

telecomreviewasia.com

Smart cities in Asia: a multi billion dollar ICT market

Telecom towers go green

City-wide WiFi spreading in Asia **TDD-LTE** A technology whose time has come

OTT SERVICES FOR CLOUD ENABLING AND CONTENT MONETIZATION BY DEUTSCHE TELEKOM





NETANALYZE AND NETOPTIMIZE

Optimization of digital content distribution based on multi-sourcing.



LIVESTREAM PERFORM

High-quality global streaming to large-scale audiences over the open Internet.



VIDEORISE

Simplification of the management and delivery of premium film and TV content.



For more information, see **www.telekom.net/bdi**



CONTENTS



telecomreviewasia.com





- 5 Global news
- 6 Regional news
- 12 Deutsche Telekom BDI: Rethinking traditional wholesale models
- 14 Metro Ethernet Forum: new vision, new strategy



- A technology whose time has come
- 28 Ooredoo: Leveraging communications for a better life
- 34 Meeting the indoor mobile challenge
- 47 Glossary -F-
- 48 Events' calendar

CINERCOM 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 one day full of new different streams, the summit, held under the theme "It's 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 the era of the new services. Every year Telecom Review presents the Telecom Review Industry Awards to key people in our business. The awards honor firms based on their innovative business practices, business excellence and overall business success. The award is meant to recognize the vital contribution made by these individuals and their companies. TELECOM REVIEW AWARDS 2014

11 The attendance level is very impressive. This event is gathering people from different parts of the region; people who have contributed to the ICT sector not just regionally, but globally as they are active participants in the ITU TO H.E. Mohamed Al Ghanim, director general, TRA, UAE

Simply, there is no other event in the region that has the same capability to gather this great number of executives of telecom operators. The level of attendance shows the level of importance this event has acquired for the past two years Marwan Hayek, CEO, Alfa

> I am very happy to see such a level of audience, which is outstanding as it gathers delegates from different parts of the world. It is very encouraging JJ Hatem Bamatraf, Group CTO, Etisalat

It is much more than I expected in terms of the quality and the number of attendees as well as the ideas and the discussions. It is much more than networking. I am definitely looking forward to more future forums like this Shi Yaohong, president, Huawei, Middle East

TELECOM Review

Telecom Review Award 2013

www.telecomreview.com

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

Senior Editorial Manager - APAC Stuart Corner stuart@tracemedia.info

Editorial Team

Genesis Maniquez (Head of APAC Reporters) genesis@tracemedia.info

Marcelle Najem Saikaly (Editor) marcelle@tracemedia.info

> Graphic Designer Mary Eid

Marketing Manager Mohammed Ershad ershad@tracemedia.info

Published by



Operations Manager Marian Santos info@tracemedia.info www.tracemedia.info

Trace Media FZ.LLC. Sydney, Australia PO Box 40 Enmore NSW 2042 Tel. +61 419 492 190 stuart@tracemedia.info

Manila, Philippines

Tel. +639174788170 / +639204689763 genesis@tracemedia.info

Dubai, UAE

Dubai Media City, Bldg. 7, 3rd Flr., Office 341, P.O.Box 502498 Tel. +971 4 4474890 Fax +971 4 4474889

> **Printing** Arab Printing Press

© All Rights Reserved. Publication of any of the contents is prohibited.

Urbanization, smart cities and the Internet of Things

The Asian Development Bank's strategy for 2020 report Working for an Asia and Pacific Free of Poverty states: "Livable cities will be fostered through support for infrastructure, with programs that focus on water supply, sanitation, waste management, urban transport and urban shelter programs of slum upgrading, land development, housing and housing finance."

That's stating the obvious, but equally obvious is the importance of communications of which there is not a mention. The document is now six years old, but that's really no excuse for not giving more acknowledgement to the key role communications will play in transforming the cities of Asia and the world, by enabling smart cities and the Internet of Things.

This edition of Telecom Review Asia Pacific comes out on the eve of CommunicAsia 2014 and its affiliated events EnterpriseIT2014 and BroadcastAsia2014, all due to held in Singapore from 17-20 June.

The Internet of Things (IoT) will loom large at the event. The organizers have promised that IoT will be "clearly illuminated at Communicasia2014 and Enterpriseit2014," arguing that both emerging and developed cities must "adopt IoT to transform how [they] deliver services and how business and people interact with one another."

IoT is a useful concept but a great simplification. In reality IoT and smart cities are realized only by the combination of many specific technologies. CommunicAsia2014 and EnterpriseIT2014 will demonstrate how these various technologies connect people, enterprises and cities with three thematic clusters – NXT Cities, NXT Enterprises and NXT Connected Services.

Technologies featured in NXT Cities will include big data and business analytics software, cloud services, embedded technology, sensor networks/sensing technology, RFID, GPS, M2M, mobility, security and ID recognition technology, wireless network and others.

If you want to see and understand how communications will shape and enhance the cities of Asia, and therefore the future of Asian economies, CommunicAsia is the place to be.

Solon



Stuart Corner Senior Editorial Manager Telecom Review Asia Pacific

Deutsche Telekom publishes 2013 CR Report

- Telekom

Deutsche Telekom published its Corporate Responsibility report for the twelfth time. With the title "We take responsibility," it provides information on the Group's challenges and commitment in economic, ecological and social fields.

Groundbreaking projects in the 2013 reporting year included:

• Group-wide CR Policy adopted. Corporate Responsibility has been actively practiced at Telekom for many years. This is now additionally anchored in a Group-wide policy. It determines the duties and responsibilities of the Group's individual units when it comes to sustainable conduct.

• Social Charter revised. We added a central point of contact for human rights issues, among other things. The Social Charter acts as a kind of constitution for corporate social responsibility for Telekom and its suppliers.

 Migration to IP technology improves energy efficiency. In 2013, our Macedonian subsidiary became the first in Europe to deactivate traditional fixed-line technology and switch over entirely to IP-based lines. We are currently working on this in Germany as well. This move will mean that by 2020 the CO2 emissions created by German fixed-line services will be 50 percent lower than in 2008.

• "E-Mail made in Germany" sets new security standards. In response to the NSA affair, DT founded the industry initiative, "E-mail made in Germany," together with the United Internet company in August 2013.

Eavesdropping protection for mobile communications improved. The implementation of the A5/3 encryption standard throughout Germany ensures our mobile users are protected against illegal eavesdropping attempts.
Pioneers in cordless telephones with Blue Angel eco-label. In March 2013, we were the first, and so far the only, company to offer DECT telephones with the prestigious Blue Angel eco-label.

• "Yes, I can!" initiative selected as an "official measure" by the UN Decade Education for Sustainable Development. Through this initiative, we supported 136 projects across Germany promoting independent, confident behavior in children and young people in 2013 alone. We have reached over 50,000 children and young people in this way since the start of 2009.

• CR clause a permanent feature of our General Terms and Conditions for Purchasing. By signing an agreement, suppliers commit to taking specific measures to prevent corruption, produce the goods and services provided under environmentally and socially acceptable conditions and provide information about the materials they use in the production process.

• Group-wide climate protection target approved. We are planning to reduce CO2 emissions by 20 percent throughout the Group (not including T-Mobile USA) by the year 2020 compared to 2008.

• Leading the way in climate data transparency. Telekom was included in the Climate Disclosure Leadership Index for the DACH Region (Germany, Austria, Switzerland) in 2013. We were awarded 90 out of a possible total of 100 points for the data we submitted. This positions us among the best ten percent of companies in this region. The CR report is closely linked to the annual report and the data privacy and data security report. It also links directly to the human resources report, which covers key sustainability aspects of the HR strategy.

Telecom Italia Sparkle expands its Global IP Backbone



TI Sparkle, the international services arm of Telecom Italia Group, announced the expansion of its Global IP Backbone with two new POPs in Fortaleza, northern Brazil, and in Panama City as well as the upgrade of the Americas Backbone to 100 Gbps.

These two new points of presence in Central and South America add to Sparkle's global backbone capillarity and will further improve the performance of Sparkle's Global IP Transit Service Seabone offered to content and service providers in the region and at the same time will provide eyeballs with an overall higher internet experience. The Americas backbone upgrade to 100 Gbps also adds to a higher service quality to TI Sparkle customers in the region as it introduces efficiencies in provisioning and fault management, thus increasing overall network reliability in addition to overall backbone capacity.

Panama is a major hub in the region and the new POP will provide ISPs, content players, and multinational corporations located in Central America with lower latency and improved traffic routing capabilities.

The new POP in Fortaleza is TI Sparkle's fourth POP in Brazil and thanks to its proximity to Miami with respect to the other points of presence in Rio and San Paulo; it will further improve performance in one of the world's most crucial route between North and South America.

"TI Sparkle is currently ranked number one in Renesys' South American Wholesale Ranking and significantly ahead of its main competitors. Combined with our number ten Global position, TI Sparkle is the ideal choice for top quality North to South American IP connectivity," says Elisabetta Ripa, CEO TI Sparkle.

Seabone is TI Sparkle Tier1 fully IPv6 enabled global IP Transit backbone that ranks among top five in Europe and number one in the Mediterranean. While consolidating its global role, Seabone is strengthening its regional positioning globally and especially in Africa and Asia, where it has reached leading positions.

Qualcomm demos LTE-TDD broadcast in China

Qualcomm subsidiary, Qualcomm Technologies, says it has conducted "the first announced live public demonstration of LTE-TDD Broadcast in China."

The demonstration used devices based on Qualcomm Technologies' reference designs with Qualcomm Snapdragon 400 processors and integrated Qualcomm Gobi modems. It was supported by Qualcomm Technologies' LTE broadcast solution for the evolved multimedia broadcast multicast service (eMBMS) platform. The demo took place today during the Qualcomm Reference Design & Wireless Innovation Summit in Shenzhen.

LTE broadcast is designed to enable mobile network operators to more efficiently manage their spectrum and network loads by allowing the multicast of high-demand content such as live sporting events, breaking news or software updates, so that multiple users receive the same content simultaneously. It uses standard LTE network architecture and modems, helping simplify implementation and saving costs.

According to Qualcomm the demonstration illustrated one of the many potential implementations for LTE broadcast, which operators also could use to deliver real-time, locationbased or off-peak services, such as pay-per-view events, live broadcast television – even to areas not supported by traditional delivery methods – or important firmware updates. Qualcomm's LTE broadcast technology is commercially available in Korea and is expected to begin arriving in China and other regions later this year.

NTT Docomo teams with leading vendors for 5G trials

NOKIA

NTT Docomo has teamed up with six leading mobile technology vendors - Alcatel-Lucent, Ericsson, Fujitsu, NEC, Nokia and Samsung - to conduct, separately with each vendor, experimental trials of emerging 5G mobile communications technologies. NTT Docomo said the trials would aim to "confirm the potential of 5G mobile technologies to exploit frequency bands above 6GHz and realize very high system capacity per unit area, and new radio technologies to support diverse types of applications including machine-to-machine (M2M) services."

The company added that it also expects to collaborate with other

companies in its effort to test a wide range of 5G mobile technologies.

5G is a new-generation cellular system targeted at commercial deployment in 2020. The new system is expected to enable ultra-high-speed data transmissions at more than 10Gbps, a 1000 fold capacity increase on existing LTE networks and connectivity for massive numbers of devices to support the ever-expanding market of M2M services.

Docomo will begin indoor trials at its R&D center in Yokosuka, Kanagawa Prefecture this year and plans to follow these with outdoor field trials next year. "Key findings and achievements will be shared with research institutes and at international conferences to contribute to 5G standardization, which is expected to start from 2016," Docomo said. "Key findings also will be utilized for research aimed at incubating future advanced technologies."

Nokia said this latest move would build on the memorandum of understanding signed by the two companies in January 2014 to research future radio access experimental systems.

"The two companies will continue to cooperate on the research of future radio access systems, with an initial focus on exploring the potential of the millimeter wave technology at the 70GHz spectrum band," Nokia said. "The experimental 5G PoC system will be implemented using National Instrument's (NI) baseband modules which make up the state-ofthe-art system for rapid prototyping of 5G air interfaces today."

Tata and Huawei complete first 400G long-haul subsea network field trial

Tata Communications, Huawei and Huawei Marine completed a trial of 400Gbps per wavelength optical communication on a subsea network over a distance of 6000km, claiming it to be "an industry-first for a submarine cable system of this length." Huawei and Huawei Marine's technical solution adopted the modulation format of dual carrier polarization division multiplexing quadrature phase shift keying (DC-PDM-QPSK), an innovative Faster-Than-Nyquist (FTN) compensation and recovery algorithm, proprietary clock recovery technology and soft decision forward error correction (SD-FEC) technology to address the problems of high-speed signal distortion and unstable clocks. Hon Kit Lam, vice president of Tata Communications' International Transmission and IP business, said: "The 400G technology of Huawei and Huawei Marine demonstrates that our existing subsea network asset is capable of supporting future, next-generation transmission technology as shown in the 400G trial."

Why not make life easier?

Flexible LTE Networks with Kathrein



Site deployment can be complicated - but it doesn't have to be. Using Kathrein's new RET technologies, the installation process is highly eased. The innovative FlexRET antennas and RFID spindle technology provide advantages such as fully automatic antenna configuration and highly reduced effort of installation. In addition, Kathrein's unique Site Sharing Adapter allows flexible operator / base station sharing scenarios on site. These site sharing scenarios are completed by deploying Kathrein's combiner and amplifier products from an extensive portfolio.

At the end of the day, time is money – so why not profit from Kathrein's easy and flexible solutions? Come and get your answers and further details at booth no. 1K3-01 at the CommunicAsia 2014.







Smart cities in Asia: a multi billion dollar ICT market

Total investment in smart city technology in Asia Pacific between 2014 and 2023 has been put at \$63.4 billion, with annual expenditure in 2023 running at \$11.3 billion. What's driving this massive opportunity?

oogle "urbanization in Asia" and the trend is clear. One of the top hits is an Asian Development Bank (ADB) page 'Facts and Data

about Cities and Urbanization in Asia'. Here's what it says:

"Asia is moving into an era of unprecedented urbanization, a change bringing prosperity and problems... Asian cities are growing rapidly. Another 1.1 billion people will live in the region's cities in the next 20 years. By 2030, more than 55 percent of the population of Asia will be urban. In many places, cities will merge together to create urban settlements on a scale never seen before.

"These new configurations will take the form of mega-regions, urban corridors and city-regions. For example, it is estimated that Japan's Tokyo Nagoya-Osaka-Kyoto-Kobe mega-region will have a population of 60 million by 2015. The city region of Bangkok in Thailand will expand another 200 kilometers from its current centre by 2020."

The ADB notes also that the prosperity of nations is intimately linked to the prosperity of their cities. "No country has ever achieved sustained economic growth or rapid social development without urbanizing."

That page also quotes from an ADB strategy for 2020 report Working for an Asia and Pacific Free of Poverty. "ADB's Strategy 2020 states that 'livable cities' will be fostered through support for infrastructure, with programs that focus on water supply, sanitation, waste management, and urban transport; and urban shelter programs of slum upgrading, land development, housing, and housing finance."

Smart cities need smart comms

That's stating the obvious, but equally obvious is the importance of communications of which there is not a mention. And the strategy document itself is similarly bereft of any meaningful reference to the importance of communications to these growing mega cities. This is the as close as its gets. "The absence of well-planned rural, urban, and interconnected systems of infrastructure-as well as information and communication technology infrastructure-deprives many economies of private investment" and "ADB will invest in infrastructure to improve transport and communication connectivity within and between developing member countries."

The document is now six years old, but that's really no excuse for giving more acknowledgement to the key role communications will play in transforming the cities of Asia, and the world, in particular through its enablement of smart cities.

In mid 2012, according to Ovum, the global market for IT systems for smart cities was estimated to be \$35 billion. And the growth in cities, smart and otherwise will be massive. "The latest UN report on the subject of smart cities suggests that the world will need to create 10,000 new cities by 2040, and the Chinese are already committed to building 100 new cities to accommodate the 385 million people reported to be moving from the countryside to the City," Ovum said.

In March 2014, US based Navigant Research released a report, 'Smart Cities: Asia Pacific' in which it predicted that cumulative investment in smart city technology in Asia Pacific would total \$63.4 billion over the years 2014 to 2023. It estimates that annual spending by 2023 will be \$11.3 billion.

Smart cities "crucial for Asia"

Navigant's research director, Eric Woods, said: "Asia Pacific is home to most of the world's largest and fastest-growing urban areas, and smart city technology is becoming a crucial element of their future development." He added: "Working with an evolving mix of international and regional smart city technology firms, governments in the region are piloting a variety of technologies to solve urban problems, reduce urban energy and resource use, and prepare for future growth."

Ovum says, not surprisingly, "The entire IT industry (vendors of hardware, software, and services, of all sizes, from global giants to oneperson startups) has recognized the opportunity [created by smart cities]. "

Ovum believes that the smart city market is at an inflection point. In April 2013 and 2104 it held smart city conferences in London. Commenting on the 2013 event in the run up to this year's conference, it said: "The emphasis [in 2013] was on how the market is at an inflection point between talking about what 'smart city' means and understanding how to implement it. The evidence of the shift was in the increasing maturity of the demand side, the development of standards, and the arrival of investment in the form of stimulus funding from government, sovereign wealth funds, and venture capital.'

Ahead of the 2014 event, it said: "We will be looking at the move of smart cities into the mainstream as we see governments commit finance and policy to smart city development, deployments of smart city protocols and operating platforms and acceptance of smart technologies as the norm in transport, energy, development, assisted living and security in cities."

Smart cities will probably be more important to the future of Asia than to any other region. So what's happening in Asia on the smart cities front?

Smart grid market worth billions

In mid 2013 Frost & Sullivan estimated the market for smart grid technology alone would grow from \$5.4 billion in 2012 to \$15.8 billion by 2018. According to F&S the increased generation of electricity from renewable energy sources will lead to snags in the transfer of power over an already stressed network. "This highlights the need for smart distribution control and management systems, which can better maintain power grid reliability and stability," it argued.

"Smart grid projects in South Korea, Singapore and Japan are testing the feasibility of distributed generation using photovoltaics, biomass, wind energy and electrical vehicle charging, in addition to advanced metering infrastructure, energy management systems in homes and buildings. In fact, the use of advanced metering infrastructure and energy management systems in Jeju, South Korea has demonstrated the devices' ability to reduce energy usage in homes."

Not surprisingly the world's leading technology vendors are keen to foster the growth of smart cities, but there are many hurdles to overcome. Cisco, for example has done extensive work developing the smart city of SongDo in South Korea.

Smart Cities Council formed

To try and stimulate the global smart city market Cisco and more than a dozen other global technology companies in May 2013 formed the Smart Cities Council. It promised to create a global hub that city leaders could tap into "to develop a comprehensive and collaborative roadmap for their city, to gain advice on the most effective ways to move forward, and to compare notes with like-minded leaders."

The founders were: Alstom Grid, Bechtel, Cisco, Electricite de France, Enel, GE, IBM, Itron, MasterCard, Microsoft, National Grid Qualcomm and S&C Electric Co.

The organization wants to team up with partners headquartered in different regions and to this end is trying to encourage the formation of regional chapters. To date the only one created is in India, in Bangalore in partnership with a nonprofit organization, the Centre for Sustainable Development.

According to a report in the UK's Guardian newspaper, India is planning "dozens" of smart cities, but the prognosis is not good. It described one such proposed city, Dholera in Gujarat, as a vast, low-lying area, submerged under seawater for much of the year and salt flats for the remainder.

On a more positive note, the Smart Cities Council has produced a number of resources aimed at fostering the development of smart cities. These include the Smart Cities Financing Guide that "provides expert analysis of 28 municipal finance tools for city leaders investing in smart technologies to drive a more intelligent future for their cities" and the Smart Cities Readiness Guide billed as "the first comprehensive, vendor-neutral smart city handbook for city leaders and planners."

Telecommunications technology will clearly be essential to almost every area of smart city technologies. One vendor that has made smart cities a major component of its strategy is Hitachi (the company was named "Asia Pacific Smart City Solutions Provider of the Year" in 2013 by Frost & Sullivan).

"Hitachi has demonstrated clear plans to establish itself as a 'onestop' service provider that is capable of rendering end-to-end solutions ranging from design, engineering, production, installation, financing, servicing, to system operation and maintenance. To fulfill its vision, the company actively engages and works closely with partner companies, local companies and others to build smart cities," F&S said.

ITU strives for smart city standards

Meanwhile the International Telecommunication Union (ITU) is striving to bring some order and standardization to the nascent smart cities industry. It has formed a focus group on 'Smart and Sustainable Cities' (FG-SSC) under the auspices of ITU-T Study Group 5, Environment and Climate Change.

The focus group aims to be an open platform for the exchange of knowledge in the interests

66

Smart grid projects in South Korea, Singapore and Japan are testing the feasibility of distributed generation using photovoltaics, biomass, wind energy and electrical vehicle charging, in addition to advanced metering infrastructure, energy management systems in homes and buildings



of identifying the standardized frameworks needed to support the integration of ICT services in smart cities. It will identify future smartcity standardization projects to be undertaken by Study Group 5 and will develop a roadmap for the ICT sector's contribution to smart sustainable cities, providing cohesion to the development and application of technologies and standards.

The global GSMA Association (GSMA) has also jumped on the smart cities bandwagon, as a subset of its Connected Living initiative, which also embraces mAutomotive, mEducation and mHealth.

The GSMA says it is uniquely positioned to collaborate with cities globally and create a common index for measuring 'Mobile Connected' smart cities. "Establishing key indicators to evaluate costs and benefits of smart city projects is crucial to justify the investment from municipalities, private sector and financial institutions," it argues.

GSMA's Smart City Index

It has developed a Smart City Index that "contains a common set of 31 indicators for measuring economics, infrastructure and social benefits of 'mobile connected' smart cities."

It has used the index to rate four Asia cities: Seoul, Shanghai, Singapore and Hong Kong.

Another global organization, the IEEE, has taken a rather different approach to smart cities. In March 2014 it launched the IEEE Smart Cities Initiative in which municipalities preparing for an increase in urban residents could apply for consideration to receive strategic and practical advice from a dedicated team of IEEE experts, as well as education and training to help them address the huge demands on land, resources and services associated with expanding urban living environments. Applications closed on 16 May.

The initiative was piloted in 2013 with Guadalajara, in Mexico. According to Gilles Betis, chair of the IEEE Smart Cities Initiative, "Guadalajara was an ideal candidate for the inaugural pilot and an excellent model for future projects, as it had already established an organization called the Ciudad Creativa Digital (CCD) to drive the transition to a smart city."

Smart city IT must be 'strategic': IDC

It is perhaps stating the obvious but, according to IDC, executives heading up Asia's smart city projects must be very strategic in their IT sourcing choices.

IDC has released a report: 'Best Practices: Strategic ICT Sourcing for Critical Infrastructure and Management Competencies in Asia/ Pacific Smart Cities — Through the Lenses of Regional Case Studies.'

Ruthbea Yesner Clarke, research director of the Smart Cities Strategies, IDC Government Insights, said: "Partnerships across the smart city ecosystem will become paramount for cities to successfully implement transformative solutions that meet strategic goals. The procurement model is a key consideration within these government-supplier partnerships. "From private-public partnerships to cloud sourcing and risk sharing, all models need to be considered in terms of the best fit to meet financial and strategic requirements as well as manage risk. However, nothing should be off the table for discussion merely because it is innovative or new."

"Smart city executives need to be unambiguous in their outcomebased strategic objectives and articulate any measures of desired ICT investments to potential private sector and non-government organization (NGO) partners to ensure build or buy decisions are carried out with transparency, accountability, and value-for-money purposes," IDC said.

"Focus on innovation is key. The element of innovation above and beyond traditional cost optimization and productivity focuses needs to be highlighted. Participating stakeholders (especially solution providers) need to be able to articulate solutions that will provide extraordinary benefits to the smart city project in an original, clear, and measurable (eg, new benchmarks) way."

IDC added: "Stronger public sector presence, leadership, and team continuity, as well as enhanced project management competency (i.e., effective negotiation, contract compliance administration, and risk management) is critical to ensure success, mitigate risks, and deliver better ROI for Smart City initiatives."

Huge challenges

The opportunities for telecoms and IT industry players in Asia as cities strive to become smarter will be massive, but so will the hurdles to exploiting those opportunities. A city is not a single entity, like a corporation. It has multiple players, private and public: roads, power, water and sewerage, transport, administration etc. the 'smart' thing would be for all to co-operate fully in the interests of the city as a whole. The reality is that this is unlikely to happen.







As Chris Heckscher, managing director, Advanced Services Asia Pacific with Cisco, told Telecom Review Asia Pacific, the smart city market is very difficult and slow moving. "You're dealing with government agencies that are not technology savvy," he said. "Some of them don't even have people at the right level. And you have a lot of property developers to deal with. The often have a very different view of IT."

Deutsche Telekom BDI: Rethinking traditional wholesale models

Karim El-Khazen is vice president of Deutsche Telekom's Business Development and Innovation (BDI), an integral part of Deutsche Telekom International Wholesale business unit. BDI seeks and develops innovative services that enable cloud delivery models to enterprises, carriers, content service providers and over-the-top (OTT) players. In this exclusive interview with Telecom Review Asia Pacific El-Khazen details the BDI business, the services it provides and its plans for the Asia Pacific market.



hat is Deutsche Telekom Business Development and Innovation (BDI)?

Within Deutsche Telekom's international wholesale business unit, Business Development and Innovation (BDI) is a neighboring team to International Carrier Sales and Solutions (ICSS). We drive what we call "smart wholesale" business, partnering with best-in-class technology players to package solutions and create a one-stop-shop related to content and media. In Asia, for example, we work closely with our ICSS colleagues to better understand their needs and enable them to offer more innovative services to their market.

When was BDI formed? How many people do you employ?

We're a small team created in early 2013, and made up of 11 people with seven different nationalities, who speak six different languages and live in four different countries. We have a wide range of skills and expertise, from product management and engineering to sales and marketing and thanks to its small size and specialized knowledge, the BDI team is dynamic, approachable, creative and able to deal flexibly with an ever-changing global innovation environment.

Can you give an overview of your business model? How is BDI different from other global telcos in terms of what you do?

The telco wholesale industry has been in a state of constant change over the last several years and is continuously changing in order to cope with hard competition. What is needed now are smart wholesalers that, in addition to network capacity and traditional services, can seek out and develop innovative services that enable cloud delivery models for enterprises. carriers, content service providers and over-the-top (OTT) players. This presents usually a challenge to the wholesale departments of many operators because this market is so different from traditional wholesale. Suppliers need to be agile and deal with a range of different providers, partners and customers. That's where we come in.

We are rethinking traditional wholesale models and coming up with new and exciting ideas and solutions, supporting our core wholesale business by OTT services. To establish our smart wholesale business we are not working on our own. It's all about winning with partners. We follow the aim of one of Deutsche Telekom's strategic pillars, win with partners, and are partnering with best-in-class technology players.

As a result, we have already built a portfolio of OTT solutions that are

all cloud-based and delivered overthe-top, and so they do not require any investment in infrastructure for example. Additionally, all solutions are highly reliable, state-of-the-art, as well as future proof and delivered with our service level agreements (SLAs) and our 24/7 support worldwide. Last but not least, these solutions are all based on best-in-class technologies already adopted by major brands worldwide.

What are the main challenges your customers are facing?

We see several trends impacting our wholesale customers. Their consumers are demanding more secured and personalized content. They expect to be connected anywhere at anytime with high quality. They don't want to miss a goal when watching a live match; they don't want to wait when purchasing things online; they don't want to watch movies only on their TV, but also on the go, pause and play on different devices.

All these trends have an effect on the needs of our wholesale customers. The products and solutions that are required have to provide the best experience for their users, but at the same time increase their revenues and reduce costs. This, of course, is a challenge and our role is to support them to face these new challenges.

How does BDI help its customers overcome their challenges?

We have a couple of solutions related to content and media including content monetization and cloud enabling. Within cloud enabling, we have a solution related to load balancing for various cloud and CDN providers. This means providing the best end user experience and enabling enterprises such as those that produce luxury brands or sell online to measure the user experience and enhance it.

On the content monetization side, we have solutions related to video. One is specifically intended for implementing live streaming, enhancing live content distributed over the open internet, improving the experience of live viewers and enabling the conversion of broadcast to broadband TV. The second is related to video on demand, the monetization of video assets, for example, from Hollywood studios, and the provision of these video assets to different users on connected devices.

You have a widespread presence in Europe and a recent focus on the Middle East; do you have any plans for Asia Pacific? What is keeping you from expanding into Asia, and what opportunities do you see there if any?

We see a significant potential in the Asian market. Since last year, we have been working with several major players in the region. The main opportunities in the region are: delivering the best experience to end users across the region and being able to deliver HD quality on top of the public internet. Our "LiveStream Perform" solution has been recently selected by a regional operator for delivering linear TV channels globally on connected devices, and we will announce that soon. Several regional Asian online players are experimenting with our "NetAnalyze/NetOptimize" solution for always offering the best user experience to their customers.

Will you further develop your portfolio? If so, what technologies do you plan to introduce and in which markets?

So far, we have been focused on two key areas: cloud enabling and content monetization, and are enabling our wholesale customers to ensure best user experience and deliver high quality TV and video-on-demand services on all connected devices on a large scale. But, we have also identified content sourcing, analytics and security as areas in which BDI can add value to our customers by developing further solutions. Therefore, we envision our portfolio evolving with a series of innovative cloud-based and globally available components to address these areas.

What are Deutsche Telekom BDI's key priorities for the year?

BDI's focus for this year is to further extend its portfolio of solutions related to content and media, strengthening its one-stop-shop offering to its wholesale customers, while developing its activities in the different regions of the world.



Metro Ethernet Forum:

10

new vision, new strategy

Nan Chen, president of the Metro Ethernet Forum (MEF) and co-founder of CENX - the company that pioneered the concept of a carrier ethernet exchange - talks to Telecom Review Asia Pacific about the latest updates in the carrier ethernet space, highlighting the most recent developments and plans. he MEF has materially shaped the telecom industry by establishing Carrier Ethernet not only as a

predominant technology, but also as one of the fastest growing services for businesses, homes, mobile infrastructure, and for next generation networking for the Internet. Where is the MEF now with carrier ethernet in terms of certifications, members and so on? MEF currently has over 220 members; around 140 of them are service providers from around the world. We have really made a significant difference in terms of making ethernet a dominant technology.

From the technology perspective, we have produced 42 tactical specifications, commonly known as standards. In addition to that, our certification committee has created a significant amount of certifications. Over 700 products and services have already received our certification.

In addition, last year we also launched certification for 2.0. Now, we have 48 companies that have received 2.0 certification, and quite a number of these companies are service providers. This number will continue to grow significantly.

In more detail, what can you tell us about CE 2.0?

As a matter of fact, CE 2.0 can make it much easier for service providers to evaluate and deploy some of the most advanced equipment available on the market. With CE 2.0, they do not have to start from scratch because a lot of the heavy lifting work on the testing front has already been done during the certification process.

Regarding CE 2.0 services certification, operators all over the world have started to show interest in this technology. They are trying to figure out the right timing for discussing whether they should certify now or just wait until they make service enhancements. On the other hand, more and more tier 1 service providers are announcing that they have been certified, which sheds more light over the growing interest in ethernet access service certification.

Another interesting thing is that awareness of CE 2.0 is starting to gain traction at the enterprise level. Enterprises are starting to ask for CE 2.0, and as a consequence they will in turn accelerate the demand of service providers for CE 2.0.

MEF is also known for its Carrier Ethernet Certified Professionals or CECPs. Can you give us the latest updates in this regard?

Professional certification has grown rapidly, with more than 1,100 MEF Carrier Ethernet Certified Professionals (CECPs) in 47+ countries. We have already exceeded our growth expectations last year just as we have been doing since the beginning of 2014.

This year, the number of certifications has grown to 1700. We pretty much have around 130 every week. Clearly there is significant growth. The interesting thing is that CECP growth is taking place around the world and in a lot of places, not necessarily just in developed countries. From that we can see that the development of carrier ethernet is everywhere.

In short, I can say that the MEF-CECP program is quite interesting as we have a lot of MEF member companies and non-member companies who are trying to raise the level of expertise across the board.

If we are to talk 100G and beyond, what is the status of the 100G market now? Where has 100G taken us so far and where will 400G and 1T likely take us in the coming years?

MEF has actually developed standards for these services. We can run over multiple physical technologies including 100G or even 400G. Awareness about this technology has actually being growing all over the world; this is helping us to grow ethernet further as a technology, especially on the backbone side where we see the aggregation of certain amounts of traffic such as data center applications and video, and this is really driving the need for 100G and beyond.

What can you tell us about the highly anticipated Global Ethernet Networking conference GEN14?

Well, this industry-wide conference will take place on November 17-20 2014 in Washington DC.

We are expecting a target audience exceeding 1,200 attendees. This conference is billed as the mustattend networking event for senior professionals involved in the carrier ethernet services and technology industry that consists of retail, wholesale, mobile service providers, data center providers, cloud service providers, mid to large businesses, government organizations, network solutions vendors, press, analysts and many others.

GEN14 will assemble an unprecedented lineup of CE, SDN, NFV, and network-enabled cloud services market leaders to map out the evolution of carrier ethernet and other wide area network services in the context of a paradigm shift that is reshaping the data services and networking landscape. This paradigm shift promises to accelerate the ability of CE network operators to develop and deliver more dynamic, customized and scalable services and applications to many more locations over much more efficient, agile, and interconnected networks.

Every aspect of GEN14 is being developed with the paramount goal of empowering industry professionals with the highest-quality information, analysis and peer-to-peer networking opportunities that will help them successfully navigate through today's pressing cost, revenue and business process challenges.

GEN14 will encompass industryleading keynote speakers, educational roundtables and panels, services and technology demonstration center including proof-of-concept and other CE, SDN,



MEF is really working on a new vision and a new strategy, which will take ethernet to the next level, allowing it to be more dynamic and to be able to manage dynamically and provide different business models so that service providers are given the opportunity to gain some of the revenues lost to some of the OTT players



NFV and cloud services demos, an exhibit floor, a networking lounge and a vibrant media hub.

Apart from this, what's new on your 2014 agenda?

2014 is a very important year for MEF. We have grown significantly not only in terms of membership, but we have also grown to have a great influence on the industry as a whole. After having launched CE 2.0, one might ask about our next plans or steps. As a matter of fact, there are a few things on our agenda such as the theme of SDN as well as dynamic bandwidth capabilities.

MEF is really working on a new vision and a new strategy, which will take ethernet to the next level, allowing it to be more dynamic and to be able to manage dynamically and provide different business models so that service providers are given the opportunity to gain some of the revenues lost to some of the OTT players.

With all this and GEN14 ahead, we think 2014 is going to be a very fruitful and promising year for us.



Telecom towers go green

The planet is warming; here's something the telecoms industry can do to help slow down this warming.

n its latest report, issued in April, the Intergovernmental Panel on Climate Change (IPCC) said that global emissions of greenhouse gases had risen to unprecedented levels despite a growing number of policies to reduce climate change. The IPCC said it would be possible, using a wide array of technological measures and changes in behavior, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels.

These environmental issues have been discussed by numerous concerned organizations and industries. Institutions and focus groups have been diligently involved in developing effective means for every industry to reduce its harmful impact on the environment.

For the telecommunication industry, the GSMA has been actively involved in setting up guidelines as well as encouraging its members to be a part on this endeavor. In September 2008 GSMA launched the Green Power for Mobile (GPM) program to extend mobile network coverage beyond the reach of the electricity grid, an initiative that also aimed to reduce the energy consumption and other environmental impacts of mobile networks.

The goal of GPM is to assist the mobile industry in adopting renewable energy sources. It examines technologies such as solar, wind, biomass, fuel cells, sustainable bio-fuels and hybrid power systems as alternatives to diesel generators for an estimated 118,000 new or existing off-grid base station sites in the developing regions of the world. Reaching this target will reduce diesel consumption by an estimated 2.5 billion liters per annum and carbon emissions by up to 6.8 million tons annually. GPM has already catalyzed the adoption of green power at over 40,000 live and planned cell sites.

As part of the GSMA program, in 2012 GSMA and Bharti Infratel signed a memorandum of understanding to develop and promote green technologies for telecom tower infrastructure in India. They aimed to convert 1,000 Infratel towers to green sites, a move that would reduce greenhouse gas emissions by almost 11,000 tons. Since then numerous other operators have rolled out 'green' base stations.

Earlier this year, Apollo Towers Myanmar announced that it had selected Flexenclosure to supply its eSite hybrid power solutions for telecommunication sites across Myanmar. Apollo Towers has been selected by Telenor Myanmar to build and manage telecom towers in preparation for Telenor's massive mobile network rollout across the country. The multi-million dollar deal is the largest ever for eSite and signals a strategic breakthrough for Flexenclosure into the fast growing South East Asian market.

Green base stations for Myanmar

eSite is a portfolio of energy-efficient hybrid power systems for base station sites in areas where grid power is unreliable or unavailable. eSite is powered by renewable energy sources or the grid and a backup generator. It is claimed to deliver a 90 percent reduction in diesel fuel consumption, CO2 emissions and energy related costs compared to traditional diesel based systems.

Green initiatives are happening everywhere in the world as companies upgrade or expand their footprint and coverage. Telecommunication research firm Analysys Mason has predicted that three out of four base stations will be deployed in emerging markets and that most of these will be in remote regions with no access to electricity grids.

Photovoltaics becoming more attractive

Environmental concerns are not the only drivers for the adoption of renewable energy sources like solar and wind. According to research undertaken by X&Y Partners, recent developments have triggered companies to have a second look to these energy sources, despite them being perceived to be expensive. In the case of solar photovoltaics (PV), for example, PV module prices have fallen by about 65 percent since 2001 and by about 73 percent since 2007.

The use of micro-grids is also increasing. A micro-grid is a combination of hardware and software that allows the integration of management of multiple energy sources both conventional and renewable. In addition, energy service companies that install the necessary equipment and sell generated power to telecom operators are becoming a viable alternative to traditional energy sources. The lowering cost of setting up a renewable energy source, the availability of micro grids and energy service companies are all helping operators make their base stations more environmentally friendly

The future for 'green' technologies seems bright. As telecom operators continue to expand their footprints to previously unconnected regions and increase base station densities to cater for rising demand, it will become increasingly important that they do so with minimal environmental impact.



Exhibition & Conference



The 11th International Information Technology Exhibition & Conference for the Enterprise

www.goto-enterpriseIT.com

17-20 June 2014

Basement 2, Level 1 & 3 Marina Bay Sands, Singapore

Bridging Communication Borders, Optimising Business Opportunities

CommunicAsia / EnterpriseIT2014 presents...



CommunicA sia

to discuss on the latest

industry's trend.

unique showcases / networking functions at companies' exclusive hospitality suites located at Level 3. Comprehensive showcase of innovative technologies

4G / LTE, AR and innovations, connected home delivery network, FTTx, M2M, multi-screen technology, OTT and many others by

over 1,300 international exhibitors.

Pre-register your visit to the exhibition at www.CommunicAsia.com/pre-registration NOW!



Singapore Exhibition Services Pte Ltd Worldwide Associate:

Oes Overseas Exhibition

Services Pte Ltd

Incorporating:

Held concurrently with:





City-yde WiFi spreading in Asia

Increasingly governments and the owners of major public spaces such as airports are installing public access WiFi networks that in many cases are free to use. Tourists, business travelers and citizens are reaping the benefits.

> hile traversing the three kilometer stretch of the historic Espana Boulevard in

Manila, one cannot help but notice the facelift given to one of the city's famous streets.

The current mayor, former president Joseph Estrada, has repeatedly vowed to bring the capital city back to its glory days. He is running a campaign for the metro to be eventually known as a WiFi city. In his first six months in office and in line with this campaign, a handful of new bus stops have been installed and most of them are equipped with WiFi, especially those stops that are near university campuses.

Although the concept of having WiFi access in busy public places is not new, cities in the Asia Pacific region are just beginning to reap the benefits of it. According to a report by Informa Telecoms and Media the number of public hotspots worldwide is set to grow from 0.8 million at the end of 2010 to 5.8 million by the end of 2015. Public WiFi has been around for almost ten years but not all installations have been successful. In the US the concept of rolling out municipal WiFi city-wide has been tested on several occasions. Some of the early implementations did not survive, but others have grown to become successful. Search giant Google is spearheading projects that will deliver more stable, faster and more accessible WiFi coverage.

Though 3G options are available, end users are more accustomed to WiFi. For several years, it has firmly established itself as the most heavily used wireless technology. Its logo is widely recognized and in many cases WiFi access is free. It is becoming ubiquitous and low cost WiFi chipsets have enabled WiFi to be incorporated into millions of devices.

Free WiFi for Taiwan tourists

City-wide WiFi is a cost-effective way to bring significant benefits to many end users and city-wide WiFi initiatives have sprung up around Asia. In June 2013 Taiwan announced that it was giving its international tourists free WiFi across the whole country. Tourists have to register at Travel Service Centers and present their passport and can then immediately get an email address and an account number to get free online access.

The government has backed that initiative, dubbed iTaiwan and there are now more than 4400 hotspots with coverage of most of its tourist attractions. iTaiwan has established roaming agreements with four local governments enabling tourists to have access in Taipei City, New Taipei, Taichung and Tainan.

In Hong Kong there are several free WiFi networks. GovWiFi covers parks, libraries, public buildings, ferry terminals and more. The MTR WiFi is available at MTR stations and provides 15 minutes of free WiFi per device up to five times every day. In Macau the WiFiGo service offers free Internet for visitors every day between 8am and 1am. The network has around 150 hotspots, meaning there's usually Wi-Fi close by. Access is limited to 45 minutes per session, but users can reconnect after logging off.

Singapore has Wireless@SG, a combination of free and paid access. It is a wireless broadband program developed by the Infocomm Development Authority (IDA) of Singapore. Areas covered include shopping centers, libraries, museums, public swimming pools, cafes, restaurants, fast food joints and other public venues. Visitors to the country can receive a free



24 hour Wireless@SG account by calling a computer-operated phone number at SingTel to receive an SMS with a username and password.

In Malaysia free WiFi is made available via Wireless@KL. The free WiFi service started in 2009. However, coverage is limited to commercial spots in Penang Island. In Sarawak paid WiFi access is available through deConnexion in business districts and major towns.

17,000 free hotspots in Japan

Visitors to Japan can get 14 days free access to 17,000 WiFi spots all over the country backed by fiber optic lines that guarantee fast, reliable and stable Internet access. In addition, last February, Japan launched Osaka Free WiFi brining free WiFi to locations throughout the city. Users have to provide only their valid email addresses in order to use the service. Sessions are limited to 30 minutes, but there is no limit on the number of times users can log in.

In Thailand, Airports of Thailand (AOT) is offering free WiFi in its six airports: Bangkok's Suvarnabhumi and Don Mueang International airports, Phuket international airport, Chiang Mai International Airport, Songkhla's Hatyai International Airport, and Chiang Rai's Mae Fah Luang International Airport. Both locals and foreign tourists can access the 10Mbps WiFi for free for two hours a day by using their passport to register online. Free WiFi is already available in some of Thailand's main cities and the government of Thailand is planning to roll out 310,000 hotspots to provide free WiFi in most cities by the end of 2014.

Providing free WiFi to the majority of citizens brings many benefits, one of the most common being to provide information for tourists visiting the country. The 10Mbps free access at airports and valuable tourist destinations like Bangkok and Phuket is of great benefit to tourists.

WiFi easing traffic flows Some of the benefits are less obvious, for example improving traffic flows. Manila's vice mayor Isko Moreno, says, "the reason we provided free WiFi to bus stops is so the commuters will wait for public vehicles at the designated bus stops and not anywhere else, because by doing so; it contributes to the overall traffic here in Espana."

In short, these free services provide many benefits to counter the cost of rolling out the networks. Thus, governments see them as an integral part of their urban infrastructure plans.



A technology whose time has come

Time Division Long Term Evolution (TD-LTE, also known as LTE-TDD) was conceived in 2007 by China's mobile telecommunications industry as an evolutionary path for its home-grown TD-SCDMA standards.

> D-SCDMA never made much impact outside China, but Chinese telcos and other are leading a push to make TD-LTE a widely deployed global standard,

and from a slow start it looks set to achieve this goal.

The Global Mobile Suppliers Association (GSA), which publishes frequently updated statistics on many aspects of the industry, reported in its 'Status of the Global LTE TDD Market' report on 30 January 2014 that the number of commercial LTE networks either solely based on TD-LTE or incorporating TD-LTE along with FD-LTE had exceeded 10 percent of the total. "28 LTE TDD systems are commercially launched in 21 countries, including 13 operators who have deployed both FDD and TDD modes in their mobile operations," GSA said, adding that a further 73 commercial TD-LTE TDD networks were either in deployment or "firmly planned".

That might not seem a great achievement, but TD-LTE is coming from behind. FD-LTE, largely responsible for making LTE the fastest growing mobile technology in history, saw its first commercial network deployment in 2009.

AsiaPac to be largest TD-LTE market

ABI Research is forecasting that, by 2018, TD-LTE and FD-LTE will be on par in Asia Pacific. Jake Saunders, ABI VP and practice director, said: "Asia-Pacific will be the region with the most LTE-TDD networks. Of global LTE-TDD concluded contracts awarded to vendors so far, 47 percent come from Asia-Pacific and the second largest portion of 18 percent is contributed by the Middle East."

ABI forecast, in November 2013, that LTE-TDD networks would cover more than 53 percent of the population by 2018 at a compound annual growth rate (CAGR) of 41.1 percent between 2012 and 2018, while frequencydivision duplex (FDD) networks would reach 49 percent population coverage by the end of 2018. According to ABI, among Asia-Pacific's recently completed, on-going, and upcoming 4G spectrum auctions, 25 percent concern 2,600 MHz, 25 percent 1,800 MHz, and 20 percent 800 MHz, which is consistent with the popularity of the 2,600 MHz band for LTE-TDD networks.

Another research firm, Strategy Analytics, is also very bullish on TD-LTE, saying: "LTE is rapidly establishing itself as the global 4G standard to meet the rising demand for higher speed mobile broadband on new and existing spectrum, including unpaired or TDD spectrum." It is calling on the industry to "seize the opportunity to create a harmonized ecosystem, supporting both LTE FDD and TDD products and solutions."

Commonality with FD-LTE

According to Sue Rudd, Strategy Analytics' director service provider analysis, "The window of opportunity is open for LTE TDD's global development. The unified global 3GPP LTE standard provides significant technical commonality and a good foundation for commercial harmonization between both modes, but the ecosystem for LTE TDD does not yet quite match its FDD counterpart. The industry needs to pursue commercial products and solutions that support both TDD and FDD to achieve global scale economies."

Strategy Analytics notes that LTE TDD shares the same network architecture, protocol stack and common physical layer technologies with LTE FDD systems. "This enables tight and seamless interworking that should enable operators who implement an integrated FDD/TDD operation to reduce operating costs and provide users an enhanced experience that will increase their market value."

China, not surprisingly, has made major commitments to using TD-LTE in its networks and was initially the major driver behind 'globalization' initiatives for the technology: the bigger the market the lower the cost will be for TD-LTE chipsets, infrastructure and devices, not to mention the greater the export opportunities for Chinese manufacturers. China has now been joined in this crusade by the WiMAX Forum - which sees TD-LTE as the best evolutionary path for a technology that otherwise seems destined for extinction - and by small cell manufacturers arguing that TD-LTE is an ideal complement to FD-LTE to make the best use of spectrum and cater for different uplink and downlink traffic patterns.

Global TD-LTE initiative to drive uptake

The main vehicle for these efforts is the Global TD-LTE Initiative (GTI), launched at the 2011 Mobile World Congress. The announcement, from China Telecom, was somewhat inaccurate (and certainly premature) in its claim that TD-LTE had "emerged as the premium choice for the deployment of mobile broadband networks worldwide." The founding members were China Mobile, Bharti Airtel, Softbank Mobile, Vodafone, Clearwire, Area2 and E-Plus. The organization has now grown to 101 operator partners and 73 members.

GTI has set up a complete working group system covering network, terminal, spectrum and service, released a wide range of white papers for multi-mode and multiband terminals, spectrum, networks, synchronization, 3.5GHz and consumer electronics, and in conjunction with Sony has developed a 5-mode 13band smartphone with global roaming capability. It was demonstrated during Mobile World Congress in Barcelona and is expected to be commercially launched in the second quarter of 2014.

This will all be good news for China Mobile, which has made a massive commitment to TD-LTE - "China Mobile bets the house on LTE TDD" said one headline. China Mobile has committed to rolling out TD-LTE in 15 provinces, home to 63 percent of China's population. China Telecom and China Unicom have also been awarded TD-LTE licenses.

GTI estimates that there will be 800,000 TD-LTE base stations in place covering three billion people by the end of 2014 and 150 million LTE terminals.

In a report published early in 2014, Dell'Oro Group said that the TD-LTE RAN market grew rapidly in the fourth quarter of 2013, with initial large scale TD-LTE rollouts in China being the main contributors. Stefan Pongratz, RAN and small cell analyst with Dell'Oro Group, said: "We estimate TD-LTE RAN revenues exceeded \$1 billion accounting for more than one third of total FDD/TDD LTE revenues during the fourth quarter 2013." Ericsson, Huawei, NSN, and Alcatel-Lucent accounted for 38 percent, 24 percent, 17 percent, and 10 percent of combined WCDMA/ LTE RAN revenues in 2013 respectively, Dell'Oro said.

TD-LTE the future of WiMax

TD-LTE is being promoted as the main migratory path for WiMAX networks. According to the WiMax Forum there are some 450 WiMAX networks in operation but although at one time the technology seemed likely to rival WCDMA in popularity, it is on the wane.

In 2012 the WiMax Forum launched its WiMAX 2.1 initiative with the goal of adopting a clear evolutionary technical roadmap for the WiMAX technology's convergence with TD-LTE. It announced in November 2013 that it had been working with operators and ecosystem vendors to develop the business case and technology roadmap for WiMax 2.1 or 'WiMax Advanced', based on IEEE Standard 802.16, saying "the WiMax 2.1 initiative leverages the unique advantages of TDD spectrum along with other key attributes, such as carrier aggregation, 256QAM, and 8x8 MIMO, with a goal to reach a mobile downlink speed of 1Gbps by 2017.

"WiMax Advanced runs parallel to LTE Advanced, but is also a path to convergence with TD-LTE to enable operators to benefit from the economies of scale associated with a larger ecosystem of cost-effective TDD LTE devices.... As of Q1 2013, almost every one of the 477 WiMax operators worldwide has embraced the WiMAX 2.1 initiative. ... The global TDD LTE transition presents a substantial business opportunity for equipment and system providers."

In February 2014 Light Reading quoted a report from China's Sina Tech news saying that GTI had made the mass conversion of WiMax operators one of its top priorities for the year.

"According to China's Sina Tech news, a GTI pre-Mobile World Congress meeting in Barcelona ... specified the need to win over WiMax operators to help build scale for the standard. They also agreed to target large FDD LTE operators and emerging market carriers.... The GTL meeting agreed on a 2014 development plan, committing the group to 'fully guid[ing] WiMax operators to LTE-TDD' and to 'induce major FDD' and emerging market operators to adopt the standard." On 25 February the WiMax Forum announced the formation of a partnership to "serve as a strategic foundation to guarantee WiMAX Advanced is fully compatible with TD-LTE."

The WiMAX Forum has proposed a co-labeling process of WiMAX Advanced and TD-LTE ecosystem products and says it will also sponsor a WiMAX Advanced/TD-LTE platform, to be implemented by Taiwan CMB (Consortium of Mobile Broadband) to facilitate ecosystem interoperability in August 2014.

TD-LTE touted for small cells

TD-LTE has some inherent advantages over FD-LTE and in the never-ending quest to meet the insatiable demand for mobile data will have a role alongside FD-LTE.

Capacity demands on mobile networks can only be met by having many small cells and re-using the available spectrum and there is an argument at TD-LTE should be used alongside FD-LTE in these small cells (which of course would require devices able to operate across both technologies and many frequency bands).

Accelleran, a Belgian startup specializing in small cell technology, produced a white paper 'The Essential Importance of LTE TDD for Small Cell Deployments' in which it argued that TD-LTE was well suited to matching the inherent asymmetry of the traffic, increasing the overall capacity of the system, especially in the small cell case and making best use of spectrum and otherwise wasted bands.

Asia Pac cloud-based managed hosting:

Visionaries wanted

The market for cloudenabled managed hosting services in Asia Pacific is immature, growing rapidly and presently lacking leading players, according to research firm Gartner. So what's the picture and who are the main contenders?

G

artner has published one of its 'Magic Quadrant' reports, on cloud-enabled managed hosting in Asia Pacific, saying the market is immature but

developing rapidly. Significantly the 'Leaders' quadrant is empty, suggesting that the major global cloud players will be jockeying for pole position.

Gartner says that most IT infrastructure in the region is located on customer premises or co-located with a hosting provider, and managed in-house, but the situation is changing rapidly, prompting it to produce its first Magic Quadrant for this market.

"The arrival of cloud IaaS, coinciding with the trend for data center consolidation and virtualization, has attracted many players. With wider and easier availability of services, adoption is growing rapidly in Asia/Pacific, albeit from a low base," Gartner says.

FEATURE

Not surprisingly, adoption is highest in the developed markets of Japan, Australia, Singapore and Hong Kong, but Gartner says that adoption of cloud-enabled managed hosting service is growing in developing markets, particularly India where there is a growing choice of strong local providers. "Initial adoption was led by midmarket companies, but it is now extending to enterprises and government organizations as well," the research firm says.

Untapped market opportunities

It adds, "For aspiring regional providers, the biggest challenge is posed by Asia/Pacific's geography. It is large region with a fragmented market and considerable diversity in terms of economic development and IT maturity.

"It is difficult for even large or strong providers to address all the country markets at once. Consequently they focus on a small number of markets, typically in the regional hubs of Singapore, Hong Kong, Japan and Australia, and expand progressively to other markets over time. This leaves a large part of the region underserved."

Gartner makes a clear distinction between cloud-enabled managed hosting offerings and data center outsourcing and infrastructure utility service offerings, for which it has a separate Magic Quadrant.

Cloud-enabled managed hosting providers "focus on standardized and productized services. Managed services are provided up to the hypervisor and OS level, with little or no customization."

Data center outsourcing and infrastructure providers "provide managed services up to the system level, with customization for complex application requirements. Management of the overall service operation is central to these offerings."

Gartner rates 15 providers of cloudenabled managed hosting, but only three are local players, and all three were rated "niche players'. They were:

- CtrlS Datacenters, an Indian managed hosting and public cloud

provider;

- Internet Initiative Japan (IIJ), a major Internet and network services and managed hosting services provider that was among the first to launch a public cloud service in Japan. Its target customers are enterprises and midmarket companies;

- Sify, a major managed hosting and network services provider in India that targets enterprises and midmarket companies.

With no vendors making the grade into the Leaders' quadrant, announcements from vendors included in the survey have been fairly low key. Telstra trumpeted its inclusion with the head of Telstra Global's Network Application and Services, Martin Bishop, saying, "We believe being named in the Challengers' guadrant validates the capabilities and flexibility of our cloud infrastructure and confirms our commitment to putting customers at the centre of everything we do." He added, "Our goal is to further enhance our market position in the cloud-enabled managed hosting space, providing flexible and agile solutions for business expansion across Asia."

Dimension Data also announced its inclusion (as a visionary) but without comment.

Tough road to inclusion

Gartner has not said when it will publish the next version of this Magic Quadrant, it will likely be at least 12 months hence, but for providers aspiring to make the grade into the Leaders' quadrant, Gartner offers extensive guidance on its evaluation process.

"For many service providers the Magic Quadrant is viewed as a highstakes exercise that will consume a tremendous number of hours of your time and the time of your executives," it said. "You would do your organization a disservice if you do not read everything provided to you regarding the Magic Quadrant."

The road to leader status in the next Magic Quadrant on cloud-enabled managed hosting in Asia Pacific will clearly not be an easy one, and you can be sure that the competition will be tough.



Shanghai | 11-13 June 2014 = 上海 | 2014年6月11至13日

MAKING GLOBAL CONNECTIONS 构建互联世界

Mobile connects us to new information, possibilities, people, ideas and experiences. The **2014 Mobile Asia Expo** will celebrate and expand on the connections offered by mobile. Senior industry leaders will learn about new developments and make the connections needed to grow their business in the years ahead, and consumers passionate about mobile will discover devices and technologies that will keep them connected to what matters most.

This three-day event is comprised of an international technology exhibition; the Mobile Forum thought-leadership conference; world-class networking opportunities; and a unique offering of featured programmes, specialty zones and pavilions.

> Don't miss this industry-changing event. Make plans to be in Shanghai, where our international audience will be **Making Global Connections.**

www.MobileAsiaExpo.com







Nasser A. Bin Hammad, candidate for Radio Regulation Board, 2014 ITU Plenipotentiary Conference

Telecom Review met with Eng. Nasser Bin Hammad, the senior manager of International Affairs of Corporate Development Department, Telecom Regulatory Authority (TRA), UAE, at the recent World Telecommunication Development Conference (WTDC-14) of International Telecommunication Union hosted in Dubai, to talk more about his candidacy (Asia and Australasia region) for Radio Regulation Board (RRB) membership at the upcoming 2014 ITU Plenipotentiary Conference.



he Plenipotentiary Conference is the key high supreme event at which ITU Member States decide on the future role

of the organization The 2014 Plenipotentiary Conference will be held in Busan, Republic of Korea, from October 20 to November 7.

Held every four years, the conference is the top policymaking body of the ITU to set the Union's general policies; adopt four-year strategic and financial plans; and elect the senior management team of the organization, the members of Council and the members of the Radio Regulations Board.

The Plenipotentiary Conference elects the secretary-general, the deputy secretary-general, the directors of the Bureaux of the Radiocommunication Sector (BR), the Telecommunication Standardization Sector (TSB) and the Telecommunication Development Sector (BDT) and the members of the Radio Regulations Board.

"The UAE is contesting for two main positions this year. The first position is the continuity of candidacy for the council membership for the third consecutive term. The UAE has been member since 2006. That was the first time that UAE government was elected council member which is limited only to 48 seats out of 193 seats of state members. This means a lot for the UAE government to submit candidacy again," said Bin Hammad.

On the individual level, Bin Hammad is running for a seat in the RRB which is limited to 12 seats. "This is the second time I will run for to this position. I tried in 2010 at the Plenipotentiary Conference in Mexico. I was only seven votes short and I got 69 votes out of 155 total eligible votes. That's why we are hoping to win this year," he said. "The chances are good enough this time; we are very optimistic and confident for the UAE to be elected, hopefully."

The Radio Regulations Board is an important body in the ITU. The RRB currently consists of 13 members elected from the candidates proposed by Member States at the Plenipotentiary Conference. To achieve geographical balance, board members are elected from five administrative regions. All ITU Member States can vote for the candidates from each region. In other words, voting is not restricted to the Member States in the region concerned. The administrative regions and corresponding numbers of board members are:



Nasser is an experienced international telecommunication policy and regulatory affairs professional and expert and telecommunications engineer and

Nasser Bin Hammad in brief

has been actively participating in the activities of the International Telecommunication Union (ITU) for the past 14 years.

Nasser has a considerable amount of experience in international cooperation and policy including but not limited to Arab countries affairs, GCC affairs, ITU affairs, other UN organizations including UN office at outer space affairs as well as Arab regulators network activities, international frequency coordination (space and terrestrial), allocation and interference analysis of radio, wireless and space services.

- Region A (Americas): 2 members;
 Region B (Western Europe): 2 members;
- Region C (Eastern Europe and
- Northern Asia): 2 members;
- Region D (Africa): 3 members;
 Region E (Asia and Australasia): 3 members.

More active

"The TRA strategy is to continue to be more active with the ITU activities and be more influential on the studies, resolutions and decisions taken by the union in its three different sectors," said Bin Hammad. The UAE has hosted four important ITU conferences in 2012 for the first time in the Middle East and in Dubai and in the history of the itu: the ITU Telecom World which took place in October 2012 which was the second time hosted outside geneva since 1971; the Global Standards Symposium (GSS) and the World Telecommunications Standardization Assembly (WTSA) which took place in November 2012; and the World Conference on International Telecommunications (WCIT) which took place in December 2012.

"The UAE has been very active through the TRA by hosting four main ITU events in the past twoand-a-half years," added Bin Hammad. It was a first to have a single administration hosting and chairing four main ITU events in one single year. This, according to Bin Hammad, is a clear proof of the strong relationship between the government of the UAE, the TRA and its leadership management and the trust and confidence on our country from all the entire membership.

"The TRA vision is to be amongst the leading regulatory bodies and the UAE a leading player in the telecom sector and to strive more and more and put UAE on the international footprint," added Bin Hammad.

Vote UAE

"We want to do something for the country by winning this opportunity and having UAE more globally recognized on the ICT field. We are saying thanks to the country and its wise leadership and seek all opportunities that allow us in contributing back to society," concluded Bin Hammad. Thanks also to the TRA management for giving me and all its staff the support and encouragements all the time and we want to return to them some valuable results and achievements. world summit 2014

LTE World Summit 2014 continues to drive the LTE evolution

LTE continues to be a key technology driving mobile data capabilities and delivery of new services, and with 274 commercial LTE networks now launched across 101 countries, the LTE World Summit returns this June at a hugely exciting yet crucial time for the industry.



ow celebrating its tenth anniversary, the LTE World Summit takes place across three days (23-25 June) and brings together

3,500+ attendees, 300+ speakers and 150+ exhibitors to address the key issues, opportunities and challenges facing today's booming LTE market.

This years' event provides an important platform for both advanced and emerging markets addressing not only the technical and commercial challenges facing LTE deployments, but also highlighting the opportunities for operators offering LTE to ensure intelligent and optimized networks and to maximize these networks through new value added services.

Attracting leading operators, content providers, regulatory players, analysts, industry associations and technology vendors from all parts of the ecosystem, the conference agenda will address several key areas: NFV, Monetizing LTE, Roaming and IPX, Backhaul, Cloud, SDN, LTE Broadcast, LTE Business Models, Device Deployments, SON, VoLTE, IMS, M2M, Carrier Aggregation and OTT Collaboration to name just a few.

The event will also feature a number of pre-conference focus days and co-located events including the Signaling and Antenna Evolution Focus Days and the always-popular Operator Mindshare.

This year's LTE World Summit is set to be the biggest yet, and will for the first time be co-located with the 5G World Summit which looks ahead to the future of 5G to ensure that leading operators and solution providers are effectively paving the way towards these future networks and understand exactly what is driving 5G, what technologies are required and what services 5G will enable.

The event includes a stellar global CTO-led speaker lineup that includes amongst many others:

- Erik Hoving, CTO, KPN Group
- Hugh Bradlow, CTO, Telstra
- Günther Ottendorfer, CTO,
- Telekom Austria Group

• John Jiang, CTO, China Mobile Intl

- Ibrahim Gedeon, CTO, TELUS
- Haitham Abdulrazzak, CTO, Etisalat
- Park Jin-Hyo, SVP & head of Network Technology R&D Center, SK Telecom
- Kerstin Günther, SVP Technology Europe, Deutsche Telekom • Corbett Rowell, research director, China Mobile

Pierre François Dubois, vice president of Product Development at Orange, is speaking on day one and comments: "LTE is a major breakthrough in our industry. It shakes everything, from architecture and operations to business models. It is very important to meet with other MNOs and vendors to share ideas and make sure we make the right choices. It is very important that the LTE World Summit exists in order to give us this opportunity. No doubt that the 2014 edition will be very interesting."

"Some of the leading LTE operators are seeing that the technology is having a positive impact on KPIs, which is great news for the future of the mobile industry," says Paul Lambert, senior analyst at Informa Telecoms & Media.

"With LTE network launches gathering pace in all regions, those attending this year's LTE World Summit will have the chance to hear what the right approach is to launching and evolving LTE services and how to most effectively communicate the benefits of LTE to end users.

Where and when?

LTE World Summit will take place at the RAI, Amsterdam, on 23-25 June 2014. To plan your visit, to view the full event program or to register for the event, please visit http:// ws.lteconference.com/. Alternatively, keep up to date with the event on Twitter using @LTEWorldSeries.

23-25 June 2014, Amsterdam RAI, Netherlands



www.lteconference.com/world



informa

telecoms & media

00000000

Ooredoo:

Leveraging communications for a better life

Dr Nasser Marafih, CEO of Ooredoo Group, talks to Telecom Review Asia Pacific about the latest developments on the group's agenda, spanning the Middle East and Asia Pacific regions.

his year marks the first anniversary of the Ooredoo branding. What can you tell us about the brand positioning after its first year?

From the beginning we were very excited about the rebranding process. We had preconceived expectations about what the new brand would deliver, especially in relation to our vision and strategy. So far we are very pleased of our position and what we have achieved.

As is well known, the rebranding process is gradual in order for us to make sure that everything is done at the right time and is aligned with our predefined criteria.

For this reason we launched the brand in a number of key markets including Qatar, Algeria, Myanmar and the Maldives. Now our plans involve launching the brand in a number of other countries including Oman, Tunisia, Kuwait and Palestine.

The rebranding has boosted our operations as we came into the markets with new propositions. For instance, in Algeria we introduced and launched 3G, thus delivering on our promise and providing our customers with advanced services that cater to their needs. The purpose behind our operations is that we make sure that our brand stands up to what we have designed it for and that is focus on our customers, solving their problems as well as driving human growth.

So far the feedback has been excellent in all the markets in which we have rebranded. The brand equity has received a lot of appreciation. To go back, this is why we have decided to take the gradual approach, so that everything we do is effective and structured. We did not want to push operations without a clear understanding of why the new brand is launched.

Did you expect the brand to pick up so quickly?

Well, it is no surprise. Every step of the way was planned and prepared in the

right way; we did not rush the new brand into the market; instead, we have gradually built the value it will bring to the market. We also needed to make sure that the transition was smooth, so we had to align every step with all the stakeholders from the employees to the consumers. This is important because the brand is critical for our vision and strategy especially to secure and maintain our leadership position in the industry.

What is your plan for this year as a group?

We have a number of strategic objectives that we have put together as part of our overall strategy. The brand value is a main pillar for our vision. However, the first important aspect of our strategy is to make sure that we are the leading operator in every single market in which we operate as we aim to be among the top two operators in every market. Towards achieving that objective, we work in a very rational way so that we can efficiently and effectively deliver the value to all our shareholders.

Another major focus is centered on data and broadband. As a matter of fact, we see this as a key focus because a lot of customer needs are centered on data. In this respect, we have a number of initiatives that have been launched this year to ensure that we do that effectively. We believe that the quality of our services has to be the best in any market we are in.

We started investing in new technologies such as 4G and 3G so that we deliver not only connectivity, but also the best services such as mobile money as well as other applications that meet customer needs. So, preparing our infrastructure to meet the requirements of our data services will be a main focus for us throughout the year.

On another hand, we are also focused on enterprise and B2B segments. We started this last year, and it will continue to be of great focus this year. We need to build the organization, but most importantly we need to build and prepare the channels that deliver these services. Another important aspect has to do with our understanding that the market has reached a certain saturation stage, and pressure on operators is increasing. In this respect, we are trying to optimize our costs to be more efficient in our operations.

Consequently, one of the major focuses this year is on infrastructure sharing with our peers in the industry. We believe that it is very important for us to look at our core structure because the way we have been operating is not sustainable. Even if we are always trying to be ahead of the game, and even though we know the potential growth in terms of data, the efficiency and effectiveness of our infrastructure is very important. For this reason, we are in the middle of discussions with our peers to share as much as we can in infrastructure.

We have already started moving in that direction in one of our key operations in Myanmar, where we started sharing infrastructure with Telenor.

There is a lot of talk about operators suffering and business models changing. Are operators in that bad a position for real?

The industry did well in the past 10 years because penetration rates were very low and growth was big. However, if we look at the industry today in terms of the number of connections, we all know that there are around seven billion. Yet, the actual number of unique users is around 3.5 billion. So, there is around 50 percent who are not actually connected.

In most our markets, the penetration is roughly around 70 to 80 percent. In more advanced markets like Qatar or Kuwait, we have reached a penetration rate of 100 percent. However, this is not the case in most of our emerging markets, where we believe real growth opportunities are lingering. The growth we are talking about is going to be driven by data. However, due to the nature of these markets, revenues will be less and margins will be lower. Add to this the emerging trend of infrastructure sharing: it becomes clearer why the business model is changing.

There is another important issue behind all these speculations and tensions. A lot of governments and regulators do not understand the pressure operators are put under, especially when it comes to new licenses and imposing additional taxes and fees. The problem is that operators cannot afford additional fees and taxes because they have to invest in the infrastructure as well. At the end, operators end up increasing the prices and most customers cannot afford high prices.

As such, growth for new data services will reach a halt and telecom operators will not be able to fund advanced infrastructures. That is why I believe that regulators need to be approached and encouraged to take a long term view regarding the industry and stop drowning it under the heavy weight of taxes and extra costs.

In which countries do you face competition?

Now, we are among the top two players in the markets in which we are in. Yet, every market has its own challenges, and our kind of business is never challenge free no matter how good you are. Competition is fierce, and we are trying to maintain our position without destroying the value of our brand.

However, a major challenge has again to do with governments and regulators. They need to understand that bringing competitors into a market which is already saturated is very destructive. Such moves not only destroy value for the operators who are already established, but they are not sustainable for the newcomers. In small economies, two operators are more than enough. A new third operator will face a lot of difficulties to monetize the investment that they have made.

Governments need to think about future investments, and this will only be solved through meaningful dialogues with governments and regulators, where everybody is aligned as where we all want to take the industry and where we need to take the economies. Operators can have huge impacts on societies.





What can you tell us about your operations in Myanmar? Where do you see the potential?

We are very excited about the opportunity. This is one of the untapped markets with penetration

rates of less than 10 percent. We believe there is huge growth in that market and lots of opportunities for us as a company to grow our portfolio. The country comes with its challenges of course, but the opportunity for growth is huge. This will be a major focus for us.

In the coming six months we will rollout a world-class 3G mobile network with affordable and life-enhancing valueadded services, which is expected to boost entrepreneurship. By adding a start-up support program to our existing network investment, we aim to support local businesses via these flagship developments and to provide inspiring role models of success to encourage human growth through innovation with the potential to impact millions of lives across our markets.

What about your other operations in the APAC region?

We have a lot of operations there. The biggest one is in Indonesia where we are the second biggest player with over 50 million customers. We are trying to push a lot of data services and we have launched a big banking initiative, where we have over one million customers now subscribed to the service. We are also trying to build new business models such as creating an incubation center with our project "IdeaBox". The project has been launched in a number of markets, including Indonesia. The aim of such an initiative is to encourage entrepreneurs to develop new services, products and applications that will drive more data growth.

Recently, we have announced the extension of this successful incubation program to Myanmar with the launch of a new ICT innovation program, as part of our ambitious efforts to foster grassroots innovation through entrepreneurship. In expanding the incubation program to Myanmar with IdeaBox, Ooredoo is using best practices from existing markets and leveraging partnerships with major research and educational institutions to support Myanmar's entrepreneurial community from day one.

We also have presence in the Philippines and other countries including Pakistan. We are always looking at how we can expand these operations in the future.

What is your strategy in enabling connectivity and empowering communities?

Everything that we do now is focused on the needs of the market. We have segmented this market in a number of ways. Consumers are there, but within the consumers there are different communities for which we develop certain services and products. Another important segment is enterprise and B2B; this is a big focus for us this year. We started building teams in every operation to focus on that segment and to build the channels to deliver the services to each specific segment, and we believe that there is a big opportunity.

We are also focused on the youth market because youth and employment is a major issue these days. We are always looking into more opportunities that would engage communities and untap their different needs.

We are always guided by our vision of enriching people's lives and our belief that we can stimulate human growth by leveraging communications to help people achieve their full potential.

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 powered by the convergence of Carrier Ethernet 2.0, SDN, and virtualization technologies.

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

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



REGISTER NOW AT <u>GEN 14.COM</u>

- Ethernet In Action (Demos/Exhibits)
- 1st MEF Certified Professionals Convention
- MEF Members Meetings
- Ethernet Academy Awards Dinner



COMMSCOPE°

Redefining in-building wireless with ION-E



The need for in-building wireless solutions is on the rise. As much as 80 percent of mobile data consumption happens inside buildings, and there is no coverage at all in many buildings. Commscope is a leader in the provision of in-building wireless technology. Telecom **Review Asia Pacific sat** with Philip Sorrells, VP of strategic marketing wireless, Navin Vohra, VP of wireless sales APAC and India and **Rick Aspan, vice** president of corporate communications for a chat on the company's latest in-building solutions.



hree key focuses CommScope empowers many of the world's topperforming mobile networks. The company is focused

on three key businesses: the wireless business, the enterprise business providing data center solutions and the broadband business, bringing broadband to the home.

Asia Pacific presence

CommScope is present in North East Asia, Southeast Asia and India. Vohra says: "We have a factory in Goa and we have presence in different countries in the region in terms of sales offices. Our role entails supporting all the major operators in the region."

CommScope's solutions cater to advanced as well as emerging markets. In Southeast Asia, Australia and Indonesia are two major markets for CommScope. India is another important market. In Northeast Asia, vital markets include Taiwan, Hong Kong and Japan.

Product differentiators

CommScope offers unique multioperator and multi-technology solutions especially for in-building installation. In the outdoor space, innovation, competition and product quality are the order of the day, according to Vohra. "We have helped operators evolve throughout all deployment and migrations processes," he says.

"That is what makes operators work with us now and come to us in the future."

Two ecosystems

Sorrells adds: "We are focused on two ecosystems: outside and inside. With outdoor cell sites, the biggest challenge for any operator anywhere around the world is adding new technology to existing cell sites. This is what we call a network modernization problem. In order to help operators solve this problem, we have created our Andrew Metro Cell concealment solution."

This solution boosts capacity in urban environments and minimizes deployment costs. It not only helps in increasing the capacity and coverage with minimal aesthetic impact, but it also meets zoning minimization and other community approval challenges.

Metro Cell concealment solutions form a portfolio of fully integrated, factory-tested cell site systems comprised of an upper section and a lower monopole support section. The sections can be deployed quickly and efficiently, while providing greater capacity and coverage.

First truly unified wireless infrastructure

CommScope has introduced a completely new architecture for inbuilding wireless systems: the ION-E, a unified wireless infrastructure platform designed around IT-based structured cabling architecture, making it friendly to both wireless operators and business enterprises.

"The flexibility, scalability and simplicity of the system resolve the issues associated with rapidly changing indoor coverage and capacity demands," explains Sorrells. Today, only about two percent of the world's commercial space has indoor mobile network coverage, and this is made up mainly of malls, airports and stadiums. CommScope came up with the ION-E, the new ground breaking product that fits the indoor space.

The ION-E brings together wireless technology for licensed spectrum with power plus Gigabit Ethernet for WiFi into one unified wireless network that can scale to building size and is technology and spectrum adaptive. Unlike any other offerings available today, it features multiband, multi-operator and multitechnology capabilities and uses the standard IT structured cabling infrastructure common to most commercial buildings.

The new product combines the capability and flexibility of cloud RAN while making Distributed Antenna Systems (DAS) simple and unifying local area and wide area networks. This intelligent transport system will fulfill the promise of small cells according to Sorrells.

Key features of ION-E

The ION-E simplifies implementation by using the structured cabling systems familiar to IT installers, and by providing a simple user interface for setup and configuration with minimal input.

Today's modern buildings require flexibility to handle floor space layout changes, the relocation of users, and other changes that could require 66

The ION-E brings together wireless technology for licensed spectrum with power plus Gigabit Ethernet for WiFi into one unified wireless network that can scale to building size and is technology and spectrum adaptive



an extensive rework of the wireless system.

As a multi-band, multi-operator and multi-technology platform, the ION-E employs a standard grid approach and supports on-demand software defined frequencies to flexibly adapt to changing requirements.

Moreover, the ION-E platform easily scales to support buildings from 5,000 to 500,000 square meters. It is frequency agile and technology agnostic, eliminating the need for costly infrastructure and equipment upgrades.

With the ION-E, CommScope has simplified and optimized a solution that empowers IT professionals to deploy these systems. For example, adding network capacity to meet changing usage patterns is achieved with a simple click-and-drag.

The ION-E self-detects and selfconfigures its components, while sending alarm notifications when it detects network issues. The ION-E will be released globally in the second half of 2014.



Meeting the indoor mobile challenge

Dr. Michael Weber, CTO at specialist antenna company Kathrein, looks at how a new active Micro C-RAN system promises to meet demand for in-building data capacity with a multi-operator, multi-band and multi-standard solution.

he growth in mobile data continues to break all records, driven by the demand for always on internet access in offices and homes.

as well as across public environments from stations and airports to hotels, campuses and entertainment venues.

With close to 80 percent of mobile data traffic already consumed indoors, it is clear that higher capacity and more efficient data communications are required to support in-building networks for the future. We are already in a position where some buildings can't be leased if there is not a good indoor signal throughout.

However, with LTE on the way, the prime focus for operators is on the rollout of the outdoor macro layer and driving migration from 3G through better coverage, handset penetration and network options. But while LTE will deliver more outdoor coverage and capacity, it presents limitations indoors – not helped by new building design techniques such as metalized windows that reflect sunlight but also keep out radio signals.

The traditional approach to solving indoor coverage and capacity

problems is through the use of Distributed Antenna Systems (DAS). The benefits of DAS include simultaneous downlink broadcast and uplink reception from and to multiple antenna locations, along with the ability to handle signals for multiple mobile operators. The indoor DAS market has already proved popular in sporting stadiums and airports, for example, where the building owner, occupier or system integrator have installed a single system of antennas to support a number of mobile services.

But most existing indoor DAS solutions are passive and fail to provide the flexibility to adapt rapidly and cost-effectively to the changing requirements. Because a complex coax tree with splitters and antennas needs to be deployed in the first instance, it is necessary to predict capacity demand and identify hotspots for two or three years in advance.

Furthermore, any change of building use, or if a company wants to move from one floor to another floor, or better mobile broadband capacity is needed in executive offices, DAS needs to be manually re-configured, recalibrated and leveled; a time consuming and costly process that requires specialist skills. And to support MIMO (Multiple Input and Multiple Output), a DAS tree structure needs to be doubled, which involves huge investment and disruption.

But at Kathrein we have come up with a new active Micro C-RAN solution that delivers greater flexibility, reduced CAPEX/ OPEX and an improved end user experience. Unlike conventional small cell architectures, with a single Centralized RAN platform, it is possible to aggregate traffic at the C-Hub and then distribute it to any Radio Unit (RU), independent of operator, band, standard or carrier.

Furthermore, any changes to the network, including introducing LTE MIMO, can be delivered remotely from the Network Operations Center. Coverage and capacity can be optimised in real time, simply by increasing sectorization in defined areas with automatic calibration and system leveling.

The new business case for operators

For operators, the business case for public buildings such as an airport or stadium is not always clear. While there is an element of prestige, branding and reduced churn, users mainly have flat rates and don't pay more to cover the investment for in-building systems. But with network sharing and multi-operator connectivity, deployment and operational costs can be shared. For example, with Kathrein's new CDS system, a lead operator or neutral host can rent out peak-time capacity and services to other operators. A dedicated MNO signal can be targeted at sectors in specific areas and additional sectors could be auctioned during a key sporting event, for example. This opens up exciting new profitable business models for site facility owners, neutral hosts and operators.

While the operator business case for an enterprise customer is more transparent, usually involving a single MNO, the ability to automate changes to the network or increase capacity is still vital to improve customer response times and deliver the best possible end user experience. And by acting as a SON (Self Organizing Network) enabler for indoor and campus use-cases, it also saves expensive network resources and reduces the number of field support personnel needed to manage continuous changes.

With Kathrein's CDS power saving options, selected bands and carriers can also be switched on and off per small cell sector. For example, this enables MNOs to turn on an 1800 or 2100 base signal overnight to provide basic coverage and switch off the remaining small cell amplifiers, saving up to 50 percent of the DAS power during off-peak times.

The Kathrein CDS system comprises a C-hub connected to MNO base stations via vendor agnostic interfaces, covering all applicable frequency bands. And since the full spectrum of each band is supported, the C-hub can aggregate multiple operators as well as MIMO capable basestations.

The C-hub transforms the signals into a robust digital data-stream comprising up to 64 Expansion hubs or E-hubs. The digital link supports distances of up to 20km to the E-hub, where the signals are allocated to sectors, which can be changed remotely, and where Remote Units (RUs) are connected via coax or optical cables.



Each RU is equipped with multiple band selective transceivers and LTE MIMO transceivers.

The RUs also provide transparent IP connectivity with a throughput of up to 700Mbps, which can be used for a sensor network, a small cell or WiFi access points. RUs will be available at several power levels to provide a smart portfolio for MNOs to build capacity in buildings but also squares and campuses.

Building for the future

It is clear that DAS solutions won't deliver the capacity, end user experience and flexibility to meet the future demands of inbuilding and mixed indoor / outdoor environments. While the drive for indoor capacity still varies from region to region, operators know they will need to come up with a solution sooner rather than later.

The new generation of active Micro C-RAN technologies not only ticks all the boxes for coverage and capacity, but with the flexibility to support site sharing and multi-band services, the business model and revenue opportunities suddenly become far more attractive.

For more information, visit Kathrein at stand 1K3-01 at CommunicAsia or go to www.kathrein.com

cisco.

He told Telecom Review Asia Pacific that Advanced Services had started in a small way almost a decade ago and gathered momentum in recent years as Cisco ramped up its transformation into a solutions centric company.

"We have been on the journey to becoming a solutions centric company for the last several years," he said. "In a solutions centric company you need a lot more services and content expertise and capability, and that is what I have been building in the last five years."

3000 Advanced Services staff in APJ

Heckscher, a 16 year veteran of Cisco, took on his current role six years ago after 10 years in Asia in product sales, preceded by two years at Cisco headquarters in San Jose. He now presides over a team of 3000 staff -Cisco calls them 'service associates'in Asia Pacific, Greater China and Japan.

He explained that the Advanced Services business is organized around a number of technology-focused 'centers of excellence' and regional delivery teams.

"We have a center of excellence around data center and cloud because we are helping customers to build data centers and cloud capabilities using Flexpods, Vblocks etc. We also have centers of excellence around collaboration, around deploying and building contact centers and around hosted collaboration centers. We also have centers of excellence around mobility, and the mobile packet core. We have capabilities in small-cell and self-optimizing network technologies. And we have a capability around OSS and network management, which of course it is also important for service providers."

Heckscher has regional teams in each market but the center of excellence teams are concentrated to serve the whole market. "The technology is moving so quickly that it is very difficult to keep up if you distribute that expertise. You can't get the level of specialization you need," he explained.

CISCOS OUTPOSE from products to solutions focus

Chris Heckscher heads up Cisco's Advanced Services business in Asia Pacific. He tells Telecom Review Asia Pacific how the business is at the forefront of Cisco's transition from being a product to a solutions centric company.



isco rose to market dominance as a product company, initially with its switches and routers and later with a whole gamut of communications

and computing products: IP telephony systems, WiFi and servers to name but a few. Now on the cusp of its fourth decade it is well into a major transition into being a solutions provider and leading that charge in Asia Pacific is Chris Heckscher, who as managing director, Advanced Services Asia Pacific heads Cisco's IT solutions arm. All these resources are supported by two delivery centers, one in Dalian China, and one in Bangalore in India. "Bangalore is our back office and delivery center that does a lot of software customization and builds tools and supports the front end of our delivery model," Heckscher said.

Advanced Services also has what Heckscher described as "a thin layer" of people that interface to customers at the c-suite level. "We felt we needed people who can translate technology into business outcomes at the CXO level. Every company is going to need a digital strategy at some point. That is why we have this layer: to translate all the technology speak into 'how does that work' for the C-suite."

Advanced Services also works closely with Cisco Consulting Services. "These are people that have a lot more business consulting skills tied to technology skills," Heckscher explained. "For example, they have a lot of intellectual property and expertise around Cisco's solution architecture, data center and converged infrastructure and ACI, which is something we have recently launched." (ACI - Applications Centric Infrastructure is Cisco's vision for the implementation of software defined networking in the data center)

Security a growing focus

Security is a rapidly growing area of focus for Cisco. The company recently announced its managed threat defense capability and the opening of a security operations center in Sydney to deliver the service to the Australian market. Another one will follow shortly in Japan.

"We felt that Japan and Australia were the first places to start and we will build additional centers where we see growth and opportunities," Heckscher said. "They are getting a lot of interest. We will also be supporting customers in other countries from the centers, but clearly there are data sovereignty issues."

He added: "We also do a lot of other security consulting and assessments of service provider networks, data



centers and enterprise networks. ... Security is big. Every CIO and CTO wants to talk about security."

Telecoms service providers account for more than 50 percent of Cisco Advanced Services revenues in Heckscher's region. "That's not surprising because there is a tremendous amount of growth in mobile networks," he said. "There's growth in packet core networks and Wi-Fi networks Small cells are starting to gain traction."

Telcos the biggest customer segment

He is also seeing demand for Cisco's capabilities in self-optimizing networks. "Most of the mobile networks in Asia-Pacific were optimized for voice and now there is a huge amount of data because the advent of the smartphone and tablets that are choking these networks. I do not know of any provider that does not have congestion challenges in multiple parts of their network because the demand for data is growing faster than their capability to build networks to support it.

"We are seeing mobile players running WiFi out because it is more costeffective than spending half a billion dollars on new base stations. And we are seeing a lot of fixed line players and cable companies using Wi-Fi as a way to siphon off traffic and revenue from mobile networks."

Overall, Heckscher says that Cisco's Advanced Services business in Asia is growing faster than in any other region, and he sees no signs of slow-down.

"As we evolve more towards a solution company and away from product company I have no doubt there will be plenty of opportunities to grow and become more relevant and help our customers simplify their infrastructure and their strategies and help them get the outcomes they are looking for," he said.

"I think there is more opportunity and more destruction than we've seen in a lifetime," he concluded. "We saw the coming of the internet in the 90s; we saw the boom and the bust now we are seeing the second wave of the internet which we at Cisco think revolves round the Internet of Things, with more things being connected. It is a really interesting time to be in this industry, but at times it can be somewhat harrowing because the pace is too quick."



Matthew Lempriere, global head of financial services market, Telstra Global





Telstra Global hires former BT Radianz APAC finance head

Telstra Global has appointed Matthew Lempriere as global head of its financial services market segment. He will be based in Hong Kong and will be responsible for identifying and optimizing opportunities for the company within the financial services sector across Asia Pacific, EMEA and the US.

He has over 20 years sales and account management experience in the financial and telecommunications industries. Prior to joining Telstra Global he was head of BT Radianz for Asia Pacific, and has previously held a number of other senior management roles at BT.

Telstra Global said that Lempriere's in-depth specialist knowledge in the delivery of electronic trading and information applications to the banking industry would be critical as Telstra enhances its offerings to the financial sector.

Brocade names Matt Kolon CTO for Asia Pacific

Brocade has appointed Matt Kolon to the role of chief technology officer (CTO) for Asia Pacific.

He will be responsible for leading the company's technology strategy and product roadmap within APAC and for "helping align technology initiatives and execution closely with customer needs across the region, particularly in the areas of network functions virtualization (NFV) and software-defined networking (SDN)."

He will be based in Beijing and will report to Brocade vice president for APAC, Adam Judd.

Kolon was most recently the APAC managing director for Cisco's evolved programmable network business and CTO for service providers. Prior to joining Cisco he spent 12 years at Juniper Networks, holding various executive roles in customer service, sales and marketing, and systems engineering.

Brocade creates OEM leadership role for Asia Pacific

Brocade has appointed Gabriel Breeman to the newly-created position of OEM director for Asia Pacific (APAC). In this role, Breeman will drive OEM strategies, strategic partnerships and alliance initiatives for the region to help position Brocade as the data center networking partner of choice in the OEM partner business segment. Brocade's worldwide OEM partners include EMC, Dell, Fujitsu, HP, Hitachi Data Systems, IBM and NetApp.

This is Breeman's second stint at Brocade. He spent six years at Brocade as a global sales executive and corporate account director before taking up his previous role of senior director for global OEM at solid state storage vendor Fusionio. He has also held direct end-user, indirect channel and OEM leadership roles at Dot Hill Systems and Sun Microsystems.

He will be based in Singapore and will report to Brocade vice president for Asia Pacific, Adam Judd.

Brocade names Christine Heckart as CMO

Brocade has named Christine Heckart as chief marketing officer (CMO). She will be responsible for the strategic direction of Brocade's global marketing organization and will aim to position the company as the network provider of choice to the world's data centers. She will report to Brocade CEO), Lloyd Carney.

Heckart has more than 25 years IT industry experience. She has held a number of senior marketing leadership positions at networking and other high tech companies.

Most recently at ServiceSource, a SaaS provider that helps drive recurring revenue where she served as EVP strategy, marketing, people and systems. Prior to that she held CMO roles at NetApp and Juniper Networks and was general manager of Microsoft's TV, video and music business.

Shaun Page becomes VP of worldwide sales for Big Switch

Big Switch Networks, - which bills itself as "the bare metal SDN company" - has named Shaun Page, a 13-year veteran of Juniper Networks, as vice president of worldwide sales. He is charged with "deepening coverage in key North American markets, establishing an ecosystem of distribution partnerships and ramping the company's presence in Asia and Europe." His appointment follows a series of senior executive appointments by the company in the last year: Douglas Murray as CEO; Jeffrey Wang as vice president of engineering; Prashant Gandhi as vice president of product management and strategy and Joe Palazola as vice president of worldwide operations and support.

Page held a variety of sales and alliances roles during his 13 years at Juniper Networks. He was most recently vice president of strategic accounts. He joined Juniper via the acquisition of Unisphere Networks in 2002, where he was the country manager for Australia/New Zealand.

VCE appoints former IDC research director to AsiaPac CTO role

VCE, the converged infrastructure company formed by Cisco, EMC and VMware, has named Matthew Oostveen, former director of research for IDC Australia as chief technology officer, Asia Pacific and Japan. He will be responsible for articulating the VCE technology vision to customers and partners and ensuring that VCE product strategy is aligned with the diverse business opportunities and demands in this dynamic highgrowth market.

Oostveen has spent the past six years at IDC overseeing all research divisions. His responsibilities covered services, software, telecommunications, infrastructure and verticals, and penning more than 50 published research papers on these topics. Before IDC he held positions at Microsoft and IBM Australia and New Zealand, managing competitive strategy and Linux sales respectively.







TELECOM Review



he company has grown to reach annual revenues of \$1 billion in three years, an IT industry record, and claims to have achieved

year-on year growth rates in excess of 50 percent in the Asia Pacific & Japan region.

According to Gartner's 'Market Share Analysis: Data Center Hardware Integrated Systems 2Q13', VCE had a 51 percent share of the global integrated data centre infrastructure systems market. However that success has been achieved only by significantly changing the original business model.

VCE was billed as "an unprecedented collaboration of three information technology (IT) industry leaders ... created to accelerate customers' ability to increase business agility through greater IT infrastructure flexibility, and lower IT, energy and real estate costs."

This, they said, would be achieved through "pervasive data center virtualization and a transition to private cloud infrastructures."

VCE introduced the concept of 'Vblocks', billed as "fully integrated, tested, validated and ready-togo/ready-to-grow infrastructure packages that combine best-in-class virtualization, networking, computing, storage, security and management technologies from Cisco, EMC and VMware with end-to-end vendor accountability."

The reality did not quite match the hype. These packages were in fact only reference designs. Essentially VCE was saying: "If you want your infrastructure to do X this is what you need." Armed with the reference design, customers could go and source the components from the VCE partners' respective sales channels then build and operate the system.

According to Paul Harapin, VCE's vice president for Asia Pacific and Japan, that business model was short-lived.

VCE brings data center packages to Asia Pacific

As vice president for Asia Pacific and Japan for the Cisco EMC joint venture, VCE, Paul Harapin was responsible for growing the company's packaged data centre solutions of servers, networking, storage and VMware virtualization software across the region. He talks about how the company has changed tack significantly since its formation in 2009, and where it is heading. "About six months after we started we were getting feedback from both customers and partners telling us that we had not gone far enough. ... What we worked out pretty quickly was that we really didn't add much value [by simply providing a reference architecture] because as soon as the customer had put the system together, it started changing."

He explained: "The customer was responsible for all the patches that came out and they had to apply them and test them. Even if they called us, which was the intent, we had no clue how to fix the system because just about everything had changed since we designed it. So within 12 months we reset the company and decided the real value add was going to be in giving a repeatable and predictable product. Then, if there were any updates we would supply them, already tested on the hardware and with the applications."

Resetting the business

He added: "That changed the nature of our business dramatically. We brought tremendous value overnight both in times market availability, supportability and cost reduction."

Harapin joined VCE in May 2012 and since then has seen the number of employees in the Asia Pacific & Japan region grow from a handful to 200. "I feel like a glorified recruitment agent," he quips.

VCE now manufactures its integrated products, Vblocks, at plants in Boston USA and Cork in Ireland and sells mostly through channel partners.

In addition to creating complete systems optimized for specific applications a key VCE contribution to the end product is its in-house developed management system, Vision, that manages patching, updating and fault diagnosis and reporting.

"We realized there was nothing that tied all the components together, that managed all the Vblock and that over time could bring more automation to patching and updating and we



realized we had to build it ourselves specifically for the Vblock," Harapin said.

Focus on telcos

VCE has a particular focus on telcos, Harapin said. "We are looking to assist [telcos] to get to market with the right type of multi-tenant cloud offering and, in particular, at enabling them to offer their customers onpremises private, managed cloud, which is what those customers are really focusing on. They want to bring the perceived economics of cloud into their own data center and really optimize what the are doing."

For channel partners VCE is looking to the major global and local systems integrators. "If companies make their money by stitching hardware together they are to not our partners," Harapin said.

"If they are focused on delivering applications and services and adding real value to customers, then they are our partners, companies like the Indian systems integrators: HCL and, Tech Mahindra, and companies like Accenture and CSC."

To date the bulk of VCE's regional sales have been in the developed

markets of Australia, Japan and Singapore. "We needed to hit the markets that were more mature in their virtualization journey and in their ability to conceptualize managed services, cloud, etc," Harapin said.

"Australia is very mature in virtualization. In Japan, most of their IT is outsourced and has been for 30 years. Japan is the world's second largest IT market. It's mature and it's a market to demands high quality so it's a perfect market for us. Australia is very similar."

He added: "We are also supplying Vblocks into Southeast Asia and China but without a local presence. That will come later, but we have no plans at present. We will look at Hong Kong later this year. I see the next logical markets for us as being China, in which I include Hong Kong, Korea and Taiwan."

Footnote

After giving this interview Paul Harapin left VCE. The company will make no comment on his departure other than to say: "In order to better capitalize on the growing opportunity in the region, VCE is restructuring to focus on specific markets including ANZ, ASEAN, and Japan."



elecommunications companies no longer just support voice and data, but have taken on a critical role as complete connectivity partners, where their

regional knowledge and on-the-ground expertise can mean the difference between success and failure.

Operating in one country can be vastly different from operating its neighbor, thanks to issues that range from language to the law. Their role is to deliver a consistent, predictable and simple solution that has the same flavor no matter which country the customer operates in.

Telecom Review Asia Pacific recently sat down with Martijn Blanken, Telstra Global's Hong Kong based president and managing director, to give our readers a better feel for what is happening in the global connectivity space and specifically how Telstra is connecting the booming Americas to Asia marketplace.

Blanken leads sales, service and operations across 15 countries for Telstra Global. He was previously chief operating officer of Telstra Global and was responsible for Telstra Global's network operations, customer service, engineering, IT and procurement divisions, as well as strategic planning for the technology roadmap.

"There's no point doing anything in business unless you're thinking about how it will change the way your customers do business. And our customers are telling us that we're doing many things right," Blanken said. "We design our products, services and processes from a customer point of view and are continuously optimizing these with our customers in mind. We think through the 'what if' and are proud when our customers tell us that we're their best performing telecommunications supplier and a benchmark for their other partners.

"We spend a lot of time with our customers to understand why they buy from Telstra in the first place and what makes them come back to buy more.

Connecting the Americas to Asia

As pipes get faster and smarter and as the cloud plays an increasingly significant role in global data management, the way the telecommunications industry supports its partners around the world continues to change. They don't just say 'I like your network and your cable systems.' Quite often they say they like our direct, open approach, whether it's through our Customer Control Center portal, which provides direct access to real-time traffic and performance reports, or our proactive approach to quicker issue discovery, analysis and resolution. Customers buy from people and it's our people that make the difference."

Core network expansion

Telstra recently announced the upgrade of multiple ultra-long haul submarine cable routes, optimizing capacity and providing scalability and reliability on key routes of its network. Telstra is using the Infinera Intelligent Transport Network to enable it to quickly deploy 10G, 40G and 100G Ethernet and OTN services on:

Telstra Endeavour – a 9,124
kilometer submarine cable
connecting Sydney and Hawaii;
Telstra's Designated Fiber Pair on
the Asia America Gateway (AAG)
submarine cable connecting Hawaii
and California;

• Reach North Asia Loop (RNAL), which spans 9,000 kilometers to connect Hong Kong, Taiwan, Japan and South Korea.

"We are continually developing our network to meet customers' requirements and this is just one of the projects we are working on to ensure our network is always growing, improving and providing world class services," said Blanken.

The Infinera DTN-X is designed to scale to enable future upgrades to terabit super-channels and terabit ethernet. It converges 5Tbps of nonblocking OTN switching into the same platform, resulting in more efficient network utilization when compared to conventional WDM architectures. Intelligent software combined with this converged platform automates manual operations to lower operational costs and enable faster service delivery.

Telstra Global also recently announced that it would deliver additional capacity on the Unity cable route by adding new 100Gbps submarine cable technology. Unity is a five fiber pair trans-Pacific cable system linking the Chikura cable station in Japan and One Wilshire, the premier carrier building in Los Angeles. Telstra Global says that its investment aims to meet the growing bandwidth demands and business requirements of Telstra's customers across Asia. Australia and the USA and will form one of the core routes for its transmission and IP backbone worldwide. The new 100G technology provides the scalability and diversity to meet the increasing business demands of Telstra's trans-Pacific and Asia Pacific customers.

Unity will be one of the first trans-Pacific cables to be equipped with 100G technology and the announcement represents a breakthrough in optimizing 100G transmission over the 9,600km route from Japan to USA.

Blanken said this announcement demonstrated Telstra's commitment to continually developing its network to meet customers' requirements.

"This is just one of the many projects we are working on to ensure our network is always growing, improving and providing world class services. Our customers can be certain that by using the Telstra Global network they have the best telecommunications technology at their fingertips. Our job as a trusted network supplier is to ensure we are adapting and creating capacity where it is required. Demand for network services in the Asia Pacific region is growing exponentially. We are always working to deliver new technologies to ensure we have a strong connected Asia."

Datacenters and cloud centers

Telstra Global recently announced the expansion of its 'Connected Colocation' capability and coverage in response to growing customer demand for robust and high performance cloud solutions worldwide. This comes at the same time as the integration and expansion of data centers across six locations in Asia, Australia and North America.

Telstra Global's head of network application and services portfolio,

Martin Bishop, said the expanded capability and coverage were the company's next step in providing multinational companies with access to powerful new connectivity and data center solutions under a single integrated service-level agreement. Telstra Global has announced:

 expansion of the Sydney (Broadway) data center – 155 new racks of medium and high-density capacity in the heart of Sydney's central business district;

• North American data center coverage through data center space in Los Angeles, Chicago, New York and San Jose;

extension of Asia Pacific data center coverage via a new Tokyo facility;
availability of low latency network connectivity services from its Singapore data center.

"These capabilities will meet the rapidly growing demand for integrated network and cloud services of our media and financial organizations," Telstra said.

"The expanded offering showcases a level of innovation that is designed to serve their customers seeking the flexibility of cloud computing solutions for their businesses. The extended footprint of data centers is connected to Telstra Global's already extensive telecommunications network, offering advanced solutions and consistency regardless of location that is critical to many of today's business applications."

Looking forward

Blanken was very enthusiastic about future opportunities. He sees cloud customers and interconnection of the cloud centers as very important for Telstra Global's customer base. "Infrastructure as a service is something that our customers ask for and we continue to provide for them," he said.

He added that Telstra Global would continue to expand its footprint in order to better serve customer requests, in particular for vertical markets such as oil, gas and minerals in places such as Mongolia and India where its clients ask for services.

∽infinera

T

elecom Review Asia Pacific recently visited Tom Fallon, CEO of Infinera to discuss the optical networking business and the explosive

growth in network capacity upgrades around the world. We felt that our readers would benefit from hearing the experience of one of the world's leaders of optical transport equipment design, manufacture and deployment. In addition, several submarine cable operators have announced optical upgrades using the Infinera equipment making those upgrades good examples of Infinera's capabilities.

Tom Fallon has been Infinera's chief executive officer since January 2010. He served as chief operating officer from October 2006 to December 2009 and from April 2004 to September 2006 was vice president of engineering and operations.

Fallon said, "Our reputation and customer trust is what helps drive our business. Our customers tell us that they like Infinera's approach to capacity and we continue to build on that theme."

AJC cable upgrade

Infinera recently announced that Australia Japan Cable (AJC), operator of the 12,7000km AJC cable system linking Japan and Australia via Guam, had deployed the Infinera DTN-X packet optical transport networking platform across its network. AJC is owned by a consortium of service providers: Telstra, AT&T, NTT, Verizon and Softbank.

The DTN-X platform with SD FEC super-channels and integrated OTN switching enables AJC to significantly expand network capacity and rapidly deliver 10, 40 and 100 Gigabit Ethernet (GbE) services.

Infinera provides AJC with the DTN-X platform featuring long haul superchannels with SD-FEC based on the industry's most widely deployed Photonic Integrated Circuit and the FlexCoherent Processor, supporting up to 500Gbps in a single line card.

Intelligent optical transport networks

minera:

We all know that there has been an explosion of data being transported across the world's data networks. It seems like every day we read of a network being upgraded to 100G when just a year ago naysayers were telling us 10G would suffice. The DTN-X platform is also equipped with 1Tbps per slot to support higher capacity 1Tbps super-channel line cards for future scaling needs. Intelligent software combined with this converged platform automates manual operations to lower operational costs and enable faster service delivery.

"To meet the growing bandwidth needs of carrier, enterprise and ISP customers, AJC is significantly increasing the capacity of our network," said Philip Murphy, head of engineering at AJC. "We selected an Infinera Intelligent Transport Network because it allowed us to scale capacity while simplifying operations."

Telstra Upgrades

The Infinera Intelligent Transport Network will enable Telstra to quickly deploy 10G, 40G and 100G Ethernet and OTN services on:

Telstra Endeavour – a 9,124
kilometer submarine cable
connecting Sydney and Hawaii;
Telstra's Designated Fiber Pair on
the Asia America Gateway (AAG)
submarine cable connecting Hawaii
and California; and

• Reach North Asia Loop (RNAL), which spans 9,000 kilometers to connect Hong Kong, Taiwan, Japan and South Korea.

Dr David Welch, Infinera CTO, cofounder and president said, "As global businesses turn to cloudbased offerings, we're seeing increasing demand for reliable, global connectivity. We are delighted to build on our existing relationship with Telstra Global to deploy an Intelligent Transport Network across these major submarine routes.

"With an Infinera Intelligent Network deployed across Endeavour, AAG and RNAL, Telstra can deploy highly reliable, differentiated services to its customers while reducing capital and operating costs through scale, multilayer convergence and automation. Telstra Global's deployment is a great example of how long-haul superchannels with SD FEC are accelerating the pace of global communities."

Infinera network as a service using SDN

Telefónica and Infinera recently announced the successful demonstration of network-asa-service (NaaS) in a multi-layer environment using a software defined networking (SDN) approach. The collaboration highlighted the power of an open SDN approach and how it can unleash the innovation of a carrier like Telefónica. According to Fallon, "our customer networks are basically SDN ready."

As a first step in the collaboration, Telefónica developed its own multi-layer IETF-based application based network operations (ABNO) controller which included the path computation functions to control both the IP/MPLS layer as well as the Infinera transport layer. Telefónica was then able to rapidly integrate its ABNO controller with Infinera's programmable SDN Open Transport Switch (OTS) running in conjunction with Infinera's Intelligent Transport Network platforms leveraging both the OpenFlow protocol and Infinera's **RESTful application programming** interface (API).

Telefónica also integrated the ABNO controller with a brand name router to support multi-layer integration. In aggregate, this SDN demonstration allowed end users to define MPLS services from a single screen, resulting in the dynamic allocation and configuration of associated networking resources at both the IP/ MPLS layer and the transport layer. With the speed and automation NaaS delivers, service providers can deploy services faster, more efficiently, and at lower cost.

Specifically this demonstration illustrated:

• How SDN can allow service providers like Telefónica to unleash their creativity and innovation to develop new multi-layer services rapidly and free from the constraints of proprietary operating systems and traditional element management systems.

An SDN control framework based

on IETF's ABNO proposal and its ability to be implemented to support the orchestration and provisioning of services across a multi-vendor, multi-layer IP/MPLS and optical transport network.

 A working prototype controller developed by Telefónica using multi-laver PCE for networking Lavers 1 and 3, demonstrating how SDN technologies and a logically centralized control plane approach can help realize dynamic NaaS capabilities on carrier backbones. • Infinera's Open Transport Switch, a lightweight Web 2.0 software construct that abstracts and virtualizes the underlying transport network resources so they can be easily programmed via a controller. The purpose-built design of OTS for SDN solutions is to enable rapid innovation, in contrast to other transport solutions that repurpose large and heavyweight Element Management Systems (EMS) in their SDN implementations. • NaaS and its ability to enable network operators to offer userinitiated connectivity services to multiple customers on top of a common physical infrastructure, empowering the customer to request bandwidth services as needed, without manual intervention.

"This demonstration with Infinera is the type of research and development that puts us on the forefront of testing new technologies that continually reduce deployment time, the number of manual operations, and deliver more dynamic connections on our network," said Víctor López, responsible for SDN transport innovation activities in Telefónica.

2014

Fallon said that Infinera spent \$120 million on R&D and took big bets on technology. "We do not do what others do, but we do as our customers have a defined need. In 2014 you will see us continue to invest in intelligent network capabilities. It is a competitive world and our product scales very well. An infinite pool of intelligent bandwidth is our goal."

US regulators tentatively OK internet 'fast lanes'

US regulators voted for a controversial proposal that would allow internet "fast lanes" while leaving open the possibility of tougher regulations to protect online access.

Amid demonstrations outside its meeting and following weeks of lobbying from various groups, the Federal Communications Commission voted 3-2 in favor of the new rules, which still must go through a public comment period before being finalized.

The plan, which aims to replace rules struck down by a US federal court, seeks to keep some principles of "net neutrality", the notion that all online traffic should be treated equally, while allowing commercial deals authorizing companies to pay for faster Internet access.

The FCC said the proposed rules may allow special deals for priority access but that each would be examined for commercial reasonableness.

At the same time, the commission said it was keeping open the possibility of regulating internet access as a public utility, which could give the FCC much greater authority over Internet access providers. The plan was touted as a means to preserve an open internet but did not placate critics on either side of the issue, those who want a guarantee of equal access, and those seeking less regulation that allows deals for faster speeds.

Michael Weinberg of the activist group Public Knowledge, said the proposal remains insufficient to guarantee a truly open and neutral internet. He said that the proposal would create a two-tier internet where commercially reasonable discrimination is allowed on any connections that exceed an unknown minimum level of access' defined by the FCC.

Scott Cleland, a consultant and chairman of the business group NetCompetition representing telecom and internet firms, said the plan leaves open the possibility of heavy-handed regulation that would require every business decision of consequence to be approved by the FCC.

Michael Powell, president of the National Cable and Telecommunications Association which includes big internet firms such as Comcast, said, "We will continue to reiterate our unwavering opposition to any proposals that attempt to reclassify broadband services under the heavy-handed regulatory yoke of FCC rules."

Backers of so-called net neutrality say tougher FCC rules would prevent major internet firms from slowing or degrading services like videostreaming outfit Netflix and new emerging services.

Debate on the issue became muddled earlier this year when Netflix signed a deal with Comcast to pay for improved network access, even though the company has long opposed the notion of "tolls" on the internet.

The plan appeared likely to generate more protests such as the one outside FCC headquarters, where several hundred people banged drums and carried signs reading "Save the internet."

"If we start creating express lanes on the internet, they're only going to be reserved for a small handful of big companies and those that can afford to pay them huge, huge rates," said Craig Aaron, president of the activist group Free Press.

The political action group MoveOn called for protests of the decision at 19 FCC regional offices.

Speedcast extends IP backbone to Vanuatu via ICL-1 cable



Wherever You Are

Global satellite telecommunications service provider, SpeedCast (formerly Pactel International) has extended its IP backbone into Vanuatu by acquiring capacity on the new ICL-1 submarine cable that connects Fiji to Vanuatu.

The company says the new service will provide high throughput IP capacity, peering, transit and backbone to numerous wholesale customers in Vanuatu. Steffen Holzt, sales director for Pacific Islands at SpeedCast, said: "This is an exciting time for telecommunications within the Pacific Islands as the proliferation of new and more widelyaffordable communication tools begin to reach the territory. Vanuatu is now 49 milliseconds away from the major Internet peering points and is truly a member of the global Internet community. The new network will deliver high-speed fiber services throughout Vanuatu and we are honored that our customers have entrusted us with their critical communication requirements."

SpeedCast already provides services to Fiji, Tonga and New Caledonia,

which was one of the first adopters of a fiber network rollout in the territory. SpeedCast recently acquired two Australian satellite industry players, Australian Satellite Communications and Pactel International. The company serves oil and gas and mining customers around the country with a team of over 50 professionals in Australia and over 100 in Asia-Pacific.

In Australia it has offices in Sydney, Darwin, Perth and Adelaide. In Asia-Pacific its infrastructure covers the region's major oil and gas and mining hubs: Singapore, Kuala Lumpur, Jakarta, Port Moresby and Dubai.

Fade margin	A design allowance that provides for sufficient system gain or sensitivity to accommodate expected fading, for the purpose of ensuring that the required quality of service is maintained
Fail safe	Of a device, the capability to fail without detriment to other devices or danger to personnel
Fan-beam antenna	A directional antenna producing a main beam having a large ratio of major to minor dimension at any transverse cross section
Far-end receive failure (FERF)	An indication returned to a transmitting link terminating equipment (LTE) upon receipt of a line AIS (alarm indication signal) code or detection of an incoming line failure at the receiving LTE
FDD	Frequency Division Duplex
FidoNet	A network designed for e-mail distribution through individual bulletin board systems rather than through Internet servers
FMC	Fixed/Mobile Convergence
Free routing	The routing of messages in such a manner that they are forwarded toward their destination or addressee over any available channel without dependence upon predetermined routing
FTP	File Transfer Protocol
FVOD	Free Video On Demand 🔟

June 2014

Mobile Asia Expo

MOBILEASIAEXPO 1///移动通信博览会 Danghai 1 11-13 June 2014 - 3.06 1 2014 9-6/111 8-1318

Mobile Asia Expo 2013 had over 20,000 business and consumer attendees, as well as an incredible conference, innovative exhibition and impressive line-up of featured programs. MAE 2014 will be

Date: 11-13 June 2014 Place: Shanghai, China

even bigger and better.

CommunicASIA

Communic<mark>sia2014</mark>

CommunicAsia continues to strengthen and stay relevant to the ever changing info-communications

technology industry. CommunicAsia2014 is the event that addresses the ENTIRE ICT ecosystem from 4G / LTE, AR and Innovations, Content Security Management, FTTx, Mobile Apps, Mobile Broadband, Mobile Devices, RF & Cables, Telecom Energy & Power System and many others.

Date: 17 - 20 June 2014 Place: Marina Bay Sands, Singapore

LTE WORLD



The world's leading 4Gevent, will be relocating back to the popular city of Amsterdam for 2014! With its core values of creativeness, enterprise and innovation, Amsterdam is the ideal location for the world's only dedicated global LTE event.

Date: 23-25 June 2014 Place: Amsterdam RAI, Netherlands

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.telecomreview.com





telecomreview.com

The Telecom Industry's Business Monthly Publications





www.telecomreview.com

Telecom Review North America



www.telecomreviewna.com



Telecom Review French

www.telecomreview.info



www.telecomreviewasia.com

Breaking through

Mobile. Computing. Connectivity.

qualcomm.com







facebook.com/qualcomm



@qualcomm