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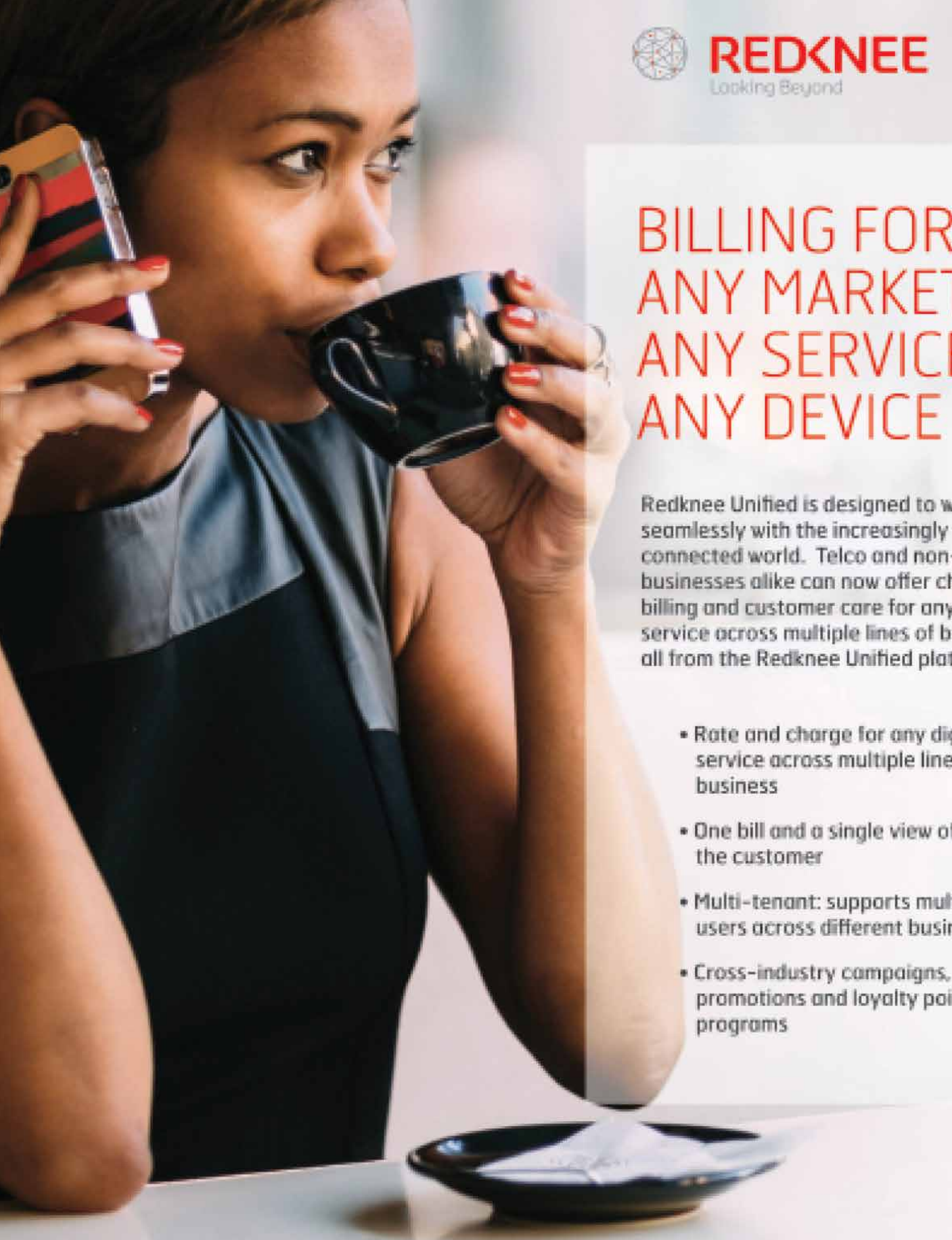
Identified: the Asia-Pacific industries ripe for disruption

SD-WAN: threat or opportunity for telcos?



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Are you ready to be disrupted?

There is one theme running strongly through this edition of Telecom Review Asia Pacific: digital disruption, and the related concept, digital transformation. They aren't quite the same: disruption is the consequence of external forces. Transformation is, generally, a considered and planned response to external pressures, hopefully for the better.

These forces are not, of course, unique to our region but given that many sectors of Asian economies are less mature than their western counterparts, and also very different, the effects of digital disruption and the resulting transformations in the region could be rather different to elsewhere.

In our article *Identified: the Asia-Pacific industries ripe for disruption* on page 13) IDC picks out retail commerce, travel and tourism, medical products and payments as being ripe for disruption in the region. Payments is an obvious one, with a large percentage of the region's population unbanked the payments industry is well primed for disruption/ transformation.

Elsewhere, IDC goes further and identifies how the forces of disruption will play out in Asia. In particular, it sees enterprise mobility as being a business tool that the region has been slow to adopt.

According to IDC, "The Asia Pacific market for mobility is in its very early stages with 80 percent of organisations ill-equipped to harness ... mobility, cloud, social and big data analytics to compete in the market. We see the next 18 months as a critical period for companies to accelerate efforts and investment in the enterprise mobility space."

And, it adds: "Competing in the fast-paced Asia/Pacific region is no longer simply about being the first to market, the lowest-priced player or even the best in the industry. Be they banks, pharmaceutical companies or garment manufacturers, organizations in today's marketplace need to grow beyond boundaries as they are no longer competing only in their industry."

If you need any further evidence that the forces of digital disruption will play out in region specific ways, look no further than the Digital Disruption Asia Summit, scheduled for Singapore in December, billed as the first of its kind in the region

As the program says: "With the mature markets already enduring the full brunt of digital disruption, Asia is set to be hit next – and hard. Businesses in Asia can look to global trends to gain insights to what might disrupt their future, but macro and micro economic factors such as population composition, industry profile, social and internet penetration will shape how they play out."

Fasten your seat-belts. It's going to be a bumpy ride!

Stuart Corner
Senior Editorial Manager
Telecom Review Asia Pacific

Ooredoo launches smart city in the Maldives

Ooredoo has launched its Smart City initiative in the Maldives, committing to connect the nation with smart solutions aimed at enriching the lives of the population.

To kick start the Smart City initiative, Ooredoo announced the introduction of Ooredoo Wi-Fi Hangout Areas across prime spots in the capital city, including hospitals, ferry terminals, youth centers and cafés. The company said it would expand this service across the country, enabling customers to obtain seamless access to a fast, secure and affordable internet connection from any location.

Customers will be able to use 50MB of data per day to catch up on news websites or connect with friends and family via social media, email, and social chat platforms such as WhatsApp and Viber. They can also watch videos, video chats and download content by subscribing to available Wi-Fi hotspots.

The company has setup a telecenter at Iskandhar School, enabling free access to a number of educational websites, adding to the interactive learning experience of young students.

The vice-president of Maldives, Mr Ahmed Adeeb, said: "We applaud Ooredoo for their support in bringing our vision of establishing smart cities in the Maldives to life. Connecting our people to smart technologies will instigate innovative solutions that tackle key challenges that are prevalent in an urban society, thus paving the way to a better quality of life."

The chairman of Ooredoo Maldives and group chief officer small and medium business unit, Khalid Al Mahmoud, said: "Globally, Ooredoo is contributing to the development and implementation of smart city solutions and networks, supported by our role as a lead partner in the Smart Cities Council. We believe in the power of emerging smart city technologies to enrich people's lives, and we are eager to offer our expertise to the people of the Maldives in their efforts to build next generation urban environments."

At the launch event Ooredoo demonstrated the opportunities for growth behind Internet of Things (IoT) and Machine to Machine (M2M) services which allow business to connect business assets with each other or a central command center, thereby enabling the automation of routine tasks and maximizing efficiency with minimum investments in manpower, time and cost.

Ooredoo is already working with a number of leading organizations to support the development of smart cities, and has signed a strategic alliance with KT Corporation of Korea to introduce new concepts and innovations.

Nokia and China Huaxin to from new China JV

Nokia and China Huaxin Post & Telecommunication Economy Development Center (China Huaxin) have signed a MoU confirming their intention to combine Nokia's telecommunications infrastructure businesses in China (Nokia China) and Alcatel-Lucent Shanghai Bell into a new joint venture, once Nokia's Acquisition of Alcatel-Lucent closes.

Alcatel-Lucent Shanghai Bell is presently owned by Alcatel-Lucent and China Huaxin. Nokia will take over Alcatel-Lucent's share of the JV and will hold 50 percent plus one share with China Huaxin holding the remaining shares. The new joint venture is expected to operate under the name of Nokia Shanghai Bell and to be registered in the China (Shanghai) Pilot Free Trade Zone. It will have one board of directors, one management team, unified customer and business functions, and one integrated product portfolio and R&D platform.

Rajeev Suri, president and CEO of Nokia, said: "Together with China Huaxin, Nokia will be in an excellent position to support strategic initiatives of the Chinese government such as 'Internet Plus' and provide a strong link between Europe and China.

New cables for Malaysia and the Northern Marianas Islands

NEC Corporation has signed a contract with Telekom Malaysia and Time dotCom subsidiary TT dotcom to construct a new submarine link between Peninsular Malaysia, Sabah and Sarawak. And the Northern Marianas are to get a new link to Guam, built by Docomo Pacific

NEC will build the Sistem Kabel Rakyat 1 Malaysia (SKR1M), a 3700km submarine cable system that will connect Peninsular Malaysia, Sabah and Sarawak with landfalls in Cherating, Kota Kinabalu, Miri, Bintulu, Kuching and Mersing.

It will be Malaysia's first 100Gbps domestic cable and, following expected completion in mid-2017, is expected to enhance connectivity between Peninsular Malaysia, Sabah and Sarawak.

KDDI opens Cambodian office

KDDI says it will open an office in the Cambodian capital Phhom Penh on October 1, 2015 to "provide factories and offices with Japanese-quality services from the construction of IT infrastructure to maintenance and operation, thus contributing to the expansion of operations for customers advancing to Cambodia."

The Cambodian office will provide system integration, network construction support and ICT consulting services. It will be an arm of KDDI Singapore. KDDI said: "Cambodia has a real GDP growth rate of 7.4 percent, making it a country with a high economic growth rate, even amongst Southeast Asian countries.

KDDI has also pledged to continue strengthening its business provision system for corporate customers by establishing offices in each country along the Southern Economic Corridor and to expand its communications business through Myanmar and Southeast Asia. Establishment of the Phnom Penh Branch will give KDDI a presence in 107 locations in 28 regions and 63 cities outside Japan.

The Southern Economic Corridor follows a highway spanning approximately 1,000 kilometers that traverses the Indochina Peninsula connecting Ho Chi Minh City, Vietnam; Phnom Penh, Cambodia; and Bangkok, Thailand. It was completed in April 2015 with the Neak Loeung Bridge (Tsubasa Bridge), which crosses Cambodia's Mekong River.

Singapore unveils 10 year infocomm media master plan

Singapore's Ministry of Communications and Information has released the Infocomm Media 2025 plan. It has been developed by a private-sector-led committee to guide the development of the infocomm media sector over the next 10 years.

The plan comprises three broad thrusts:
- Capitalise on data, advanced communications and computational technologies to bring about a quantum leap in our economic competitiveness;
- Nurture an infocomm media ecosystem that encourage risk-taking and continuous experimentation to create Singapore-made content, products;
- Connect people through infocomm media to enhance quality of life in Singapore and to foster a stronger Singaporean identity.

Recommendations to address the first thrust include the use of heterogeneous networks (HetNets), which will give mobile users seamless high-speed internet access when moving from place to place, as well as transforming various business sectors such as e-commerce and urban-logistics business.

Under the second thrust, the plan recommends equipping the infocomm media workforce with new knowledge and skills so they can innovate.

Recommendations under the final thrust include deploying media technologies in a people-centric manner to improve various aspects of everyday life, such as health, education, transport and community services.

The plan's steering committee, chaired by Mr Koh Boon Hwee, submitted the report to the minister for communications and information, Dr Yaacob Ibrahim, on 11 August. Dr Ibrahim said in his speech at the launch ceremony that Infocomm Media 2025 would play an important role in helping Singapore achieve its Smart Nation vision, with strategies to grow the key enablers including infocomm media infrastructure, agile enterprises, skilled manpower, and cutting-edge technology and research.

Aircom Pacific taps AsiaSat for inflight Internet services

Aircom Pacific — a telco specializing in system integration for the provision of video, audio, gaming, shopping and communications services — has leased multiple transponders across AsiaSat's fleet of geostationary satellites for delivery of in-flight entertainment and connectivity services.

Under the agreement, Aircom Pacific will use Ka-band and Ku-band capacity on AsiaSat 7 and AsiaSat 8 to deliver its in-flight entertainment and connectivity services for airlines flying routes over Asia. These services will include WiFi broadband Internet, streaming TV and videos, streaming gaming, cellular connectivity, and real-time duty free shopping and travel services.

The chief marketing officer of Aircom Pacific, Alan Gallant, said: "We chose AsiaSat as our satellite partner because it offers us the capacity, coverage and expertise in aero services necessary to ensure a successful implementation in the coming calendar year. We anticipate providing our partner airlines better value, improved and more convenient services to their passengers.

He added: "The airline industry is intensely competitive. Advanced satellite solutions are playing an increasingly important role in enabling in-flight service providers and airlines to offer the best possible entertainment and connectivity solution to their passengers. These will be the key for airlines to achieve differentiation and to boost passenger loyalty."

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Meet the cloud champion of Asia

The Asia Cloud Computing Association (ACCA) is a member-driven, Asia focused non-profit organization with a mission to accelerate adoption of cloud computing in Asia Pacific. At CommunicAsia in June, Telecom Review Asia Pacific caught up with its chairman, Bernie Trudel, who is also head of data center technologies at Cisco.

According to its website (http://asiacloudcomputing.org), ACCA's membership includes "a diverse profile of influential cloud providers, cloud consumers and government cloud stakeholders, working together to provide thought leadership for cloud computing in Asia and to remove obstacles to adoption."

However, Trudel said "We have decided to be more of a supply side association as opposed to having end users being part of the organization. But we do have conversations with end users. We invite them in. And we have quarterly meetings around APAC."

The ACCA was launched in November 2010 by Alcatel-Lucent, Cisco, EMC, Microsoft, NetApp, Nokia Siemens Networks, PLDT/Smart, Rackspace, Reach (now part of Telstra), Telenor and Verizon.

Its stated mission was to "address regional issues and challenges to adoption of cloud computing in Asia including privacy and security concerns, compliance and regulatory mandates, licensing models, service levels, and other market risks."

Its first chairman, Sundi Balu, said: "Cloud adoption in the Asia Pacific region has yet to reach its full potential. The regulatory landscape and varying market maturity levels have fragmented the adoption of cloud computing in the region."

Barriers remain

That would certainly have been true back in 2010. Cloud has progressed by leaps and bounds since then, but Trudel says, barriers still remain. "In Asia we have seen cloud become mainstream. It is not a case of if you are going to do cloud but when you are going to do it and how fast you are going to adopt it. However, we are still seeing a lot of reluctance and people concerned about security and meeting regulatory compliance around data sovereignty.

"So one of the things we have tried to address in the association is to really get a true view of what are the issues regarding data security. What are the laws in the different jurisdictions and how are they preventing the use of cloud computing.

"We are also trying to identify what we could be doing as an industry and even giving advice to the regulators in terms of them maintaining their roles as policemen to the industry but not limiting the use of technologies of cloud computing so that the industry can gain the efficiencies and agility associated with cloud computing."

Engagement paying off

He added that this approach had proved successful. "Initially we saw a lot or

resistance to cloud computing, people almost putting up a wall, but when we started to engage and to organize industry workshops we found the positions of both sides were not so hard and that people were willing to listen to each other and to what the concerns were."

In Singapore, Trudel said: "We are seeing that government agencies are very interested in using cloud computing to allow the financial services industry to be efficient and to be competitive and to allow Singapore to continue to be a hub for the financial services industry.

"The regulator is listening and is willing to modify some of their regulations to really look at what is it about cloud computing and its dynamic nature that needs to be controlled.

"[In May] we had a Chatham House Rules engagement with government agencies and MAS [Monetary Authority of Singapore] and the banks themselves and cloud players in one room. We had some frank and open discussion and I think we made some headway."

He added: "One of the things we want to do in ACCA is to have that discussion in all countries around APAC to foster the dialog and get the parties together to co-operate and to make some real changes.

ACCA executive director, Lim May-Ann, said: "Adopting Cloud and cloud services will help FSIs in Korea stay nimble and competitive, enabling them to pursue innovation and provide cutting-edge services. The ACCA has been a tireless advocate for strong, clear guidelines and these new regulations from the FSC and FSS will help FSIs create a trusted environment within a safe and consistent regulatory framework."

Working with governments

"We are working a lot with government agencies, but we are also reaching out with events like CommunicAsia. We are speaking to end users about what we see the issues are and what issues should be addressed to accelerate the adoption of cloud computing in Asia. That is our mission.

Today the five year old ACCA is a very active organization. It boasts seven working groups:

- Public policy & regulatory working group
- data sovereignty working group
- security working group
- cloud assessment working group
- small & medium enterprise working group
- cloud segments working group
- cloud assessment working group

And it seems to be making progress in its goal of reducing resistance to cloud, especially in the finance industry.

Earlier this year it produced a 14-country comparative study of cloud computing and the financial services industry Asia's Financial Services: Ready for the Cloud – A Report on FSI Regulations impacting Cloud in Asia-Pacific Markets.

Financial services warm to cloud

That appeared to have some impact. In June the Korean Financial Services Commission (FSC) and the Financial Services Supervisor (FSS) announced a revision to regulations that will enable financial institutions to adopt cloud computing.

Stacy Baird, chair of the ACCA's Data Governance Working Group, said the changes were in line with those recommended in the report. "In particular, the decision to allow offshore data storage and processing, subject to appropriate safeguards, and easing some of the approval burden on FSIs and cloud service providers (CSPs), accelerates the creation of a safe and stable environment for FSIs, and opens the door to the benefits that cloud adoption can bring to these sectors of the economy."

However, the big end of town is not the sole focus of the ACCA. Earlier this year it published a study into the market for cloud computing among SMEs in Asia Pacific.

Focus on SMEs

As the ACCA points out, this market is extremely important. "SMEs comprise variously between 60-99 percent of all businesses, 50-98 percent of all employment and between 35-70 percent of GDP."

It claimed the study to be one of the first of its kind, and said it was important on two counts: almost all governments across the region are targeting both the SME sector as an engine of growth as well as the IT sector as an engine of innovation.

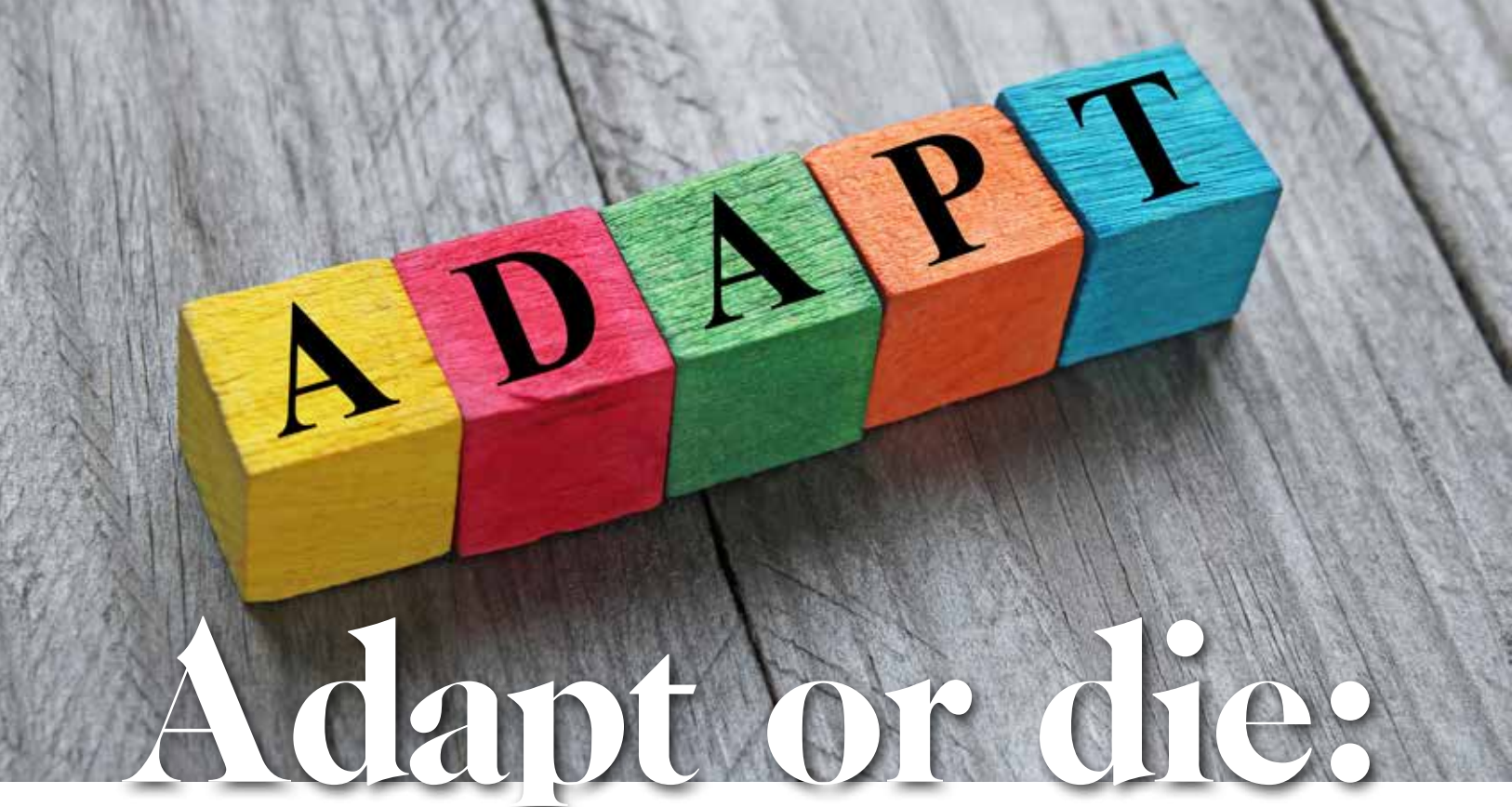
May-Ann, commented: "In this context, it is surprising that there are almost no comparable measurement benchmarks to assess the effectiveness of current investments for SMEs. Cloud computing promises to be the great leveler, bringing enterprise grade tools and capacity within reach of SMEs. In addition, it will bring next generation infrastructure benefits within reach of emerging economies without the need for crippling capital expenditure." TR

SME Cloud Computing Market Attractiveness Index 2015

Overall Ranking

RANK	ECONOMY	Addressable Market	Early Adoption	Demand Drivers	Affordability	Support	OVERALL SCORE
1.	Japan	101.4	57.7	71.0	64.7	56.6	70.2
2.	Singapore	25.7	78.0	68.7	73.0	73.8	63.8
2.	Hong Kong	29.3	75.7	66.7	75.3	72.3	63.8
4.	South Korea	40.3	67.7	78.0	70.7	58.8	63.1
5.	China	141.9	37.3	36.3	29.3	59.0	60.8
6.	Taiwan	27.6	73.3	62.7	66.7	73.0	60.6
7.	Australia	44.3	56.7	72.0	80.3	46.0	59.9
8.	New Zealand	28.3	72.3	71.3	77.7	48.8	59.7
9.	Philippines	17.8	66.0	52.7	54.3	52.8	48.7
10.	Indonesia	76.8	39.7	39.3	31.3	52.0	47.8
11.	Malaysia	20.6	57.3	41.0	53.0	60.8	46.5
12.	Thailand	22.4	50.0	47.0	48.7	56.8	45.0
13.	India	39.3	39.3	24.3	43.7	42.0	37.7
14.	Vietnam	6.2	41.0	26.0	34.7	35.5	28.7

Source: Asia Cloud Computing Association 2015 http://www.asiacloudcomputing.org/research/smecloud2015



Adapt or die:

new business models for communications services providers

Nick Wilson, managing director, HP South Pacific and general manager, Enterprise Services, HP South Pacific, argues that the key to survival of for communications service providers lies in groundbreaking data analytics.

Every moment with a connected customer is a make or break experience. Communications services providers (CSPs) are only too aware that underperformance in delivering a quality customer experience will lead to customer churn.

Disruption from new over-the-top (OTT) content providers with new business models threatens traditional revenue streams for CSPs. They face cost inflation where increasing costs of IP networks outweigh revenues. Moving beyond commodity services to value-added services is the key to halting profit erosion.

Uncertainty and disruption caused by this rolling landscape require CSPs to establish new business and operating models quickly, and come up with alternative revenue resources.

For the majority, a key to finding the correct solution is close at hand. Every telco has vast sources of data that can prove invaluable. The challenge is working out how to harness this rich source of information for maximum advantage – and that involves making some smart, strategic decisions on the right technology mix.

Make good use of rich data

Historically operators have not taken advantage of the data they hold. Monetizing the value of data is now the means by which CSPs can generate new revenues to offset the commoditization of traditional services and compete in the over-the-top (OTT) market. It also has the potential to enable CSPs to target cross-sell and up-sell opportunities among the existing customer base.

Big data applications that are context aware place CSPs at the heart of the digital value chain. By combining real-time insight, such as location, interests and activities, with demographic knowledge, such as customer relationship management information, habits, and preferences, unparalleled marketing power can be achieved.

There are three core areas where CSPs can maximize the value of data.

- The use of big data to target products and offers to increase loyalty and personalize the customer's experience according to their individual needs.
- The use of network and IT data to increase operational efficiencies and improve effectiveness of the customer experience.

- The use of operator data to identify new business models and look for partnering opportunities with OTT service providers that enrich customer services and extend subscriber revenues.

The opportunity is there to insert an organization into the digital value chain and be more than a network infrastructure provider.

Sourcing customer-centric big data

With this wealth of data available, the CSP that can harness the full value of analytics will provide the best platform for success. The CSP should be aiming to improve the customer experience and generate new revenue streams through more effective analysis of:

- Network data: gain better network performance from optimization opportunities identified through analytics of usage records, performance monitoring, fault monitoring and call management data.
- Subscriber data: from the network registry, operations support system and billing systems.
- Application data: harnessing value from unstructured data such as traffic analysis, web/search/SMS/email, social media, mobile apps and device data.
- Market data: to build a better picture of the customer including profile data, demographics and segmentation.

ANALYTICS as a tool for service quality

Customer experience and retention are inherently tied to service quality. However, with the rapid growth of devices and applications, and the pressure on network capacity, maintaining consistent service delivery poses significant challenges.

It is important to define key performance indicators that reflect a superior customer experience to support planning and service delivery, and provide measurable outcomes to evaluate performance.

- Analytics plays an important role in service quality and capacity planning.
- An effective analytics platform can monitor the performance of the network, predict service failures and reduce the risk of unexpected downtime.
- Trends analysis can forecast bandwidth growth by location thereby triggering investments where additional capacity is needed.
- Big data technology can help optimize data routing and bandwidth, especially during temporary spikes in demand such as major sporting events.

Strong focus on customer value

Imagine if big data analytics could be used to gain real-time insight into subscriber usage patterns, preferences and interests. These insights can help capitalize on opportunities and partner more effectively with new OTT providers. The reality is, however, that few CSPs have a consistent approach to data analytics or access to analytics skill sets across key disciplines.

Rather than simply increasing the average level of customer experience, it is possible to focus on specific customer lifetime value to provide the best return on investment. Analytics should be aiming for:

- More personalized, innovative and efficient services and offers leading to greater customer satisfaction, less churn and an increase in the average revenue per user.
- A rich and detailed single view of the customer for advanced segmentation, incentive and campaign targeting and price plan optimization, improved operational efficiency, lower operating cost and improved customer service with faster response times.

Success of the program can be measured through improvements in operational, bottom-line and superior customer experience.

An approach that covers all bases

An effective approach to customer experience and analytics is company-wide and cross-functional. It requires a holistic vision that bridges business functions such as marketing and products, and technical functions such as IT and network operations. It must also embrace different organizational boundaries, responsibilities and processes with well-defined roles to support clear business outcomes.

> “Big data applications that are context aware place CSPs at the heart of the digital value chain.”

New initiatives are assessed using a business impact analysis that features capital and operating expenses, and quantifies savings and direct revenue gains. The benefits and impacts can be defined across the organization from the operations and network department, to marketing and customer service teams.

Industry benchmarks are critical for the main KPIs to help quantify cost reductions, revenue and margin improvements, operational efficiencies and customer experience. Every technology investment requires a business impact analysis to inform decision-making and to demonstrate how customer experience management solutions can impact the bottom line.

Making the right technology choices

Technology is opening up a new world for communications service providers to connect with their customers like never before. But simply investing in the latest sophisticated technology is not enough to keep and win customers and meet their evolving needs.

To understand and anticipate their customers' preferences, CSPs must harness the vast amounts of data and use it effectively, employing analytics in order to stay competitive.

Priorities have to be clearly mapped so that the correct investments are made in the right technology to provide their customers with the right service where they need it and when they need it. Only then will a truly superior customer experience be realized. TR

Roundup:

NetEvents APAC Press and Service Provider VIP Summit, Singapore

Service providers, telecom industry players and members of the press came together at the NetEvents APAC press and service provider VIP summit in Singapore to discuss the latest and hottest topics in the industry.

The event, which took place on May 28-29, consisted of two days of keynotes, presentations and scheduled briefings. It kicked off with a keynote presentation by Amit Sinha Roy, vice president, TATA Communications, a tier-one ISP service provider which has created more than 50 datacenters, over 200 POPs and 500 ISP customers on "The evolution of the WAN – best of private networks and public internet."

He discussed how the internet has come a long way, and as something that we use every day, it is something that is part of our lives, a part of our social as well as professional lives. He asked: "So how is it that we could potentially extract more value out of the internet, make it more business-ready?"

Everyone agrees, be it the reputed analysts such as Gartner, Ovum, as well as our private studies that we have done within TATA Communications; that enterprise is moving to the cloud and to a hybrid cloud environment. And the issues that are facing the enterprise CIOs are mostly around network security and the service level agreements. And the evolution of the hybrid cloud, where the private data is secure, and the applications that we want to open up to the public are a way of life that is not going to be reversed.

"We did a study with some of the CIOs in the large enterprise and other related companies. And essentially, we marked them on: Was the expectation exceeded? Were they met or were they not met across various parameters, across data access, improved security, revenue and, of course, the big one, which is cost-effectiveness? And most of them said that expectations were met but not really exceeded, which is where everyone wants to be in terms of deploying a network solution."

The keynote was followed by an interview with Amit Sinha Roy and Mike Fratto, principal analyst, Enterprise Network Systems, Current Analysis.

Fratto stated: "Obviously there are a lot of WAN service providers. They're

providing value-added services in addition to just connectivity. So you can talk a little bit about what you see as the main competitors, either technology-wise or service-wise, to IZO."

Roy replied: "There are competitors in each of the spaces and some of the solutions that we have obviously would compete. But then there's a price point and a use case for each one of these, and there's a best fit scenario that allows us to custom build it for the network for each of the enterprise customers that we have."

The first debate session then followed with a discussion entitled 'Testing times in the internet of things', which was introduced and chaired by Nikhil Batra, research manager, Telecommunications, IDC and guest speaker presentation by Neil Holmquist, senior director Product Marketing/Management – Cloud & IP, Spirent Communications. Spirent Communications is a company that builds test solutions that help ensure and verify that the complex network of today can reach and communicate as well as scale-up for the network that's needed for tomorrow. This is important as we talk about the internet of things and how that scale is beginning to be more and more complex.

Neil discussed the internet of things and said that in 2020, the average person will have seven connected devices. He added that a more obvious one is around the connected car. He said: "I saw one of the Google driverless cars running around, driving around, and I was curious about how that car knows when to stop. How does it distinguish between a ball bouncing across the road and a kid running after the ball?

So a lot of technology and a lot of testing have to go into that, to make that split second decision on what to do. Gathering all that information, communicating, constant communication between the car's components, constant communication with other cars, other wearables, other devices: everything is going to be connected and they're going to be talking to each other. You won't know it, but your phone will be talking to other cars to inform you of your proximity to them."

The debate continued with panelists Derrick Loi, head of Cloud Business for APAC, Orange Business Services; Helen Wong, director, Partner & Product Strategy Asia Pacific, Verizon; and Amit Sinha Roy.

Nikhil Batra asked Helen Wong: "I'd like to ask that, as a telco, Verizon is pretty much very heavily invested into IoT. But then, development and testing are not a telco's forte per se. So are there any specific challenges that you are facing when you are embracing IoT in terms of testing or developing new software or solutions around these (intelligent) systems?"

She replied: "We are a big customer of Spirent. So it's obvious that we do spend a lot of money on companies that test all of our equipment. But to Neil's point, yes, the vendor will have to test it; the telco provider will have to provide the SLA. But more importantly, I think when somebody develops something, it's important to create scenarios, crash testing scenarios. Assume the worst. Something happens, you want to create those scenarios to be able to test it. And that's how you address the security side of things as well. Don't just test what you think might go wrong, but create scenarios that are going to cause problems.

I think people need to take it a step further. You should look at it from a user experience, the application what are you providing end-to-end and take that into consideration, try to not draw the line. This is where we stop."

The next round table session entitled 'Follow the money: Who's investing in what?' included panelists Dan Pitt, executive director, Open Networking Foundation; Chris Rezentes, regional manager, Partner & Product Strategy – Asia Pacific, Verizon; and Amit Sinha Roy, discussing how to ignore marketing hype, and to watch where smart money is headed. They asked the question: Where are service providers investing their money in today? NFV? SDN? Service orchestration? Cloud providers? Dan Pitt presented his and ONF's current thinking on the prospect and business realities of cloud innovation.

The first day ended with the final round table session which covered business defined cloud networking.

The second day kicked off with a keynote presentation by Steve Chappell, chief operating officer, Wedge Networks, and focused on 'Innovation in the cloud & the importance of security' followed by a guest speaker interview with Steve Chappell and Manek Dubash, editorial director, NetEvents.

A debate on 'LSO hath charms to soothe a savage beast' was followed with a presentation by guest speaker Kevin Vachon, chief operating officer, MEF, who outlined how SDN/NFV principles and open APIs can build an orchestration layer to shape the network for real business needs. For example is the provisioning, automation and monitoring of enterprise business services. MEF third network thinking points the way forward for LSO.

'Datacenter interconnect: The perfect solution?' was the title of the next talk, and included guest speaker Gint Atkinson, vice president, Network Strategy & Architecture, KVH, speaking about how he keeps ahead in this fast paced arena. Ultra high speed, robust and secure DCI demands clear thinking, strong views on the ideal infrastructure and a keen eye on the latest technology trends. He shared his insights, with examples of recent and forthcoming KVH projects.

The final session of the day was titled 'Metro aggregation: A 100 gigabit opportunity' with guest speaker presentation by Andrew Bond-Webster, vice president Asia Pacific, Infinera, and he described some strategies already under way to tap into this major opportunity. He shared his opinion on their viability and discussed topics including: reducing complexity, the flexible scalability bonus over 10x10G, metro cloud implications, going beyond 100G, and which metro network architectures will be best for scale, granularity and simplicity.

Everybody gathered at the end of the conference with a series of 40 minute individually scheduled briefings throughout the afternoon. TR

The network spin

At MWC, Phil Twist, global vice president of Portfolio Marketing at Nokia, spoke about how the event was the first time Nokia's three business units of technology, networks and mapping, had come together at a major trade show to present the company's path to its Programmable World vision. Here, in a detailed conversation, he talks about the difference in demand between emerging and established markets, how the mapping division compliments networks and the future agenda for Nokia.

Could you give us an idea about your position and the areas of responsibility as VP Portfolio Marketing?
I am responsible for the global mobile broadband, products and services portfolio.

Globally speaking, which has a bigger share, products or services?
If you look at our overall business, it is very well balanced. Some specific segments such as systems integration activity are a big opportunity; it is the glue that makes networks come together.

Would it be fair to say that in most emerging economies, operators tend to have a larger demand for products; whereas, in more developed regions it is services that have a greater share of the market?
That is probably too wide a generalization to make. If you are a new operator, you probably do not have the skills and experience, therefore, you would look for companies such as ours to help you design, plan, build, operate and maintain the network. If you were an operator with an established engineering department then it would be otherwise. In either case we certainly can provide a complete range of full services to do everything including managing a network as a service or even managing a service as a network.

In terms of the telco cloud, the messaging is going to be a game changer. Is it already a game changer in many parts of the world or is it a technology that still has to realize its potential?
If by game changer you mean a step change in the way networks are built, I don't think that's actually going to happen even though I know a lot of people have been talking about that. From our perspective it's a migration to transformation. If you look at the

status of clouds, it's going through four phases. The first part is the virtualization of network functions, particularly in the core; then how to configure a network as we go through in terms of those network functions, such as software defined networking. The third phase is taking radio to the cloud where you still need radio access points everywhere but some of the base station functions are taken to the cloud. The fourth part is end-to-end service management.

If you take it from our perspective, a core network maybe has 20 or 30 separate buildings and the old way of building those is by buying HLR, a piece of hardware and a software. To buy one I'd have to order the hardware, install it and then integrate it. But if I want more capacity, I have to buy another one and wait six months for the process.

We are already a long way down the process of moving from an integrated HLR into an HLR application that runs on standards of hardware. And the migration we are doing now is to move from standard telecoms architecture into those same software applications now running on standard IT but with standard middleware in between.

We now have virtualized all of our EPC, the management systems and customer experience management systems and have the application manager to run all of these virtualized functions. We have also just launched the orchestration systems which in our terms is called the cloud network director as well. We've also got the security orchestration. Therefore, cloud changing and disruption is actually something we're doing already.

If you look at some of the newest services coming to market like voice over LTE, for example, if you are doing it natively across the network, it needs an IMS function and a server. Those are perfect new opportunities to start building a cloud, as in a small cloud for the operator to be able to offer VoLTE. We have already done that with some operators commercially. NFV is also live in commercial networks already.

Is this critical to your Programmable World agenda?

It's a natural evolution. Things will not just need to be connected but have some intelligence to do clever things. For instance, we have something that we launched last year called Predictive Operations. The network has millions of data points from every single element in the network – indicators, parameters, load time, etc. If you put that kind of information in a big data research engine, which is one of our key areas of development, you can actually spot trends in the traffic.

We have something similar now called Predictive Marketing which, from a network perspective, looks at behavior and consumption patterns to offer to operators an opportunity to be more than just connectivity players and take some value from what they know about people in a very succinct and positive way.

Approximately 90 percent of in-car navigation systems in the world use Nokia maps. What do you plan to do with that besides working on a grid system?

Here is not my area of expertise since I'm looking after networks. But the automotive sector is a key sector for Nokia. With a market share like that, it is obviously going to be a great opportunity for business. There are other aspects to it, though, such as the enterprise business using maps as a way of collecting the terrain data to do a graphical map of wind generation patterns and possible areas for wind energy generation systems to be deployed based on where populations are located.

This, of course, can have positive implications for base stations as well when considering where to deploy them based on traffic. They have helped us in building a very nice 3D location planning system, mapping traffic in high rise buildings that help in understanding where to place small cells and it is working very neatly. They also have the public mapping application on android which has been very successful. Of course, the primary business is building the location cloud, building the huge database of information about the world and progressively increasing the resolution of the maps they provide.

> Talking about IoT and how it is progressively building, it's providing a platform for why 5G is going to be needed

In terms of centralized RAN, how is the technology performing and what are you working on with it?

Centralized RAN is now effectively a mass market product and we are extending it with more frequencies with higher bandwidth, making the global capability higher. We will expand on that with the next generation of architecture moving into virtualized Cloud RAN.

What is the agenda Nokia is outlining for the future under your marketing portfolio for the networks business?

There are five messages that I would like to share about moving towards ultra-dense networks to support a thousand times more traffic over the course of this decade, and that is before 5G comes into the equation. The first is moving to the cloud where the core network and all the components can be virtualized, showing how the radio can be virtualized too. The next is enhancing what networks do with location, and setting parameters for self organizing networks. It's a big emphasis on data analytics to actually monetize what we know about the network and improve its performance. Finally, talking about IoT and how it is progressively building, it's providing a platform for why 5G is going to be needed. TR

Identified: the Asia-Pacific industries ripe for disruption

Analyst firms have been warning about the dangers of digital disruption for years. IDC talks of the '3rd platform – comprising cloud, mobile, social and data analytics' – and it has identified the industry sectors in Asia Pacific most likely to washed away by the disrupted.

IDC says 3rd platform disruption started in 2006 and is now well advanced. To its initial four forces of cloud, mobility, big data analytics and social business it has added "innovation accelerators" including the Internet of Things (IoT), cognitive computing, 3D printing, advanced robotics, next-gen security and natural interfaces.," and says that, by the end of 2015, at least 45 percent of all ICT spending in Asia-Pacific will come from 3rd platform technologies and solutions.

The market, says IDC, has now entered an "Innovation Stage" where there is there is accelerated adoption of the four-pillar mash-ups of cloud, mobility, big data analytics and social business along with the "innovation accelerators".

IDC explains that, in the "Innovation Stage", IT becomes the epicenter of the marketplace, where it not only impacts but disrupts the commercial, public, consumer, data, skills and start-up economies. "Tech-enabled disruption thus becomes a competitive advantage, and innovation is no longer about invention; it now implies industries and commerce."

IDC says that Asia/Pacific began to witness the deployment of 3rd platform mash-ups in late 2013 and that 43 of 70 organizations it surveyed have started their mash-up deployment journey, with 10 percent currently in Stage 3 (Repeatable) of the maturity model. "This is a fairly advanced stage where defined requirements and processes are in place for planning, execution and evaluation of 3rd platform mash-up initiatives and investments, says IDC.

According to IDC: "The leading business driver among the 'mash-up' organizations is delivering productivity-based automation while the CEO's top concern is the emergence of new business models. These business outcomes are thus pushing organizations to find disruptive innovations to bring a new competitive benchmark in the marketplace."

This 'new value of IT', says IDC "comes in multiple dimensions including delivering business agility, productivity-led automation, personalized customer experience, collaboration-based partnerships, open innovation and crowd sourcing, all driving toward a new benchmark in market competitiveness."

In a "Leadership Playbook" Transformation Everywhere: Are You Ready for A New Style of Business? sponsored by HP, IDC then lists industries in the Asia/Pacific that it has identified as being ripe for disruption

Payments

Financial institutions such as banks, credit card companies and money transfer firms are increasingly threatened by alternative payment providers such as Square and Alipay as retailers and consumers look for cheaper and more convenient payment methods to transact online and via mobile. Banks, the power houses of the financial services industry, in particular, are losing their competitive advantage.

Banks traditionally "know their customers" well but with digital technologies, online transactions and social media interactions, this competitive edge is increasingly transferred to technology providers such as payment alternatives and over-the-top (OTTP) providers like Facebook and Google.

The emergence of non-traditional providers is rapidly on the rise. While many, if not all economies, do not allow these players to take deposits and operate as a bank (at least not without an approved license), these players are certainly interested in payments and the lines are blurring. Alipay with its online money market fund, Yu'e Bao, is one such example. The fund is the largest investment fund in China and ranked 22nd in the world.

Medical products

Healthcare is on a collision course with the technology sector and that is expected to be most intense. This collision is not all negative as new innovations are emerging at a faster rate and consumers or patients are benefiting more than ever before. However, this is changing the rules of the game for the healthcare industry.

Technology start-ups and ventures are developing and launching commercial products and services aimed at improving the medical quality and care of the general public. Take 3D printing as an example. In recent news, a 3D-printed exoskeleton helped a woman who was paralyzed two decades ago by a tragic ski accident to walk again. Similarly, Google's smart lens, designed for diabetic patients, was awarded two patents for its cutting-edge, biometric sensor technology, and will be commercially available in about five years' time.

Google's latest innovation is a prime example of how new entrants are poised to further shake up the healthcare and pharmaceutical industry. The recent focus on IoT is only intensifying this game-changing trend with healthcare-focused smart connected gadgets representing more than 70% of the IoT wearables market today.

Retail commerce

One of the booming industries in the Asia region is retail. With new money from emerging markets and the strong overall economic growth, consumer retail spend is on the rise. This has translated into new opportunities for both physical stores and e-retailers. In fact, with Asia being the largest mobile market in the world, eCommerce and mCommerce (collectively known as xCommerce) are high-growth sectors.

China will become the largest business to consumer (B2C) xCommerce market by the end of 2014, surpassing the current leader, the United States. India and Indonesia are both very sizable xCommerce markets and in matured economies like Singapore, South Korea, Hong Kong, Australia and Japan, consumers maintain fluid relationships

with their merchants. This fluidity is enabled by technology as new players enter the market with a strong virtual or online presence and create new and enriching customer experiences. These players have quickly gained market share.

An example is China's Xiaomi, the up and coming mobile handset player which conducts sales online and product developments are heavily shaped through online interactions. New market categories are also being created. Online grocery shopping is one example. The rapid pace of this competitive intensity is also giving rise to a new trend, the emergence of online to offline (O2O) services and vice versa.

Historically, with e-retailers' success, there was a lot of pressure for brick-and-mortar retailers to go online and mobile. Today, the reverse is also competitively critical. Retailers need to find the optimal balance between establishing an online and offline retail presence to compete effectively.

Travel and tourism services

One of the first industries that benefited from the rise of technology, travel and tourism has always thrived on delivering convenience to consumers. Web sites like hotels.com and booking.com are highly-valued online destinations for many travelers to find the best airline, hotel and tour excursion rates around the globe.

However, airlines and hotel owners have long been less than satisfied by the high commission rates charged by these middlemen of the Internet age. Internet start-ups and giants equipped with algorithm-based analytics and search technologies are developing and offering new capabilities that will make these middlemen obsolete in the not-so-distance future — that is if they do not change their business models.

IDC points out that the variety in these examples show t there is no clearly defined formula to succeed in this new marketplace, but they demonstrate clearly the need to think and act beyond the traditional boundaries.

"New technology start-ups and Internet giants are entering into traditional non-technology industries to become the next-generation competitors. These companies are pushing incumbent industry players and long-established market leaders to compete differently … To thrive in 2020, all organizations must therefore be technology/digital companies."

Scorecard for transformation

IDC has come up with a scorecard on how to effectively deliver the new value of IT via 3rd platform mash-up initiatives in this new marketplace. "The critical success factors look into how organizations should evaluate, assess, design and deploy IT to digitally transform their organizations to deliver new business competitive benchmarks," it says.

It lists five dimensions of the strategy scorecard.

- **Intent.** The measure of intent defines an organization's maturity for establishing 3rd platform mash-up strategy as well as establishing project and program sponsorships and justification.
- **Process.** The process measure defines an organization's maturity for attributes such as the processes of tracking and analysis, vendor/service management, architecture, decisioning and workflows.
- **Technology.** The technology measure defines an organization's maturity for attributes such as tools and functionality, adoption, performance, management and business adaptation.
- **People.** The people measure defines an organization's maturity for attributes such as 3rd platform mash-up technology skills, cultural readiness, organizational structure and hiring/training.
- **Metrics and measurement.** The measure of metrics and measurement defines an organization's maturity with regard to relevance, data relevance, availability and quality, key performance indicators (KPIs), innovation and business outcome alignment.

Finally, the paper concludes with a dire warning. "There are many unknowns but one thing is certain. Organizations that cannot transform to technology/digital companies will perish or at least face harsh consequences. The marketplace is redefining itself."

This article is an edited version of the IDC Leadership Playbook Transformation Everywhere: Are You Ready for A New Style of Business? by Sandra Ng and sponsored by HP.

Qualcomm: Driving the next shift in the mobile industry

As the push towards transformation picks up the pace, Qualcomm is proving to be pivotal in the image of a world where the internet of everything is beginning to emerge. Telecom Review spoke to Jay Srage, president of Qualcomm Middle East, Africa and South East Asia, about how the company is preparing to drive the industry into the future.

In general and from a processor business perspective, what is Qualcomm's focus globally and in the region?
Qualcomm is a world leader in mobile wireless technology with a proven model to deliver inventions that drive industry progress and growth. We are more than just a semiconductor company; we are an R&D driver for the mobile ecosystem, developing technologies and solutions that enable our partners to bring the latest devices and services to consumers around the world. Mobile is changing everything and is unique in its ability to provide technology innovations to many other industries. Qualcomm has played a major role in this transformation; our ideas and inventions have been behind major technology shifts in the mobile industry.

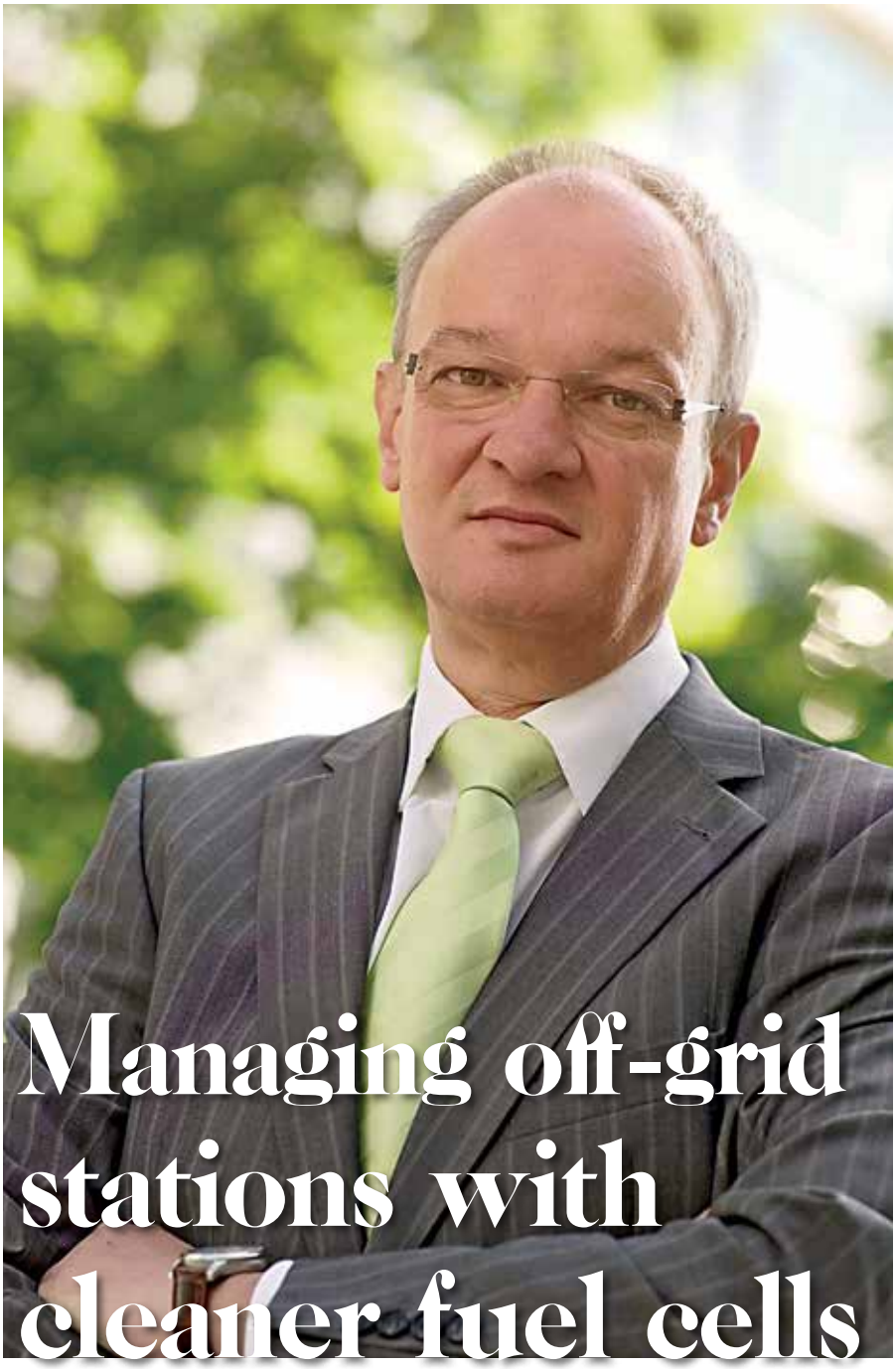
Our focus globally – and indeed in the Middle East to a large extent – is to leverage the inventions and innovations that Qualcomm and the ecosystem have made over the years, and prepare to transform the edge of the internet which is entering a new phase of growth and evolution. We have seen the internet evolve from a PC-based world during the 1990s and early 2000s, to a gradual shift towards mobile devices and wireless connectivity up the 2010s. This new phase of growth will mean that billions of objects will be connected via wireless technology. That means looking beyond smartphones and tablets and addressing the significant opportunities presented by the internet of everything. Moving forward, Qualcomm will continue to develop its comprehensive roadmap of multi-tiered portfolio of products and address various computing, connectivity and battery requirements across device categories. With over 400 Snapdragon based devices shipped between October and December 2014 alone, and more than 830 designs in development, Qualcomm is confident it will continue to drive the ecosystem in this new age of the internet.

What are the benefits that the Qualcomm snapdragon processors and their relevant technologies bring to the end user and to the OEMs?
To the end user, Snapdragon enables a superior, connected mobile experience with smooth high resolution video streaming, capture and playback, sharp digital image capture and editing, stunning 3D gaming and high fidelity audio and music wherever they are. The network connections are incredibly strong, in part due to Qualcomm's leadership in modem technology. Beyond connectivity and advanced multimedia features, Snapdragon allows users increased access with greater security and privacy, and more convenient authentication with Qualcomm® Security Solutions, Qualcomm® Snapdragon Studio Access TM content protection, Qualcomm® SafeSwitch TM theft prevention and Qualcomm® Snapdragon Sense TM ID 3D fingerprint technology.

For OEMs, Snapdragon offers them superior performance, feature sets and power efficiency – all in a tightly integrated SoC solution. Thanks to our tiered structure of Snapdragon processors, OEMs can deliver valuable, highly capable products at every price point, while maintaining compatibility across these tiers. Our expanding coverage of vertical IoE sectors (for instance auto and healthcare sectors) also allows our partners to forge new partnerships with other OEMs, exploring new product categories and continue their innovations in device development.

What are the opportunities available for local OEMs in the region, especially when competition is so fierce with other local players as well as international brands?
I think one of the most important factors for local brands in their quest for success is to market their mobile devices "beyond voice + data". From Qualcomm's perspective, we see the importance of the smartphone as a platform to deliver an experience that combines content and services that are relevant to the local consumer. That platform has to also deliver those services in style, at long battery life and an affordable value. A lot of players that we work with in the region – local and international – share these core beliefs and I believe this explains their ability to gain consumer mindshare.

Another interesting trend that I see among successful local brands is their ability to differentiate themselves by injecting a bit of "Silicon Valley DNA". Simply, some of these local brands are bridging between technology, design and advanced innovation – prevalent among international, higher-end flagship devices – while cognizant of price sensitivities in emerging markets. I believe striking this delicate balance, while working with Qualcomm technologies, is a recipe for long term success. TR



Managing off-grid stations with cleaner fuel cells

Operators often find diesel generators for off-grid base stations expensive to maintain, have high carbon emissions and are inefficient. Michael Kutschenreuter, general manager of Heliocentris, tells Telecom Review Asia Pacific that the German company's fuel cells and remote management system are the answer.

Heliocentris provides power solutions for base stations. But is it just for emerging markets?

I would call it energy hybrid solutions; basically, you can use the technology anywhere but especially where you have off-grid base stations, since most of the off-grid base stations are based in emerging markets or in countries where the infrastructure is not developed to a maximum extent. Middle East, Africa and Asia Pacific are our focus areas.

What are the countries you have operated in Asia Pacific?

In Indonesia, and we recently got a huge contract in Myanmar. We are developing businesses in Philippines and other countries. In the Middle East, it is UAE, Morocco and Pakistan where we are very active.

Why is an energy hybrid solution valuable for the UAE markets?

The same as it is for countries that have off-grid base stations. The UAE is very developed in terms of power grids. However, there are a lot of regions which are not yet connected to the grid. So, a lot of operators in the UAE have a lot of off-grid base stations. Both du and Etisalat each have between 400 to 600 off-grid base stations. One of the reasons for that is the development of the networks 3G and 4G, and it moves forward so fast that they do not have time to bring the grids to the base stations, so they just install generators in order to have the stations up and running and providing the service to the customers.

Now, all off-grid base stations are running on diesel generators, which are running 24 hours. This is the most inefficient way to run base stations. They run with an efficiency of 12 to 15 percent, not more. This is because the generators are always oversized to cover peak time loads. And this is where we come in. We install energy management systems and deep cycle batteries, which can be loaded and unloaded many times — between 1,200 to 1,500. With this, we cut down the running time of generators, cutting

down fuel usage by more than 50 percent.

At the same time, generators are running at a higher efficiency because while they are charging the batteries, they are also providing power for the base station. So the efficiency of the generators goes to the maximum, which is 30 per cent, and the running time is cut down by below 10 hours. So you save on fuel, which is 50 percent (of the running cost) and also extends the life of the generator and cuts the cycles of maintenance. It saves the operator about 65 to 70 percent.

Is this solution all hardware-based or is there software involved?
The heart of our solution is hardware, but without the right software it couldn't run efficiently. The core of our business is RMS or Remote Motion System, which provides a lot of information to the operator and helps in optimizing base stations, such as the air conditioning system. Usually, the ACs at the stations are kept at 18 to 20 degrees Celsius. But telecom equipment can tolerate much high temperatures of about 35 degrees Celsius or more.

Our system manages the AC system in its optimized temperature, and we also provide what is called a free cooling system, which means you can switch off the AC by providing ventilation and bringing cooler air into the shelter with a fan. Even here in the Emirates, it is possible to use the free-cooling system for six months. One of our core customers in the UAE, du, was awarded in the UK for implementing the free-cooling system.

How does the RMS or the remote management system work?
We control the sites with this smart software, which means we control the batteries and generators remotely. The batteries are the most expensive investments apart from the generators. We manage and control the right charging and health of the batteries. If the start-up battery is not switching on, we get an alarm and we can go to the site and fix it. There are a lot of options for operators as to how to manage and maintain the sites.

What is the charging cycle?
The cycle starts with the generator charging the batteries. RMS allows the generator to switch off when the batteries are charged and the power to be delivered from the battery as and when needed based on peak time. Till now, operators were using diesel generators in peak capacity for 24 hours.

This charging makes one cycle per day or maximum of two cycles per day. So if the generator is running only 10 hours or less in a day, it is making one charging cycle. Batteries can run 1,200 to 1,500 cycles, which mean they will last for three years.

Do you have ground staff for maintenance and security?
We provide 24 hour maintenance for customers. du has had a maintenance contract with us for over five years. We have a team of 10 people in the UAE who are providing software maintenance or what we call level 3 support. So if there is a substantial mistake, there is no need to go to Germany.

What are Heliocentris' future plans?
What we are talking about now is just a hybrid solution. It is not a clean power solution, but only cuts down fuel consumption tremendously. We still need to use generators and we also have CO2 emissions. So, the next step is to go into completely green energy solutions without generators. That is something we started with du as well.

We extend the sites which we are running into fuel-solar sites by installing solar panels. We can also extend the sites using wind energy and hydrogen fuel cell technology. The fuel cell business was actually one of the core elements of Heliocentris. We recently acquired one of the biggest fuel cell companies in Europe called Future, to be able to offer a full scale of green solutions. If a customer wants completely green energy, we can offer that. We got the first contract in Germany with the security industry, a TETRA project.

How safe are hydrogen fuel cells?
It is as safe as generators or other technology. It is rather a problem of infrastructure than of risk. You cannot bring it to a country where you do not have the infrastructure to provide hydrogen to the sites.

However, the next step is to provide fuel cell technology by producing hydrogen onsite by splitting water into its elements and storing the hydrogen onsite. We are not providing that technology but that is our vision.

How much do you invest in R&D?
Maybe less than what you might expect: in the low two digit percentage. While in innovation-based industry, the spending is much higher, we do it much more efficiently with stringent processes in place and having the right people.

Where is the biggest demand for this technology?
Places with more off-grid stations and higher fuel prices need this kind of solution. Pakistan has six mobile operators and thousands of off-grid base stations and bad grid base stations, which mean the grids are switched off for more than 16 to 18 hours a day. There are a lot of tenders where we participated and we are hoping to get a big piece of the cake.

Myanmar, which is one of the few greenfield countries for telecommunication solutions, is an important market for us. Telenor has chosen our solution as well as two operators in Myanmar. We have a huge rollout for one of the operators in Myanmar. We started in 2014 and we over-achieved the targets set by our customer. Middle East, North Africa, Algeria, Morocco also have many off-grid base stations so business opportunities are huge.

Unfortunately, the lead time with our customers are very long. Sometimes the lead from first talks up to the floating of the tender is one-and-a-half to two years and the decision-making time after the tender takes three to six months. We have to be very patient, but it's ok if at the end of the day you get the contract. Egypt is a big market and the whole sub-Sahara Africa is a huge market as well. TR

Telcos' drive in the media world

The telecom and media space is going through significant changes as the way we consume media evolves. New players and new business models are emerging in which telcos have a big role to play, rising to bigger growth opportunities.

Nowadays, media consumption, in particular audiovisual content, is changing dramatically with a strong increase in the number of digital devices such as smartphones and tablets which are used frequently to watch videos. Since 2010 reaching 2014, the average time spent on major media using smartphones and tablets has grown from 12 minutes per day per person to almost two hours, showing a significant appetite for digital devices by the younger generation.

Even the video traffic carried on telecom networks across the world has been growing rapidly; OTT video is driving massive traffic growth. Video usage already represents more than half of the total traffic carried over the internet globally.

In all parts of the media delivery value chain, a number of new players have been emerging; their scale is already bigger than that of traditional players, even when compared to large telecom operators. These new players, which are leveraging new digital and online technologies, include internet giants such as, Google (with YouTube), Amazon, Apple and Netflix.

These global internet leaders are the most successful players in terms of viewership. Netflix, for instance, is growing quickly on a global scale; it is present in 53 countries, with an addressable market of 1.3 billion people and it's accompanying its rise with large content investment. YouTube (owned by Google), however, is looking beyond its free model; Apple, having further ambitions in streaming and Amazon, has recently launched its prime instant video service proposing S-VoD services.

Moreover, in Europe, a large number of video-on-demand (VoD) platforms have emerged.

YouTube, for example, distributes content with an advertisement model, its revenues come from advertising and it is looking at options to introduce a paid revenue stream. It's worth mentioning that YouTube accounted for almost 20 percent of the US online video advertising market in 2013. Furthermore, Google recently announced its launch of a MVNO in the US, and could potentially bundle the mobile service with access to specific YouTube paid content at preferred rates.

Yet, with all these increasing demands, there shows to be some growing strains on network. The growth in online video is resulting in a massive increase in data traffic carried over the internet, and hence, over telcos' networks. Ensuring that the quality of the viewing experience remains up to standards requires players to continuously upgrade their equipment, in addition to investing in key areas: the core networks, content delivery servers and having an interconnection between different players. This investment requires a financial contribution by the content providers such as Google or Netflix in order to help the local-access operators (telcos, cable operators).

Additionally, telecom networks sometimes show their technical limits on video distribution. Telecoms data networks, forming the basis of internet networks, had been designed to deliver traffic on a best-effort basis. However, usage has evolved from a data transfer platform for applications such as email, web browsing and file transfer to a media delivery platform. This implies growing strain on networks and, hence, the need to increase the capacity and quality of networks. Already a number of large events have led to network failures, illustrating the strain on telecom networks generated by large, simultaneous video streaming demand.

In spite of this, telcos are playing a major innovative role. With the advent of broadband, most telecom operators have moved beyond the provision of telephony and internet access. In fixed line, their core business is now to provide triple-play services, including TV. Telcos have actively participated in a number of innovations regarding the delivery of audio-visual content: rolling out high speed data networks (xDSL, Fiber, 4G), which enable the transport of video files and video streaming, delivering managed IPTV services and video distribution platforms, developing triple-play services, including boxes and their user interfaces, building VoD platforms and pay-TV bouquets and in some cases, acquiring or producing content. Telcos are, therefore, in direct competition with cable operators, as well as satellite-based pay-TV providers.

As for the network and technology related assets, the key monetization opportunities for telecom operators include their ability to: provide broadcast-grade networks – including building the infrastructure and constantly optimizing their networks and software defined networks (SDNs) which can help enable a unified user experience throughout different types of devices, influencing the quality of the customer experience.

Moreover, there are a number of strategic opportunities for all telecom operators with regard to their relationships with media and OTTs. They can monetize data traffic; content consumption, particularly video content, is an extraordinary traffic generator. Telecom operators are in a position to extract value out of this traffic growth and they can monetize the network quality, especially with large global OTTs which are in demand for quality delivery of their content, hence, of quality networks.

For telcos, developing their own role in content or pay-TV services is a challenging proposition. The investment in content needs to be amortized on a sufficient scale which is difficult because telecom operators can address only their subscriber bases with the service. Still, few of them have rolled out different types of strategies to try and capitalize on the growing online content distribution market.

On another note, with large international players such as Apple, Google, Amazon and Facebook, there will always be a factor of size and footprint, even if the telecom operator is strong in its country. Large OTTs will not need more than network services from the telecom operators, and this may reduce to only the local loop part in extreme cases. However, these players are dependent on the telecoms operators to provide high quality access for a premium user experience

As a conclusion, although the telco world is facing challenges, mobile revenues are getting progressively better. In mobile, the impact from lower mobile termination rates on the service revenue trend reduced drastically and the underlying trend also improved throughout 2014, from -6 percent in Q4 2013 to -3 percent in Q4 2014.

There's an optimistic view on the mobile revenue turnaround and long-term growth potential. Mobile pricing is evolving towards all-inclusive bundles with unlimited voice and SMS, but the question remains: Will operators be able to monetize the increase in data usage per customer through higher ARPU, or will they include progressively larger data allowances in their current price points as they have been doing for years? It is evident that the telecom world is progressively shifting towards higher services and standards. Let's see what shall be next. TR

Beyond connections: Huawei's growth, anniversary and new president

Huawei recently announced the appointment of Charles Yang as president, Telecom Review sat down with him to discuss his new role and things to come for Huawei.

Holding over 16 years of experience in the telecom industry, Yang plays a key role in many of Huawei's milestone global projects. In this time, he held a number of senior positions in the company, most notably as president of Huawei's STC Group account and CEO for Huawei in Shandong, Neimeng and Liaoning province in China.

Over the latest three years, Yang has been active in Saudi Arabia, supporting the development of the telecom industry in Saudi Arabia. His crowning achievements include constructing new strategic partnerships with operators, assisting operators to achieve the best customer experience, setting up a telecom laboratory and telecom training center for talent development, and deploying joint innovation center for cutting-edge technologies research in Saudi Arabia.

Which key strategic areas do you plan to focus on in your role as president?
My focus will be to collaborate with Huawei customers, employees and partners to further strengthen the success story of Huawei Middle East while building a better connected world - creating extensive value for Middle East society. As part of the commitment, we will have to deliver on a number of external and internal priorities.

Looking outwards, we believe that ICT has become the key enabler for a country's transition to a digital economy. We conducted a research study on the relations between connectivity, economy and society, which showed that if you increase ICT investment by 20 percent it can positively impact a country's GDP by one percent. For the Middle East region, we still need to do more to climb on this GCI ladder, and Huawei is committed to supporting this growth.

Beyond connections, we see the Internet of Things (IoT) as the next era for the ICT industry. It will bring immense opportunity to the whole industry. We are only at the beginning of the beginning. To really support this growth, cross sector collaboration - both in breadth and depth - is the need of the hour. Sectors including telecoms, healthcare, retail, energy and utilities, and so on will have to form alliances for better coordination and faster penetration of IoT to ultimately lead towards quick social development and industrial growth.

From an end user's perspective, we also need to understand that today's consumer is quite different from even 10 years ago. They want services in real-time without waiting. They want these services on demand. They desire to always stay online, never disconnected. Do-it-yourself is the new mentality, not passively accepting whatever you offer. They also want to share with friends and stay in social networks wherever they are. We summarize all these into a term "ROADS" (Real-time, On-demand, DIY, All-online, Social).

Aside from these industry priorities, Huawei must look internally and be prepared for these requirements. We

must first realize new value chains through the continued integration of Huawei's unique "Cloud-Pipe- Device" strategy. We will continue to optimize our internal processes to make the region a benchmark for Huawei overseas. Furthermore, we will maintain our focus on customer-centric innovation. Huawei already invests on average 10 percent of its annual revenue into research and development, and in the region we will see that come to life through joint innovation centers with our partners.

The Middle East is home to one of the world's fastest growing ICT sectors. In such a dynamic environment, what are the biggest challenges you expect to face?

In my view, there are two key challenges that need to be addressed. These are providing ubiquitous connectivity to the public and addressing the industry's spectrum gap.

When it comes to ubiquitous broadband, there are only a few countries in the region which have deployed national broadband infrastructure with the support of state investment. Most countries have not widely deployed national broadband because from a traditional telecom perspective, the investment is high, the investment return period is quite long, and fiber deployment can be logistically difficult. Nonetheless, the industry needs to collaborate together to continuously improve broadband penetration.

The spectrum gap is another significant challenge. The lack of spectrum and cost of spectrum are significant short-term and long-term challenges which restrict the business development of operators and IoT development. In order to bridge the spectrum gap, we need the whole industry to understand spectrum needs and accelerate spectrum harmonization and release processes at a reasonable rate.

Do you expect Huawei will need to make any changes in its relationship with operators in the future as they undergo their own transitions in the coming years?

Yes, I do. In the past several years, the boundaries between telecommunications and IT have blurred. Cross-sector competition is a fact that operators have to face. OTT services are increasingly prevalent, and that has a huge impact on operator's core business. We are seeing some operators transforming to provide more innovative services in the region and also operate with more agility. This will transform operators to the next stage - a full ICT service provider.

For our part, we need to provide consultancy for the transformation. We have consultancy teams in the region which will help operators to transform on three fronts.

- More digital services: We already have a hosting center in the region which brings the world's best content and applications to the region for our customers.
- Agile operations: Our telco OS systems will help to transform today's BSS/ CRM systems to meet next generation requirements, serving the demands of a "ROADS" vision.
- Network transformation: Using SDN/ NFV is the trend for infrastructure, in which Huawei is leading in the industry. This will guarantee our support to operators.

There will of course be challenges, but I am optimistic about this transformation.

Huawei has grown rapidly in the past couple of years, globally as well as in the Middle East. Do you think the company will be able to sustain this pace and why?

Huawei's unparalleled growth comes from its unique Cloud-Pipe-Device strategy and customer-centric innovation. Over the past three years, Huawei Middle East's CAGR has been above 20 percent. In the next three to five years, we anticipate sustaining that growth.

With our partners we deployed the first 3G networks in 2003, the first 4G networks in 2011, and will deploy the first 5G networks in 2018. With this spirit, I believe we will grow together with our customers.

Can we talk a bit more about what is happening in the Middle East specifically? How are things here different from other regions?

The Middle East region is a strategic hub between the worlds of trade, finance and energy. People from around the world are here pursuing their dreams, especially in areas like the GCC where more than 40 percent of the population is expats. This is quite unique, and this will bring different requirement to ICT services. Customers here also consume more content on average than what we see in other markets. For example, KSA has the highest per capita consumption of YouTube views in the world. As I said, there are great dreams taking the region forward - like Smart Dubai - which are in themselves quite unique.

What do you hope to see happen in the region in the next 15 years?

It is always difficult to predict the future. At one time people said that 640k of memory should be enough for everyone! However, as a professional working in the ICT industry for more than 15 years, there are a number of exciting developments on the horizon. Over the next 15 years, I believe that we will see at least 20 smart cities coming up in the GCC to support the aspirations of the public to live more comfortably and efficiently. In such smart cities you will see innovations like self-piloting automobiles and holographic telepresence adopted across many vertical industries. 5G technology will further be deployed as a mainstream technology to support applications and IoT scenarios requiring ultra-low latency and ultra-high bandwidth like 10GBPS. By 2025, we could also see the number of IoT devices installed, connected and autonomously managed reaching 100 billion globally.

This is the 15th year since Huawei entered the Middle East market. How do you plan to mark the occasion?

Huawei's 15 year anniversary in the Middle East is indeed a monumental occasion for our employees, our customers and our partners. We are thankful to all these people for making our journey to success a pleasant and rejuvenating experience. As a responsible corporate citizen, Huawei will continue to integrate deeply into Middle East society and be a significant contributor to the region's big vision of ICT enablement. We will also carry out a series of activities and campaigns spread throughout the year, including a major event slated for October held as a token of our appreciation to all our customers and partners for giving us an opportunity to serve them better.TR

Intelsat talks smart antennas and software defined satellites

When #Telecom Review Asia Pacific # interviewed Intelsat VP for Asia Pacific, Terry Bleakley, at CommunicAsia in June 2014 Intelsat's new generation EpicNG satellites were almost two years away from delivering services. This year the possibilities are crystallizing and he's looking further ahead to a future of software defined payloads.

The first of the EpicNG satellites, Intelsat 29, is now due for launch in Q1 of 2016, somewhat later than the Q4 of 2015 Intelsat had been hoping for in mid 2014. It will have coverage of North and South America and of a broad swathe of the North Atlantic Ocean. The second EpicNG satellite, IS33e, to be launched in the first half of 2016 will cover the whole of Europe, the Middle East, Africa and most of Asia. They will be followed by another four to be launched before the end of 2019.

"This is the first digital satellite payload," Bleakley says, but stresses that the technology itself is well proven. "It has been trialed with governments in the past."

The key feature of the digital satellite technology is that it enables bandwidth to be switched between transponders in small increments, without tying up a whole transponder. "There is no gateway, you can go up any beam and down on any beam and it is fully compatible," Bleakley says. "Once you go to a digital payload it becomes incredibly flexible."

Gains on the ground

But the real impact is on the ground: The higher throughput of EPIC means smaller antennas, which means lower cost, which means whole new applications that were previously cost-prohibitive open up.

These benefits are being amplified by radical new antenna technologies in which Intelsat is investing. These replace traditional dish antennas that have to be manually oriented (which can require a skilled installer) with new flat antennas made of smart materials that automatically lock on to the satellite.

This technology comes from a company called Kymeta – majority owned and chaired by Bill Gates. Its flat antennas are made from 'metamaterial' elements that scatter RF energy when activated. Software activates a pattern of these elements to generate a beam. Changing the pattern of activated elements changes the beam direction.

The company claims its products can cost about 10 percent of the equivalent dishes and less that one percent the cost of electronic phased array antennas. "What it means is that you get passive very low cost antenna that can look at multiple satellites," Bleakley says.

Intel is also putting money into Phasor Solutions, a developer of phase array antennas. "We are getting them to do a low form factor antenna for the business jet market which we believe is underserved with broadband access at present," Bleakley says.

A re-invigorated industry

Overall, Bleakley says the satellite industry has taken on a new lease of life in recent

years: what has been a staid and mature industry is attracting the attention of the entrepreneurial community and Silicon Valley startups.

"It's a time of change for the industry. For the first time at Washington 2015 [The Satellite Washington 2015 Conference and Expo] you saw young people there: people without ties, people without grey hair. It was like Silicon Valley meets the old folk," Bleakley says.

Perhaps the most exciting possibility opening up for the satellite industry is the idea of software defined payloads.

When a company like Intelsat contemplates a new satellite today the first stage is a complex process of assessing where bandwidth will be needed and how much. The outcome of this process is translated into the design of the satellite payload, often with a highly complex mix of transponders and antennas to create spot and wider area beams with a range of different powers. The entire process is costly and takes several years, which means returns on investment are a long time coming.

With a software defined payload, if the idea can be translated to commercial reality, each satellite is physically identical and the beam configuration is created by software.

"You can change the beam forming from the ground if your market changes," Bleakley says. "You can effectively change the satellite to meet market demands. It also means that the time to build a satellite will be much less. It takes about three years to build a satellite today. We believe that will come down to about a year.

"This way the satellite will be off-the-shelf. It will reduce time to market and increase the addressable market. Now we have to put up capital at the start and we get no return for three and half years. If we can cut that the one year, the business model will change."

Software-defined satellites

Bleakley says software defined is a technology for its next generation of satellites. Meanwhile, rival Eutelsat is claiming that its forthcoming satellites, the Eutelsat Quantum class, will be 'software defined'. However, like

the name for any new technology it tends be used in advance of reality, and it's not clear from Eutelsat's announcement, of December 2014, just how close to the Intelsat vision of a software defined satellite the Quantum will be.

Eutelsat says the new design will "represent a first in the commercial satellite industry by enabling the complete electronic synthesis of 'receive' and 'transmit' coverages in the Ku-band, including on-board jamming detection and mitigation."

It will "give customers access to premium capacity through footprint shaping and steering, power (Mbps) and frequency band pairing that they will be able to actively define [and] by adapting dynamically to all frequency bands in each ITU region, will also be the first generation of universal satellites able to serve any region of the world."

Software defined satellites were the focus of a panel session at the Satellite 2015 conference in March. *Milsat Magazine* put to panelists the question: "From your perspective, as members of the Hosted Payload Alliance, how are reconfigurable payloads changing the way you do business now and over the next five years?"

The replies (http://bit.ly/1KxQaNX) make interesting reading. However, none specifically confirmed that the innovations they revealed would appear in the next five years.

Intelsat's vice president, satellite operations and engineering, Jean-Luc Froeliger, summed up the benefits this way.

The future

"Future satellites should be flexible and reconfigurable in orbit to meet customer requirements for 1) a competitive cost per bit; 2) a service tailored to their needs; and 3) a service that can be rapidly implemented.

This flexibility could include:

- Frequency selection/change in orbit
- Adjustment in uplink and downlink power allocation over a given area on Earth in orbit
- A change in allocated bandwidth over a given coverage area in-orbit
- In-orbit connectivity between coverage areas with a digital payload
- Modification of the coverage area once the satellite is in-orbit with such tools as on board beam forming or active array antennas.

"If you carry these ideas to their full potential, you obtain what we call a 'software defined' satellite, ie a satellite that is basically identical on the ground and can be configured to the customer's needs once in-orbit. It is plausible to think of a concept where the satellite manufacturer would 'pre-build' these standard satellites ahead of the demand. At the request of a customer, they could be launched in record time and configured to meet the mission demand once in-orbit. This will lower the recurring cost of the satellites and reduce the time to market."

What's certain is that the innovations in electronics that have transformed our lives in last decade will impact the satellite industry, but much more slowly. A geostationary satellite has a life of about 15 years. That's about three times longer than commercial IT infrastructure, and six or seven times longer than the average smartphone. TR

AsiaSat gears up for Ultra HD by satellite

Ultra High Definition (Ultra HD) is a breakthrough in video technology for the broadcast industry. Captain Ip, communications systems engineer at AsiaSat, discusses delivery of Ultra HD content by satellite.

Ultra High Definition (Ultra HD — also known as 4K — delivers more than four times the resolution of Full HD TV with more vibrant colors and higher frame rates, providing much better viewing quality especially in sporting events and action movies. But it requires enormous bandwidth (over 10Gbps for uncompressed material), making its delivery over traditional infrastructures such as satellite, cable, over-the-air, challenging.

Delivering Ultra HD via satellite has become a hot topic in the community of broadcasters and industry partners. An indoor transmission of Ultra HD through a simulated satellite link was performed by NHK in May 2007. In that demonstration, an Ultra HD TV signal (7680 x 4320 at 60 fps) was compressed into a 250Mbps MPEG-2 stream and transmitted through a 300MHz carrier using a wideband modulator in the 21GHz band. This was the first demonstration on the technical feasibility of delivering Ultra HD TV signal through a satellite transmission model, albeit over a distance of only two meters.

Improvements in compression technology and in RF equipment enabled the first satellite broadcast of an Ultra HD channel (3840 x 2160) in 2013. The video was split into four sections and compressed individually. The MPEG-4 compression standard was used, with a data rate of around 80-100Mbps and four HD professional IRDs were required at the receiving end, along with a HD to UHD combiner to reconstruct the Ultra HD video.

This approach has since been used in many experimental and trial Ultra HD transmissions but has not been commercialized due to its high cost and its inefficient use of equipment. The cost barrier was lowered with the launch of High Efficiency Video Coding (HEVC) video compression, which can fully support the Ultra HD resolution, instead of combining four MPEG-4 encoded HD videos.

HEVC debuted in 2013. Compared to H.264/MPEG-4 AVC, HEVC at least doubles the compression efficiency while maintaining the subjective quality of the video. It can also support the higher Ultra HD (8K) resolutions up to 8192×4320.

HEVC key to satellite Ultra HD

HEVC is still under development. The latest version was published in early 2015. This version supports format range extensions, scalable coding extensions, multi-view extensions and 3D-HEVC extensions. Further screen content coding (SCC) extensions are still under development stage and development is expected to complete in early 2016. HEVC will improve the compression capability for video containing rendered graphics, text, or animation as well as (or in place of) camera-captured video scenes.

By using HEVC, the bandwidth requirement of an Ultra HD channel can be reduced to around 20Mbps per channel, a mere quarter of the bandwidth required with MPEG-4.

Using HEVC in conjunction with the established satellite digital transmission technology DVB-S2, it will be feasible to broadcast 3 – 4 Ultra HD channels over a 36MHz C-band transponder. In addition, a limited selection of Ultra HD TV and Ultra HD set-top-boxes with an embedded HEVC decoder are gaining momentum in developed countries.

Many Ultra HD file transcoders (supporting up to 2160p, 60fps) are available in the market but most of them are software-based non-real time, off-line encoders. Professional grade servers with tens of processers are required to minimize the prolonged processing time. In addition to off-line transcoders, more and more vendors, e.g. ATEME, Ericsson, Harmonic, NEC, Rohde & Schwarz, are starting to provide real-time Ultra HD broadcast solutions.

Ultra HD satellite set top boxes are another key element required to realize 4K video distribution through satellites. In Europe, a handful of models of Ultra HD TV STBs with built-in HEVC full frame rate decoders and satellite tuners are available in the consumer market. However, most commercial HEVC satellite STBs support only half frame rate video.

Until at least 60fps commercial STBs has become more common the full quality of Ultra HD cannot be realized. Fortunately, semiconductor vendors such as Broadcom and ViXS are starting to offer a range of HEVC products including entry-level satellite system-on-a-chip STBs which support 60fps. It is expected the penetration of Ultra HD into homes will ramp up when Ultra HD STBs featuring HEVC and 60fps becomes affordable to the consumer market.

What is AsiaSat doing on Ultra HD?

AsiaSat has made great efforts since 2014 to promote knowledge and awareness of Ultra HD in Asia. In January 2014, AsiaSat cooperated with Hong Kong Cyberport Management Company to demo a live Ultra HD broadcast through AsiaSat 3S. AsiaSat satellites have also supported Ultra HD broadcasting of international sporting events. For example, the first-ever live telecast of the 2014 FIFA World Cup matches held on 28 June (Round of 16), 4 July (Quarter-Final) and the Final on 13 July 2014 in Brazil.

Furthermore, AsiaSat believes an in-depth knowledge on the actual performance of equipment and thorough understanding of different compression technologies will enable our customers to identify the best possible solution and the support they need.

To this end, AsiaSat established an Ultra HD research laboratory in 2014 and joined hands with various partners to promote and accelerate the reception of Ultra HD content in Asia.

The laboratory is tasked with evaluating end-to-end Ultra HD solutions including playout, compression technologies, compatibility of satellite transmission and reception, and different types of content through on-air satellite transmissions. A series of tests were successfully conducted using different HEVC encoding equipment, including off-line and real time solutions, in order to determine the optimum configuration and to understand the limitations of the existing systems.

These tests enabled AsiaSat to optimize the data rate required and understand how to provide the most effective solution to our customers. AsiaSat also evaluated the user interfaces of different Ultra HD equipment such as file transcoder, playout, etc to assess user friendliness of the equipment. AsiaSat will continue to test and evaluate new Ultra HD equipment in its research laboratory as they develop and will provide updates to the market.

To promote the reception of Ultra HD and to allow broadcasters to validate the economic feasibility of satellite-delivered Ultra HD broadcasting in Asia, AsiaSat is setting up a Free-to-Air Ultra HD platform based on DVB-S2 and HEVC solutions on AsiaSat 4 at 122°E. It will be able to deliver 2-5 full time Ultra HD channels, available for reception by terrestrial TV stations, pay TV platforms and home viewers across Asia using C-band antennas as small as 2.4m to 3m in size. TR

By Doug Farndale, Vice President, APAC Silver Peak

SD-WAN: threat or opportunity for telcos?

Disrupt or be disrupted. That was a recent message from an outgoing CEO of an international tech giant. The message is short but clear: the business climate is changing and you can either change with it, or become irrelevant.

That has certainly been the case in networking and telecommunications, where the explosion of cloud services and mounting frustration surrounding the high cost and inflexibility of multiprotocol label switching (MPLS) networks is forcing enterprises to rethink their enterprise wide area network (WAN) strategy. Companies are now looking to the Internet to augment or replace their current WAN connections, which has opened the door for faster WAN provisioning and the ability to use multiple WAN paths at the same time. This WAN transformation is being referred to as the software-defined WAN, or SD-WAN.

Why is SD-WAN so disruptive? As an overlay technology, it enables customers to rapidly and non-disruptively augment or replace their MPLS networks with any form of Internet connectivity. It provides visibility into all applications, and the capability to centrally-control all WAN traffic. It ensures end users are satisfied with consistent and enhanced application performance. Finally, it can dramatically lower connectivity, equipment and network administration costs by up to 90 percent.

SD-WAN: telco friend, or telco foe?

At first glance, SD-WAN could easily be viewed as a competitive threat. After all, the objective of most implementations of an SD-WAN by enterprises is to offset the cost, rigidity and lack of control typically associated with MPLS. And, for most service providers, MPLS is a huge source of revenue. However, if you look a bit closer, you could argue that SD-WAN could very well become the telco's best friend. First, you start with reality. The rise of SD-WAN is already happening among global enterprises that want to leverage broadband Internet to augment or replace their existing MPLS connectivity. Companies like memory products leader Kingston Technology and global manufacturer Interroll have already started to "broadband their WAN" with SD-WAN technology, and are now benefitting from a lower cost and more agile network for their operations in Asia and across the globe.

With most telcos continually looking to differentiate their business and provide value to their customer base, SD-WAN can be their new, differentiated solution, delivering SD-WAN as a managed solution or as part of a network functions virtualization (NFV) offering.

SD-WAN technology gives the telco a flexible software platform for delivering enterprise customers with a variety of virtualized network functions. By leveraging SD-WAN technology, telcos can offer these differentiated services to customers, maximize operational efficiencies, and introduce new revenue-generating services faster and easier than ever before. It can also set them apart from service providers who resist the SD-WAN trend or are trying to derail it.

SD-WAN enables new offerings

If companies are already moving to an SD-WAN or possibly a hybrid WAN where they augment MPLS with broadband, which provider do you think has the advantage? The one who can deliver a solution that fits a need, or the one clinging to the old way of doing things and resisting the evolution of the market?

By adding SD-WAN to the mix, a telco can offer a customized WAN service portfolio that includes managed WAN optimization, virtual private networking (VPN), compression/de-duplication, and path conditioning services. The right SD-WAN solution can provide automated licensing to help get new and innovative services to market quickly, which in turn means a faster time to revenue. Other benefits include per-instance tracking and metering of end-user customer usage to allow for easy and accurate billing.

The bottom line is that the rapid adoption of cloud technologies and software-as-a-service (SaaS) applications are leading enterprise customers to use network resources in new ways. For telcos looking to augment their existing business with new and innovative managed services, or NFV offerings, SD-WAN is a logical choice, not something to fear and/or resist. TR

SK Telecom team with Samsung & LG for smart homes

SK Telecom has announced plans to cooperate with Samsung Electronics and LG Electronics to interconnect its smart home platform with those of Samsung and LG. It says the move will enable users of the SK Telecom Smart Home to control and monitor Samsung and LG's electronic products equipped with their own smart home capabilities via SK Telecom's Smart Home App.

In line with an MoU signed in April, SK Telecom and Samsung Electronics have agreed to realize seamless interworking between their respective smart home platforms within this year. As a result, consumer electronic products - including refrigerators, washing machines, air-conditioners, air-purifiers, robot vacuum cleaners and ovens - equipped with Samsung Electronics' smart home capability can be controlled via SK Telecom's Smart Home app.

SK Telecom signed a similar MoU with LG Electronics at IFA 2015 in Berlin in early September. The two companies will work together to realize seamless interworking between their respective smart home platforms within this year. LG's smart home-capable consumer electronic products, including refrigerators, washing machines, dryers, air-conditioners, speakers, robot vacuum cleaners and ovens, will be controlled via SK Telecom's Smart Home app.

BT Global & Rajant team up to IoT enable remote mine sites

BT Global Services has struck an agreement with US based Rajant Corporation under which BT will provide global connectivity to installations of Rajant's kinetic wireless mesh technology in factories, mine sites etc. With the Rajant technology all network components – terminals and base stations – are mobile. According to Rajant this provides very reliable communications in areas of challenging topology.

The main application is in remote locations beyond the reach of cellular networks. CEO Bob Shena said the technology was being used to provide continuous monitoring of vehicles at remote mine sites. "They all have hundreds of condition monitoring points but traditionally those could only be accessed when a vehicle was in a repair bay. Once you put in a kinetic mesh network all vehicles are connected to their monitoring systems 24 x 7."

TPC to develop IoT benchmarks

The latest entrant to the already crowded field of players in the IoT standards game is the Transaction Performance Processing Council (TPC), which has announced plans to develop a set of benchmarks for IoT hardware and software. The TPC has set up a new working group, chaired by Raghunath Nambiar, a distinguished engineer at Cisco, "tasked with developing industry standard benchmarks for both hardware and software platforms associated with the Internet of Things (IoT)."

The TPC is a non-profit corporation founded to define transaction processing and database benchmarks and to disseminate objective, verifiable TPC performance data to the industry. Benchmarks are its speciality and it has about a dozen active ones. It's not at all clear at this stage just what will emerge from the TPC's IoT benchmarking exercise, or when.

Wireless Broadband Alliance sets up connected city board

The Wireless Broadband Alliance (WBA), the industry association that champions the development of the converged wireless broadband ecosystem, has set up a connected city board to help deliver the vision of connected cities being pursued by a growing number of cities from around the world.

According to the WBA, the board, "provides an exclusive platform for city managers and CIOs to knowledge-share and create best practices with their counterparts in other cities and also determine the best way to leverage public-private partnerships."

The WBA said: "Building on the recent thought-leadership dialogue and roundtable discussions hosted by the WBA with a number of CIOs and senior officials from leading cities including Barcelona, London, New York, San Francisco, San Jose and Singapore, the board will continue to focus on development of the Connected City plans and blue prints, creation of public-private ecosystems and collaboration mechanisms for resource contributions."

Alcatel-Lucent boss under fire over huge reported bonuses

France's government and unions have called on Michel Coombes, head of telecoms equipment maker Alcatel-Lucent to renounce reported bonuses of some 14 million euros he could receive after the firm is swallowed up by its rival Nokia.

Coombes, who has headed the French-American company since 2013, is due to step down as part of a 15.6 billion euro deal to create the world's biggest supplier of mobile phone network equipment.

The *Journal du Dimanche* newspaper, citing official documents and current share values, said he could receive almost 14 million euros in bonuses over three years. "It is quite rightly causing controversy," said the spokesman for the Socialist French Government, Stephane Le Foll.

According to Le Foll the size of any such bonus "is always political at a time when we are emerging from what is a difficult crisis for a lot of French people. Alcatel-Lucent defended Combes, saying he "has multiplied by six times the value of the company and saved it from bankruptcy." Since his arrival, Combes has overseen a recovery plan that has tripled its share value, but led to the loss of 10,000 jobs.

BlackBerry buys Good Technology for $425 million

BlackBerry bought mobile security and enterprise mobile device management systems provider Good Technology for $425 million in a move to broaden its software sales. With its consumer smartphone sales sagging in recent years, BlackBerry turned to mobile security for governments and corporations, a market in which Good Technology also operates.

Good Technology of Sunnyvale, California serves more than 6,200 organizations including banks, aerospace and defense firms, as well as healthcare, manufacturing and retail firms. Its software secures Apple IOS, Android and Windows based devices. BlackBerry is the mobility partner of all G7 governments, 16 of the G20 governments, the world's top banks and law firms as well as healthcare, investment and oil and gas companies.

In a statement, Blackberry said: "Enhanced by Good, BlackBerry will expand its ability to offer a unified, secure mobility platform with applications for any mobile device on any operating system, supported with security that has been certified by governments around the world, embedded in every component of the mobility infrastructure."

Facebook rolls out M to take on Siri, Cortana

Facebook is testing an artificial intelligence-powered virtual assistance called 'M', inside its messaging app, Messenger, with a few hundred people in the San Francisco Bay Area.

According to Facebook, M is powered by artificial intelligence but is "being trained and supervised" by real people. Unlike other digital PAs such as Apple's Siri and Microsoft's Cortana, M isn't built into an OS, but built inside Facebook/s messaging app, Messenger. Unlike its rivals, it does not offer predictive search results.

David Marcus, Facebook's head of messaging products, said in a Facebook post, "Unlike other AI-based services in the market, M can actually complete tasks on your behalf. It can purchase items, get gifts delivered to your loved ones, book restaurants, travel arrangements, appointments and way more."

According to Wired, the few selected users can access M by tapping the icon within Messenger and asking questions. They will be answered by AI or possibly a real person – users won't know which. It could also be both, with a human stepping in to complete more complicated tasks where AI might fail.

New head for Ericsson India

Ericsson has named Paolo Colella as new head of region India. He will also take a seat on Ericsson's Global leadership team, reporting to the chairman of region India and senior vice president Asia-Pacific, Mats H Olsson. Colella succeeds Chris Houghton who will assume the role of head of region North East Asia. Colella was previously responsible for Ericsson's Consulting & Systems Integration business globally and before that was executive vice president sales and marketing at Ericsson UK. He joined Ericsson in 2001 as vice president of global services at Ericsson Italy.

Bridge Alliance gets new CEO

Bridge Alliance, a partnership of 36 mobile operators across Asia, Africa and the Middle East, has named Ms Eileen Tan as its new CEO. She replaces Alessandro Adriani who has held the post for the past three years during which time membership of the alliance grew from 11 to 35 operators. Announcing her appointment, Bridge Alliance said: "With the increasing demand for M2M, enterprise mobility and cost effective roaming services, she will play a key role in developing innovative solutions to meet the needs of customers in the alliance footprint." Tan has more than 15 years of experience in the telecommunications industry and was most recently director in business planning, strategy and alliance partnerships, International Group at Singtel.

Bjorn Engelhardt joins Riverbed Technology

Riverbed Technology has appointed Bjorn Engelhardt as senior vice president of Riverbed Asia Pacific and Japan. He will be based in Riverbed's APJ headquarters in Singapore and will be responsible for leading the Riverbed team across its six APJ markets — Australia & New Zealand, Greater China, India, Japan and Korea.

He brings to Riverbed 20 years of business, IT and consultancy experience in the Asia Pacific and Japan region, including security, data center and virtualization, network and application infrastructure, software-as-a-service (SaaS) and emerging technologies. He joins Riverbed from Actifio, where he served as vice president & general manager Asia Pacific & Japan.

MuleSoft names William Fu regional VP Asia

API developer MuleSoft has appointed William Fu as regional vice president of Asia to lead sales operations for the Southeast Asia and Greater China region. He will be based in Singapore and will report to Will Bosma, vice president of Asia Pacific. MuleSoft said it had experienced growth in Asia Pacific, expanding its enterprise customer base in the region from a just a dozen to more than 130 customers in the past two years. It now has more than 60 regional partners.

Recent additions include Frensworkz, Hexaware Technologies Limited, NTT Data China and Pacter. Customers in the region include China Securities Company, Envision Energy, Guosen Securities, Packet One Networks, Red Flag Group, Siam Commercial Bank, Sumitomo, Tat Chuan Acoustic and Thai Military Bank.

Symantec names new Pacific MD

Symantec has named Ian McAdam as managing director for the Pacific region, encompassing Australia and New Zealand. He will be based in Sydney and will report to to Sanjay Rohatgi, senior vice president sales, Asia Pacific and Japan. McAdam has held several senior management roles with various organizations. He joins Symantec from Oracle where he was most recently the vice president of applications for Australia and New Zealand. Prior to joining Oracle he was the vice president of eServGlobal Limited.

Verifone gets new Apac president and new China VP

Online payments company, Verifone, has named Steve Aliferis president of Asia Pacific and Arthur Jiang as senior vice president and general manager for China, which was recently established as a separate region. Aliferis was most recently head of business banking, product and Australian Financial Services at Westpac. He will be based in Verifone's Singapore office.
Jiang is the former CEO and a former board member of PAX Technologies, and has also held senior leadership roles with Gemalto and Hi Sun Technologies. Most recently he was the vice general manager of Aisino Corporation's payments business, where he led initiatives to drive merchant acquiring and services in China.TR

December 2015

Telecom Review Summit 'Its all about Networking' 2015

Following the great success of the 2014 edition, Telecom Review Summit will gather global leaders and experts of the telecom and ICT industry, for the sixth consecutive year, in a friendly environment to discuss the latest market trends.

Date: **13 December 2015**
Place: **Intercontinental Hotel, Dubai Festival City, Dubai, UAE**

October 2015

LTE Asia

Celebrating its ninth year, LTE Asia is returning to Singapore with an extended conference program and new speakers from the whole ecosystem to give greater depth and breadth of discussion around the region's most pertinent mobile broadband developments.

Date: **6-8 October 2015**
Place: **Suntec, Singapore**
http://asia.lteconference.com

November 2015

COMMUNICAST MYANMAR

ommuniCast 2015 will combine a professional exhibition with additional events, which will include the second Myanmar Satellite Forum. A selection of sponsorship opportunities will be offered for the show, for the Satellite Forum and for a combination of the two. The show, that brings together professional visitors and companies, will set a new benchmark for projecting the forward development of the country's ICT industry.

Date: 17-19 November 2015
Place: Myanma Event Park(MEP), Yangon

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