TELECOM Review
ASIA PACIFIC
THE TELECOM INDUSTRY'S MEDIA PLATFORM

telecomreviewasia.com

The 4K revolution in Asia-Pacific

White space: a gold mine of untapped spectrum

Flying high, and surfing the net

Bringing the Internet of Things to the Marketplace


REDKNEE
Looking Beyond
BRANDIA CENTRAL
LOOKING
BEYOND
At Redknee, we look to a world where there are no limits to how service providers launch and support new markets, new offerings and new ideas. The world is becoming more interconnected - and Redknee is at the forefront of this innovation, with our focus on real-time monetization software for communications, smart utilities, railways, and beyond. Our real-time converged billing, charging, policy management and customer care solutions enable service providers to increase profitability and support any new product or business model.
Contact us today to learn more, and start Looking Beyond.
www.redknee.com

Editor in Chief
Toni Eid
toni.eid@tracemedia.info

Senior Editorial Manager
Stuart Corner
stuart@tracemedia.info
PO Box 40
Enmore NSW 2042
Sydney, Australia
Tel +61 419 492 190

Chief Reporter
Genesis Maniquez
Manila, Philippines
genesis@tracemedia.info
Tel +63 91 7478 8170
+63 92 0468 9763

Editorial Team
Lea Abboud (Lebanon), Shelley Bayak (Canada), Nancy Charbel (Lebanon), Stuart Corner (Australia), Toni Eid (UAE), Jinan Elzeer (UAE), Faical Faqihi (Morocco), Genesis Maniquez (Philippines), Marcelle Najem (Lebanon), Lacinan Ouattara (Ivory Coast), Jeff Seal (USA), Shayan Shakeel (UAE)

Advertising Enquiries
Mohammed Ershad
ershad@tracemedia.info

Graphic Designer
Mary Eid

Published by

TRACE MEDIA Ltd.

Trace Media
Dubai Media City, Bldg 7, 3rd Flr
Office 341
PO Box 502498
Dubai, UAE
Tel. +971 4 4474890
Fax +971 4 4474889
www.tracemedia.info

Printing
Arab Printing Press

China's domestic smartphone vendors going global

In late July market research firm IDC released its Worldwide Quarterly Mobile Phone Tracker for Q2 of 2014. The top five vendors - by Q2 shipment numbers - were Samsung, Apple, Huawei, Lenovo and LG. Program director Ryan Reith doesn't expect that ranking to remain.

"Right now we have more than a dozen vendors that are capable of landing in the top five next quarter," he says. "A handful of these companies are currently operating in a single country, but no one should mistake that for complacency – they all recognise the opportunity that lies outside their home turf."

He didn't name names but to anyone with more than a passing interest in the global smartphone market, no prizes for guessing who the lead contender is: China's Xiaomi.

Shortly after IDC released its figures rival firm Canalys released its data on China's smartphone market in Q2, saying: "In little over a year, Xiaomi has risen from being a niche player to become the leading smartphone vendor in the world's largest market, overtaking Samsung in volume terms in Q2. Xiaomi took a 14 percent share in China, on the back of 240 percent year-on-year growth."

Canalys also flagged Xiaomi's global ambitions. Analyst Jessica Kwee said: "Ninety seven percent of Xiaomi's Q2 shipments were into mainland China. It is now looking to expand into other markets, with Indonesia, Mexico, Russia, Thailand and Turkey in its sights for the second half of the year. Its aggressive pricing model will certainly resonate beyond China, but the challenge it faces in scaling its model for success on a global stage should not be underestimated. ... That said, Xiaomi does have the potential to be a disruptive force beyond China and international vendors should take note."

They certainly should. Depending on whose figures are accurate - IDC's or Canalys' - Xiaomi could already be the number four global player. Canalys gave the company 14 percent of a 108.5m Q2 market in China. That plus the three percent it estimates Xiaomi sells outside China gives Xiaomi a Q2 total of 16.24m units. That puts is ahead of IDC's number four vendor, Lenovo (15.m) and, it if maintains its stellar growth rate, a strong contender to oust Huawei (20.3m) from the number three spot.

And Xiaomi is not alone. As IDC senior research manager, Melissa Chua, observes: "As the death of the feature phone approaches more rapidly than before, it is the Chinese vendors that are ready to usher emerging market consumers into smartphones. The offer of smartphones at a much better value than the top global players but with a stronger build quality and larger scale than local competitors gives these vendors a precarious competitive advantage."

Expect major changes to the global smartphone market in the next two years.

Stuart Corner
Senior Editorial Manager
Telecom Review Asia Pacific

Qualcomm revenues and earning and shipments at all time high

For Q3 of fiscal 2014 Qualcomm has reported a record quarter, saying that revenues, earnings per share and chip shipments have all reached all-time highs.

The company reported revenues of $6.81 billion, up nine percent year-over-year and in excess of prior guidance. It shipped 225 million MSM chipsets, a 31 percent increase on the same period last year. Total reported device sales were worth $58.1 billion, up three percent year-over-year.

The company had $32.7 billion in cash, cash equivalents and marketable securities as of June 29, 2014. During the quarter it returned $2.06 billion to shareholders: $1.35 billion through repurchase of 17.0 million shares of common stock and $706 million in cash dividends

For the full year the company has reaffirmed guidance but with a narrowed range of $26.3 billion to $27.2 billion, representing six to nine percent growth year-over-year. Prior guidance was $26.0 billion to $27.5 billion.

For Q4 it is forecasting revenues of approximately $6.5 billion to $7.4 billion, flat to an increase of 14 percent year-over-year. It expects 3G/4G device shipments in calendar 2014 to be approximately 1.3 billion globally.

O3b launches four more satellites

O3b Networks - the a global satellite service provider building a satellite network for telecommunications operators, Internet service providers, enterprise and government customers in emerging markets - has launched four satellites from the Space Center in French Guiana.

They take the number of its satellites in orbit to eight, completing its initial constellation and enabling it to connect telcos, ISPs, enterprises and governments that serve three billion people that are unconnected or poorly connected to the Internet.

O3b says that once the current period of in-orbit testing is completed, the four new satellites will be fully integrated into the network. A further four satellites will be launched in early 2015, in order to meet growing market demand.

O3b says it already has customers in commercial service in the Cook Islands, Papua New Guinea, East Timor and the Democratic Republic of Congo and that more customers are testing and will go live on the service in the coming weeks.

It quotes Gerardo Angelo Carrilho, director of engineering and operations, Timor Telecom, saying: "Once we deployed O3b, all of a sudden the whole situation changed. I used to speak with our customers who were fairly critical of our service. They just came to me with huge smiles on their faces saying, 'What did you do? Timor Telecom's Internet is way better now?'"

Cisco warns on security issues

Cisco has released its 2014 Midyear Security Report warning that a focus on only high-profile vulnerabilities rather than on high-impact, common and stealthy threats puts organizations at greater risk.

"By proliferating attacks against low-profile legacy applications and infrastructure with known weaknesses, malicious actors are able to escape detection as security teams focus instead on boldface vulnerabilities, such as Heartbleed," Cisco said.

Cisco examined 16 large multinational organizations with combined revenues in excess of $300 billion.

It found that 'Man-in-the-Browser' attacks pose a risk for enterprises: nearly 94 percent of customer networks observed in 2014 were identified as having traffic going to websites that host malware and nearly 70 percent of networks were identified as issuing DNS queries for dynamic DNS domains.

Also nearly 44 percent of customer networks observed in 2014 were identified as issuing DNS requests for sites and domains with devices that provide encrypted channel services, used by malicious actors to cover their tracks by exfiltrating data using encrypted channels to avoid detection like VPN, SSH, SFTP, FTP, and FTPS.

John N Stewart, Cisco senior vice president and chief security officer, said: "Analyzing and understanding weaknesses within the security chain rests largely upon the ability of individual organizations, and industry, to create awareness about cyber risk at the most senior levels, including boards making cybersecurity a business process, not about technology. To cover the entire attack continuum before, during, and after an attack organizations today must operate security solutions that operate everywhere a threat can manifest itself."

Gartner rates Asia Pacific network providers

Gartner has released its 'Critical Capabilities for Asia/Pacific Network Providers' report saying that multinational companies with pan-regional networking requirements have a wide choice of good IP-VPN providers, but that there are fewer strong providers in the small but growing segments for high-capacity and low-latency services.

Gartner has assessed services from AT&T, BT Global Services, China Telecom, KDDI, NTT Communications, Orange Business Services, Pacnet, PCCW Global, SingTel, Tata Communications, Telstra Global, Verizon, and Vodafone for managed MPLS VPN, ethernet services, Internet access, managed WAN optimization/ APM and for regional network, extended domestic network, high-capacity network and low-latency network use cases.

Apac IoT market tipped to be worth $58b in 2020

Frost & Sullivan is tipping the Internet of Things (IoT) market to be one of the fastest growing segments in the Asia Pacific technology industry. It is forecasting total Asia Pacific spending on Internet of Things to be $9.96b in 2014 and says spending will continue to grow at a CAGR of 34.1 percent to reach $57.96b by 2020.

Frost & Sullivan's forecasts have been published in a new report 'Analysis of The Internet of Things Market in Asia Pacific'. It identifies early adopters of IoT technologies as being Japan, Singapore, China, Australia and South Korea, but expects other countries in APAC like India, Malaysia, Thailand and Indonesia to be some of the fastest growing IoT markets in Asia Pacific between 2014 and 2017.

Andrew Milroy, vice president, ICT Practice, Asia Pacific at Frost & Sullivan, said there were several factors driving the adoption of Internet of Things in the region, including regional government efforts to improve competitiveness in their economies and city planners' efforts to address social demographic challenges in their cities.

However Frost & Sullivan warns that the Internet of Things market is not without its challenges, saying there are several factors that could prevent it from achieving rapid adoption.

Xiaomi soars to leadership in China's smartphone market

In Q2 2014, the world's largest smart phone market, Mainland China, accounted for 37 percent of global shipments, some 108.5 million units, according to market research firm, Canalys, and the standout development was the meteoric rise of Xiaomi.

"Xiaomi took a 14 percent share in China, on the back of 240 percent year-on-year growth. With Lenovo, Yulong, Huawei, BBK, ZTE, OPPO and K-Touch, the eight Chinese vendors in the top 10 together accounted for a total of 70.7 million units and a 65 percent market share. Samsung and Apple, the only international vendors in the top 10, together accounted for shipments of 20.0 million units, representing 18 percent of the overall smart phone market in China," Canalys said.

Ninety seven percent of Xiaomi's Q2 shipments were into mainland China, but according to Canalys it is now looking to expand into other markets, with Indonesia, Mexico, Russia, Thailand and Turkey in its sights for the second half of the year.

Internet has huge potential to boost China's productivity: McKinsey

According to a new report from McKinsey&Company, new applications of the Internet could account for up to 22 percent of China's labor-productivity growth by 2025 and greater adoption of web technologies could lead to the introduction of entirely new products and services if government and industry take the right steps to maximize the potential.

The report, from the McKinsey Global Institute (MGI), 'China's digital transformation: The Internet's impact on productivity and growth', projects that new Internet applications could fuel some seven to 22 percent of China's incremental GDP growth through 2025, depending on the rate of adoption. That translates into 4 trillion to 14 trillion renminbi in annual GDP in 2025.

The report focuses on a set of Internet applications that could penetrate more deeply across key sectors of the country's economy.

These include big data, improved demand forecasting, online sourcing and marketing, Internet banking and payment systems, the Internet of Things and e-commerce.

SUMMIT
TELECOM Review

"It's All About Networking"

November 26, 2014
Intercontinental Hotel,
Dubai Festival City,
Dubai, UAE

Telecom Review proudly announces its next summit in Dubai. In a day full of different tracks, the Summit, with the theme, "Its All About Networking", will bring together ICT industry leaders across the region in a friendly environment to shed light on the changes that the telecommunications and IT sector are experiencing in this era of new services.

www.telecomreview.com

Official Telecom Partner

etisalat

Strategic Sponsor

HUAWEI

Platinum Sponsors

VIVA
QUALCOMM
NOKIA

Gold Sponsors

alfa
GBI
qnbn
COMMSCOPE
REDKNEE
Looking Beyond
Deutsche Telekom
MYCOM

Silver Sponsor

10 years iBwave

The 4K revolution in Asia-Pacific

It seems like only yesterday that the advent of ultra-high definition television gave the global TV industry a significant boost. The initial high price of HDTV sets fell rapidly as consumers eagerly embraced the new technology. Now the same thing is happening again with the next iteration of TV technology, 4K.

If you ask anyone today 'What is 4K?' you are likely to receive a blank stare in response. 4K is less well-known than its predecessor, high-definition or HDTV, which managed to capture the headlines long before it was launched and which has become synonymous with crystal clear and pin-sharp movies. Nevertheless the tide is about to turn in favor of 4K.

But what does 4K actually mean? It is one example of ultra-high definition resolution, of which there are two variants: 3840 pixels × 2160 lines or 8.3 megapixels with an aspect ratio 16:9; and 7680 pixels × 4320 lines or 33.2 megapixels. Ultra high definition has double the horizontal and vertical resolution of 1080p HDTV and a UHDTV image contains four times as many pixels as 1080p.

The term 4K refers to a screen resolution of 4000 pixels, somewhat more than the 3840 pixels of UHDTV. But UHDTV has always been referred to by consumers as 4K and the name has stuck. UHDTV is now synonymous with 4K.

4K reversing TV shipment decline

According to the NPD Display Search Quarterly Global TV Shipment and Forecast Report – Advanced, overall TV demand declined in 2012 and 2013. Last year it went down for about three percent compared to 2012 and in 2012, three percent compared to 2011. But the turn around is not far away. Total TV shipments are expected to grow about one percent this year, or about 229 million units shipped. LCD TV comprises about 96 percent of the market or about 220 million units. Shipments of plasma and CRT TVs are in rapid decline.

The report noted that there is keen interest this year in 4K TVs. Market

drivers include early adopters as well as some mainstream consumers. The report also showed that China is one of the top markets for 4K and that prices are rapidly going down, falling below $1000 in China while the global average remains over $1,100 and close to $2,000 in North America.

Total 4K TV shipments last year amounted to 1.9 million units and by the end of 2014 are expected to reach 12.7 million. China will lead the region and account for about 78 percent of the market. Skyworth, TCL and Hisense are just a few prominent Chinese brands that are flooding the market.

Sony has been the primary proponent of 4K and its efforts have paid off. Sony claimed the largest share of global 4K TV shipments outside China last year with approximately 23 percent. But the Japanese manufacturer is not resting on its laurels and expects to widen its lead. It wants to capture 40-50 percent of the market. Its closest competitors are Samsung followed by LG electronics, which has tripled the number of models in its 4KTV line up.

But the 4K revolution does not end with TV shipments and consumer purchases alone. Without 4K content performance of a 4K screen is no better than HDTV.

4K boost from World Cup Soccer

The soccer World Cup in Brazil in June and July gave a big boost to 4K. Market reports noted that some of the early shipments in the US this year were to consumers preparing to watch live 4K telecasts of World Cup matches. Also, the Japanese Ministry of Internal Affairs and Communication used the games to initiate 4K TV broadcasts of the games.

It had earlier announced plans to begin 4K broadcasts in 2016 and by bringing these forward it has beaten South Korea to become the first country to adopt this next generation TV format. Japan also took the opportunity to announce that, by

2016, it expects to release 8K, saying that broadcast network NHK is already working on 8K.

Another World Cup 4K initiative is the partnership between PCCW Global and Hong Kong's TVB under which PCCW will provide the end-to-end managed media services for TVB. PCCW's Global Television Network will provide TVB with both 2K and 4K feeds of the games.

The BroadcastAsia expo held at Marina Bay Sands in Singapore in June saw a strong turnout from members of the 4K ecosystem. Leading TV screen manufacturers like Sony were present showcasing not only their 4K screens but also other equipment for ultra HD broadcast. Various satellite companies were also showcasing their 4K offerings.

French satellite giant Eutelsat announced during the show that it would start beaming ultra-high definition video to Asia. The Eutelsat 70B satellite's footprint covers Southeast Asia and Australia and with the help of Singapore communications solution provider, ST Teleport, Eutelsat will use it to carry 4K broadcasts.

These are just some key happenings around the 4K environment. The movement towards the adoption of 4K is still on its infancy. Perhaps one of the primary reasons is that 4K content is still developing and broadcasters are just starting the transition to 4K while consumers are waiting for prices to come down so they can get better value for their next TV screens

Asia-Pacific is a growth market for 4K but 4K will not make a big impact until countries like the Philippines, Indonesia, Malaysia, Vietnam and others rally behind the technology. For this to happen there must be melding of two compelling reasons: low prices for 4K TVs and a plentiful supply of 4K content. TR

Intelsat at 50:

giving birth to a new generation

Global satellite operator, Intelsat celebrates is 50th anniversary this year and VP for Asia Pacific, Terry Bleakley, says a new generation of satellites will be a game changer or the organization.

On 20 August 1964 the governments of 11 nations signed an agreement to form a consortium to launch a communications satellite for commercial international communications. Thus Intelsat was born.

Much has changed in the intervening half century - Intelsat was privatized in 2001 - and as the organization prepares to celebrate its 50th anniversary it's on the verge of launching a new generation of satellites that will give it greatly increased satellite bandwidth and capabilities.

The new generation, dubbed EpicNG, will initially comprise two satellites: IS29e, to be launched in the second half of 2015, will have coverage of North and South America and of a broad swathe of the North Atlantic ocean. IS33e, to be launched in the second half of 2016 will cover the whole of Europe, the Middle East, Africa and most of Asia.

Terry Bleakley, Intelsat vice president for Asia Pacific, told Telecom Review Asia Pacific at the CommunicAsia exhibition in Singapore, that the new satellites would have much greater capacity than current models. "We will be predominantly using Ku band frequency re-use spot beams and we will be getting five or six times the throughput of traditional satellites. That translates into 50 or 60 gigabits of throughput per satellite," he said.

Bleakley explained that frequency re-use meant using the same frequencies in multiple, non-adjacent spot beams to avoid interference. However he declined to provide any information on the re-use model. "It's a honeycomb pattern, but I cannot talk about the frequency re-use multiple, because we don't want our competitors to know how efficiently we are using spectrum."

He said the EpicNG offering was already gaining strong traction with customers: contracts worth several hundred million dollars have already been signed. "Panasonic Avionics has signed up for their connectivity to aircraft on both IS29e and IS33e. Airbus has also signed up recently," he said.

Comms for commercial aircraft

Panasonic Avionics is planning to offer broadband Internet access to passengers on commercial airlines, and has also signed a contract with Eutelsat to use its satellites for this purpose.

Exploration company Harris CapRock is another early EpicNG customer. "They have taken Epic for oil and gas," Bleakley said. "They have done an analysis of our Ku band frequency re-use and compared it to the competition and they see that we have hit the sweet spot with their antenna size and throughput requirements. So they have taken gigabits of commitment for different areas where they will be drilling and exploring."

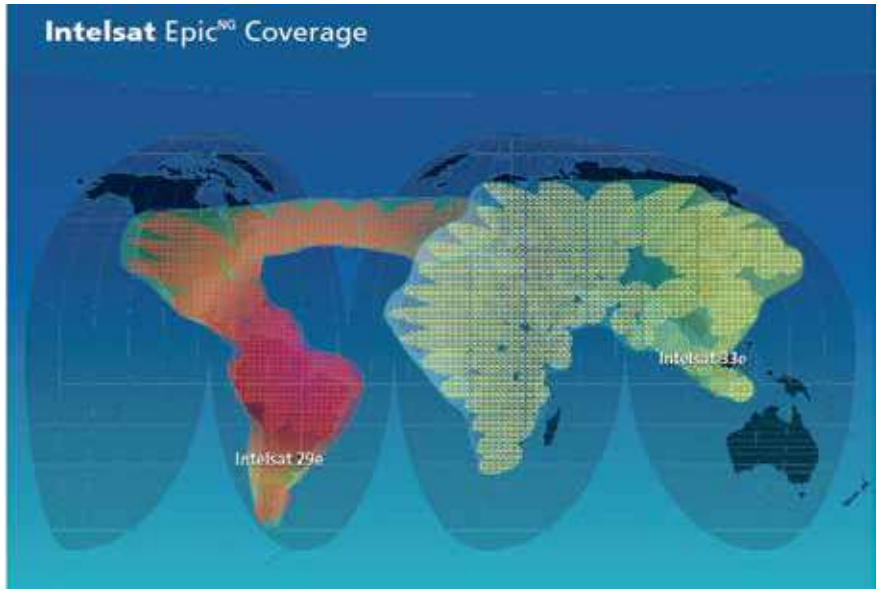
Another customer is a large cruise ship organization. This is a huge and growing market thanks to the recent growth of the cruise industry and our increasing dependence on Internet access: the last thing anyone wants on their 'holiday of a lifetime' is to be disconnected from the online world, and with current satellite technologies access is at dial up speeds and can cost $1.00 per minute.

"A cruise ship is like a mini city: you need hundreds of megabits," Bleakley said. Intelsat also expects provision of cell site backhaul from remote locations to be a large market for the Epic satellites. "In Japan, Softbank, which is the second largest mobile operator, is already using our standard capacity for connecting their cell sites in the southern islands and they will use our high throughput capacity for connecting sites on the main island."

According to Bleakley, two key features of Epic differentiate it from other 'high throughput' systems: its support for standard ground station equipment and its use of onboard digital processing to enable services to switch between C-band and Ku-band frequencies in small bandwidth slices.

"The feedback we got from consumers when we started looking at a high throughput play was that 30 percent of their investment was in ground infrastructure and they didn't want to make that obsolete."

Bleakley explained that the onboard digital processing provided much greater



flexibility in service configuration. "Let's say you have a teleport operating in C-band - which is less susceptible to rain fade than Ku-band. You have some really important sites that are using C-band but the remote sites and smaller sites are less important so you can use Ku-band. Your uplink can be in C-band, but it can downlink in C-band and Ku-band to the end-user. They can go back to the satellite in Ku-band, and down the teleport in C-band.

Digital wizardry boosts capacity

"To do that in the past we had to tie up entire transponders. Now we are doing it using some digital wizardry. It creates incredible flexibility with the satellite compared to other satellites. And it does not require proprietary gateways. You can uplink in any beam and downlink in any beam."

While Intelsat in Asia is preselling services on the yet to be launched IS29 and IS33 Epic satellites, Bleakley sees plenty of opportunity for services on existing satellites serving Asia, in which Intelsat has invested significantly in recent years.

"We have 11 satellites serving the Asia-Pacific region," he said. "Of those five have been launched in the last three and a half years. In 2012 we put up three new satellites for this region." Cellular backhaul is a significant growth market. "We have been selling a lot into the Indonesian market. We see opportunities in Myanmar and in Japan, and we are talking to people in New Zealand."

Intelsat claims to dominate the market for broadcast television distribution using C-band services and to be making headway in the direct to home broadcast (DTH) market, which tends to use Ku-band and which is undeveloped in some Asian countries.

"Indonesia has only a five percent penetration of pay-TV, it is one of the lowest in Asia so the opportunity there to provide pay-TV to the growing middle classes is very large and the most efficient way of delivering pay-TV is by satellite. Bangladesh has just issued to licenses for DTH, Pakistan is talking about issuing licenses for DTH and we believe that, in time, it will happen in Myanmar," Bleakley said.

Bleakley also sees a role for satellite in the rapidly growing market for Internet delivered video content, complementing the use of content delivery networks that are widely used to cache popular content - video and web page in general - close to end users.

"We believe the most efficient way of distribution content is via satellite: there's no difference in cost to reach one million or 10 million users, but as soon as you load of a content delivery network beyond a certain size it will crack under the pressure. So there could be an interesting mix of CDN and satellite." TR

Kathrein: king of antenna technology

At CommunicAsia Telecom Review Asia Pacific talked to Mark Bingham, director for sales and marketing and sales support with specialist antenna company Kathrein on his company's commitment to Asia-Pacific.

Can you give us a brief regarding your presence at CommunicAsia?
We've been coming to this show for the past several years now. We always find it interesting and it is a great place for networking

I'm responsible for our inter-business units sales within Kathrein. The main driver for me at this show is to make presentations on our new cable micro C-RAN and in-building solution. We launched these this year at the Mobile World Congress in Barcelona in February and we have been presenting this solution to a lot of customers during the course of this show. We've been seeing a very high level of interest, specifically on the new features that cable is able to supply.

Can you give us a brief of your new product?
The new feature that differentiates us from other suppliers is the ability to steer the capacity within the building to where it is actually needed, to perform scenario management, to have more flexible use of the infrastructure once it is deployed. To make the coverage and capacity available depending on where the customers are and where they are using their data services, where they are loading the system with data traffic and where they need it.

How is the competition so far?
We see other competitors with similar

features, but these are not quite what we are offering. On the one hand what we are doing is the correct thing because we are not completely alone. On the other hand we see our solutions having differentiators that put us slightly in a different field. We see this as confirmation that what we are doing is right and we believe that we are well placed to succeed with cable.

But that is not all we offer our customers. We have a very wide portfolio. The competence of Kathrein covers a large field of different areas of technology. For example, it includes antennas for radio and television broadcasting, macro site solutions for outdoor systems and our base station antennas and antenna line devices.

For LTE we now offer multi-band antennas, including hexaband, 12 port, antennas. This is our main differentiator. We can do the complex stuff, which is needed if you want to combine several operators, or one operator on several bands, onto one antenna. This is what helps us against very cheap competition like that coming from China.

Do you find it easier to compete here in Asia-Pacific against local suppliers?
As Kathrein we have a name in the market. If you are a customer or an operator then you either go for a cheap simple solution from one of the Chinese manufacturers that all do more or less the same thing. But if you need something that is quality, that has additional features and that is very complex then most likely you would choose our brand. This is what differentiates us not only from the Chinese but also from other European vendors. If an operator decides to go for a complex but quality solution they usually go for the best.

You mentioned China; they have loyalty to their own brands. How do you usually deal with that?
We found that there is not too much loyalty to Chinese brands. The Chinese operators know exactly what they want. For simple antennas, definitely we cannot compete with Chinese manufacturers and don't intend to. But as soon as antennas get more complex then we are in the game. We are selling to China Unicom and China Mobile and I don't think we have a problem.

Can you give some breakdown?
We work worldwide with more than 240-250 operators. Our path to the market is actually twofold. One is through direct sales channels to the operators; the second one is via system suppliers like OEMs Ericsson, Huawei, which we are supplying directly via our sales network. In the Asia Pacific region we have two central hubs. One in Bangkok responsible for the South East Asia region and one in Hong Kong serving the north east region of Asia: China, Japan and Korea.

We also have a representative in The Philippines and we are also selling directly or indirectly to Smart or to Globe. We have a very good market share in Vietnam and we have good projects there. We currently have more than 50 percent of the market there.

Indonesia is another one, with Telkomsel and the others. Australian and New Zealand are very good for us as well.

We have just started in Myanmar. We are trying to make inroads in the broadcast side. We are supplying a large number of super turnstile antennas for projects that are rolling out in a year or two. We do have a lot business there in terms of the broadcast.

So we are present all over Asia. We have our own production facility in Shenzhen, and at a number of locations worldwide. But we have made investment in the Shenzhen region and we will be increasing production in the next few months. So we are moving facilities. We have made a firm commitment to the Asia-Pacific region by installing our central hub structure in Bangkok and Hong Kong to serve the region. We are building up capacities, technical sales capacities in the region. TR

KVH connects 100 data centers with on-demand links

KVH has built its business and its reputation on the provision of ultra low-latency services for the finance sector. Now it is moving into software-defined networking with a bandwidth-on-demand service for data center interconnection.

Japan-based international telco service provider and data center operator KVH has expanded its horizons considerably with the launch of DCNet, a service to offer flexible ethernet connectivity between 100 data centers across Asia.

Gint Atkinson, KVH vice president, network strategy and architecture, speaking to Telecom Review Asia at the recent NetEvents conference in Thailand, said the impetus to develop DCNet had come from financial services customers for KVH's low latency services who were increasingly needing connections to multiple data centers.

"A lot of our financial services customers using us for low latency infrastructure and services were coming back and saying 'We've been with you for three years, or five years, can you take care of our regular IT traffic?" Our answer was, right now, maybe, but it might be too expensive because we have mostly low latency links."

DCNet marks a significant departure from the business on which KVH has build its success. According to Atkinson, providing ultra-low latency services end-to-end between stock exchanges and similar is its forte, and a market in which it leads the competition.

"One of our big target markets is users of ultra low latency connectivity and other attached services: high-frequency trading and securities industry companies that need to go all the way to the stock exchanges. So they want rack space in the stock exchanges."

He claimed that KVH operated the shortest path from Europe back into Japan and Asia, saying that the company's efforts to minimize latency end-to-end extended to optimizing connections within data centers.

Specialist in ultra low latency

"Because we are an ultra low latency carrier we traffic engineer every single customer connection for the shortest, lowest latency path. Not only do we do low latency to the stock exchange, we keep going all the way to the server, to the virtual machine the customer is using."

He added: "These customers want ultra low latency networking, they want to spin up these environments and ideally pay for them usage-based. They don't want them up and running 24 hours a day. So we are talking about a real cloud infrastructure that is highly, highly specialized. This is how KVH has carved out a slice of the market where almost nobody else is playing, especially when we bundle the whole package together in a private cloud type environment."

However, he said this very specialized market providing ultra low latency services to high frequency financial traders was small and its future uncertain, which had prompted KVH to widen its scope.

"The HFT market is tiny and who knows what is going to happen to it in the future, so we are expanding into securities and banking, into media communications and gaming because they have similar but not as stringent requirements. They require some low latency."

This is the conference for those
who don't wait for change to happen.

This is the conference for those
who make things happen.

Join us as we make change happen at the ACC.

DISCOVER THE FUTURE OF TELECOM CARRIERS

10 YEARS OF COLLABORATION

ASIAN CARRIERS CONFERENCE

September 10 -13, 2014
Shangri-La's Mactan Resort & Spa
Cebu, Philippines

www.asiancarriersconference.com | info@asiancarriersconference.com

The company has also seen growing demand for inter-data center capacity. According to Cisco's 2013 Global Cloud Index forecast the increase in the number of data center facilities along with the adoption of data center related services is driving increases in data center-to-data center traffic by approximately 26 percent annually to 530 exabytes, globally, in 2017.

KVH says this traffic growth has created a need for cost-effective and rapidly scalable data center connectivity solutions that connect different data centers, internal IT and network infrastructure across multiple sites to customers and business partners located in different data centers and possibly across multiple geographies.

"Everyone kept throwing more infrastructure into the data center and we saw more and more customers asking for links from this data center to that data center," Atkinson said.

"We realized that we could lower pricing and improve our margins if we made one network capability and if customers stopped ordering circuits but just signed up for a port where they needed one and dialed up the bandwidth when the needed more. ... So we decided to build DCNet and we're putting Asia's top 100 data centers onto DCNet."

Just a crossconnect away

DCNet is being marketed under the slogan "Everything is just a crossconnect away." Atkinson explained: "You can be in one or two of our data centers physically, but you can reach out to other data centers." Customers will also be able to extend DCNet connectivity to their own premises. "We can graft on a local loop from another service provider," Atkinson said.

Atkinson told Telecom Review Asia Pacific in May: "We are putting 51 data centers in Tokyo on net, 16 data centers in Osaka, 12 in Hong Kong and 11 in Singapore. Plus we have on-ramps in the US and Europe. We are taking orders now and DCNet will be live August 1. From that date we will be provisioning in under two days."

KVH says the data centers have been strategically chosen to include content distributors, major application and cloud providers, carrier hubs and other key data centers. The service will offer point-to-point, point-to-multipoint and multipoint-to-multipoint links.

DCNet is claimed to allow user to seamlessly increase bandwidth from 100Mbps to 10Gbps, and from 2015 to 100Gbps. The service is charged on a "low" monthly port fee plus usage-based charges: users can burst on demand to the bandwidth limit of the service they have subscribed to. Those that require guaranteed bandwidth will also be able to subscribe to a service with a committed information rate. Atkinson said that, initially, these would be separate service options, but "from the end of the year you will be able to put both on the same service instance. This is bandwidth on demand." TR

23-25 September 2014
Marina Bay Sands
Singapore

9TH ANNUAL

LTE™ asia 2014

EMPOWERING ASIA'S CONNECTED GENERATION

LIMITED FREE OPERATOR PASSES AVAILABLE!

Strategic Partner: 3GPP

Official Operator Partner: SK telecom

2 PRE-CONFERENCE FOCUS DAYS

- SIGNALING FOCUS DAY, 23rd September 2014
- NEW ANTENNA EVOLUTION FOCUS DAY, 23rd September 2014

LTE Operator MIND SHARE

NEW LTE ASIA AWARDS 2014

NEW 5G asia summit

FEATURING OPERATOR CASE STUDIES FROM ASIA'S LEADING INDUSTRY EXECUTIVES ...

Kuan Moon Yuen
CEO Consumer Singapore
SingTel

Aileen Chia
Deputy Director General (Telecoms and Post), **IDA**

Jin-Hyo Park
SVP, Head of Network R&D Center
SK Telecom, South Korea

Sun Tae Kim
SVP Corp R&D
LG U+, South Korea

Herfini Haryono
CTO
Indosat, Indonesia

Mock Pak Lum
CTO
StarHub, Singapore

Christian Cadeo
Head of Google Enterprise, Southeast Asia
Google, Singapore

Patrick Scodeller
CTO
M1 Limited

Michiko Wakui
VoLTE Project Lead
NTT DOCOMO, Japan

Suresh Sidhu
Chief Corporate and Operating Officer
Celcom Axiata Berhad, Malaysia

Pen San Tang
Founding Director
Packet One /
Steering Committee
GTI, Malaysia

Francisco Claravall
VP IT-Enabled Products & Services
Globe Telecom, Philippines

85 UNIQUE OPERATORS IN 2013

80+ EXHIBITORS

1000+ HIGH LEVEL ATTENDEES AND EXHIBITORS

2014 SPONSORS:

Platinum Sponsor: SAMSUNG

Silver Sponsors: CISCO, ORACLE

Bronze Sponsors: NETSCOUT., SAP

Badge and Lanyard Sponsor: HUAWEI

Delegate Lunch Sponsor: telenor | global services

Bubble Tea Stand Sponsor: bics

Event Guide Sponsor: SIEMENS

Gold Track Sponsors: bics

Silver Track Sponsors: Basis | kpn, MAVENIR

Visit www.lteconference.com/asia

informa telecoms & media

Imagine Communications reborn

Imagine Communications, a 50 year old supplier of media software and video infrastructure, was acquired by Harris Broadcast in 2013 - shortly after Gores' acquisition of Harris Broadcast from Harris Corporation and earlier this year was reborn as a separate, Gores-owned entity. At BroadcastAsia in Singapore Telecom Review Asia Pacific caught up with Mehmet Balos, SVP, global channel sales and marketing and Peter Martin, senior manager marketing communications APAC, to chat about the company and its latest end-to-end solutions.

Can you give us a brief about Imagine Communications?

Mehmet Balos In March 17 this year in the US at Madison Square Garden Gores announced the formation of two companies from what had been Harris Broadcast. One is called GatesAir. It holds the transmission portfolio. The other is Imagine Communications. It takes all the media playout and networking products and brings all the broadcasting product line under one roof.

Our emphasis is not only about keeping the traditional product line intact: the routers and the multi viewers. We are also spending quite a bit on R&D. If you look at our competition, we are spending twice as much on R&D as they are, about 20 percent of our income goes to R&D. Also we are looking at future technologies, to position and differentiate ourselves.

Firstly, software defined networks. Now the majority of our R&D goes into software development. Everybody in the IP and telecom infrastructure is moving into software tools. We are committed to doing that for broadcast as well.

The second area of our research focus is cloud computing. It has been a buzzword for quite sometime. It is happening in IT and telecom, whether it is a private and public cloud. I think there will be a migration to that and we are committed to do that.

The third is IP transformation. There is no escape. It took telecom about a dozen years. It started in about the late 90s and now IP transformation is pretty much done. It is still continuing but it is a major infrastructure in terms of wholesale networks and interconnects; all are mostly done in IP.

Now going to broadcast. IP makes it easy, makes it cost-effective in terms of capital and operational expenditure. So if I want to define our commitment to the future, definitely it's IP transformation, software-defined networks and cloud computing.

In the meantime we have bought two companies; Imagine Communication, whose name we have adopted because of its trademark. The second one, announced on the opening day of NAB, was Digital Rapids. These two product lines are taking us not only to broadcast but into telco as well.

Telco video distribution is the next thing to do, I think. It was tried in the early 90s but was before its time, it was not mature. Now, voice networks are done, data networks are

pretty much complete. With Internet technologies to support it, I think video is a real growth area. These two acquisitions are both applicable to broadcast, but because they have file transport technologies they are opening the telco doors for us.

How do you think your solution would fit in to a fragmented market like Asia? Some countries already have the latest technology while others are just starting to have mobile communications.

Mehmet Balos There is definitely growth, particularly in India and China. People in rural areas are becoming more educated. You have TV for training and education. Our systems are not only for TV channels but also in the vertical markets as well; whether it is a sports arena or an airport, metro station with digital signage like here in Marina Bay Sands – Singapore.

Another good example would be in education. Multiple campuses present a big challenge. Professors cannot be duplicated and so the option to have broadcast from a central campus would be good. And in multi-campus hospitals doctors can remotely analyze images such as X-rays. These are the types of opportunities for us and our product lines.

Our products are not only about the future. I know here in Singapore, as well as in Malaysia, they love using the latest technologies. In Australia Telstra and Optus are keen on using the latest products. So the move from analog to digital is happening right now. Digital is moving to high definition and there are a lot of high definition conversions already, so it opens up opportunities for our current portfolio.

Peter Martin I think there are still a few countries in the region where digital switchover hasn't happened. Thailand is set to switch in 2026 if I'm not mistaken; which is quite long way down the track.

What we are seeing is similar to what happened in the telecom space, when they transitioned from fixed lines to mobile lines. Countries were able to make some great leaps. Where they did not have fixed line infrastructure they were able to move using mobile infrastructure and they were able to do several steps at once.

We will probably see some of the countries that are not yet on par with the technologies deployed in Australia, or Singapore and some parts of China. But definitely they may catch up quicker.

Can you elaborate on your targeted advertising and digital signage solutions?

Mehmet Balos Digital signage is more about locations; like the airport, where there is a lot of information into which you can insert digital advertisements. It is totally different from TV broadcast advertisements, like the ones you receive on your iPad or iPhone. Then there is digital signage for specific enterprise needs.

Peter Martin Taking for example the need for this at Marina Bay Sands. The infocaster is to be deployed throughout the facility both around the casino floor and through the MICE facility. This allows them to communicate new schedules via the screens and also to build their own brand. And if someone hits the jackpot in the casino then they can flash it on all the screens.

The line between telecom and broadcast is getting blurred, how do you see your company and your solutions playing to that?

Mehmet Balos What we are really talking about is the convergence of cellphones and television sets. People are consuming more and more content on their tablet or on their cellphone. And because of that people in the telco space need to offer that type of solution; for media distribution and media preparation.

The problem is that all these devices use different distribution and compression techniques. Everything is sort of unique. Unlike the broadcast industry where there is standardization or where a committee would come in and say 'This is how it's all going to work.' There have been attempts to rationalize everything, but these have not been so successful.

The solutions we offer allow telco providers to offer media content to their end consumers via these new media devices. And we are seeing customers demanding to consume this content in non-traditional means; not on the TV anymore but instead via a live stream to their mobile handsets.

Is that how you define TVE (TV Everywhere)?

Mehmet Balos TVE is actually a brand name. It captures the concept of distributing content to multiple locations.

What we are really talking about is the fact that consumers nowadays aren't just satisfied with the traditional television broadcast. They are looking at OTT and Netflix and the like. They are looking also at handset playback, particularly the new generation of users.

I think the demarcation between the TVs and telcos is becoming blurry. Convergence is happening. Video will become the next revenue stream for telcos and because of this they really have to pay attention.

Here in Asia? Where do you see it happening first?

Mehmet Balos Aside from Singapore we are seeing it happening in a lot of places. We've sold converters to Japan, Taiwan and South Korea.

Peter Martin South Korea is huge they are very forward thinking particularly on this type of thing. We've been selling this product for the last three to four years. South Korea, Taiwan and Japan are the leading markets. We are seeing a big uptake in Indonesia as well because instead of going to the traditional broadcast they are going straight to the cellular distribution model. That is something consumers are demanding and the technology is here. We often see this in the developing countries but the leaders in terms of use are the mature countries like South Korea and Singapore. TR

Iridium making plans for new products new satellites

Telecom Review Asia Pacific spoke to Raymond Tan, Iridium's vice president and general manager Asia, at the recent CommunicAsia show in Singapore where he detailed a number of new product offerings and outlined the company's plans for its second generation of low earth orbit satellites.

2014 is shaping up to be a big year for Iridium, the operator of a global network of low earth orbit communications satellites, conceived by Motorola in 1987 and that finally became operational in 1998. The system is now prospering after the company set up to operate it went bankrupt in 2001. (The Iridium system was rescued by new owners as the satellites were about to be de-orbited.)

"This is an exciting year for us, said Raymond Tan, Iridium's vice president and general manager Asia, "We're launching three new products for the land-based market. We are redefining 'one to many' in the satellite world. We have Iridium Push-to-Talk; we have Iridium Go and Iridium Burst."

Iridium PTT will be launched later this year and will work just like land-based two way radio: every member of the group will hear all messages when the speaker presses a button on their phone to transmit, except that with Iridium PTT the members of that group can be spread right around the globe.

PTT on Iridium is not new, but has not previously been commercially available. "We've had PTT for the last four years but only for US defense forces," Tan said. "It is now a mature product so we have decided to bring it to market."

New push-to-talk service

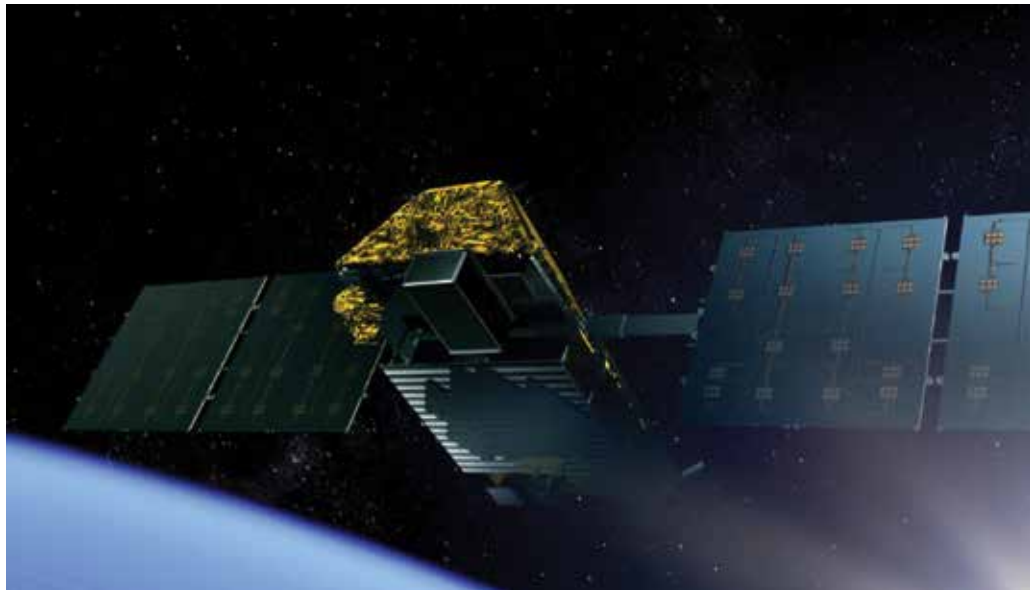
Iridium will add PTT functionality to a new version of its Extreme handset, a device that has been on the market for the past two years. The company will also produce a PTT module that manufacturers can embed into other products.

The second new product, Iridium Go, is a pocket-sized Iridium modem and WiFi hotspot that enables smartphones, tablets and laptops to access the Internet via Iridium satellites. It was due to go on sale as Telecom Review Asia went to press. Iridium partners will sell the device along with the Iridium access service.

Retail prices will be set by the resellers. The unit will sell for around $800 with Internet access charged by the minute, not by the megabyte. One reseller, Range Global, was offering plans ranging from $100 per month for 60 minutes to $200 for 200 minutes per month.

The third new product, Iridium Burst, was launched in February with the claim that it was the first one-to-many global data broadcast service (Iridium is the only truly global satellite network: geostationary satellites provide no coverage in polar regions). Iridium is promoting the service for applications that range from tsunami warnings to weather and traffic alerts, over-the-air updates and other machine-to-machine (M2M) applications, and maritime safety.

Making inroads into maritime market



One use is "Maritime agencies notifying rescue ships using Global Maritime Distress and Safety System (GMDSS) of ships in distress," Iridium says. "Rather than having to contact each ship separately, all ships within the relevant area can be contacted simultaneously with one Iridium Burst transmission."

This is not Iridium's first foray into the Maritime market. Tan said that Iridium had been making increasing inroads into the Maritime market, once almost the sole domain of Inmarsat (formerly the International Maritime Satellite Organization), since launching its first maritime product, Openport, five years ago.

Openport is claimed to be is the world's first global, high-speed network specifically engineered for the maritime market. Each terminal supports up to three phone lines for simultaneous use and data at up to 128kbps.

"We now have a respectable market with shipping companies," Tan said. "Ships are installing both Inmarsat and iridium. Sometimes they want redundancy and sometimes they would like to separate installations for crew and for business." He added: "We position our price so that Openport is at the sweet spot where for some people it would be more costly to use our competitor."

Next year, 2015, is also shaping up to be a big year for the company: it will launch the first of 72 new second-generation satellites, Iridium NEXT. Sixty-six will be operational, the remaining six in-orbit spares. A further nine satellites will be built and stored as on-ground spares.

New satellites will offer new functions

Iridium NEXT has been long in gestation. Iridium announced plans for the second generation in 2007. Prime contractor Thales Alenia Space was given the go-ahead to begin development in 2010. Iridium Next is expected to be fully operational with all satellites deployed by 2017.

The new satellites will have enhanced capabilities to support M2M communications and for communications with personal devices. They will have high bandwidth in the L band and will also be offering Ku band services. The current generation uses Ku band but only for communication between satellites and with ground control stations.

The second generation satellites will also carry a non-Iridium payload. In June 2013 Iridium announced the creation of Aireon LLC, a joint-venture with Nav Canada to fly a unique payload on the Iridium Next constellation to track commercial aircraft and provide that information in near-real time to air traffic controllers.

Harris was selected by Aireon to supply the payload and is building 81 payloads that will be integrated with Iridium's new satellites to receive the ADS-B position signals from aircraft, including those over the world's oceans, poles and remote regions where there is currently no surveillance of aircraft.

Beyond that, starting in 2018, Iridium is planning to launch other similar satellites that will carry hosted payloads for other companies, the Iridium Prime program.

At the time of the Harris announcement Iridium said: "There has been considerable interest from public and private entities who recognize the benefit in placing earth and space observational sensors, communications packages, and other unique payloads on a low-earth orbiting system operating only 780km above Earth, with interconnected satellites minimizing the need for ground stations around the world. In addition, hosting alternative payloads has created a new business opportunity for Iridium that will likely generate significant new data service revenues over the life of Iridium NEXT." TR

White space:

a gold mine of untapped spectrum

The relentless growth in wireless broadband relies on a very finite resource - the radio frequency spectrum - so there is a constant push to exploit or repurpose presently unused frequency bands. Some of the most promising are TV white spaces - frequencies allocated to television broadcasts that are presently unused.

Singapore has always been at the forefront of communication and technology in Asia-Pacific. Both the government and private agencies encourage academic institutions and businesses to come up with new ways to develop its technologies and to harness and maximize the full potential of its resources.

In Singapore's highly urbanized and connected environment, bandwidth demand continues to increase, particularly for mobile devices. To boost mobile bandwidth Singapore's policymakers plan to maximize current spectrum resources by tapping television 'white space'.

TV white spaces (TVWS) are vacant frequencies within the spectrum allocated to television broadcasts. These frequencies are made available for unlicensed use. This spectrum is located in the VHF (54-216 MHz) and UHF (470-698MHz) bands and has characteristics that make it highly desirable for wireless communications.

These frequencies are lower than those used for Wi-Fi or cellular so the signal travels longer distances and better penetrates barriers such as building walls, making these frequencies particularly well suited to Singapore's heavily urbanized environment.

TVWS is often referred to as Super Wi-Fi. However it uses different communications technologies and requires customized transceivers in the mobile devices. According to the Singapore White Spaces Group web site "TVWS radio products are maturing but have yet to enable 'consumerization', pending the availability of TVWS chipsets, which is projected in the next 12 months."

IDA started TVWS trials in 2011

To make use of TVWS spectrum the Singapore Government is using Dynamic Spectrum Access (DSA) technology. The campaign to exploit the potential of TVWS started in 2009 when The Infocomm Development Authority (IDA) began looking into the matter. IDA subsequently launched the Cognitive Radio Venues (CRAVE) trials for the industry in 2011.

Last June, IDA released the TVWS regulatory framework. The new regulation will take effect in November 2014 and it will make available an estimated 180MHz of spectrum for unlicensed TVWS operation. This will give Singapore significant additional bandwidth - about 24 channels - to carry new and exciting wireless applications and services.

Initially the IDA has opted to do away with licenses for TVWS in its regulatory framework and anyone with an interest in the industry may use the bandwidth without applying for a license. However, An organization that wants to use the geo-location database must apply for a Service Based Operator (SBO) license.

According to regulators, this would allow IDA to ensure that geo-location database operations adhere to the mandated technical parameters and regulatory requirements. To encourage deployment, the SBO license fees are waived for the first two years.

According to the Singapore White Space Pilot Group (SWSPG) - whose founding members include Microsoft Singapore, StarHub and the Institute for Infocomm Research (I2R) - commercial pilots are being undertaken under a test license from IDA. They are utilizing TVWS Geo-location Database developed for Singapore by Microsoft.

Locations include:
Gardens by the Bay – Extending Wireless@SG free Wi-Fi across areas and providing visitors with a reliable and cost-efficient connectivity. It was deployed without the intrusive equipment and wiring built-ups over its landscape. Sites at Gardens by the Bay include Supertree Grove, Meadow and Canopy.

Sentosa – The island resort is implementing a trial run in providing Wi-Fi coverage. It is also deploying wireless security surveillance cameras at Siloso Beach, Belawang Beach and the Merlion complex.
Housing & Development Board (HDB) - This project is about video surveillance for rooftop security, car park enforcement and getting real-time video from the elevator system in their buildings. The enhanced real-time video aims to boost security and safety for its residence.

Eurokars Group – are car dealerships that will use TVWS to cost effectively and extend their IT network to some outlying buildings. Complemented by a unique concierge services like test-drive vehicle tracking, customer scheduled service management and other value added services.

Taking TVWS to Asia

Since its inception, the success of the TVWS commercial pilots in Singapore has created a ripple effect across the continent. The SWSPG members have expanded the group's involvement in several projects across Asia, including the Philippines, Taiwan, Indonesia, Malaysia, India, Bhutan, Vietnam, Japan and China. So useful is the technology that every nation wants to get a hold of it. SWSPG has detailed a number of applications of TVWS technology. It has been used in Bhutan to connect a remote health unit in the village of Tang to the Bumthang Hospital.

It also played a crucial role during the Bohol Earthquake and Typhoon Haiyan in Tacloban, providing communications crucial in the rescue efforts.

TVWS was used to provide free Internet connectivity for hundreds of schools and government offices over an area of 1000 square kilometers.

These examples are just the beginning. The full potential of TVWS is yet to be realized. The commercial benefits will soon trickle down to end users as more organizations create TVWS based services, and Singapore will once again live up to its reputation as an Asian leader in communications technology. TR

Deep inspection defines Wedge Networks' security product

Canadian company Wedge Networks is poised to hit the big time with a unique approach to monitoring networks for malware, and with an injection of $10m in new venture funding. Telecom Review Asia Pacific caught up with VP Steve Chappell at the recent NetEvents conference in Thailand.

Internet users in a certain Middle Eastern kingdom who have found ways to get around the country's tight Internet censorship regime are in for a nasty shock.

The unnamed country is implementing on a massive scale Wedge Networks' content inspection technology linked to a customised database of signatures provided by McAfee that will identify, and block, any content deemed by the regime to be unsuitable for its citizens.

It's a totalitarian's dream and a libertarian's nightmare, but according to Seven Chappell, executive VP of sales and marketing and COO of Wedge Networks, it's simply one application of a technology whose main purpose is to provide a new, unique and powerful defensive weapon in the ever-escalating battle against cyber criminals.

He told Telecom Review Asia Pacific that the Wedge Networks technology had an unmatched ability to do content inspection of network traffic flows, on a massive scale.

Very fast deep content inspection

"Wedge does not really do security," he explained. "We do content inspection at very, very, very high speeds. Higher than anybody else comes close to." By inspecting every bit going into, or out of a company's data center Wedge claims to able to detect any previously identified malware.

Chappell claimed the Wedge approach to be more effective than the, widely available deep packet inspection. "There are a lot of people do deep packet inspection, and it worked for a long time but the hackers got better and started putting the viruses and things inside the Word document or inside a PowerPoint."

For security applications the Wedge Networks software uses lists of malware signatures available from security companies like McAfee, Symantec and Trend Micro and compares these against the content of traffic flowing through a network, looking for matches.

According to Chappell, the Wedge Networks software running on a single OS instance in a virtualized environment under VMware is capable of filtering the Internet traffic of over half a million users.

"We have one instalation at Bharti [Telecom] that is doing one million users a day. It is amazing what the Wedge technology can do," he said. According to Chappell the installation for the unnamed Middle Eastern country will filter the Internet traffic of millions of users and comprises Wedge Networks' software running in five data centres with each instance processing about 40Gbps of traffic. "When this thing is up and running we will be doing web content filtering for the entire nation," he said.

Fast tracking to a planned sale

Wedge Networks has been bubbling along for almost a decade but now, Chappell says, it is on a fast growth path, taking significant venture capital with a view to a sale in about three years.

"Wedge was founded by two gentlemen, Hongwen Zhang and Husam Kinawi, who met when they were doing their PhDs at the University of Calgary," he said. "They decided to start a company together. The University gave then some grant money and they set up in its incubator building. They are still there.

"They incorporated in 2002 and were just doing consulting work for other companies. Their very first project was to build a wireless edge controller, which is where their name came from. And that was the only wireless thing they ever did.

"In 2008 they started to develop their deep content inspection engine and to start marketing it. They have been doing about a million dollars of revenue and they just kept working on the technology, making it better and faster and getting patents. That was when the board called me and said, "I think perhaps we have something that can be really big."

Chappell sees the company's primary market as being telco service providers that would use the technology to power a cloud-based security-as-a-service offering to small businesses, but pursuit of this model required additional funding.

"They had been getting by with friends and family funding when I got there. I spent the first six months finding out if the technology really worked and then I spent three or four months travelling, talking to service providers and saying 'would you buy this?' They all want to do proofs of concept so I said to the board 'We need more money.'"

The company then launched a series B funding round to raise $US10 million. It closed at the end of May. Chappell says his aim now is to sign up as many service providers as possible, build the value rapidly and sell Wedge Networks within about three years to a company with complementary products.

Ideal for security-as-a-service

He sees the Wedge Networks technology as being ideal to enable telcos service providers to offer cloud based security-as-a-service to their small business customers.

"It's easy for them to go to a small business and say 'I can do security for you a whole lot better and you can do-it-yourself'."

To make the product more attractive to small businesses Wedge has developed a data loss prevention module that, according to Chappell, is much easier for small businesses to use than established products that are aimed primarily at large organisations.

"The established products are really hard to set up. We have created simple screens with checkboxes: There's one for 'I don't want credit card numbers to leave my business', another for Social Security data. You can put in strings, for example:'my part numbers look like this' and you can have free form text strings."

He suggests also that the software provides an opportunity for any entrepreneur to get into the security as a service business. "You could provision a VMware image on Amazon, install our software and go after the small business market." TR

Flying high, and surfing the net

Passenger aircraft have until recently represented one of the last islands of isolation in today's hyper-connected world. That is changing with many airlines now offering in-flight Internet access, and more, from passengers' smartphones and tablets.

Five years ago airline passengers were skeptical about the possibility of having Internet access during a flight. They were more accustomed to having to turn off their electronic devices during a flight.

However things have changed and being connected while flying is now available in much of the world. In fact, in flight connectivity is now becoming almost as important, and as much in demand, as Wi-Fi in hotels. Here is a rundown of some airlines to and from Asia that are offering in flight Internet access.

Japanese airlines have partnered with a service provider, Gogo, to enable their planes to have Wi-Fi and Internet access. The Japanese Civil Aviation Bureau has given Japan Airlines the go-ahead to install Wi-Fi on its domestic fleet of Boeing 737-800, 767-300, 777-200 and 777-300.

JAL plans to provide in-flight Internet service on its entire domestic fleet of 77 aircraft. Gogo currently holds Supplemental Type Certificates (STCs) from the FAA and certificates from the Japanese Civil Aviation Bureau to install its connectivity service on all aircraft types in JAL's domestic service.

All Nippon Airlines (ANA) passengers will be able to purchase Internet access on-board selected international flights using the new ANA Wi-Fi service, provided in partnership with JSAT Mobile Communications, which supports the 'Internet OnAir' Wi-Fi service in Japan. The service will be available to all classes of travelers on selected international flights serviced by Boeing 777-300ER and Boeing 767-300ER aircraft.

OnAir approved in 100 countries

Service provider OnAir has gained regulatory approval from over 100 countries and has put in place roaming agreements with more than

375 mobile network operators. This means that OnAir's services are now available on all types of planes flown by the world's major airlines.

OnAir is providing services to Philippines based Cebu Pacific, which is installing the service on its fleet of Airbus A320 aircraft for short haul flights. Flag carrier Philippine Airlines has also announced plans to offer the OnAir service.

OnAir also provides service to Middle East based airlines including Qatar Airways and Saudia Airlines. Qatar Airways launched in-flight connectivity in late 2012 and has since added the service to more aircraft. All its A350s and A380s are fitted with OnAir kit to provide Wi-Fi and Internet access.

Saudia Airlines' services are branded Mobile OnAir and Internet OnAir and are available on all 12 of this Airbus A330s. Saudia also plans to install facilities on all 20 Boeing B777-300ERs, enabled by the Thales TopConnect solution and Inmarsat's Swift Broadband.

Earlier this year, Oman Air reported a significant increase in the number of Oman Air passengers logging on to its in-flight service. It said that log-ins had increased by 45 percent and data volumes by 85 percent. The airline expects usage to double this year.

Etihad Airways and Emirates have a track record of being at the forefront of any development in the airlines industry. Since December 2012, Etihad has been flying from the United Arab Emirates to other Asian countries fully equipped with in-flight Internet and mobile connectivity. The service, dubbed Wi-Fly, is powered by Panasonic Avionics Global Communication.

The airline also has some aircraft using the OnAir in-flight service. Wi-fly connectivity costs $US13.95 per hour or $US24.95 for 24 hours and complementary to first class passengers. OnAir also provides connection to Emirates airlines. Singapore Airlines has been offering

in-flight services since 2012, powered by OnAir. In addition to Internet access the service offers live information, news updates and in-flight shopping. The service is available on SIA's long-haul Airbus A380-800s, A340-500s and Boeing 777-300ERs.

SriLankan Airlines has tapped OnAir and Inmarsat's SwiftBroadband satellite network to provide services on its six new A330-200 aircraft.

Thai Airways first in Thailand

Thai Airways also jumped onto the in-flight bandwagon this year with a service dubbed Thai Sky Connect, becoming the first airline in Thailand to offer in-flight connectivity. Six Airbus 380-800 and seven Airbus 330-300 aircraft will be equipped with it.

On Thai Airways, smartphone users will pay $US4.50 (146 baht) for 3MB or $US14.50 for 10MB. Passengers with laptops or iPads pay $US14.50 for 10MB and $28.50 for 20MB.

Hong Kong's Dragonair, a subsidiary of Cathay Pacific, has been making news about taking up Panasonic Avionics in-flight WiFi. However it has not yet made any installations among its fleet of aircraft. In-flight Internet access is now becoming a significant competitive differentiator among Asian airlines.

At the recently concluded CommunicAsia 2014 expo in Singapore Thailand's NokAir partnered with Thaicom to offer services on many of its planes, starting this August. TR

CENX's vision:

carrier ethernet on demand

Service orchestration might not sound like an exciting topic, but it has the potential to transform the way carrier ethernet services are provisioned. Telecom Review Asia Pacific caught up with one of the pioneers in this field, Nan Chen, at CommunicAsia in Singapore.

Nan Chen is cofounder and executive chairman of service orchestration software company CENX and also president of the Metro Ethernet Forum. He's a man with a vision for the future of carrier ethernet networks towards which both these entities are striving.

"Eventually service orchestration will power a portal that will the enable customers to provision carrier ethernet services directly, without having to talk to a carrier's sales guy," Chen told Telecom Review Asia Pacific.

He contrasts the present manual system for setting up carrier ethernet links across telco networks with the automation of the telephone system. "Think of telephony networks where any given endpoint can connect to any other endpoint in seconds even though there are multiple carriers in between. You don't even know about those, because service orchestration is built in. With data networks today it takes weeks if you want to set up ethernet between two endpoints."

Achieving this instant connectivity, he says, requires "all mobile, wireline and data centre operators worldwide to be able to provide connectivity services that are dynamically provisioned and deleted with quality and security assured." He adds: "CENX has pioneered and industry-leading service orchestration solution to help make that a reality."

A new generation software company

CENX (the name is derived from "We See-Nex generation service orchestration solutions), according to president and CEO, Ed Ogonek, is "a new generation software company using big data analytics, leading web technologies and deep data networking expertise to revolutionize the way carriers build and manage advanced data networking services."

CENX's flagship product is its Ethernet Lifecycle Manager (ELM), a software

platform that resides in the operator's network data centre environment, pulling data from a wide range of network and IT systems and providing a complete and very accurate view of all the carrier's network and IP circuits.

"With ELM we are delivering full life-cycle management of advanced data services from initial build and provisioning to real-time fault performance and SLA management," Ogonek says.

According to Chen, "It's the management of the entire life cycle of carrier ethernet and IP services from initially creating, defining and designing the services to provisioning, to ordering, testing and capacity planning and managing and eventually tearing down the services. That is life-cycle management. Generally the industry calls it service orchestration."

CENX launched its first version of ELM in 2012. It is now at release 5 and the company claims to have global tier 1 service providers and leading cloud data centers as its customers. Its development center is in Ottawa, Canada, and it has already opened sales offices in the UK and in Hong Kong to service the European and Asian markets.

According to Chen, CENX has been successful because it addresses a fundamental problem with telco networks, one that the MEF is also working to resolve through the development of standards.

Silos causing stagnation

"One of the reasons the telecom world is moving so slowly is that there is not enough abstraction of each of the network layers. What that means is that applications, service orchestration, controllers and the network elements - the routers and switches - are all vertically integrated. Any time you change anything within any of the layers, everything has to change.

"In the computing world you have CPUs, operating systems applications and users and you can innovate at any of those layers without affecting the others, but telecom operational support systems are not designed that way. They are vertically integrated so any time you want to change anything it takes a long time.

"What we are trying to do from a CENX perspective and an MEF perspective is to separate those layers: the service orchestration, which is the higher layers, and the controllers and the network elements at the bottom. Innovation should be possible at any of these layers to provide better functionality, be cheaper, or whatever."

Chen says that CENX is in a unique position. He claims it is the only company to provide a complete end-to-end solution for service orchestration of carrier ethernet networks. "There are other people providing each of the functions that we offer, the inventory and provisioning for example. Those people are feeding the information to us so we can have the higher-level view of those silos of performance, capacity, inventory etc. We bring it all together and run big data analytics and automation."

CENX is presently funded by venture capitalists and by Verizon and Ericsson, which both act as channels to market in addition to CENX's direct sales approach. Chen would not comment on the possibility or the timing of any IPO, or on the possibility of its acquisition by a larger company that would see service orchestration as one component of a more comprehensive range of offerings of networking software and hardware.

"We are focused on building the business and creating value," he said. TR

Missed calls meet social networks - via Tecnotree

Every phone call is important not only for the end user but also for the service provider. Service providers will be able to save as much as 30 percent of operational costs if they can convert every non-completed call into revenue. Call completion is one main reason Tecnotree came up with Reachability Express, a service for hard-to-reach end users that provides them notifications through their preferred social media platforms. Stavros Vougas, vice president, Asia-Pacific, Middle East and Africa talks to Telecom Review Asia about this latest product.

When was it launched?
We just announced it, two weeks ago, and next week we will announce it in Johannesburg South Africa at an event for VAS.

Before we talk about Reachability Express, kindly give us a brief about Tecnotree.
Tecnotree is an end-to-end telecom solution provider for tier 2 operators or tier 2 markets. It is a publicly listed Finnish company. Four geographic areas comprise the majority of the business: Latin America; Europe; Middle East; Asia Pacific and India. India is our R& D and product support and product delivery centre.

Tecnotree is a company of around 1000 employees with offices around the world. In the Middle East and Asia-Pacific we have an office in Dubai, which headquarters the region. In South Africa we have an office in Johannesburg. We have an office in Nairobi in Kenya. We have an office in Kuala Lumpur, Malaysia. We have an office in Taiwan. We have sales people residing in different places in the world like Thailand. We have representation in Melbourne, Australia, which covers the Oceania region.

What is the main focus of your portfolios?
Basically Tecnotree develops solutions in VAS area and BSS, billing and call completion. The call completion business unit came from Tecnomen before it merged with Lifetree to become Tecnotree. That is why we were able to maintain a complete portfolio for operators, from the VAS side as well as billing. From the billing side, generally speaking we are addressing tier two operators with the exception of Latin America where we have America Movil and in in the Middle East and Africa where we have the MTL Group.

We have to keep products that we started last year, BSS Express, a prepackaged billing platform with very little customization. It offers fast

deployable and addresses a small number of subscribers. It came as a result of demand from operators who wanted to launch services very quickly.

Instead of going to the traditional billing platforms to change a tariff plans or introduce a new service they find it more cost-effective to adopt a ready-made solution that integrates with the rest of the billing. That seems to have gained a lot of traction because of the explosion of the smartphone business and the applications that come on top, and all the services that are being launched into the market.

What do you think is the edge of your BSS?
I would say that it is rapidly deployable. It is pre-packaged. There is not much customization that needs to be done. It can be integrated to another billing platform. We have experience in billing platforms, and we have a very agile product, particularly BSS Express.

The same can be said of Reachability Express. It was launched at the VAS event in Johannesburg and now in Asia-Pacific here at CommunicAsia. It is the equivalent of BSS Express but on the VAS side of business. Reachability Express basically integrates all the social media demand, messaging, voice messaging, etc. It is a platform that is focused on addressing the need for call completion.

You are offering this to service providers?
Yes we are. It is a good opportunity for the CSP to generate income from traditional services. It also serves as a traction point for customer loyalty. It works the same as SMS notification. But has a wider scope in terms of platforms as it taps into social media like WhatsApp, Facebook, Line and more. This is good especially when customers are roaming.

How can the end-user have this service?
The service provider will provide you the settings and ask you to identify which social media application you are using. There is not much to do for end users. It will all be up to the service provider.

This is a platform that we sell to the service provider that they can convert to a service for their subscribers. It is a new service and something different from what others are doing.

How does it work?
End users can activate the service through service providers depending on how service providers design it and how they package it, but all messages come from Reachability Express.

It is also possible to change the notification format. For example from SMS then to WhatsApp and then later on to Line. Each subscriber can have his/her own profile and it is for the subscriber to let the service provider know to which social media app it should be provisioned.

Missed call notification comes in different forms depending on the social media application. For Line it is a missed call notification, for Facebook, chat and a message. On WeChat, a missed call notification and message. On WhatsApp, a message in a specific format. It can be in an mpeg3 format and be shared with any other media.

What drove you to come up with Reachability Express?
The VAS business has a tremendous demand now. In a lot of CSPs the VAS managers are looking outside traditional applications to attract customers because at the end of the day it is the product offering that makes the difference.

There is also another demand that we see in the younger generation. They are using a lot of smartphones and they are social media inclined, they really want something different. There is segmentation behind different messaging systems today, SMS, WhatsApp, Skype, and Facebook and so on; and how a telecom operator provides his missed call notification has something to do with this demand. It is unique and it is something new to the market. TR

VISLINK

Delivering video the Vislink way

The Vislink Group is a global technology business specializing in the collection and delivery of high quality video and associated data from the field to the point of usage. The company provides solutions to the broadcast market and to the surveillance market. At BroadcastAsia in Singapore, Mark Anderson, marketing operations manager, talks about the company, its new partnership with ND SatCom and how it is embracing new trends in broadcast communication.

Please tell us about Vislink

Vislink is a UK based company. The group and its brands are market leaders in their segments. We have the widest range of cameras in the market. Some of our latest Gigawave cameras were used in the recent World Cup in Brazil. Then we have a satcomms brand, Advent, which is also very well known.

We have brand in the US, MRC, which does a lot of point-to point microwave. Then we have LiveGear, which is based in the US and which supplies 3G wireless cameras. And we recently acquired Pebble Beach Systems, a leading developer and supplier of automation, channel in a box and content management solutions for TV broadcasters, cable and satellite operators.

As a group we provide an end-to-end solution for broadcasters. Vislink is a well-established company: we've been around in the broadcasting industry for over 20 years. Our head office is in the UK just outside London.

How about your presence in the Middle East and Asia?

We do have offices here in Singapore and we have an office in Dubai. And soon we will be opening an office in Brazil. We also have a large office in the US and two offices in the UK. So we have a very large presence around the world. We also have a lot of dealers and distributors.

How long have you been attending BroadcastAsia?

We've been attending this event for over 10 years. We started small but year-on-year our presence has grown as we have brought in more equipment. This is a very good place to meet with our distributors and their clients in the region.

Can you elaborate on your business here in Asia-Pacific?

Overall it is good. We have steady growth. We have a strong presence here. Based on our recent financial

results it is one of our strongest areas and there is a lot room for us to grow. Our office has been very busy. We've been seeing sales of our products here on this region, particularly before the World Cup.

Your new partnership, can you elaborate on that?
ND SatCom is a well-established European provider and we have done a deal with them to use their new modem. The plan is to use that modem in some of our equipment and ultimately put that in our satcomms.

We will also then reciprocate with ND SatCom. They will be able to actually use some of our antennas. This is one of our latest partnerships and we expect interest in those products going forward, probably around IBC time in September. We plan to do more with them. You may consider what we have now as a soft launch of our partnership.

What products are you showcasing on this event?
We have our latest camera transmitter, on show here for the first time. We also have on show for the first time in Asia our MSAT satellite system. That is the new motorized version, launched last September.

There is keen interest on this show and our offices in this region have been very busy. We've seen sales of our new products particular the ones that was used in the recent World Cup.

What's your view on the blurring of the line between broadcast and telecommunication?
I think what will happen is more centered on IP delivery. Our equipment is more focused on the studio than the home. But I think there will be some IP things happening there especially IP over satellite. One that happens people will be using our equipment to do some of that, particularly delivery.

There is no question that we are at the forefront of it. We see the technology that is coming and we will be delivering that, particularly to the broadcasters. And when that time comes I know we will be working a lot more.

Cameras that communicate wirelessly over 3G and 4G, like our LiveGear brand in the US, are becoming more and more pervasive. People now accept that they are not getting the highest quality but what matters is being first with the story. If a story develops then they bring in the bigger and more powerful satcomms systems, the big TV cameras and the rest.

We are seeing some tremendous success with our LiveGear products. But we want to do more. We want to be a part of the $750 billion industry. We will become part of that infrastructure as time goes on.

Microwave and satcomms gear will always be needed, but we also need to be aware of the technology that is coming in and our equipment has to work with that. TR


Wendy Koh, senior vice president (SVP) of APAC sales, Singapore


Sam Saba, head of customer unit, South East Asia and Oceania regions


Geoff Thomas, president, Polycom Asia Pacific


Matthieu Destot, vice-president of sales, Alcatel-Lucent Enterprise, Asia Pacific

Juniper beefs up Asia Pacific team
Juniper Networks has announced a series of senior appointments in Asia-Pacific spanning sales, systems engineering, marketing and partners. Wendy Koh has been promoted to senior vice president (SVP) of APAC sales, based in Singapore. An 11-year Juniper veteran, Koh has held several senior leadership roles across the company including VP of APAC service provider and VP of Asia sales. She reports to Vince Molinaro, Juniper Networks' chief customer officer.

Mitch Lewis, previously VP of strategic alliances, has relocated to Singapore to assume the role of VP of APAC partners reporting to Koh. Russell Skingsley has been promoted to VP of APAC systems engineering and center of excellence, focused on product evangelization, field enablement and overall technology stewardship. He joined Juniper in 2009 and has served in a number of senior APAC and global technology roles based out of Singapore. He also reports to Koh.

Helda Lopes, previously senior director of worldwide partner marketing, has been promoted to VP of APAC marketing, reporting to Matt Hurley, VP of worldwide field and partner marketing. Mark Ablett has been appointed vice president of Juniper's newly created South Asia region, which encompasses Australia, New Zealand and ASEAN. He also reports to Koh.

Ericsson names new Asia execs
Ericsson has appointed Sam Saba, currently head of customer unit Indonesia, to head its South East Asia and Oceania regions, and Charlotta Sund to head its Northern Europe and Central Asia regions. Saba has 20 years with Ericsson and has held a variety of senior sales and operations roles in South East Asia and the Middle East including leading its business with Telstra and heading Ericsson's operations in Australia, New Zealand and Fiji.

Sund has 25 years experience in the telecommunications industry. Her positions in Ericsson have included heading up product and business development, head of multimedia and systems integration for former market unit Nordic and Baltics, head of customer unit Nordics and Baltics. She is presently head of customer unit Industry and Society.

Polycom appoints new Asia Pacific president
Polycom has named Geoff Thomas as president, Polycom Asia Pacific. He joins Polycom from Juniper Networks where he was vice president enterprise sales Asia Pacific. He previously served in several leadership roles at Microsoft.

Anthony Briscoe named CEO of Southern Cross Cable
Anthony Briscoe has been appointed president and CEO of Southern Cross Cable Network. He replaces Fiona Beck, who has been CEO since 2001 and who is stepping down to pursue roles as an independent director. Briscoe is a former senior executive of Southern Cross Cable shareholder, Telecom New Zealand and has a long-standing relationship with the company. He previously served as a director and chairman of Southern Cross. He left Telecom NZ in 2011 after a 22-year career that culminated in him holding the role of general manager international.

New Asia Pacific sales VP for Alcatel-Lucent Enterprise
Alcatel-Lucent Enterprise has named Matthieu Destot as vice-president of sales for Asia Pacific, which the company says is "a key growth market where demand for seamless cloud-based collaboration and broader network and communication solutions is on the rise." He was previously vice president of enterprise sales for France and before that worldwide Director for the FT Orange global account.

Fortinet appoints new ANZ & South Pacific engineering director
Network security technology vendor Fortinet has named Gary Gardiner as director of engineering for Australia, New Zealand and the South Pacific. He has over 15 years' security industry experience working

for system integrators, enterprises, end users and network security vendors for companies such as Queensland Government, Bridge Point Communications and Standard Life Assurance in the UK. Most recently he was the northern region sales.

Cisco names new Indian leadership team

Cisco has named a new leadership team for India comprising Dinesh Malkani, president - sales for India & SAARC; Amit Phadnis, president - engineering and India site leader; and VC Gopalratnam (Gopal), president - strategy, planning and operations, India and CIO, Asia Pacific and Japan and Greater China.

Malkani takes over from Jeff White and will report to Irving Tan, Cisco's president, Asia Pacific and Japan. Phadnis will lead Cisco's focus on innovation, ecosystem and talent development in the country. Gopal will take on the newly created role of president of strategy, planning and operations for Cisco India in addition to his current role as CIO for Asia Pacific, Japan & Greater China.

Brocade names three to regional SDN roles

Brocade has named Chee Keong Lam and Beni Sia to the roles of director of data center fabric and virtualization for Asia Pacific and regional director for South East Asia, respectively. Their appointments follow that earlier of Benjamin Hickey to the newly created role of software networking director for Asia Pacific.

Lam and Sia will be responsible for driving the company's data center and software-defined networking (SDN) strategy and adoption across the regions. Lam will report to Matt Kolon, Brocade CTO for APAC. He was most recently the country director for Singapore, Vietnam, Philippines and Indo-China at Juniper Networks.

Sia will be responsible for charting the company's strategic direction and growth for the region, and driving customer adoption of Brocade Ethernet fabric and software networking solutions.

VMware names new head of End User Computing for APJ

VMware has named Sanjay Deshmukh as head of its end user computing business for Asia Pacific and Japan. He joins VMware from Citrix Systems India where he was area vice president, Indian Subcontinent for more than four years. He will report to Sanjay Mirchandani, VMware's senior vice president and general manager for the APJ region, and will be based in Singapore.

Gartner hires former Australian Government CIO

Global technology research and advisory firm Gartner has appointed Glenn Archer to the role of research vice president in its public sector research group. The primary focus of his research will be the rapid transition to digital service delivery by governments, specifically in the context of the business and operational implications, and the opportunities available to governments to better leverage emerging technology solutions.

He was most recently the Australian Government's chief information officer and a first assistant secretary in the Department of Finance. He led the Australian Government Information Management Office (AGIMO), which fosters the efficient and effective use of information and communications technology by Australian government departments and agencies.

Satellite company ITC Global expands in Asia

Satellite communications provider ITC Global has appointed industry veteran Ashok Rao to open new operations in Singapore, and expand its business across Asia. The new office will initially provide sales, engineering and customer support resources. Field operations resources will be added shortly.

The company said the new Singapore office would supplement its regional headquarters in Perth, Australia, by placing additional facilities and personnel closer to customers in the offshore energy and commercial maritime markets. TR

Chee Keong Lam, director of data center fabric and virtualization, Brocade Asia Pacific

Beni Sia, regional director, Brocade South East Asia

Glenn Archer, research vice president, Gartner, public sector research group

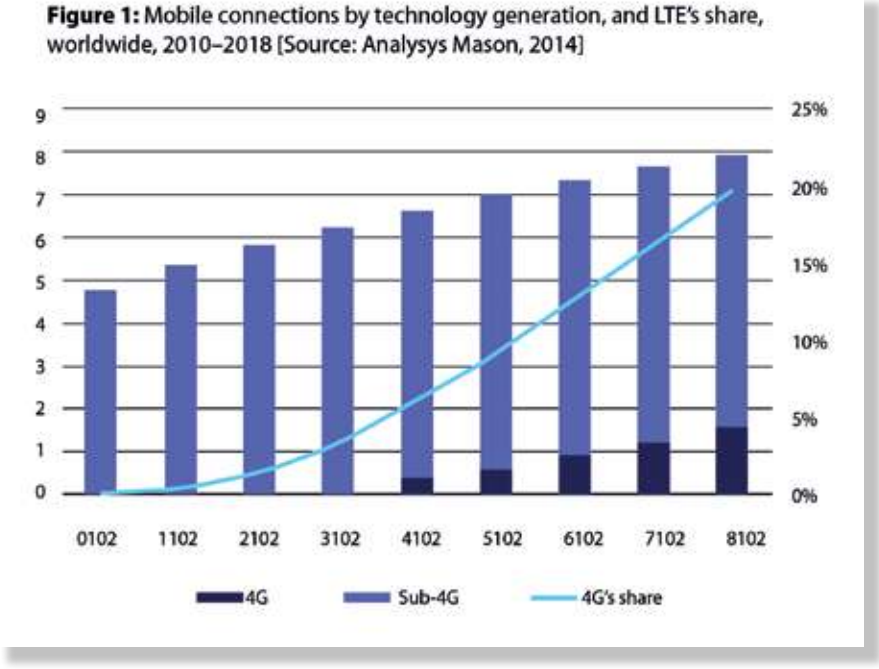
VoLTE: Challenges and opportunities

Voice-over-LTE (VoLTE) technology is in the early stages of deployment at a few operators including KT, LG Uplus, SK Telecom and Verizon Wireless. However, the full promise of VoLTE is still years away. The challenges inhibiting the rapid migration to VoLTE include the need to assure end-to-end quality of service (QoS) for VoLTE technologies such as Single Radio Voice Call Continuity (SRVCC) and in different types of scenarios such as VoLTE to VoLTE, VoLTE to 3G and VoLTE to CDMA.

VoLTE promises significant business benefits for operators, but full-scale adoption will take time

Analysys Mason forecasts that the number of LTE 4G connections will increase twenty-fold from 80 million in 2012 to reach 1.60 billion in 2018, a CAGR of 64 percent. LTE connections will account for 19.7 percent of mobile connections by 2018 (see Figure 1).

Figure 1: Mobile connections by technology generation, and LTE's share, worldwide, 2010–2018 [Source: Analysys Mason, 2014]



LTE will be used predominantly to deliver data services, but the different nature of the voice and data technology will force operators to run a separate circuit-switched voice network. Circuit-switched fallback (CSFB) is a temporary solution, but the real benefit realization can occur if operators implement SRVCC and full native VoLTE.

Operators are already evaluating SRVCC technology, which would enable them to deliver premium HD voice services while scaling down their CS voice networks, resulting in significant cost savings. However, SRVCC is a complex hybrid technology, and we are years away from ubiquitous LTE coverage that would enable full native VoLTE support.

Assuring VoLTE is a complex challenge for operators

Despite showing a declining trend, voice is still the highest revenue-generating service for mobile operators. This, together with the established QoS expectations of CS voice, places significant pressure on operators to get VoLTE right first time; they cannot afford to get it wrong.

A comprehensive service assurance strategy for VoLTE must consider a range of issues. Foremost, monitoring and assuring end-to-end QoS must form a central theme for all service assurance requirements because VoLTE is all-IP, and in an all-IP LTE network, there are no network resources devoted to voice. A VoLTE call can traverse any given path in the network, creating the need for a comprehensive monitoring approach that takes into consideration all possible network call flow scenarios. Assuring QoS in the RAN will pose the biggest technical challenge for operators. Some of the key assurance issues that must be tackled are discussed in Figure 2.

Multiple VoLTE call scenarios add to the complexity

Operators must cater to a variety of VoLTE call scenarios and tackle the assurance requirements appropriately (see Figure 3).

Other scenarios such as roaming and interoperability with other operators will need significant co-operation among operators in order to deliver and assure VoLTE.

Service assurance solution: Vendors that move early will have an advantage

Vendors should position their solutions and communicate clearly in order to gain a competitive advantage in the market. Assuring CSFB will become a prerequisite for most operators, and vendors that succeed in the VoLTE assurance segment will be those that

can offer solutions for SRVCC and develop advanced capabilities such as monitoring and correlating signalling and user planes, assuring end-to-end call quality, monitoring and optimizing network performance in near real-time, and troubleshooting handover failures and call drops. TR

By Anil Rao and Patrick Kelly, analysts at Analysys Mason

Figure 2: Some considerations for VoLTE service assurance requirements [Source: Analysys Mason, 2014]

Consideration	Description
Call handover in the RAN Call anchoring in the core network for SRVCC	In a scenario where a user initiates a call in an LTE cell but moves out of LTE coverage mid-call, the call must be seamlessly handed over to a 2G/3G network. Call drops must be avoided, and the expected call quality in terms of latency and QoS must be maintained. Calls can be either packet-switched (PS) or CS depending on the radio coverage, so all calls must be anchored by the IMS. Because calls are handed over from PS to CS voice networks and vice versa, the IMS needs to accurately maintain the state of the call and provide control for both outgoing and incoming calls.
Expected signalling overload resulting from VoLTE	Operators have deployed diameter routing agents (DRA) for load balancing of signalling overload from smartphones. It is expected that VoLTE will increase the signalling load and any DRA failure will have a significant impact on the VoLTE service.
Signalling complexities	A network call setup for VoLTE requires significant levels of co-ordination among disparate network elements. Signalling for attach, registration and call control must be monitored for troubleshooting.
End-to-end quality of service	Voice is real-time in nature, so any degradation in network performance can have a noticeable impact on call quality. The network has to be optimally tuned to ensure that voice packets get the highest priority by assigning the appropriate QoS class identifier (QCI).
Network performance	Real-time network performance monitoring and optimisation, and self-organizing network (SON) capability will put operators in a better position to assure VoLTE.
Assuring QoS in the RAN and at cell edge	Assuring QoS in the RAN is a significant challenge for operators, which is further accentuated as customers move to the edge of the cell because poor reliability of the connection and interference from neighbouring cells can result in dropped calls.

Figure 3: VoLTE call scenarios [Source: Analysys Mason, 2014]

Scenario	Description
VoLTE to VoLTE	The most straightforward call scenario, but will be limited to areas with LTE coverage.
VoLTE to 2G/3G and vice versa	All 2G/3G operators, for example, most of those in Europe, the Middle East and Africa and Asia Pacific, moving to LTE will cater to this scenario as LTE coverage improves.
VoLTE to CDMA and vice versa	All CDMA operators, for example, most of those in North America and some in the developed APAC region.
VoLTE to PSTN and vice versa	This will be a mandatory scenario for all operators because they have to provide interconnection with fixed telephony and emergency calling.

Bringing the Internet of Things to the Marketplace

At a recent forum in Nice, France, Chris Newton-Smith, Redknee VP of Marketing spoke about how the Internet of Things (IoT) will help to drive the next wave of innovation. By 2020, it is expected that 30 billion new things will be connected to the Internet, and a commercial business model to generate revenue will be required.

The Challenges

The IoT ecosystem is complex and involves many participants, from communications, electric/gas, healthcare, automotive, security and other industries using connected devices with sensors, modules and SIMs to provide new solutions and services.

New services will emerge, such as intelligent traffic management in smart cities, telemedicine and remote healthcare, smart energy management, and smart home services. There will be all kinds of different devices, various connectivity environments, machine-to-machine (M2M) enablement platforms and industry-specific M2M solutions involved. This means more of everything: more devices, transactions, services, applications and connections. The challenge and requirement for enterprises offering M2M-based services is to take the complexity out of M2M.

There are various ways for IoT to connect to the Internet – based primarily on range and data required. While many of today's M2M devices require low transmission capabilities, the bandwidth requirements will continue to grow. The landscape is continuing to evolve, but there are opportunities for many players.

The communications service provider (CSP) sweet spot lies in:

- Providing the furthest range for mobile and isolated 'things'
- Enabling the transport of large data files
- Acting as a trusted brand (new startups may be gone in a few years)
- Ensuring availability and ubiquity
- Delivering AAA and security capabilities
- Enabling the monetization of M2M applications and bandwidth
- Providing roaming capabilities

Research and investment is continuing to support IoT for cellular: 4G sensors, embedded sensors, lower power requirements and more.

The Opportunities

CSPs are a trusted brand that can provide turnkey IoT platforms to help businesses launch and support their IoT offerings. CSPs can play a significant role in IoT business if they move away from traditional business models, go beyond the connectivity business towards platforms and integration, and find the right vertical partners to provide complete solution offerings. This path will lead to business value creation and revenue potential.

M2M introduces new business models that challenge the traditional telecommunication billing systems that support various business models and different vertical industries. Flexible billing and charging solutions are required to monetize M2M and enable service providers to foster cost-effective and rapid reuse and repurposing when entering new vertical industries. To effectively monetize IoT, CSPs need a robust real-time billing and charging solution that provides scalability, multi-industry support, the ability to efficiently manage large numbers of low-value transactions, support for advanced B2B pricing structures, and that accommodates advanced partner management for revenue-sharing and settlements.

Ready to monetize IoT?

To take advantage of the full business potential of IoT, CSPs must adapt and change quickly. CSPs should explore IoT vertical needs and horizontal capabilities, and focus on the IoT value chain, including networks, applications and connected devices. It's important to create the right technology platform and strategy for IoT, providing full end-to-end integration, and develop the right business models with respect to partner management and charging. TR

CEF's OpenCloud project gets underway

Comcast, Verizon and Tata have hosted the first meeting of the OpenCloud Project, a live test environment for the validation of end-to-end interoperability for cloud, data center and network services.

The OpenCloud Project is open to all companies worldwide and is sponsored by the CloudEthernet Forum, a member industry group comprising Alcatel-Lucent, Avaya, Comcast, Ciena, Cisco, Citrix, CoreSite, Ericsson, Equinix, Juniper, HP, Huawei, Interexion, PCCW Global, Spirent Communications, Tata Communications, Telx, Verizon and many others.

According to the CEF there are many challenges for today's enterprise cloud customers that could severely limit the potential of the burgeoning cloud services market.

"The root cause is [that] network service providers, cloud service providers, data center operators and enterprises all use different APIs and interfaces to communicate," CEF president, James Walker, said.

SK Telecom and Ericsson demo 5G elastic cell

SK Telecom and Ericsson say they have successfully demonstrated elastic cell technology, which is expected to become a key enabler for 5G. The announcement follows the signing, on July 6, of a memorandum of understanding between the two companies for joint research on 5G technologies.

According to SK Telekom, "Elastic cell, also known as flexible cell, is a new technology that enables multiple cells near the handset to cooperate for every transmission thereby creating a user-centric environment, compared to the current cell-centric one where each handset communicates with only one specific cell."

With Elastic Cell technology a serving cell receives information on nearby cells from a handset and selects a group of cells that can improve the network quality in the cell-edge for transmission while temporarily turning off the cells that cause interferences.

According to SK Telecom and Ericsson, the demonstration confirmed that the technology could improve data transfer rate by up to 50 percent at the cell boundary compared to the existing LTE network. SK Telecom says it aims to commercialize the technology by 2016.

Huawei elected to board of European 5G body

Huawei has been elected to the board of the 5G Infrastructure Association in Europe at the General Assembly held in Bologna on June 26th. Huawei will be represented by Dr David Soldani of the Huawei European Research Centre.

The 5G Infrastructure Association is as an international non-profit association based in Gent, Belgium. It conducts research on 5G communication systems and networks, contributes to the preparation of global standards related to 5G and to regulatory discussions on topics including future frequency bands. The organization represents the private party of the 5G Public and Private Partnership (5G-PPP), a €1.4 billion joint initiative between the European ICT industry and the European Commission, created to develop standards for the next generation of mobile communication networks that will deliver ubiquitous super-fast connectivity for Europe and globally.

Huawei promises to: help formulate and implement a 5G communications plan with partners and to disseminate results at a global level; play an important advisory role for the 5G Infrastructure Association, contribute to shaping European Union (EU) priorities in 5G research and extending the dialogue to a wider group of stakeholders; and to work with the European Commission and industry partners to align the work of the 5G Infrastructure Association, the 5G-PPP, the NetWorld2020 European Technology Platform and various related working groups with stakeholders' expectations.

ZTE advocates dynamic mesh networking for 5G

ZTE Corporation has released details of a new 5G access network architecture based on dynamic mesh networking saying it believes that 5G radio access networks should use a dynamic mesh network technology based on IP backhaul. "In 5G networks there could be many types of base station including UDN (user densification network), massive MIMO (multiple-input multiple-output), traditional macro, and D2D (device-to-device). These various base stations will coordinate with each other horizontally more often than they do in 4G networks, and so will require a dynamic and adaptive wireless mesh network."

ZTE claims that this approach to the improvement of 5G network architecture will make it possible for 5G networks to implement highly effective SDMA (space-division multiple access) and it hopes this will become "the next telecoms industry hotspot for 5G technology research."

G.703

ITU standard for transmitting voice over digital carriers such as T1 and E1. It provides the specifications for pulse code modulation (PCM) at data rates from 64Kbps to 2.048Mbps

Gateway

A network node equipped for interfacing with another network that uses different protocols. It may contain devices such as protocol translators, impedance matching devices, rate converters, fault isolators, or signal translators as necessary to provide system interoperability. It also requires that mutually acceptable administrative procedures be established between the two networks

Geostationary Orbit

A circular orbit above the equator at a height such that a satellite in that orbit will have an orbital period equal to the earth's rotational speed and will thus remain always above the same point on the ground. A geostationary orbit is at a height of approximately 36,000kms above the surface of the earth

Geotagging

The addition of geographical information, usually in the form of latitude and longitude coordinates, to Web sites, images, videos, smartphone transmissions, and various other data types and sources

Global information infrastructure (GII)

The totality of worldwide infrastructure elements that combine the three industry sectors of (a) telecommunications, (b) computer (information) technology and (c) consumer electronics to extend the capabilities of the NII (national information infrastructure) worldwide

GOSIP

Acronym for Government Open Systems Interconnection Profile. A definition of US Federal Government functional requirements for open systems computer network products, including a common set of Open System Interconnection (OSI) data communication protocols that enables systems developed by different vendors to interoperate and enable the users of different applications on these systems to exchange information

Governance, Risk and Compliance (GRC)

A combined area of focus within an organization that developed because of interdependencies between the three components

Graded-Index Fiber

An optical fiber with a core having a refractive index that decreases with increasing radial distance from the fiber axis

Ground Wave

In radio transmission, a surface wave that propagates close to the surface of the Earth. Note 1: The Earth has one refractive index and the atmosphere has another, thus constituting an interface that supports surface wave transmission. These refractive indices are subject to spatial and temporal changes

Guard Band

Time Guard Band
A time interval left vacant on a channel to provide a margin of protection against interference between sequential operations such as detection, integration, differentiation, transmission, encoding, decoding, or switching

Frequency Guard Band
A frequency band deliberately left vacant between two channels to provide a margin of safety against mutual interference TR

Telecom Review Summit 'Its all about Networking' 2014
Intercontinental Hotel, Festival City, Dubai, UAE
26 November 2014

September 2014

Asian Carrier Conference

The ACC is the most sought-after telecom conference in Asia, the world's growth area on telecoms and IT. The ACC is where industry leaders from wholesale fixed and mobile carriers, network and infrastructure providers, applications and service developers, handset and equipment manufacturers and entertainment and content distributors join under one roof to discuss and share about the latest technology, breakthroughs and innovation in the world of telecommunications and ICT.

Date: 10-13 September 2014
Place: Cebu, Philippines

LTE ASIA

Now in its 8th year, LTE Asia is the must-attend event for Asian operators.

Date: 15 - 17 September 2014
Place: International Convention & Exhibition Centre, Suntec Singapore

November 2014

MEF GEN14

With a target audience exceeding 1,200, GEN14 is the must-attend networking event of the year for executives and other senior professionals involved in all aspects of the CE services and technology ecosystem (end-users, service providers, network solutions vendors, etc.) Combined CE services and technology revenue associated with this ecosystem is projected to grow from $45+ billion in 2013 to $65+ billion within the next 5 years. This event is for those committed to making it happen.

Date: 17-20 November, 2014
Place: Washington, DC-Gaylord National

Telecom Review Summit 'Its all about Networking' 2014

For the 3rd consecutive year, Telecom Review's summit 'It's all about Networking' will bring to Dubai the leaders of the telecoms and ICT sectors from across the globe in a very friendly environment to discuss the markets' latest challenges and opportunities.

Date: 26 November 2014
Place: Intercontinental Hotel, Festival City, Dubai, UAE

Latest updates on: www.telecomreviewasia.com

MEF GEN14

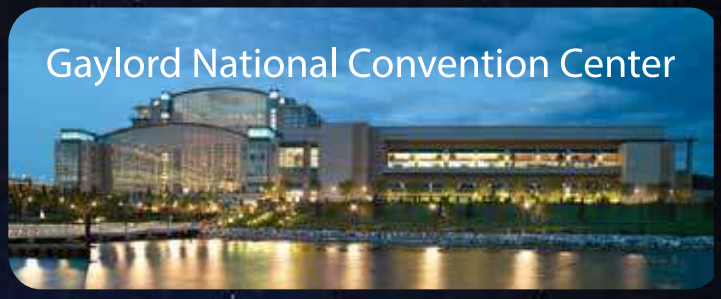
GLOBAL ETHERNET NETWORKING 2014

November 17 - 20 Washington, DC

The global gathering of the Ethernet community defining the future of network-enabled cloud, data and mobile services.

Largest event for buyers & sellers of Ethernet services and enabling network technologies.

1,500 Attendees
100+ Ethernet Service & Cloud Providers
100+ Enterprise & Government Agencies
50+ Media & Analyst Organizations



REGISTER NOW AT GEN14.COM

Telecom Review is an official GEN14 Media Partner

PLATINUM SPONSORS

Cisco, Comcast Business B4B, Cox Business, Ericsson, Juniper Networks, Lumos Networks, PCCW Global, Verizon

GOLD SPONSORS

cenx, Ciena, Cyan, Fujitsu, InfoVista, MRV, Oracle, Overture, RAD, Tata Communications, Telco Systems, Telecom Italia, Sparkle

SILVER SPONSORS

Alcatel-Lucent, allstream, Amartus, Colt, Eantc, EXFO, Global Capacity, Globe Business, iometrix, Time Warner Cable Business Class, PLDT, Spirent Communications, Tech 2000, Telus, neustar, Perpetual Solutions Delivering Knowledge, Transition Networks, Veryx Technologies, WebNMS, XO

BRONZE SPONSORS

INOC, Omnitron Systems, ONEAccess, Pulsecom, Raisecom

ADDITIONAL SPONSORS

at&t, btl

PARTICIPATING SERVICE PROVIDER

T