, the business-case justification for small-cell technology is compelling. This is particularly the case in markets where data traffic is overwhelming the capabilities of traditional network designs, and challenging the return-on-invested-capital that operators can achieve.

Although outdoor small-cells have been deployed for several decades under the guise of micro-cells, technology vendors have made tremendous progress in cost-optimizing them with integrated platforms and form-factors that ease installation and integration requirements. These efforts have benefited from the femtocell market, the proliferation of Wi-Fi technology for mobile traffic offload and the innovation solutions by companies like AirHop, Alcatel-Lucent, Cisco, Ericsson, Mindspeed, NSN, Silku and SpiderCloud. While cost optimization will remain a key focus for small cells, 2014 will herald new strategies for enabling large-scale small-cell deployments, particularly in four areas.

Network planning: The ultimate goal is for network planning to become autonomous, enabling multitudes of low-cost network nodes to adapt to network demands and provide coordinated measurements and predictions to inform network optimization, planning and inventory requirements. However, for the foreseeable future, centralized planning platforms offered by compa-

nies like Aircom, Forsk, and Mentum will be needed.

In addition, the planning of outdoor small cells contrasts macro-cell planning in many ways, including the need for higher resolution geographical information system data, radio propagation modelling solutions that anticipate near-far difficulties created between small and macro cells, and solutions that optimize proximity of cell sites relative to utility and transmission resources.

Site acquisition: In the past macro-cell site acquisition has involved complicated site identification, landlord negotiations and zoning approvals. For example, in mature markets like the US, the acquisition of new macro cells typically costs between \$40,000 and \$50,000. More recently, infrastructure outsourcing initiatives and site overlays have resulted in master lease agreements and simplified site acquisition and lease modification activities, typically costing between \$5,000 and \$10,000.

Further simplification is crucial for large-scale outdoor small-cell deployments. This will involve packaging suitable street furniture into clusters or zones under master lease agreements that are predicated on standard site configurations. Ultimately, the demand for low-cost small cells will lead to the proliferation of neutral host cluster sites with pre-provisioned utility and backhaul infrastructure.

Self-optimizing networking (SON):

The architecture and civil works, and EF&I (engineering furnish and installation) requirements for outdoor small-cells are dramatically reduced by the integrated small-cell form-factors that are used for the equipment. Standardized designs are being optimized for the variety of street furniture used and “plug-and-play” functionality is being enabled with technologies like SON.

We believe that it is crucial for SON functionality to evolve with improved configuration management capabilities, so that small-cell installation requirements can be completely deskilled. However, in some cases, the rate at which mobile operators can “de-skill” their small-cell implementations might be hindered by pre-existing operational policies and by employee union regulations.

Fault management: For outdoor small cells, fault management is aided by overlaid macrocellular coverage and self-healing functionality that is being developed as part of the software suites for small-cell solutions. These same self-healing functions are forming the basis for SON developments that enable networks to be re-optimized in cases where faults occur and will advance in 2014.

The changes being driven by the need for small-cell cost optimization will rapidly disrupt macro-cell operational models, particularly as large-scale small-cell implementations become commonplace. The foundations of these disruptions have already been created and will be furthered tremendously in 2014.

– Phil Marshall, Tolaga Research



The ultimate goal is for network planning to become autonomous

Targeted insight on the telco industry



Congratulations to all winners

Bandwidth Optimization Innovation of the Year

Oracle Communications
Tekelec Policy Solution

Business Analytics Innovation of the Year

Gigamon GigaVue H

Small-cell Innovation of the Year

Huawei Technologies AtomCell

CEM Innovation of the Year

Nokia Solutions Networks
Dashboard solution

SDN Innovation of the Year

Cyan Blue Planet SDN Platform

BSS Innovation of the Year

Amdocs CES 9

Data Center Innovation of the Year

Nuage Networks
Virtualized Services Platform

FTTX Project of the Year

ZTE and China Telecom
FTTx tender

Optical Network Innovation of the Year

FiberHome
FONST5000
(100G OTN Platform)

Carrier Ethernet Project of the Year

Ciena and AAPT
Deployment of E-Suite-enabled
5160 service aggregation switch

Cloud Innovation of the Year

Huawei Technologies
FusionCloud

Core Network Project of the year

Transmode and HGC
ROADM-based 100G optical
backbone network project

Broadband Innovation of the Year

RAD Data Communications
Service Assured Access solution

Wireless Network Project of the Year

Ericsson and SK Telecom
Commercial LTE-Advanced service
launch

LTE Innovation of the Year

ZTE 4G Cloud Radio Innovation

Infrastructure Management Project of the Year

OSS Innovation of the Year

Amdocs CES 9

Huawei and XL Axiata
Managed services contract

READERS' CHOICE & INNOVATION AWARDS 2013

telecomasia

Asia's best telecom vendors

December 5, 2013 | Marina Mandarin Singapore

Telecom Asia named the winners of its sixth Readers' Choice & Innovation Awards in Singapore on December 5. A total of 17 awards were presented to 13 companies by executives from AT&T, BT Global Services, Deutsche Telekom Asia, Level 3, NTT Communications, Orange, Pacnet, StarHub and 1-Net.

Huawei Technologies, for the second year, won awards in three categories. It was recognized for the Infrastructure Management Project of the Year (XL Axiata managed services contract), Cloud Innovation of the Year (FusionCloud) and Small-cell Innovation of the Year (AtomCell).

Amdocs and ZTE both went home with two awards. The former won both OSS Innovation of the Year and BSS Innovation of the Year awards for its integrated CES 9 suite. ZTE took the LTE Innovation of the Year (4G Cloud Radio Innovation) and FTTx Project of the Year (China Telecom FTTx tender) awards.

This year five companies won awards for the first time. Nuage Networks' Virtualized Services Platform was voted the Data Center Innovation of the Year. RAD Data Communications was named Broadband Innovation of the Year for its Service Assured Access solution; Gigamon picked up the Business Analytics Innovation of the Year award for its GigaVue H analytics tool; Cyan took home the SDN Innovation of the Year prize for its Blue Planet SDN platform; and Transmode's ROADM-based 100G optical backbone network project for HGC was recognized

as the Core Network Project of the Year.

The Wireless Network Project of the Year went to Ericsson for its commercial LTE-A service launch for SK Telecom. The Carrier Ethernet Project of the Year award was given to Ciena for the deployment of its E-Suite-enabled 5160 service aggregation switch at AAPT in Australia.

Nokia Solutions Networks was voted the CEM Innovation of the Year for its Dashboard solution while Oracle/Tekelec's Policy Solution was selected as the Bandwidth Optimization Innovation of the Year. FiberHome's FONST5000 100G OTN platform was named the Optical Network Innovation of the Year.

Each year *Telecom Asia* organized the Readers' Choice & Innovation Awards to recognize the advancements and contributions of the industry's top vendors from around the region.

The awards, now in their sixth year, have always put a heavy emphasis on innovation, said group editor Joseph Waring. "But this year we have added 'Innovation' to the name to reflect the increased focus that suppliers have made to ensure their products and services help telcos to find new ways to partner, test new business models and compete in the digital economy."

The editors of *Telecom Asia*, with support from a team of a dozen analysts, narrowed down the 174 nominations in 17 categories to a shortlist of 69, representing 37 companies. Voting was open to our online subscriber base of service providers in early October. Voting was closed in late October. **TA**

Nomination Criteria:

- Overall quality of innovation and contribution to technology advancement (60%)
- Vision and industry leadership (15%)
- Market acceptance – market share growth, market share and new customer acquisition (15%)
- Revenue growth and profitability (10%)
- Based on performance in 12 months prior to Aug 1, 2013 – nominated products/services should have been available by June 30, 2013

Adding agility and IT efficiency

This was a year that saw Huawei win several LTE and NBN opportunities, launch new smart devices, implement its enhanced cloud, M2M, unified communications, application storefronts and BSS solutions, and unveil a fully compliant SDN switch.

With business models constantly evolving and new disruptors emerging almost daily, Huawei recognized that customers are looking for a different type of relationship. So it has made significant investments in further developing its Global Consulting Practice.

"This past year has seen us work with numerous customers around the world in developing their strategic ICT vision. Huawei is definitely making great inroads in achieving our strategic intent of becoming more of a trusted strategic advisor to our customers," said David Liu, Huawei's VP of Southern Pacific solution sales & marketing.

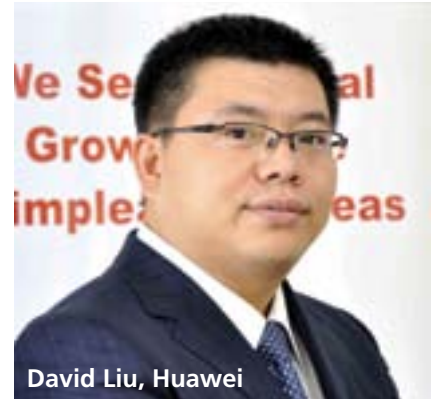
Most telcos are facing significant challenges, such as looking for new sources of revenue due to the decline in traditional revenue streams and at the same time looking at ways they can reduce their current

capex and opex spend to help fund these new business ventures. Liu says cost reduction is really all about consolidation, automation, efficiency and generally working smarter to push down margins, monetize assets and at the same time improve customer experience.

Four years ago Huawei announced it would enter the cloud computing market. Since then, it has seen some significant developments, such as a purpose-built range of servers, storage, security and network solutions as well as a cloud operating system.

Over the past 12-24 months Huawei has enhanced the operating system, FusionSphere, to support a variety of industry hardware platforms as well as different hypervisors include Xen, VMware, Hyper-V and KVM. This enables telco customers to protect their existing IT investments, Liu says.

And in the last 12 months the company has extended its cloud offering to include a Cloud Service Broker (CSB), which enables cloud customer to design, order and build their own enterprise private networks and IT infrastructure using the concept of virtual private cloud within minutes, he says.



David Liu, Huawei

"This high degree of service automation means customer no longer need to recruit server, storage, network and security specialist to perform low-level IT infrastructure configuration. All these complicated tasks have been automated and managed by the telco service provider. The deployment of FusionSphere and CSB will significantly improve telco customers' business agility and IT support efficiency."

Liu says the impact of apps and software ecosystems in the mobile industry has been nothing short of astonishing. Apps have turned the service providers business upside down in the last two years, as players with strong software ecosystems tied to devices have clearly taken over the leadership roles.

HTML 5 will definitely enable the disintermediation of these current walled-garden storefronts. He says Huawei's strategy is to embrace HTML 5, enabling the development of more open application storefronts and capturing the vast community of internet developers.

"We believe that 2014 will be the year when telcos will start their transformation to a software-defined and virtualized environment. Huawei is working with a number of telcos, helping them to develop their transformation plan and proving these new technologies." **TA**

Why they won

Huawei secured a contract to manage the mobile network, covering 20,000+ sites, of one of Indonesia's leading cellcos. The contract involved the full management of the telcos' mobile network as well as the transfer of 1200 existing operational to the vendor

Atom Cell: This stripped-down small cell puts an emphasis on performance and cost savings, with an embedded beam-forming function to improve the user experience.

FusionCloud led the way in bringing OpenStack to the telco space with its carrier-grade, open-source, end-to-end cloud platform that includes an operating system for running cloud deployments, a complementary converged infrastructure, and the ability to integrate IT infrastructures from different vendors.

Developing the tools to differentiate

The year 2013 has been a busy one for Amdocs, which released CES 9, its new product suite which it claims revolutionizes the customer experience. Earlier in the year, it announced Compact Convergence on the Cloud, a business support system designed to meet the requirements of small to medium-sized service providers, mobile virtual network operators/enablers and mobile network operators.

Other portfolio highlights include Omni Convergent Charging, which integrates Amdocs' real-time charging, policy control, enterprise product catalog and service platform to allow service providers to define, deliver and dynamically monetize any convergent service.

Why they won

The new CES 9 release enables telcos to rapidly launch and monetize offers by personalizing every interaction with real-time insight and empowering customers to take control.

This suite also enables a multi-play experience and allows customers to choose any package, at any time and pay a-la-carte with in real time with a convergent charging solution that integrates Convergent Charging, Policy Control, EPC and Service Platform.

Its acquisition of Celcite builds upon the recent purchase of Actix and demonstrates Amdocs' continued commitment to its network software and services strategy. By combining Actix's market leading products with Celcite's comprehensive network management and self optimizing networks (SON) services and offering capabilities, Tamir Ginat, VP of sales for APAC at Amdocs, says the company will be able to offer service providers comprehensive equipment-agnostic optimization solutions.

Spanning BSS, OSS and network control domains, Ginat says CES 9 is an integrated suite that enables service providers to unleash the power of experience by rapidly launching and monetizing innovative offers, personalizing every interaction with real-time insight, and empowering customers to take control of their experiences across any channel, network, service or device – while delivering operational efficiencies.

The company's Charging Smart Start was designed to be rapidly deployed into existing and planned network architectures to allow service providers to quickly begin monetizing advanced services and bundles. Looking at OSS, he says the introduction of Amdocs Business Service Capture addresses a poorly served area for many service providers. The solution allows them to automate and simplify the sales process and design and order business services at a sustainable cost to increase profitability within the SMB/SME segment.

"We have created and delivered a self-service environment designed specifically to drive self-service adoption and reduce the cost of care. The award winning and patented Proactive Care increases the efficiencies of caring for customers in assisted and unassisted channels. Pre-integrated convergent charging with policy controller, enterprise product catalog and service platform help make telcos more automated and efficient."

Ginat says Amdocs is looking to enable

service providers to engage in the fastest growing sector – small and medium businesses (SMBs) – in a profitable manner. To date, SMBs were treated either as consumers or as enterprises, either not targeted for high-value business related offers or those which couldn't be provided to them in a cost-effective way. He says Amdocs is deepening its relationship with its SMB customers by efficiently supporting next-



generation services.

A major focus for Amdocs in 2014 will be around customer experience in the network. He says Amdocs is working to optimize networks and improve individual customer experience to enable service providers to differentiate on quality of experience, reduce churn and improve customer satisfaction.

"The acquisition of Actix, an independent provider of software for mobile network optimization, and Celcite, a provider of network management and SON solutions, will allow us to differentiate on customer experience like never before." **TA**

Taking user experience to the edge



David An, ZTE

ZTE walked away with two Reader's Choice Awards, capping off a year that had already seen the company rake in a number of accolades for its work in LTE and FTTx. It's also been building up both businesses in 2013. According to ZTE, it has the biggest market share of China's LTE market, and by October had 65 commercial LTE contracts under its belt, while its PON business has maintained its annual growth rate of more than 30%

The company's 4G Cloud Radio solution – launched in February this year – stands out in part because of its innovative use of software-defined radio, which allows it to improve network performance by adapting to existing transmissions and use existing backhaul assets to assist in interference control. More to the point, says David An Wei, ZTE's regional CTO, cloud radio enables dynamic coordination and guarantees a smooth user experience, especially on the cell edge.

"The 'cloud' element is a reference to the solution's elasticity – the ability to deploy innovative technology such as 'super cell' dynamically and give improved user experience at the cell edge," An says. "And because it is a software upgrade, the vendor can keep innovating and customers

can benefit from fresh updates."

Adaptability is key, An explains. "Cloud Radio can adapt all kinds of transmission scenarios and network architectures as well as base stations, so that radio network performance can be maximized based on existing transmission resources. Cloud Radio enables dynamic eNodeB collaboration with real-time dynamic clusters which are closely related to each user, so boundless collaboration is available and a high-quality user experience – even at the cell edge – can be guaranteed."

As for how ZTE plans to top that, the company has a number of things in the 2014 pipeline, starting with its "Smart Pipe" solution that aims to provide a multipurpose end-to-end pipe for any service that delivers differentiated services and high-quality user experiences and with easy OAM.

Also in the works: hierarchical QoS that provides differentiated QoS assurance configurable by specific user and service requirements; user and service identification (i.e. DPI to help operators track and analyze user behavior); backup and fast switching; and end-end pipe visibility for control, management and configuration, including zero-touch configuration for service creation and an automatic troubleshooting and fault repair system. **TA**

Why they won

4G Cloud Radio tackles the problem of poor user experiences at the cell edge by implementing cloud scheduling and cloud collaboration to eliminate inter-cell interference in time, space, and frequency.

Their hybrid fiber/copper access solution reused existing copper resources, resulting in lower capex, opex and a future-proof broadband network that will cover 100 million households in China by the end of the year.

Scaling down complexity

Gigamon introduced a number of solutions and products this year to help carriers prepare for and manage Big Data. It brought 40Gb and 100Gb connectivity to the market in chassis form, which it says provides the volume, port density and the scale necessary to give visibility into these Big Data pipes.

Andy Huckridge, director of service provider solutions at Gigamon, says that true visibility into Big Data, however, requires even bigger, denser and faster connectivity, so the problem will become worse tomorrow than it is today and as such requires a new paradigm to fully solve it. Without some level of traffic intelligence, the amount of data coming through simply overwhelms the existing tools.

“So we announced the FlowVUE application to turn Big Data into manageable data by using active subscriber-aware sampling to faithfully reproduce the traffic, but on a smaller scale which the tools can handle,” Huckridge explains.

Any organization adopting automation technologies and new offerings like SDN or NFV, first need visibility into their networks. The automation and orchestration of the underlying infrastructure will not happen without an accurate understanding of the activities and events

occurring within the foundation of data transport nor a view to managing cost structures, so telcos can make the necessary corrections and adjustments to the infrastructure to meet business needs.

He says Gigamon is helping carriers to find problems with their traffic and on their networks faster and in a more predictable way, thereby helping to keep networks running all the time.

It's important to not overlook the importance of a solid visibility fabric foundation based on scalable chassis-based platforms, with high-speed connectivity and high port density, he noted.

“However, the exciting advancements have come in the form of distributed monitoring nodes like the new GigaVUE-HB1 and applications like FlowVUE that provide traffic intelligence to manage Big Data. This combination of heavy-duty centralized monitoring complemented with ‘at the edge’ monitoring allows carriers to filter traffic at ingress as well as greater flexibility for where tools are located.”

Looking ahead, Huckridge says, the company will continue to invest in applications that help telcos manage Big Data as well as showing support for various industry initiatives such as NFV. By harnessing Big Data, service providers can better understand their subscribers and

associated experiences on the network. Through visibility, they can turn Big Data into an advantage while increasing ARPU and reducing customer churn.

It is the transactional-level visibility that provides the ultimate view to what has happened, he says. “The ability to exploit Big Data enabled by pervasive visibility combined with subscriber-aware traffic intelligence can represent a significant competitive advantage and help them to extend their business run-rates as the adoption of new business transforming technologies develop and are deployed. Network and traffic visibility will be a core component in helping carriers overcome the hurdles.” **TA**

Why they won

Gigamon's analytics tool provides the necessary volume, port density and scale for developing visibility fabric applications that can deliver traffic intelligence to monitor and monetize Big Data.



David Sajoto, Gigamon

SDN benefits for all assets

It's been a good debut year for Nuage Networks. Spun off as a separate venture from Alcatel-Lucent to focus on software-defined networking (SDN) technologies, Nuage unveiled its Virtualized Services Platform (VSP) earlier this year and began turning heads right away.

"We introduced Nuage Networks to the world in April, and the product began shipping into trials almost immediately," says Nuage founder and CEO Sunil Khandekar. "In its first six months, Nuage Networks has secured three wins and successfully completed over a dozen trials worldwide. Our SDN solution is being used by large tech enterprises, for whom IT is a critical asset, as well as by service providers with datacenter assets and cloud ambitions, and we continue to learn from our customer interactions each day."

Much of that interest is being driven by the overall need by service providers to fully embrace the cloud paradigm to the point of applying cloud principles that make delivery of network services more expeditious, operationally expeditious, and cost effective – or to "cloudify their networks", as Khandekar puts it. That includes network functions virtualization (NFV) and network automation, as well as an open SDN-based approach to data center networking that allows instantaneous and policy-based connectivity within and across all data center assets.

Nuage's VSP enables all that by removing the networking constraints that



keep data center networks from being as fluid and dynamic as computing infrastructure already is now, and as responsive as cloud applications need that infrastructure to be, says Khandekar. "Through network abstraction and automation, the VSP eliminates the delay and errors that result from today's configuration-based paradigms with policy-driven auto-instantiation."

That means the benefits of network virtualization won't be restricted to islands of connectivity, he explains. "The benefits of SDN automation and role-based policy definition are extended throughout and across all data center assets, whether they are virtualized or non-virtualized. Through seamless connectivity to existing VPNs, the VSP makes cloud data center resources a natural extension

of business services that service providers already offer today."

Khandekar expects to see even more demand for cloud-based service delivery in the coming year as telcos not only test the waters, but also undergo the fundamental shift in mindset necessary to fully embrace the SDN paradigm.

"A necessary shift in operational mindset is underway, one in which networks are programmable and policy-driven rather than static and configuration-driven," he says. "The SDN mindset is certainly accompanied by technologies that facilitate a more open and more agile cloud-based network infrastructure. That's a key element of what we see in the technology pipeline, in addition to the expected and continuous innovations that drive capacity, capability and reach enhancements in the physical network infrastructures that service providers deliver for network access and transport."

Meanwhile, Khandekar adds, as SDN takes hold, "compelling new models can emerge for delivery of VPN services." **TA**

Why they won

This SDN-based service platform virtualizes any data-center network infrastructure, leverages programmable business logic and a powerful policy engine, and automatically establishes connectivity between compute resources upon their creation.

Helping telcos connect all their assets

Cyan had a number of key milestones in 2013. The company went public on the New York Stock Exchange in May, demonstrated multi-vendor enterprise to data center service orchestration across the WAN at Interop Tokyo, and demonstrated multi-vendor NFV orchestration at the SDN World Congress in Germany.

The company also announced significant new customer wins, including being selected by Colt for its next-generation modular multi-service platform. This large-scale deployment included both Cyan's Z-Series packet-optical systems along with the Blue Planet SDN platform to automate, operate, provision and deliver Ethernet services across Colt's footprint.

Cyan established its Blue Orbit Ecosystem to test and deliver real-world multi-vendor SDN and NFV orchestration solutions, said president Michael Hatfield. The interoperable partners in this ecosystem include Arista, Accedian, Boundary, Canonical, Connectem, Embrane, Mellanox, Metaswitch, Omnitron, Overture, Pica8, RAD, Red Hat and RYU.

Hatfield said it's common knowledge that the carrier business model is under pressure. "Applications, cloud providers and mobile services drive massive growth and revenue on the back of the carrier network and infrastructure, yet carriers are left with the constant pressure of massively growing and scaling their infrastructure to keep pace."

This infrastructure, he said, is built on complex, and vertically integrated hardware and software platforms that are difficult for the service provider to operate and offer limited service elasticity. "Cyan's open, multi-vendor SDN platform, Blue Planet, was custom-designed to support service providers' efforts in separating software control from hardware to make networks simpler to operate and manage, which can lead to a better customer experience."

Blue Planet, its SDN and NFV orchestration platform, has been deployed in more than 100 accounts since its launch in December 2012. "Blue Planet makes it easier to deploy new services that connect the WAN, the data center and virtualized functions together using a single system

that orchestrates services and makes better use of high-performance, but lower-cost hardware," he said.

Hatfield noted that many companies have built successful business models deploying virtualized applications, compute, storage and cloud services on the back of carrier networks and infrastructure.

"Ultimately, SDN and NFV will help service providers connect their massive investment in wide area networks with data center assets and virtualized applications. New, elastic network services and cloud-based applications will emerge from these service providers that will improve their profitability and make for a more 'sticky' and powerful end-customer experience." **TA**



Why they won

This carrier-grade SDN and NFV platform was built specifically for network operators, and lowers costs, simplifies operations and centralizes control and management of multi-layer, multi-vendor, multi-domain networks.



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100G today, 400G tomorrow

Innovation doesn't stop when the latest product is released. China-based FiberHome demonstrated that clearly this year. While its FONST5000 100G OTN platform was impressing an array of customers both inside and outside its native China (to include Telekom Malaysia, whose national High Speed Broadband (HSBB) project uses the FONST5000 for optical transport), FiberHome released the next-generation FONST6000, a packet enhanced 100G/400G OTN platform that sports an access and switching capacity of up to 25.6 Tbps. And it's already been adopted by China Mobile and China Unicom for their respective backbone and metro network projects.

Exponential growth in network capacity demand – driven by ongoing large-scale deployments of FTTx, LTE, cloud computing and data centers – is creating a major opportunity for the optical sector in the next 12 months, says Li Keng, FiberHome's GM of strategy and market planning.

"There is an urgent requirement for upgrading existing 10G/40G systems or constructing new transport networks with 100G WDM/OTN technology," Li says. "100G system will dominate the backbone network and MAN in the next 10 years."

However, satisfying that demand for greater optical capacity (and at greater distances and efficiencies) presents significant challenges as well, Li adds. "There is a contradiction between capacity and distance due to optical intensity and nonlinear noise. Higher capacity always means shorter distance. For data rates of 100G and beyond, the optical nonlinear noise is becoming the main obstacle that limits the performance improvement."

To that end, he says, FiberHome is developing advanced nonlinear compensation algorithms and error correcting algorithms for ultra-high-speed, ultra-large-capacity and ultra-long-haul optical transmission. "We have achieved optical transmission distances of 12,160km without electrical regeneration, and transmission speeds of 67.4 Tbps, which are world-firsts."

Meanwhile, another trend on the efficiency front, Li says, is "network convergence and intelligence" – i.e. fewer stacked network elements, reduced room occupation, lower power consumption and efficient multilayer cooperation, combined with an intelligent pipe for guaranteed QoS, efficient OAM and higher traffic value.

FiberHome's specific plans for 2014 naturally include further optimization of its 100G system for better transport per-

Why they won

Their 100G platform is characterized by its flexible expansion capability, consistent stability, high reliability and simple maintainability, as well as its efficient fiber utilization.

formance, lower power consumption and higher integration density. But as indicated in the opening paragraph, the company has already set its sights squarely on 400G.

"FiberHome released its 400G prototype in 2012, and can provide two optimized solutions – one for ultra-long distance backbone network, with transmission distance up to 3,000km, and another for large capacity MANs, with single-mode fiber capacity of 25 Tbps," says Li. "According to our development schedule, the FiberHome 400G system should be commercially available in 2015."

FiberHome is also upgrading its entire series of network equipment, from access and convergence layers to the core, to support software-defined networking (SDN) architecture, Li adds. **TA**



Taking LTE to the next level

Ericsson racked up a number of world firsts in 2013: LTE broadcast on a live network (Telstra), dual-mode HD voice over LTE call based on multimode chipsets (China Mobile) and commercial LTE-A call on 1800 and 900 MHz (Telstra). It also launched its Radio Dot system and a complete solution for broadcast video over LTE networks.

In May it hit the milestone of providing managed services to networks that serve one billion subscribers worldwide. Jan Signell, Ericsson's head of Northeast Asia, said 40% of all mobile traffic passes through Ericsson networks, which support 2.5 billion subscribers.

The company also made several acquisitions this year that complement its end-to-end capabilities in networks and support systems. These include Microsoft Mediaram, Red Bee Media, Devoteam Telecom and Media (France) and TeleOSS (Thailand). It also recently announced a partnership with Blackarrow in the TV and media space.

Ericsson, the key supplier behind SK Telecom's commercial launch of LTE-A service in July, was responsible for the upgrade, providing the software for carrier aggregation and multi-carrier technology for the B5 (850-MHz) and B3 (1.8-GHz) bands in South Korea's southeastern regions. Ericsson partnered with SKT for the LTE network deployment and commercial service launch in 2011.

SKT plans to roll out 32,000 LTE-A base stations by the end of the year and expand LTE-A service areas in 84 cities and start LTE-A service at 300 college campuses. The operator also has demonstrated the upgraded LTE-A service that offers speeds of up to 225 Mbps by aggregating 20 MHz in the 1.8-GHz band and 10 MHz in the 800-MHz band. SKT expects to launch this service in the second half of 2014 when smartphones that supports 225-Mbps speeds are available.



SKT, which has approximately a 51% market share, has introduced the world's first commercial HSDPA, LTE, Multi-Carrier and VoLTE and LTE-A services. "We're proud to power SKT's LTE-Advanced network that now covers major areas of the nation," said Signell. "SKT will be able to offer its users broader network coverage and an enhanced mobile broadband experience, ensuring continued loyalty among its customers."

He said Ericsson's research has found that only a handful of operators around the world have been growing profitably with mobile broadband.

"These mobile broadband frontrunners, as we call them, share a dual focus on both superior network performance and innovative marketing and offerings. They also are unified by six common traits that create new demand and drive profitable growth. We call these growth codes (which cover gap minding, streetwise metrics, showcasing, unboxing, ecosystematic and co-partnering), which represents a consistent approach taken by the frontrunners. Rather than specify a single 'recipe' for success, we engage with customers to explore their own growth codes to ensure growth

and profitability."

In OSS and BSS space, he said Ericsson is also engaging with customers through its "Realize" campaign, where it focuses on ensuring that customers' operations and business support systems are flexible enough to take them forward. "We know from experience that agile OSS/BSS leads to improved efficiency, innovation and customer loyalty." **TA**

Why they won

This year's winning project saw the world's first commercial launch of LTE-Advanced, covering the entire Seoul metropolitan area and six large cities, as well as the downtown areas of 84 cities, with peak data speeds of up to 150 Mbps – all via software upgrades.

Economics and performance win the day

Transmode's regional breakthrough contract win with Hutchison Global Communications – which *Telecom Asia* readers ranked as the top Core Network Project of 2013 – was just one highlight of a busy and successful 2013 for the company, which recorded strong financial performance as it expanded its packet-optical networking solutions portfolio.

“We started the year with our initial 100G product for high capacity networks and at the other end of the spectrum we introduced our iAccess solution for highly automated Layer 2 Ethernet CE2.0 services for applications such as mobile backhaul and business Ethernet services,” says Ola Elmeland, global VP of marketing and communications at Transmode. “We also introduced a new mobile fronthaul solution to support the migration to Cloud-RAN architectures and started to roll out our first iWDM-PON networks. All in all a very busy year!”

Transmode has also been busy developing its SDN strategy. As we went to press, Transmode was set to release the first tranche of SDN functionality with fully automated path selection via a Path Com-

putation Element (PCE) engine, which will “automate the task of finding the optimum route through a network, and can be coupled with service templates to quickly select a preconfigured set of parameters for each new service,” Elmeland says.

As for the award-winning 100G backbone project with HGC, Elmeland says that while there were several factors that helped it land the contract, “primarily it comes down to the better economics and performance of the network over the architectures proposed by our competitors. The solution offers a leaner design that simplifies the network with an all-optical ROADM based architecture which lowers the cost of the solution but also has a massive impact on space and power requirements which are important everywhere but especially so in a dense environment such as Hong Kong. By simplifying the network, the solution provides better performance in key areas such as low latency which is very important to HGC's customers in the financial services sector.”

Looking ahead to 2014, Transmode expects to see the market move further along the packet-optical roadmap, and the various solutions introduced this year will evolve to new levels, Elmeland says.

“For example 100G technology will take advantage of new pluggable 100G optics to lower the cost of 100G in metro networks,” he says. “Also SDN will continue to evolve to expand automation within a network and will then take advantage of new standards in SDN interfaces to enable communication between SDN enabled domains.”

Meanwhile, expect to see more functionality added to transport networks as more operators migrate to a collapsed packet-optical network, Elmeland adds. “Overall these trends will enable operators to roll out higher capacity networks faster with better economics and better performance, which helps them face the future.” **TA**

Why they won

This project interconnects customer premises, data centers and submarine cable landing stations in Hong Kong via an 80-wavelength optical network using low power and compact nodes, saving both energy and space.

Jacques Lebosse, Transmode



Bandwidth Optimization Innovation of the Year: **Oracle Communications** Tekelec Policy Solution

Oracle took the prize for its Tekelec Policy Solution, a turn-key management interface that helps operators quickly resolve problems that affect the customer experience. Operators can use existing policy provisioning and management interfaces and tools to create a unified policy creation environment from which network and device policies can be developed. This reduces the chance of policy conflict and increases the scalability and flexibility of existing policy servers (PCRFs) and Diameter signaling routers responsible for routing signaling messages to policy servers. The Policy Solution extends policy's role beyond the core network so any mobile device can act as both enforcement points and application functions. **TA**



Boudewijn Pesch, Oracle

Broadband Innovation of the Year: **RAD Data Communications** Service Assured Access solution

RAD's "Service Assured Access" (SAA) solution won top marks as a service lifecycle toolkit for access networks, covering service turn-up, traffic management, timing synchronization, TDM pseudowire, ongoing performance monitoring, fault management, and resiliency mechanisms. It supports fast and easy service provisioning across any bearer. CSPs can use SAA to deploy a complete Carrier Ethernet access network, including smart demarcation and Ethernet service pre-aggregation. They can also pick and choose where to deploy it – for example, to facilitate inter-carrier ENNI handoff or to provide smart demarcation where the edge or aggregation layer is provided by another vendor. Future versions of SAA will support distributed NFV functionality. **TA**



Yacov Cazes, RAD

CEM Innovation of the Year: **Nokia Solutions Networks** Dashboard solution

NSN bills its dashboard solution for unified network and service operations as "the first of its kind" that monitors and analyzes the various aspects of the operator's entire network operations, and presents them in a unified view to help provide the best customer experience. Bharti Airtel can attest to that – it's running the dashboard live at its Network Experience Center (NEC) in Manesar, Gurgaon. The dashboard – powered by NSN's CEM portfolio – monitors Airtel's network performance across mobile, fixed line, DSL broadband, DTH, m-commerce, enterprise, international cable systems and internet peering points, enabling Bharti to provide a seamless experience to over 200 million customers across verticals. **TA**



Terence Chan, NSN

Carrier Ethernet Project of the Year: **Ciena and AAPT** E-Suite-enabled 5160 Service Aggregation Switch

As part of its strategy to gear up for Australia's National Broadband Network (NBN), as well as meet growing demand for Ethernet business services, AAPT has been upgrading its Carrier Ethernet service delivery infrastructure with Ciena's service aggregation switches (SAS). That includes Ciena's latest SAS, the 5160, which stuffs 24 10GE/GigE ports into a small 1RU form factor with a wire-speed, non-blocking architecture. That density enables 240 Gbps of Ethernet aggregation with reduced power and footprint, resulting in lower opex and capex levels. Ciena says the switch has helped cut AAPT's aggregation cost per 10GE port by 50%. **TA**



Anup Changaroath, Ciena

Inside the Event





Asia-Pacific carriers dominate in Wi-Fi deployments

Ovum evaluated 69 operator Wi-Fi offerings in 32 countries in Asia Pacific, Europe, North America, South America and found Asia Pacific accounted for 43% (29 of 69) of the Wi-Fi offerings. Europe was second with 21 operators, followed by North America with nine.

When it comes to pricing, however, the company's Global Carrier Wi-Fi Pricing and Plans Tracker saw no "one size fits all", with strong diversity within each region. Ovum found that competition was key to pricing strategies.

For instance, in the competitive Japanese market, NTT DoCoMo, KDDI and Softbank Mobile now include Wi-Fi for free (that is, no incremental cost to the consumer) for flat-rate data customers (which made up 64% of DoCoMo's total subs base at the end of June). DoCoMo was the last MNO to drop charges for Wi-Fi in September 2012, amid market share loss pressure. South Korean operators, such as KT and SK Telecom, also have no access charge for Wi-Fi for 3G and LTE customers. In South Korea and Japan, Wi-Fi offload is essential to traffic management given unlimited 3G and LTE mobile pricing in combination with rising mobile data usage.

How telcos package Wi-Fi also depends on the extent of government free public Wi-Fi initiatives, which exist in markets such as Singapore, Hong Kong, South Korea, Thailand and Taiwan. We are not surprised that Korean mobile operators offer public Wi-Fi for free to users. The government is targeting to increase free Wi-Fi locations to 12,000 by 2017. The Thai government has the region's most ambitious free public Wi-Fi plan to deploy 400,000 free public Wi-Fi hotspots (2 Mbps) by end-2015. This sort of large-scale free public Wi-Fi initiative distorts the market and makes charging for Wi-Fi challenging.

A large number of operators in the Tracker, however, offered some form of "additional charge" for Wi-Fi services. These varied from Wi-Fi offered to existing customers and non-customers, to special or differing rates based

on the type of customer or the core services to which the customer subscribed. "Pay for" services are offered on a variety of terms including per session, per day, per week or per month. Some plans meter time while others meter the amount of data used.

Out of the 69 operators offering Wi-Fi, 39 offered some form of "pay for" Wi-Fi for either their own existing customers or non-customers. While a majority of fixed and integrated operators did not offer "pay for" Wi-Fi access due to bundling this into fixed and mobile subscriptions, a majority of mobile customers did have separate "pay for" plans.

We believe offering "free" Wi-Fi to high-end customers is a sensible way to package Wi-Fi because it offers additional value to premium customers supporting a greater price differential between plan tiers. But in some cases, market forces including competition, availability of public Wi-Fi, backhaul availability and cost, network demand and other external factors have changed the carrier's initial strategic objectives (in targeting high-end subscribers for example) and how it offered Wi-Fi in a particular market.

Softbank stands out

So far, only Softbank Mobile has launched FON services (launched in 2010) in Asia Pacific. All Softbank Mobile smartphone and tablet users receive a free FON Wi-Fi router that supports two separate Wi-Fi networks: a private network (eg for home use by the Softbank subscriber) and a public network that Softbank Mobile users (and global FON users) can use for free. Users from rival Japanese telcos can access this public hotspot but they will need to buy a subscription from FON. FON claims 12 million FON hot-spots globally.

Other Asian telcos are examining the FON business model, which essentially turns the home and surrounding area into a public Wi-Fi zone. One reason telcos are considering FON is because a major source of complaints into customer call center concerns Wi-Fi black-spot areas. **TA**



Nicole McCormick is a senior analyst for communications and broadband at Ovum

While a majority of fixed and integrated operators did not offer "pay for" Wi-Fi access, a majority of mobile customers did have separate "pay for" plans

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Tata Com appoints CSO

Tata Communications has appointed Tri Pham as chief strategy officer (CSO) with immediate effect. Pham will also join the Indian telco's global management committee.

Pham will be responsible for strategy and execution, as well as managing all major strategic initiatives for the company. Pham comes to Tata Communications with over 18 years of experience in the investment banking industry, focusing on the telecoms, media and technology industries in Asia.



Tri Pham

Pacnet hires DC sales director

Keith Russell Shaw has joined Pacnet as its new director of data center sales for the carrier market. Shaw will be based in Hong Kong overseeing all data center requirements for Pacnet's global carrier customers.

Prior to joining Pacnet, Shaw held a number of senior-level positions, most recently serving as head of sales for Europe, Middle East and Asia at SEACOM and director of sales, Asia Pacific and Africa at Interoute.



Keith Russell Shaw

Blackberry ousts senior execs

Blackberry has announced the departure of three top executives as part of the company's restructuring plan. CFO Brian Bidulka is departing after working with the company for eight years. Bidulka will be replaced by James Yersh, the company's SVP of controller and head of compliance. COO Kristian Tear and CMO Frank Boulben, who were hired under former CEO Thorsten Heins, are also set to leave the company.

Acision's SVP & GM

David Huguet has joined Acision as SVP and GM of Middle East, Africa and Pakistan. Huguet has over 15 years of management and sales experience in telecom and IT. Prior to Acision, Huguet served as VP of solutions for Middle East and Africa at Oasis Smart SIM – a company he co-founded.

HTC names HK & Macau head

HTC has appointed Cedric So as GM of Hong Kong and Macau, responsible for the two markets' operations, channels management, sales and overall business development.

So is experienced in operations, retail, brand, and channels management. Prior to joining HTC, he was the managing director at Crown Motors, responsible for Hong Kong's sales, marketing and distribution.

Juniper has new CEO

Shaygan Kheradpir will take over from Kevin Johnson as chief executive at Juniper Networks from January 1. Kheradpir will also be appointed to the company's board of directors.



Shaygan Kheradpir

Johnson, who in July announced his retirement, will remain a member of the board. Kheradpir joins Juniper Networks from global financial services provider Barclays, where he served as the chief operations and technology officer, and as a member of its executive committee.

Separately, Greg Yoder has joined Juniper Networks as VP of customer service and support for the Asia-Pacific region. Yoder will lead a team of 460 delivering maintenance and education services across the theater. He replaces Sander Dales, who has led Juniper's Asia Pacific services organization since 2007 and is transitioning to the newly created role of VP of worldwide professional services.

Dimension Data Apac names COO

Sunil Desai promoted to COO at Dimension Data Asia Pacific from January 1. He takes over from Dilip Kumar, who is taking up the role of head of the newly established Global



Sunil Desai

Systems Integration Services Business Unit. Desai first joined Dimension Data in 1995 and has held a variety of management roles within the company since then, including his current role of director managed services (Asia Pacific).

Savvis APAC chief

Savvis, a CenturyLink company providing cloud infrastructure and hosted IT solutions, has appointed Gery Messer as MD for its Asia-Pacific operations.

Based in Singapore, Messer will lead strategic expansion initiatives in the region with focus on growing the global and enterprise business throughout Asia Pacific.

Ericsson's new country head

Ericsson has appointed Camilla Vautier as president of Ericsson Thailand, taking over the role from Joacim Damgard, who now heads up UK and Ireland for the company.



Camilla Vautier

Vautier has been working with Ericsson for over 18 years, having held senior roles in sales and marketing management in several regions, including Europe and Asia.

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Networking opportunities across Asia



Date	Event	Location
January 19 – 22, 2014	PTC 14	Honolulu, USA
January 21 – 22, 2014	CDN Asia	Singapore
January 21 – 23, 2014	Convergence India	New Delhi, India
January 21 – 23, 2014	Mobile Money and Digital Payments Asia 2014	Jakarta, Indonesia
February 24 – 27, 2014	GSMA Mobile World Congress	Barcelona, Spain
March 05 – 07, 2014	CommuniCast Myanmar 2014	Yangon, Myanmar
March 19 – 20, 2014	Mobile Commerce Summit ASIA 2014	Kuala Lumpur, Malaysia
March 19 – 20, 2014	CARTES Asia	Hong Kong SAR, China
March 24 – 26, 2014	WDM & Next Generation Optical Networking APAC	Singapore
March 25 – 26, 2014	Carriers World Asia	Bangkok, Thailand
March 31 – April 02, 2014	Small Cells Asia	Bangkok, Thailand
April 08 – 09, 2014	TD-LTE Summit 2014	Singapore
April 13 – 16, 2014	International ICT Expo	Hong Kong SAR, China



Telco Strategies 2014

April 09 – 10, 2014	Telco Strategies & Telecom Asia Awards	Jakarta
April 29 – 30, 2014	Broadband Asia 2014	Singapore
June 11 – 13, 2014	Mobile Asia Expo	Shanghai, China
June 17 – 20, 2014	CommunicAsia / EnterpriselT	Singapore

For full details of the events, visit www.telecomasia.net To list an event, contact Michelle Tang at mtang@questexasia.com

Margins culture and white cell DNA take a beating

This has not been not a typical year for telcos – “it’s been a year when the burning platform is a clear and present danger,” said Olivier Carnohan, emerging businesses intrapreneur, SingTel Group Enterprise.

He said telcos are moving slowly toward a partnership model by bridging the gap between the old and new (telco) world.

Thomas Clayton, CEO of Bubbly, a social networking site with 30 million users, said he’s seen partnerships moving ahead in markets where they’ve been “punched in the nose” by competition and falling revenue. “But in markets like Vietnam and Thailand, telcos still have an old-school mentality.”

Carnohan, speaking during a panel session on “What do telcos want to be in the future”, insisted that the biggest enemy is “ourselves”. He said telcos have two things working against this whole partnership model, which have probably delayed us by five or six years.

“The first is we have a margins culture. We’ve been sitting fat and happy for many years, and every time an OTT partnership was on the table, we thought it would be margin diluted and we’d walk away. That culture has to change, and I believe it is changing. We’re more humble in our approach and we are more receptive to partners, even when it competes directly with our cash cows. Look at some of the work Globe is doing with the OTT players.”

His second reason, which comes from a McKinsey consultant, is that telcos are like white blood cells that kill everything that isn’t telco.

“That is true when you have complete control. We have core assets that we understand as long term that we bring to the table – things like billing relation-



ships and the prepaid base in developing markets. We also know the partners in front of us have assets, and now we start to value that. This white cell DNA has taken a beating.”

Looking at the speed of innovation from carrier initiatives like WAC, joyn and RCS, Clayton said that governing by committee is slow and just doesn’t work.

“Look at how fast a company with five people in Silicon Valley can move, being acquired for \$1 billion and totally changing the way people live. I’m not sure if you’ve ever attended these meetings, they just spawn more sub-committees and nothing ever gets done.”

Carnohan said he’s not a fan of having more than three telcos in a room doing a standard. “Anytime more than three are involved, I think it will fail.”

He reminded everyone, however, that GSM is an example of one of the most successful cooperations in the world. “Over time we’ve had a problem with innovation. But we had it – we lost it but we can find it again. The prob-

lem comes with the telcos that always want to control. You put them in a room and each one wants to lead.”

But they are now getting smarter and asking to join the committees as observers.

Clayton said he doesn’t think they lack innovation. But the world around them has changed.

“It took 15 years to get to 50 million mobile subscribers globally. After the first SMS, it took 12 years to get to 50 million SMS users. Facebook took about four years to get to 50 million users. Twitter took about 3-1/2 years, Whatsapp took a year and a half, Line took a year and Draw something took 50 days,” he said.

Because the rate of adoption is moving so much faster, he said telcos have to move at a different pace to keep up.

Clayton said he’s seen very different approaches from operators, noting that some, like SingTel, have completely reorganized. He put Softbank, Telfonica and DoCoMo to some extent in that



category of operators that are acting differently than others, which haven't done much.

"But all of this is just toes in the water right now. Even at SingTel, which has been one of the more aggressive players and is one of our biggest shareholder so I see the inside of the decision making, for every person who puts up his hand and says let's do this, there are nine others saying let's do this instead. So it's very hard with that kind of decision making process to execute."

What is innovation?

Nick Pilbeam, director of PwC's TMT Center of Excellence, agreed that telcos have been innovating forever – but they have to do it better and faster.

"Real innovation isn't about deploying networks – any phone company can do that. Real innovation is asking yourself, why do I have x many call centers and shop fronts? Why isn't all that online? Innovation is how the business operates," he said.

"Telcos know how to partner. They've been doing it for years. The challenge is that if you get into mobile payments, for example, your competitor is no longer another telco, but a bank. How do you defend against that?"

Pilbeam talked of separating the brand from the network – i.e. NBNs. "Once you have a network with 100% coverage, why compete on infrastructure?"

Karan Hendrik Ponnudurai, chief innovation officer at Axiata Digital, compared the OTT trends to Attila the Hun's invasion of Eastern Europe, leaving telcos with three choices: pray to the regulators for deliverance, fight to the death, or say "Shit happens, the Huns are coming and hopefully we can work with them to survive."

"There are few hackers employed in telcos, but that's where much of the innovation is coming from."

Ponnudurai said Axiata realized it had the wrong structure to move ahead with innovation. "Telcos have three

fundamental different businesses, each with a different world view. We tried to operate as a blend, and it didn't work."

Axiata decided to split into three parts: passive infrastructure, transport and marketing, so the innovation arm would be unencumbered by concerns over return on assets, he said.

Commenting from the audience, Wong Ka Vin, managing director of 1-Net, said: "OTTs are not the problem. The problem is network operators are not spending enough time and money in research, and they're not engaging network vendors enough. We don't need to appease the OTTs – we just need to work out what it is we need to do. Forget about walls. Attila wants your money, and telcos overall are not losing money, but they're not investing anything in the network."

– *Joseph Waring and John C. Tanner*

From protectionist to predator – an industry morphs

It is becoming increasingly apparent that the telecommunications industry, mobile operators in particular, have become paranoid about so-called over-the-top (OTT) players, and those very same OTT players have no idea why they are being labeled or singled out as a threat.

It would be fair to say, after meeting many of them in recent months, that they don't even recognize the term or the inference of evil often attached to it. These digital service providers (DSPs), as they should be referred to, are simply doing what they need to do – provide digital services and products to their customers. The fact that their delivery medium happens to be fixed and mobile internet service provider networks is not their concern, and why should it be?

It's difficult to find an analogy to describe the role of networks in the digital era that best explains how DSPs think, but let me try using cars and roads. Without roads cars would be useless. Governments and private corporations build roads that cars drive along. The roads are paid for by the collection of road tax, fuel taxes, tolls, etc – all paid by the car owners. There really is no such thing as a free road. In most countries, if you want to use the fastest route via motorways and super highways, you have to pay more for that privilege.

At no stage, and in no country to my knowledge, does the maker of the car directly pay anyone for the use of those roads – only the users of the roads do. DSPs see themselves as the carmakers of the digital era. Without networks their products and services would be as good as useless, but just like carmakers, they rely on others to build the networks (roads) and for their customers to pay for the privilege of using them.

Is that a fair analogy? Yes, of course it is. Can it be changed, i.e. charge the carmakers for their cars using the roads and the DSPs for their apps and content using any network? Of course not! It's too late for that.

Those toll collectors prefer to see more cars on their highways, and network operators should feel the same way. If the roads become

congested, then widen them. If the traffic gets too slow, drivers find alternate routes. If they need to pay more to save time and petrol they do so for the "privilege".

Car owners are used to that, so why aren't network customers? Have they become spoiled by over-competitive network operators hoping to attract the largest number of customers? And how can the network operators even assume that the DSPs should, or would, pay for their services to be delivered over the networks?

Senior DSP speakers at events in Nice, San Jose, Kuala Lumpur and Singapore I have attended have all stressed they don't like being called OTT players, they don't see the network operators as the "enemy", and they certainly do not see their distribution and income stream as sacred territory that cannot be shared under any circumstances.

In fact, they have indicated the exact opposite and that they welcome advances from CSPs and see many areas of cooperation, including direct distribution, reselling, billing-on-behalf-of (BOBO), access to the vast pre-paid markets and joint marketing. And they are not blowing smoke either – many deals have already been done.

They also see that CSPs are making strategic investments in many DSPs. A SingTel executive said his company had been approaching venture capitalists and equity funds asking about series B and C investments they could get involved in, presumably for investment, acquisition or early access to new digital products and services.

The realization that telco DNA does not lend itself to innovation in the digital sphere is the single biggest sign that times are changing. There is no rush to absorb the new players into the fold and crush their creativity with telco processes and risk mitigation. This brave new world is one of involvement from a distance, look and see, then pounce when the time is right.

And who wouldn't want to see this work out to the benefit of all? **TA**



Tony is market strategist for the TM Forum and a regular contributor to *Telecom Asia*

The realization that telco DNA does not lend itself to innovation in the digital sphere is the single biggest sign that times are changing

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SMS protects the dead

Modern technology is being employed to solve an age-old problem – how to protect your dead relatives.

Where once bodyguards were employed to, quite literally, stop the dead from being stolen from their graves, in South Africa a company is using SMS to

alert families to any attempt to remove marble and granite headstones from graves – a problem that is reportedly rife in the city of Johannesburg.

If a headstone is moved, an embedded microchip sounds alarms in the cemetery, and alerts relatives via SMS. **TA**



Smart TVs watch back

Your TV could be turning the tables on you, by watching you as you watch it.

LG Electronics has confirmed some of its smart TVs are logging information on viewing preferences and sending it back to the company's servers, as part of a service designed to offer tailored advertising.

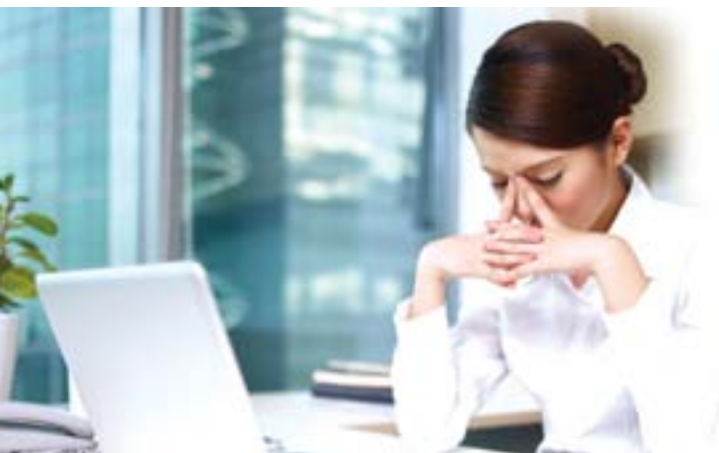
The investigation began after a UK IT consultant revealed his TV was sending information on the channels he viewed to an LG server without his knowledge. The TV also sent details of files on USB devices attached to it, and continued sending information even when users thought they had turned the feature off. **TA**

Bribery gets mobile makeover

African mobile payment systems are now so advanced you can even use them to bribe police officers.

Investigations in Kenya suggest the practice of m-bribery is rife among authorities, including traffic police and weighbridge operators, with established m-payment services being used by corrupt officials to avoid detection and prosecution.

Traffic officers can receive up to \$175 per day in bribes, typically from long-distance truck drivers, and bus drivers and conductors. **TA**



Scorned women rate men online

It is said a scorned woman has more fury than hell itself – and now they can share that online.

Lulu, a mobile app that allows women to rank men they know or have dated, is about to be moved from London to New York, after clocking up growth in usage of 600% in the past six months.

The app uses a series of multiple choice questions to build up a ranking for men, which is then displayed on his Facebook page for women using Lulu to see. **TA**