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No such thing as an Asian market

alk to any senior telecoms or IT executive with responsibility for the Asian 'market' or the Asia-Pacific 'market' and they will tell you that there is no such thing. Rather, they'll tell you they oversee many very different markets that for organizational reasons are managed by the same branch of the corporate hierarchy.

Often executives reporting to corporate HQs in the US will add that they have a hard time getting their superiors to understand that Asia is not one market.

Nor do the differences between national markets in Asia deter others from making generalizations, more often that not without any acknowledgement to the limitations of such exercises.

Not surprisingly this results in widely differing judgments on the state of 'the Asian IT market'. Or maybe these differences result from asking similar questions to people with different perspectives.

For example, in May this year Gartner announced the results of its 2013 Gartner CEO and Senior Executive Survey, saying: "A large number of Asia Pacific CEOs see their organizations as 'pioneers' or 'fast followers' in adopting business- and IT-led innovation."

Gartner vice president, Partha Iyengar, commented: "The Asia Pacific region, long seen anecdotally as more conservative in leveraging technology and driving innovation, has overtaken the global average of CEOs (26 percent) who describe their company cultures as being pioneering in the adoption of innovation. This means a larger number of CEOs than we would anecdotally expect are willing to take risks in the adoption of technology to get first-mover advantage."

According to the survey, almost 70 percent of Asia Pacific CEOs believe they have a good understanding of IT-related management issues. Iyengar said: "It bodes well for CIOs in their quest to increase the strategic impact IT has within the enterprise."

That's one view. Another would be that CEOs have overinflated opinions of their own IT expertise. That's the conclusion of another research firm, Forrester.

In its report "The State Of Digital Business In Asia Pacific In 2014," Forrester said: "Our interviews with regional CIOs clearly point to organizational issues as the greatest impediment to building digital businesses in Asia Pacific. ... Their greatest hurdles involve a lack of management buy-in or leaders who profess to have a digital strategy without really understanding what one is.

"Another characteristic of Asian conglomerates is that of deferring decisions to senior management or the business owner. While CIOs and CMOs see competitive threats, their deference to the CEO or business owner for decision-making can lead to complacency, especially if the company operates in non-information-based industries, like construction."

You pays your money and you makes your choice. Or you leave your preconceptions behind and approach every market and every opportunity with a totally open mind.

Solan



Stuart Corner Senior Editorial Manager Telecom Review Asia Pacific

SingTel teams with FireEye for cyber security services



SingTel and cyber security technology company FireEye have formed a partnership to offer cyber security services to enterprises in Asia Pacific.

They will: set up two new security operation centers (SOCs), one in Singapore and one in Australia; launch a SingTel Managed Defence service powered by FireEye in APac; build up regional cyber security expertise by training up to 150 security professionals to staff the new centers. They also intend to increase awareness and knowledge of cyber threats through joint bi-annual APac-focused threat advisory reports.

Bill Chang, SingTel CEO Group Enterprise, said: "We are combining FireEye's bestof-breed managed defence capabilities and SingTel's leadership in ICT services and infrastructure in Asia Pacific [to] help enterprises better manage the increasing challenges of a new generation of cyberattacks."

The 'SingTel Managed Defence Powered by FireEye' service promises to "provide continuous monitoring, detection and the quick containment of malware and other perceived threats to enterprises and government organisations."

It will use FireEye technology and, it is claimed, will:

- detect and prevent most intrusion attempts against major attack vectors with patented virtual machine-based technology;

- monitor an environment 24x7 and analyze potential cyber threats using techniques based on over 100,000 hours per year of front-line experience, and - resolve incidents quickly and assess the impact for prompt, accurate disclosure.

SingTel and FireEye say: "Cyber security professionals at the new security centers will continuously monitor, analyze and contain advanced persistent threats (APTs) and malware on a round-the-clock basis." The SOCs will be integrated with SingTel's network operations centers to provide end-toend visibility across corporate networks and Internet traffic.

These centers will also connect to FireEye's global network of security operations centers and have access to FireEye Dynamic Threat Intelligence (DTI), a global network that connects FireEye threat prevention platforms to provide a real-time exchange of threat data. This provides enterprises with the latest intelligence on cyber attacks and enables FireEye to proactively recognise new threats and block attacks.

New cable to link Asia and USA



Ram Telecom International has announced plans to build a new submarine cable system (SEA-US) directly connecting Southeast Asia and the United States in a consortium with PT Telekomunikasi Indonesia International, Globe Telecom, Teleguam Holdings, Hawaiian Telcom, GTI Corporation and Telkom USA.

Ram Telecom describes itself as a company "formed by leading telecom and financial industry professionals with extensive expertise implementing submarine cable systems, raising capital and providing strong investor returns."

Its web site lists those professionals as: Russ Matulich (CEO), former managing director, Asia Pacific Region for TE SubCom; David Yuile (director), former CEO of Australian telco and Telecom New Zealand subsidiary, AAPT; and Brian Mass (CFO), a former director in Citigroup's Global Technology Investment Banking Group who specialized in providing corporate finance and advisory services for global services and IT infrastructure companies.

SEA-US will link Manado (Indonesia), Davao (Philippines), Piti (Guam), Oahu (Hawaii) and downtown Los Angeles. The company says the 15,000km system will provide route diversity from the North Pacific, avoiding earthquake prone areas in East Asia.

Construction is expected to be completed in the last quarter of 2016 at a project cost of approximately \$250 million. NEC will supply and build the system.

"SEA US will provide superior latency, deliver an additional 20 terabits per

second of capacity and utilize the latest 100 gigabit per second transmission equipment for the first time in a system in excess of 10,000km," the company said.

Matulich, said: "SEIUS will provide much needed AsiaIUS connectivity and will be the fastest cable connecting Southeast Asia with the United States. It provides essential route diversity from the North Pacific and taps into the strong economic growth of more than 1.5 billion businesses and consumers who are Internet savvy and data hungry."

Pioneer Consulting is forecasting that demand for transpacific connectivity via submarine fiber optic cables will grow at a compound annual growth rate of 30 percent per year between 2014 and 2030. "In Asia, a lot of the content is generated in region, but we estimate that at least 30 percent of content downloaded by Asian users is coming from North America over transpacific cables," the company said.

3

Telstra extends Indian reach via Tata Telecommunications



Telstra has signed a network-to-network interconnection (NNI) agreement with Indian telco Tata Communications that will give it access to Tata Comms' 116 points of presence (PoPs) and extend Telstra's reach to tier 2 and tier 3 Indian cities such as Jaipur, Surat and Trichy. Bernadette Noujaim Baldwin, Telstra Global Enterprise & Services, head of connectivity and platforms portfolio, said the new arrangement was part of Telstra's broader MPLS strategy, which includes NNI agreements in emerging markets that are of high value to customers, and the expansion of its own on-net PoPs. "The latest estimates from a PricewaterhouseCoopers report predict India is set to become the third largest economy in the world by 2030, Baldwin said. "When you combine this with its young and burgeoning workingage population, you've got a compelling consumption boom and a competitive edge that sets Asia's third-largest economy apart from many other countries."

Alcatel Lucent and NEC start construction of SEA-ME-WE-5



Construction of the new Southeast Asia-Middle East-Western Europe (SEA-ME-WE 5) submarine cable system has started and the 20,000 kilometer system is expected to be ready for service by the second half of 2016. SEA-ME-WE 5 is backed by a consortium of 14 global telcos: Bangladesh Submarine Cable Company (BSCCL), China Mobile International (CMI), China Telecom Global (CTG), China United Network Communications Group (China Unicom), Djibouti Telecom, Emirates Integrated Telecommunications Company (du), Orange, Myanmar Post and Telecom (MPT), PT Telekomunikasi Indonesia International (Telin), Saudi Telecom, SingTel, Sri Lanka Telecom, Telekom Malaysia, Telecom Italia Sparkle.

The system will connect Singapore to Italy and France via Indonesia, Malaysia, Thailand, Myanmar, Bangladesh, Sri Lanka, India, Pakistan, Oman, UAE, Yemen, Djibouti and Saudi Arabia. It will have a design capacity of 24Tbps. Alcatel Submarine is building the section from Sri Lanka to France and NEC the Singapore to Sri Lanka segment.

SingTel reshuffles senior executive ranks

SingTel Group has rejigged its senior executive team in a move that it says will "enhance the group's focus in consumer business in the respective markets; ... strengthen execution and drive greater focus in both the telco and digital businesses; drive governance and group synergies, and deepen the leadership bench strength."

Group CEO, Ms Chua Sock Koong, said: "The restructure combines retention of existing management strength and experience with new leadership talent. Our team will advance the SingTel Group's transformation strategy to sustain growth, competitiveness and innovation into the future."

Direct reports to Ms Chua are now: • Paul O'Sullivan, who has also been appointed chairman of SingTel's Australian telco, Optus.

• Allen Lew, currently CEO, Group Digital L!fe. He will be appointed CEO Consumer

Australia and CEO Optus, based in Australia.

 Jonathan Auerbach, a new addition to the SingTel leadership team, will be appointed CEO, Group Digital L!fe. He joins SingTel from McKinsey & Company, where he led the Telecommunications, Media and Technology Practice in Asia.

• Bill Chang will be appointed country chief officer for Singapore where he will be the principal liaison with local and regulatory bodies. He remains CEO, Group Enterprise.

• Ms Jeann Low Group CFO, will assume responsibilities for group strategy and group general counsel in addition to her current portfolio.

• Ms Lim Cheng Cheng, who is currently managing director, Group Strategic Investments, will be appointed deputy group CFO and will report to Ms Low. Other direct reports to the group CEO are

• Mr Yuen Kuan Moon, CEO Consumer Singapore.

• Mr Mark Chong, CEO Consumer International.

• Mr Tay Soo Meng, Group Chief Technology Officer.

• Ms Aileen Tan, Group Director Human Resources.

• Ms Wu Choy Peng, Group Chief Information Officer.

Ms Chua said: "Jonathan [Auerbach] brings strong credentials to SingTel. He will build on the momentum already established in the digital business and ensure SingTel Takes a proactive and aggressive approach to global digital opportunities."



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In addition to industry veterans, the Summit will welcome government and regulatory officials who will convene to discuss the direction the telecom industry is taking through insightful and thought-provoking discussions and networking opportunities.

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On 1 October Alcatel-Lucent closed the deal for the sale of 85 percent of its enterprise business to China Huaxin. Matthieu Destot, Alcatel-Lucent Enterprise's recentlyappointed vice president of sales for Asia Pacific, told Telecom Review Asia Pacific about the company's plans for its Huaxin-funded future.



Icatel-Lucent announced in February 2014 that it had agreed to sell 85 percent of its enterprise communications and networking products

division to China Huaxin, an existing partner of Alcatel-Lucent's main business in China, Alcatel Shanghai Bell. Alcatel-Lucent has retained a 15 percent stake. The deal values the business at \$362 million.

Alcatel-Lucent said at the time: "The ambition of Huaxin is to develop Alcatel-Lucent Enterprise beyond that what it is now, using organic growth and acquisitions to do so." It described the enterprise market as being "in a period of profound transformation, consolidation and even accelerating growth." which required Alcatel-Lucent Enterprise (ALU-E) to scale up in size and in its goto-market capacities. "A change, through significant investments, is the condition to make Alcatel-Lucent Enterprise a sustainably profitable and significant player while maintaining its standards in the domain of innovation and user experience," the company said.

China Huaxin - China Huaxin Post & Telecommunication Economy Development Center, to give it its full name - was established by China's

Aleatel-Lucent

Enterprise goes for

growth with China

Juaxin backing

Ministry of Post and Telecommunications in 1993 to serve as a vehicle for investment in ICT assets and as a platform for international collaboration opportunities in the ICT industry.

It describes itself as an industrial investment company that seeks longterm commercial growth opportunities in the ICT sector. It has extensive global operations and international investment experience and has made investments in top-tier Chinese telecom suppliers such as Alcatel-Lucent Shanghai Bell and the Yangtze Optical Fiber & Cable Company.

China Huaxin president, Yuan Xin, said that his company's long-term investment approach would help Alcatel-Lucent Enterprise deliver on its ambition and enable his company to strengthen its strategic position in the enterprise communications arena.

A deal welcomed by analysts

Ovum analyst Brian Riggs, greeted news of the deal with the blogger's equivalent of a sigh of relief. "Finally! It's such a relief, since the 'Wither ALU-E?' question has been hanging around for so long," he wrote. "Would it be bought by a rival and undergo a messy corporate integration and product rationalization process? Would it stay within Alcatel-Lucent as an overlooked and undervalued asset? Would it be spun off into two separate companies--communications and networking?"

He was generally positive about the announcement saying: "Not being acquired by a rival means that ALU-E as we know it today will likely remain intact. This is unlikely to have been the case if Unify had purchased ALU-E, which was said to be the case as recently as [January]. ... Also continuity-wise, under China Huaxin, ALU-E's comms and network groups will stay together. There will be continued investments ... in ALU-E's still comparatively new OpenTouch and Unified Access platforms, as well as continued development of the company's nascent cloud offerings."

Gartner had a mixed response to the announcement. It described Huaxin's target of doubling enterprise revenue in largely stable markets over five years as "ambitious, even considering both organic and inorganic growth opportunities." It suggested that majority ownership of ALU-E by a Chinese entity should increase the unit's revenue in Asia/ Pacific, but could restrict, or even thwart, the success of its continued focus on the US. Also, "Alcatel-Lucent's partial retention of a business it wants to exit could disrupt plans that Huaxin may have for the unit," Gartner said.

Gartner claimed that Huaxin would provide the right support and the right investment in R&D to gain market share and expand into new market segments. "Huaxin's business model will provide continuity for business partners and customers, and will also enable Huaxin itself to build a new category, which in turn will enable Alcatel-Lucent Enterprise to grow in Asia Pacific and especially China."

It added: "With all products and solutions from Alcatel-Lucent Enterprise being managed under a strict product lifetime cycle process, it is a guarantee that evolutions of products and solutions are not going to be negatively impacted by this agreement."

A market in transformation

According to Matthieu Destot, Alcatel-Lucent Enterprise's recently-appointed vice president of sales for Asia Pacific, signs that the enterprise communications market is transforming are to be found in recent mergers between Alcatel-Lucent Enterprise's major competitors. "Astra and Mitel decided to merge. Each of them was a half billion-dollar business and they merged to become a billiondollar business. We are ready a \$1 billion business, we are already investing 16 percent of our revenue in R&D and we plan to add additional investment capability."

The company's R&D is presently concentrated in the US, France and India. Destot claimed that ALU-E's R&D level put it well ahead of most competitors who invested "more in the range of eight to ten percent of revenue in R&D." He said that innovation would be the unpinning of the company's success going forward and he contrasted the company's approach with that of market leader Cisco. "Marketing is what Cisco is good at, but when I benchmark R&D, Cisco is more in the range of seven to eight percent of revenue. They are a marketing machine; we are an R&D machine. We have the product and we have the R&D. Now it is a question of building our presence in the market."

In this regard the company is coming from well behind. Its market presence is very heavily weighted towards France where Destot - who headed the business there until his Asia Pacific appointment said it had almost a 50 percent share of the enterprise communications market, which accounted for 25 percent of the unit's global revenues.

"We are doing quite well in Australia and New Zealand with about 10 percent market share in the unified communications business," Destot said. "In the network business we have about a three or four percent market share. We have very low share in Korea and Japan because the markets are very protected and there is demand for specific features and protocols."

Aiming to double revenues in five years

Destot aims to double ALU-E's Asia Pacific revenues within five years and its go-to-market strategy will be key to this. Destot sums this up with two acronyms: PPPP and PAM. PPPP stands for 'people, price, program and place' and PAM for 'partner account managers'. The company intends to focus on the SMB market in very specific geographic areas, and on the enterprise market in specific verticals.

"Australia will be one of the key countries for us because the market is mature enough and the SMB market in Australia is 40 to 45 percent of the value of the total market and we have the right portfolio of communication and networking products for that market," he said. "Malaysia is also an SMB country and we enjoy a pretty big market share there. A third country would be the Philippines."

But within each country ALU-E intends to selectively focus on just a few major cities. "Will be in three or four cities in Australia, Destot said. "In India will focus on Delhi, Mumbai and Bangalore."

He intends for each channel partner to have a very local market. "Whe are not going to be investing everywhere and have people flying everywhere. We want



partners to be within 30 minutes of customers," he said.

In the enterprise market ALU-E plans to focus on three key verticals: healthcare, hospitality and education, where it claims to have strongly competitive and differentiated offerings.

Meanwhile the unified communications market is seeing a rapid shift from on-premises systems to cloud-based services and Destot said ALU-E would make joint investments with partners to help them break into this market but had no intention of being a provider of cloud services itself.

ALU-E spells out Asia Pac strategy

At a press briefing following closure of the deal, Destot fleshed out the company's strategy for Asia Pacific.

The Asia Pacific region is divided into five sub regions: Australia and New Zealand; Malaysia, Brunei and Singapore; Japan; North Asia and South East Asia. Destot's responsibilities do not extend to China.

"We will be closely linked to a systems integrator in China that will deliver our solution exclusively in the Chinese market," he said. "In China you need to partner or joint-venture with local companies especially if you want to address the government sector. So we have a very specific model for China. Everywhere else we will be 100 percent indirect."

Globally ALU-E is focused on the SMB market and on four enterprise verticals: hospitality, healthcare, education and

manufacturing, but will not pursue all these verticals in every market. Another major focus for the company is the provision of communications services from the cloud.

"In Korea and Taiwan we will focus on manufacturing," Destot said. "In Taiwan we will invest with in our product portfolio with specific R&D especially for the needs of service providers. We are particularly strong in healthcare and education in Singapore and in Australia. We believe we have huge potential in the SMB markets in Indonesia and the Philippines."

The company aims to be in the top three players in its target market sectors and target countries, with a minimum 15 percent market share, in both the communications and networking markets. Destot said: "We're not too far away from that today. Worldwide we have eight to nine percent market share. So to reach 10 to 15 percent is very feasible."

"Our goal is to double our business [globally] over the next five years to \$2 billion, which will mean 10 percent growth year-on-year, and having a gross margin of 15 percent." He said the company would "keep delivering positive free cash flow while maintaining our investment in R&D the and in sales and marketing, which is currently at 23 percent of sales."

He said that the deal with China Huaxin, apart from providing additional investment would free the company to pursue its market goals. "As a member of the Alcatel Lucent group we were part of a company of 70,000 people so we were part of the culture of a very, very large company. Now we will be 2700 people dedicated to the enterprise business. And before, all the profits we were making were going back to the group. In the new Alcatel Lucent Enterprise the goal is to deliver profit for the enterprise business."

Partner ecosystem will be key

Much of the company's investment will be in developing its partner ecosystem, especially to helping selected partners move to delivering cloud based services. Destot said a key part of the company's strategy was to be "the preferred partner of our partners."

"Worldwide we have 3500 partners and I am telling them in Asia Pacific that we need to be easier to business with. Part of the investment that we will make will go towards improvements in all the tools and processes and in the ways we work with and generate demand for our partners. This is very important."

Co-investment with selected partners will be particularly important for the promotion of the company's cloud based communications services, which it intends to offer though a 100 percent indirect model.

"We have the investment capability and we will help selected partners build their cloud infrastructure in order to be able to deliver applications as a service to end customer," Destot said.

"Our partners need to move their businesses towards annuity-based services but that will enquire huge investments: to build data centers, in network connectivity, security and storage. Not all of our partners will be able to make this move because the investment will be huge."

The company already has one such partner in Australia, the Australian Stock Exchange listed UXC, and is in negotiations with another two. It is also soon to appoint a partner in Singapore for cloud services, and these will form the main plank of its bid to penetrate the Japanese market. "Our share of the Japanese market is very low," Destot said. "This is a huge market but quite well protected for the locals." He added: "We don't yet know who our partner will be."

The emergence of digital risk and the digital risk officer

More than 50 percent of CEOs will have a senior 'digital' leader role on their staff by the end of 2015, according to the 2014 CEO and Senior Executive Survey by Gartner.

artner is predicting that, by 2020, 60 percent of digital businesses will suffer major service failures due to the inability of the IT security team to manage digital risk in new technology

manage digital risk in new technology and use cases.

Digital risk management is the next stage of evolution in enterprise risk and security for digital businesses, according to Gartner. The role will arise because IT, operational technology (OT), the Internet of things (IoT) and physical security technologies will have interdependencies that require a riskbased approach to governance and management. "Digital risk officers will require a mix of business acumen and understanding with sufficient technical knowledge to assess and make recommendations for appropriately addressing digital business risk," said Paul Proctor, vice president and distinguished analyst at Gartner.

"Many traditional security officers will change their titles to digital risk and security officers, but without material change in their scope, mandate and skills, they will not fulfill this role in its entirety."

Gartner argues that the mandate and scope of a DRO will be very different than a chief information security officer (CISO) and in many organizations the CISO role will continue with similar scope as in 2014.

The DRO, Gartner says, will report to a senior executive role outside of IT such

as the chief risk officer, chief digital officer or the chief operating officer. They will manage risk at an executive level across digital business units working directly with peers in legal, privacy, compliance, digital marketing, digital sales and digital operations.

Gartner expects many CISOs to evolve into DROs as they begin to own or form effective partnerships with digital security teams managing other forms of technology.

IT security leaders may continue with their assigned responsibilities that report to the DRO. As physical security management becomes increasingly digital, this will include the physical security teams as well.

The impact of this new structure of digital risk governance and management on IT and IT security operations is expected to be minimal, particularly in those enterprises that have already appointed a chief risk officer. However, the potential impact on the culture of IT and IT security teams is major.

New and existing technology managed outside of the IT organization requires skills and tools beyond the competence of the IT security team in its current responsibilities, and the teams currently involved in management of these technologies are culturally distinct from the IT organization.

A consistent, unified approach to digital risk at the enterprise level has the potential to deliver cost efficiencies and greater risk assurance for business processes than the fragmented approach currently in place at most enterprises.

Development of a digital risk management capability requires deconstruction and re-engineering of current organizational structures and allocations of responsibility as well as the development of new capabilities in security and risk assessment, monitoring, analysis and control.

"By 2019, the new digital risk concept will become the default approach for technology risk management," said Proctor.

The Imrd Network:

beyond ethernet, beyond the Internet

In the last edition of Telecom Review Asia Pacific we reported on orchestration software developer CENX cofounder Nan Chen's vision for 'carrier ethernet on demand', where services at specified bandwidth and QoS could be 'dialed up' as easily as a phone call today. Chan is also president of the Metro Ethernet Forum (MEF) and his vision has now been given the imprimatur of that global organization as its 'Third Network' announced in September.

> he Metro Ethernet Forum (MEF) has unveiled its vision for a 'Third Network' that will "deliver Internet-like agility and ubiquity with

carrier ethernet 2.0-like performance and security," by combining the attributes of these two networks.

It says that the specifications in CE 2.0 enable the creation of virtual private

networks using transport technologies such as MPLS to deliver services with assured performance and security across the interconnected networks of multiple carriers but take days if not months to initiate. In contrast the Internet delivers on-demand, ubiquitous services but offers no guarantees of service levels or security, leaving these functions to users.

MEF president, Nan Chen, said: "We believe that the world needs a new network that builds upon the strengths of both the Internet and CE 2.0 and enhances them with end-toend lifecycle service orchestration. Combining the availability and agility of the Internet with the assurance in performance and security of CE 2.0 will allow us to create a network so flexible and robust that the network itself can be delivered as a customized virtual service – opening up unlimited possibilities for new business models and market growth."

Carrier ethernet will be key

"Carrier ethernet networks provide assured quality of service and security, but they can take days to set up. What's needed is a carrier ethernet service that you can initiate on demand."

Chen said there was demand for a service with Internet-like agility and ubiquity and CE 2.0-like service assurance, that would offer "unprecedented levels of user control of the network and cloud servicelike dynamic, on-demand service experience," and would "accelerate growth in personalized, virtualized and mobilized services."

According to Chen, 'personalized' means that the service attributes would be associated with each and every individual regardless of their physical location. "Why does the service you have when you travel have to be different from the one you get in the office?" he asked.

The MEF claims that its carrier ethernet standards have done much to make ethernet the dominant networking technology. Research firm Infonetics predicts that 75 percent of the world's bandwidth will be ethernet based by 2017 and that by 2017 carrier ethernet will account for \$US56 billion in annual service revenues and \$US39.5 billion in equipment.

According to ethernet inventor Bob Metcalfe - now advisory director of the MEF - work is already underway to realise the vision of the Third Network by adding 'layered abstraction' to wide area networks. "In computing, hardware is separated from operating

Orchestration, NFV and SDN

Chen explained that the Third Network would be made possible by exploiting current wide area networks and two recent innovations: software defined networking (SDN) and network functions virtualization (NFV).

SDN enables the switches and routers that direct traffic through data networks to be instructed and controlled by software via standard interfaces. NFV enables the combination of hardware and software that has traditionally been needed to deliver a service - such as videoconferencing - over a network to be replaced by software running in a virtualized environment on standard hardware. Its development is being aggressively pursued by telcos that see great potential to reduce costs and create new services.

Metcalfe added: "Three major cooperative industry initiatives - NFV, SDN and service orchestration - are coming together to develop more responsive and adaptable solutions. NFV allows general purpose virtual machines for every network function, instead of vendor specific elements, while SDN is moving control functions into central controllers. But neither addresses directly the connectivity services that business or individuals actually purchase. This is where MEF provides a vital part of dynamic delivery and management of the new Third Network, a network as a service."

Service orchestration manages the entire lifecycle of connectivity services: fulfillment, control, performance, assurance, usage, and analytics. It holds detailed service inventory of all services in a layer or domain, providing the necessary APIs for information exchange between service providers and internal systems operating at other layers.

Such a network architecture is in stark contrast to those of today in which



Multi-Vendor Optical Transport Network Domain

Traditional telecoms operations are in functional silos

MEF

different systems are in functional silos – with separate inventory, provisioning performance and fault management systems. According to MEF, "Each such functional system must hold detailed information of all domains – like optical, ethernet or IP. A change in any one domain would result in changing all systems – and that takes extraordinary effort, time and money."

However, "Using Network as a Services (NaaS) principles, we can develop a layered approach for telecoms operations, to break down complex problems, domain by domain, layer by layer."

Chen drew an analogy with the world of computing, where the three layers are clearly defined enabling innovation at one layer without impacting others. "They have hardware and operating systems and applications and you can innovate at any layer without impacting the layer above or below. For example, the applications on your android iPhone don't need to understand what hardware they are running on. But networks are vertically integrated so it is very hard to change anything."

Service orchestration the first priority

MEF says that service orchestration is the immediate objective. "Initial work so far includes: the definition of service orchestration lifecycle elements; extending information models to be dynamic and protocol independent; and developing open-standards-based APIs where needed." It adds: "All new capabilities leverage and build upon CE 2.0 as the services platform, and this ensures an optimal migration strategy."

According to Andrew McFadzen, MEF chairman and head of global marketing, network services at Orange Business Services, "Initial work underway includes defining service lifecycle elements, extending information models and service attributes to be dynamic and protocol independent, and developing openstandards-based APIs. All the new capabilities leverage and build upon CE 2.0 as the services platform, to ensure an optimal migration strategy."

To promote its vision for the Third Network, the MEF has launched an industry collaboration dubbed MEFunite. It comprises a number of telco industry standards bodies including ETSI, The International Telecommunication Union (ITU), The IEEE, the IETF, the Open Network Forum (ONF), The Linux Foundation's OpenDaylight project, OpenStack and the Cloud Ethernet Forum.

Chen said that the MEF hoped to produce the first results of its Third Network initiative early next year, in the form of application program interfaces that would enable software control of CE 2.0 networks.

1

Tech Mahindra

MV Os in Asia Pacific - varied and vibrant

Tech Mahindra, part of the Mahindra Group, is a diversified IT services company with a strong focus on the telecom industry. The company has grown organically and through a number of acquisitions in business process outsourcing, enterprise mobility and applications. It has a good spread of wireline and wireless clients in both mature and emerging markets. Suresh Bhat, head of telecoms in South East Asia, gives his views on the mobile virtual network operator (MVNO) market.



hat brought you here? What paved the way for MVNOs?

MVNOs address a niche

segment that traditional telcos arnotic addressing or are loath to focus on, due to their perceived small size. However the existence of such niche areas exposes a business opportunity that can be, and in the case of Malaysia, has been, exploited by entrepreneurs.

MVNOs are perceived to be in competition with carriers. Do you still believe that, or do you see them now as allies? If so, what are the mutual benefits?

Initially mobile network operators (MNO) may have perceived MVNOs as competitors that could cannibalize their markets. However time and successful case studies have clearly shown that MVNOs can not only coexist with MNOs but can also create a vibrant telco industry and a win-win situation for both and for the industry in general.

For MNOs, MVNOs bring possibilities of furthering their network asset monetization, expanding their customer base and revenue growth with minimal investment, or none at all. For the MVNO, there is a quick-tothe-market business model, with no investment in networks.

What do you think gives MVNOS and edge over MNOs?

MVNOs come in various forms. They could be focusing on niche services such as remittance services, low call cost to certain specific destination countries for migrant/temporary labor, machine to machine (M2M), surveillance services, high speed mobile connectivity, telematics etc) or bundling such as airline and telecom services or retail and telecom services.

Essentially MVNOs address niche markets that are perhaps too small or too complex for the MNOs to focus on The overseas micro remittance market, for example, needs the MVNO to locate sales / servicing outlets in specific areas, to add employees with specific language capabilities, to be ready to manage demand peaks over weekends, etc.

Those are things that a MNO is illequipped to handle. The MVNO that runs the remittance segment as a primary focus can, however, attune itself to these demands and hence effectively create a differentiator that leads to business success.

In the case of bundling, the MVNO can bring in its existing businesses and bundle loyalty points for subscribers who consume multiple services from the MVNO or its parent company. This leads to customer stickiness and in return customers get rewarded for their loyalty through rebates, discounts or points that can redeemed for other services or value adds. These differentiators enable MVNOs to thrive alongside the MNOs, who find the overall pie being expanded.

What do you think are the key factors that make MVNOs successful?

Factors that have lead to the success of MVNOs are: the niche and the addressable market within the niche, the ability to identify and sustain the business model based on value differentiation or new bundles of services, besides the obvious – right pricing.

Do you see regulatory measures playing a crucial role in enabling MVNOs to flourish?

Regulatory bodies that have encouraged and offered MVNO licenses have clearly added vibrancy and innovation to the telecom market. Consumers have therefore enjoyed the freedom to choose from a wider variety of services/bundles that suit their lifestyle requirements rather than having to adopt standard packs and bundles offered by MNOs. Therefore a regulatory regime that encourages competition by introducing MVNOs obviously makes for a better market.

According to a GSMA report, Asia Pacific is second to Europe in terms of global MVNO footprint; do you still believe that it will be the same in the next few years?

APAC currently has a mix of economies; mature, developing and emerging in terms of telecom services and penetration. However some markets still have significant room for growth due to their economies only opening up recently; China, Vietnam and Myanmar, for example.

APAC is also the region with highest level of migration within country (from rural to urban) and from one country to another as people pursue business and job prospects. Hence the tremendous potential for MVNOs and niche market plays. It's likely that this trend will continue and flourish for the foreseeable future. That said, countries in the LATAM, Eastern Europe, Middle Eastern countries are also on the MVNO bandwagon with regulators offering licenses and operators already launching or having launched services.

Here in Asia Pacific, which countries are the ones leading the pack in terms of MVNOs innovations? Which countries are lagging behind – and what do you think they can do better?

The leader of the pack in the APAC region in terms of number of MVNOs is Japan, followed by Australia and then Malaysia. Japan has more than 90 MVNOs, Australia 30 plus and Malaysia about 10. Other countries evolving in terms of MVNO operators are The Philippines. Thailand. Singapore and Korea. Japan, for example, has the widest variety of services offered through MVNOs, from video surveillance to telematics for cars (for in-vehicle, wireless, communication services), sports specific services for fans of football clubs, M2M services for SMEs which allow remote management of multiple types of devices such as vending machines, surveillance devices, measuring devices etc. We are vet to see such offerings in the south East Asian countries.



What do you think are key growth areas in terms of MVNO services?

The possibility of offering new services and bundling is limitless and we will continue to see innovation in this area. Voice controlled services for remote devices could be one of the potential areas that can applied in medical, security or patient monitoring applications.

How do you think MVNOs will continue to affect MNOs and end users?

Technologies that leverage cloud, M2M etc will enable the possibility of new MVNO offerings that will make services available onthe-go (mobility), easy to use (convenience) and competitive (cheaper). These services will be aimed at entertainment, productivity, lifestyle, etc and will drive increased revenues for both MNOs and the MVNOs.

Salesforce dreams of being a force in comms

Cloud-based business software giant Salesforce has grown rapidly providing generic business applications, but is now turning its focus to differentiation for specific industry verticals, and communications is high on its agenda.

> rom startup 15 years ago as a provider of the first cloud based customer relationship management (CRM) systems, Salesforce has grown into a \$5

billion per year behemoth with 150,000 customers and 15,000 employees. Its cloud services are now offered targeted to six specific business needs under the umbrella of the "Salesforce Customer Success Platform": sales, marketing, servicing, apps, collaboration and, most recently, analytics. However, until recently, it has not had much of a focus on industry verticals. That is changing, and communications is one of those verticals.

Andy Baer, a communications veteran with over 30 years in the industry, was

hired by Salesforce a year ago to run a new group charged with focusing on the industry vertical of Communications and Media. It's one of six groups formed about a year ago to tackle specific industry verticals, the others being Automotive and Manufacturing, Financial Services, Government, Healthcare and Life Sciences, Retail and Consumer Goods.

Speaking to Telecom Review Asia Pacific at Dreamforce in San Francisco - Salesforce's annual user and partner conference - Baer explained that his job, and those of his counterparts, in the other industry verticals, was to help Salesforce take its products and translate them into solutions and a language appropriate to each vertical industry.

"Our mission is to help our account teams to communicate effectively with our customers in those industries, and to help our customers directly to more effectively use our products," he said.

However, that is only stage one of Salesforce's industry vertical play. Stage two will be the customization of its core products for each vertical. "The model is evolving to developing specific products and tailoring our products for those industries," Baer said.

Tailored products for industry verticals

"Our customers are now asking us to 'verticalize' our products. We are starting slowly and we will grow into it. We are doing it industry by industry. You will start hearing about this at Dreamforce."

Salesforce, he said, already had a strong presence among telcos, mostly in the business-to-business (B2B) areas of their operations, but also increasingly in business-toconsumer (B2C). One of its flagship B2B customers is Vodafone the UK headquartered mobile network operator with 27 wholly or partially owned network operating companies. "There have a single unified cloud-based B2B platform that is being rolled out to all 27 operating companies," Baer said.

However Salesforce's ambitions go beyond penetrating the market for

business software in telco carriers. They go to the heart of their network operating software. "We believe it is possible to move the entire business support system from order to cash to be a multitenant cloud solution," Baer said.

Taking BSS/OSS to the cloud

"We have been working on a multitenant cloud-based carrier grade integrated business support system (BSS). We are challenging the belief that BSS is not ready for the cloud. We are suggesting for some customers that they can have a cloud-based billing platform."

He says that this message is being well received by telcos. "Most communications service providers are saying that they want to put more into the cloud and traditionally the network and the BSS/OSS have been a different platforms anyway so that is not the issue.

"They are looking for agility, speed and performance and whatever is the best way to achieve that is where they will go. The only issue the gets raised is data residency requirements from a legal perspective."

He said this was an issue only for certain applications. For example, in Australia, Salesforce counts all three mobile operators - Telstra, Vodafone and Optus - as customers but has no data center in Australia, although it has come under some pressure to commit to building one.

"For the kinds of applications they are using [data residency] has not been an issue," Baer said. " A data center in Australia continues to be discussed. At the appropriate time and in the appropriate circumstances it is possible."

At Dreamforce Baer's group demonstrated a proof of-concept of a system designed to deliver a more personalized experience to a telco customer. Baer said: "We are having significant conversations with customers about where they want to take this. Some of our largest customers asked us to demonstrate what is possible. Every customer will have different views as to which set of products they want to integrate together. So it's now a matter of talking to customers and understanding where they want to go, to working with them to see exactly how they want to implement it."

CEM versus CRM

He added: "What we are demonstrating is customer experience management, which is different from customer relationship management. Customer relationship management is doing the best you can to enable the customer to interact with you in the way you want them to interact. Customer experience management is doing the best you can to allow your customer to interact with you in the way that they want.

"What has been happening for 20 years in customer relationship management is that you define the interaction channel and your customer has to use it in the way you have designed it. Customer experience management allows the customer to make their own journeys in how they interact with you."

Earlier this year Salesforce released a commissioned white paper *Building Blocks of Next-Generation Customer Experience*, authored by Heavy Reading analysts Ari Banerjee and Sarah Wallace. They summed up the challenges faced by telcos in this new age of the empowered consumer: challenges that Salesforce hopes will provide it with much future business as it help telcos meet them.

"Today the customer experience for consumers is disjointed, reactive and not personalized. Service providers interested in managing the customer experience more effectively need to collect as much customer experiencerelated data as possible. They must be able to analyze this information to understand the customer experience and especially to detect unexpected and unpredictable events that might pose either an opportunity – for example, to enhance or enrich the customer experience – or a threat. ...

"Operators realize they must do a better job of providing superior customer service, but wanting and executing are two different things. Inefficient BSS/ OSS stacks are one of the primary hurdles why operators are not able to provide superior customer experience as the B/OSS stacks are not agile enough and have siloed data in the various lines of business. ...

"A next-generation customer experience engagement layer should be able to continuously monitor and audit the events, capture and collect issues from other platforms, offer advanced analytics, provide proactive notification and preventive care, streamline data management, have a single active knowledge base and have social channel insight to give operators control over their online branding."

Telstra Global's view

Telstra Global Enterprise & Services is one telco that is firmly focused on its customers and, according to CIO Sundi Balu, is using Salesforce to help it.

Delivering a conference session at Dreamforce, he said Telstra Global had been drawn to Salesforce by it integration and customization capabilities and the features it could expose to customers. "Our fundamental belief is about giving customers control and choice; the control and choice to enable them to focus on their customers rather than the services they get from us."

Salesforce also provides facilities for employees. "It's really important for every employee in our company to understand what is happening with the customer, everything from sales to commercial relationships; really getting that information in one place and with Salesforce we have managed to give every employee access to that information," Balu said.

"It is also very important to have a consistent data model. Regardless of what tools you use you have to have a data model that is consistent from your initial engagement with the customer all the way through the acquisition cycle. That is what we have achieved globally and it has stood us in good stead, enabling us to expand into other capabilities."

Mobile data roaming becoming affordable

TELECOM Review

Australia's telco consumer watchdog the Telecommunications **Industry Ombudsman** - recently reported the case of an unfortunate traveler whose phone was stolen overseas and subsequently used to run up a bill for mobile roaming in excess of half a million dollars. It's the ultimate horror story to illustrate the perils of international data roaming. Fortunately things are changing.

> uring the early days of mobile communications most consumers knew the perils of making long distance calls abroad and were

aware of the high tariffs levied on SMS messages sent, and received, when they were in another country. So to avoid high charges they simply kept usage to a bare minimum.

However the advent of mobile data roaming and the widespread use of mobile Internet have resulted in many people being hit with exorbitant charges, simply by leaving data access turned on. As a result of this, operators are being overwhelmed with complaints brought about by bill shock. Operators lose their customers and customers have to pay high fees for services they were not aware they were using.

In recent times a number of different options have become available for travelers that enable them to be connected without the risk of incurring unreasonable bills. One of the most common, and one of the best options, is to get a local SIM card.

In addition, operators now are providing SIM cards designed for travelers. For example, Vodafone offers Red Roaming, which covers about 46 countries including China, Hong Kong, Indonesia, Singapore, Japan and Thailand. The Red Plans on this scheme allow a user to add the package to the existing call, text and data inclusions of their monthly plan for an extra \$5 a day.

Data-only SIMs keep costs down

Another cost saving option is the Data Roam SIM card that gives a user unlimited mobile data in Asia for £8.00/day (\$12.90). The Asian Data SIM Card covers 11 countries across Asia Pacific: Australia (Optus), Hong Kong (CSL), India (Airtel), Indonesia (Telkomsel), Macau (CTM), Malaysia (Maxis), Philippines (Globe), Singapore (SingTel), South Korea (SK Telecom), Taiwan (Taiwan Mobile) and Thailand (AIS). It has no monthly charges. It is a prepaid card and the £8.00 is deducted each day that the service is used.

Earlier this year, Globe Philippines launched an unlimited data roaming plan for its postpaid subscribers. Globe charges \$10.00 per day for unlimited access to the Internet. Partner countries includes Australia, China, Czech Republic, Germany, Hong Kong, India, Indonesia, Ireland, Macau, Malaysia, Saudi Arabia, Singapore, South Korea, Spain, Taiwan, Thailand, United Kingdom, USA and Vietnam.

As roaming tariffs in Asia loosen up, a lot of operators are experimenting with business models to attract cross border users. One such is Malaysia's U Mobile, which surprised the market by offering the first free Internet roaming service to its postpaid customers.

U Mobile leads the way

U Mobile is known for its innovative products and pricing and is considered to be the most dynamic and innovative telco in Malaysia. Before this announcement, U Mobile subscribers



had already been enjoying the cheapest Internet roaming service.

U Mobile postpaid subscribers traveling to Cambodia, Hong Kong, Indonesia, the Philippines, Singapore, Thailand and Taiwan can now enjoy free 50MB of mobile data per day. Subsequent usage is charged on as pay-as-you-use rates with a maximum of RM30 per day.

Customers do not need to subscribe to the service, or configure their handsets. They receive an SMS upon arrival in the country and simply need to manually select the designated mobile operator in each country to enjoy the service.

This limit is enough for casual Internet connection and for keeping in touch with friends and family via instant messaging platforms like WhatsApp, WeChat, LINE and KakaoTalk or sharing travel experiences and discoveries via social media platforms.

According to Cisco's Data Meter a 100 word text email takes 1MB, an hour of web browsing is about 10-30MB (but this figure is heavily dependent on the content of web pages). Downloading one three-minute mp3 file takes about 4MB and viewing/downloading one 10-minute video is about 40MB.

U Mobile is spearheading the transformation of data roaming tariffs in Asia, but more operators are expected to follow suit.





elstra announced the new unit in October 2013, headed by Brendon Riley, but said very little about it, only that it would start

life with annual revenues of \$A5 billion (\$4.7b), would operate as "a global scale, industry-based services and solutions business," and that Riley's responsibilities would include both international and domestic activities comprising "network application services worldwide, global applications and platforms, a new cloud division, Telstra Ventures, Telstra Enterprise and Government and defense."

Telstra said: "The unit reflects rapid growth in key portfolio areas and the global market in which these services are provided." The new unit took responsibility for Telstra's former international business unit, Telstra Global, headed by Martijn Blanken.

Telstra Global absorbed

Bell explained that, from a Telstra Global perspective, the move was an acknowledgement that the business unit had matured. "We've reached a degree of scope and maturity so it is now time to integrate Telstra Global as part of the bigger Telstra plan," he said. "We are taking the agility we have had internationally and bringing the depth and breadth of customer base we have had for our international customers in Australia."

He added: "Martijn Blanken is now responsible for sales [for Global Enterprise and Services] and the message in Australia and internationally to multinational enterprises is that we are now starting to integrate these two teams to serve our global customers."

Bell was speaking to Telecom Review Asia Pacific at CommunicAsia on the eve of Telstra announcing the opening of a US node of its network of data centers from which it will offer a range of cloud based services to multinationals and he explained

Cloud is key to serving global customers, savs Telstra

Australian telco Telstra late last year created a new business unit to focus on multinational enterprises, Telstra Global Enterprise and Services. Nathan Bell, its director of marketing, portfolio and pricing explains how cloud-based services will be a key component of its offerings. how these would form the core of the Telstra Global's offering to multinational enterprises going forward.

Global network of cloud hubs

He said that the new hub would enable Telstra, for the first time, to offer truly global cloud services. "We are now finally able to visualize for our customers what global really means. Now we have a cloud hub in the US, one in Europe, one in North Asia, one in South Asia and one in Australia."

He added: "Everything we do is either on the network or in the cloud. One of the strengths we have at Telstra global is that we have no legacy of on-premises solutions so what we have been able to do is to embed these into the cloud nodes."

All Telstra's cloud hubs will use Telstra's in-house developed cloud platform, CSX, based on Cisco servers, VMware virtualization technology and EMC storage and will serve as platforms for both infrastructure as a service offerings to enterprise customers and for a range of current and planned services that use software running in the cloud.

Bell said that CSX was core to Telstra's strategy of delivering an increasing range of cloud services that would be identical wherever in the world they are offered. "Our [Cisco] unified comms platform which we are about to roll out, sits on top of those cloud hubs. Our [IPscape based] virtual contact center sits on those cloud hubs. Everything we do sits on those cloud hubs. ... It is now easy for us and for our customers to replicate those services in any part of the world."

He added: "If you are a business in Europe and you start looking at other markets, the first decision you have to make is how you set up there. If you know that your provider can replicate everything you have in another location by just mirroring that capability, then you can start thinking about your business instead of your IT needs."

The CSX platform is intended to support public, private and cloud services because, according to Bell, all three models are now increasingly demanded by enterprises. "No business process today is IT-only or communications-only, all are increasingly blended. So we see that hybrid is going to play a bigger and bigger role going forward."

Telstra's cloud-focused investments

He added that a string of recent investments by Telstra reflected its new focus on delivering cloud-based services. "If you look at the companies Telstra has been investing in: IPscape, Box, Ooyla, Mendoe, these are all cloud-based companies and you can drop [their software] onto your cloud architecture anywhere in the world so you can simplify your whole delivery model."

In August Telstra added messaging application Whispir to the range of services available globally from its cloud platform. Bell described it as a service that enabled organizations to pre-configure a communication scenario and to only pay for services when that scenario was activated.

"From a major bank using the platform to communicate with staff about IT incidents, critical events and business continuity to a rail operator sharing targeted information about their train network with a local community, or a HR department coordinating the flow of information to job seekers in their network, Whispir can be used across complex operational environments within any industry and organization, big or small," he said.

Two Telstra clouds: its own and Cisco's

However CSX is not the only platform Telstra will use to offer cloud services. In March Telstra was named by Cisco as the first partner in its plan to build what it said would be the world's largest global network of clouds. Bell said that this platform would be operated quite separate from services based on Telstra's own CSX cloud architecture.

"We will be working with Cisco globally as part of their InterCloud community but we recognized that, with everything else we are doing, we needed the consistency of a cloud platform that we can user to serve our customers' IT needs, but more importantly that we can use as a platform for all their other services."

Telstra GE&S also intends to partner with local players when necessary, Bell said. "An evolving part of our cloud strategy is looking at partners, at how we can use rich APIs [application programming interfaces] to connect to other cloud environments, whether those are public cloud environments or other cloud providers. When you look at things like data sovereignty issues, some the best people who can adapt to these are those operating in local markets."

Also part of GE&S's vision is the integration of its cloud services and its network using software defined networking technologies. "The big challenge we are working to overcome is how you can have SDN integration between the network and the cloud, Bell said.

"We want the rules engine in the cloud to tell the network to resize and scale when necessary as opposed to having a separate control plane on the network. We want it to be completely seamless.

"For example, when a customer goes into our portal and says they are adding 10 new UC licenses they don't need to worry about network configuration because the cloud engine will inform the network that it needs to resize the port going to Bangkok, or wherever."

He added. "One of the strengths we have in Telstra Global is that we have no legacy of on-premises solutions so what we have been able to do is to embed these in the cloud nodes. So SDN will be very important to us."

vinfinera

Infinera eyes burgeoning data center interconnect market

Infinera has launched a new optical networking product for metropolitan area networks with the claim that it provides unprecedented bandwidth/size performance and power efficiency. Vice president, Asia Pacific, Andrew Bond-Webster, explains what's happening in the metro networking market and why the company expects significant demand for its new product.

nfinera has unveiled Cloud Xpress, a new data networking product designed primarily to meet the rapidly growing demand for increased bandwidth between data centers across metropolitan area networks.

Cloud Xpress provides 500Gbps of capacity on the network side in the form of five 100Gbps channels and 500Gbps on the data center side in a mix of 10GbE, 40GbE and 100GbE interfaces in a box that occupies only two units of a standard 19 inch rack. Infinera claims this represents a capacity/size ratio that is three to ten times better than the competition. Infinera says also that at 130W per 100Gbps Cloud Xpress uses only half the power of "the current leader of the market for comparably-sized metro cloud solutions," and that the combination of size and power advantages makes Cloud Xpress' operating expenses only 40 percent those of its leading competitor.

Infinera claims that the key to Cloud Xpress' performance edge is the use of 500Gbps 'super channels', "an evolution in fiber optics communications in which several individual optical DWDM circuits are combined to create a composite signal of the desired capacity, which is provisioned in one operational cycle," and its photonic integrated circuit (PIC) developed to use these superchannels. "Only Infinera has developed the advanced, large-scale PIC technology that we believe is the best way to deliver super-channels," it says. "The PIC combines hundreds of discrete optical functions into a fingernail-sized chip, dramatically reducing the space and power requirements for transport networks."

40G technology bypassed

Infinera never produced any 40G networking products but moved its R&D focus from 10G straight to 100G. According to vice president, Asia Pacific, Andrew Bond-Webster, not only has it been vindicated but it has in fact accelerated the market shift from 40G to 100G technology for interconnecting data centers.

"We saw 40 gig as a transition technology," Bond-Webster said. "We did not believe that it was economically a good solution for service providers and operators. We see an ever increasing demand from our customers for capacity and bandwidth driven applications and cloud solutions."

He claimed that introduction of the company's first 100G product, the DTN-X in 2012, has accelerated both

the uptake of 100G technology and the demise of the 40G market.

The metro area networking market today is predominantly using 10G technology but Infinera believes that traffic demands will soon push it to 100G. "That move will be led by telcos and cable companies." Bond Webster said. "The movement to 100G is slow, but we do believe it is going to happen towards the end of 2015 and in 2016."

Massive demand for data center interconnect

Where Infinera sees the immediate market for its new product is for the interconnection of data centers. Here, Bond-Webster says, traffic volumes are increasing rapidly and data center operators are struggling to introduce sufficient networking capacity because of cost, power, cooling and space constraints.

"Networks have evolved, the Internet has become an ever-increasing presence in all our lives and the applications required to support and manage the Internet have spawned a whole new level of devices," he said. "Each of those comes with a cost: space, power cabling requirements. It is not really scalable."

Vinay Rathore, Infinera's senior director solutions marketing, said that every simple action on the Internet, such as a search or the uploading of a photo, generated a volume of inter-data center traffic that was orders of magnitudes greater than the initial action.

"If you follow the journey of a one kilobyte packet when someone hits 'like' on Facebook, it gets replicated across the entire cloud so that everybody can see that you have hit the 'like' button. It turns out that one kilobyte of data requires one megabyte of bandwidth. That is one example of how cloud dynamics are changing networking."

"When we go to the Google website and type in a search we might think it goes someplace nearby, but Google tell us the average search path is 2400km across the network.



The market for data center interconnect technology is expected to grow rapidly

Software defined networking and virtualization technologies are creating greater efficiencies within the data center at the higher networking layers, but at the same time putting greater demands on the basic data communications technologies that move bits across the network.

Bond-Webster said: "What we are seeing is that there is a new model emerging and that model is taking a number of these functions and, rather than being hardware, they are becoming software and network functions within the cloud.

"However this does not change the need for a physical layer that actually carries the data from one point to another and the technology of this layer has to perform at ever increasing scale to meet the ever-increasing demands and traffic volumes.

Photonic integrated circuits will be key

"So what we see is the creation of this converged packet network with an intelligent transport network as the physical layer with the necessary APIs to connect into all these virtual networkbased functions," Bond-Webster said.

He described the company's vision as being "to create what we like to call an 'infinite' pool of intelligent bandwidth that is available to service providers to deliver to their customers in a highly reliable, highly scalable fashion. Our immediate focus is data center-todata center applications where users need to move content in very, very high quantities and that requires very high capacity interconnections." He added: "This market is led by the Internet content providers: Microsoft Google Amazon etc. If they do not have high capacity between their data centers, it is going to impact quality of their service and the user experience.

"It is these guys that are driving the data center-to-data center connectivity market, but the telcos and traditional service providers are also moving into the cloud space and are looking to provide cloud-based solutions to their customers."

He quotes ACG Research estimates that cloud networking will represent 24 percent of the total optical market by 2019, saying: "that makes it about a \$3 billion market worldwide." To achieve this the market would need to grow at a CAGR of 78.7 percent. AGC estimates it to be worth just \$192m in 2014.

According to Rathore, it's not hard to see what will drive this growth. He gives an example of a large data center with 250,000 servers with 10G interconnect technology. Working on the assumptions that average utilisation is 50 percent and that 10 percent of the traffic generated by each server leaves the data center, he says that 25,000 10G ports or 2,500 100G ports would be needed to carry this traffic. "In 2013 the entire market shipped 30,000 10 Gig ports."

"Every data center wants to get more bang for their buck so they are going to lift utilization. Soon demand will outstrip the entire market in 2013 and this is a market you want to capitalize on."



Characteristic and the second state and the seco

In 2012 The Thai Government unveiled an ambitious plan to roll out 400,000 WiFi hotspots around the country to provide free Internet access. In August 2014 it abandoned the project. In part it fell victim to the seemingly unstoppable evolution of cellular technology.



ccording to Cisco's Virtual Networking Index (VNI), as of September 2014, the average smartphone user in Asia Pacific consumes about 1GB

of data via WiFi and about 600MB over their mobile network each month.

Clearly WiFi is, for now at least, the means of Internet access preferred by smartphones users in Asia Pacific. That is why the Government of Thailand announced two years ago that it would provide free WiFi nationwide. The move was made as part of the Smart Thailand initiative that included the goal of providing broadband Internet access to 80 percent of the population by 2016 and to 95 percent by 2020.

The project was announced in December 2012. According to Thai ICT minister, Anudith Nakornthap in a recent statement to the Bangkok Post, the project was worth THB2 billion (\$65 million). It was launched as a partnership between the state and private sector. The initial target was to have a total of 250,000 WiFi hotspots nationwide by 2013 and 400,000 by 2015.

Participating private sector telcos included: Advanced Info Service (AIS), Digital Total Access Communication (DTAC) and True Corp (including True Move) alongside state-owned TOT and CAT Telecom and with cooperation of the National Broadcasting and Telecommunications Commission (NBTC). According to initial statements AIS and True committed to installing 50,000 hotspots each, CAT 30,000 and TOT 22,000. DTAC and NBTC were to be responsible for the remaining 98,000 hotspots.

The rollout was expected to cover schools, hospitals, tourist attractions, government agencies and transport hubs. As recently as May 2014, the Ministry of Information and Communication and Technology (ICT) had reaffirmed its commitment to the project, at a conference, but it has since been scrapped. Upon examination, it is easy to see why.

Too Little

From the outset the plan represented a huge undertaking. The total land area of Thailand is about 514,000 square kilometers and it comprises high mountains, central plains and upland plateaus. With such an immense area and such a challenging topology, WiFi rollout was never going to be easy.

With a \$65 million budget and a plan for 250,000 hotspots the partnership would have had install hotspots for an average cost of just \$162.00 each. This would have to cover the equipment, manpower and installation - in some cases in very remote locations.

In May 2014, several months prior to scrapping the project the Government re-affirmed its commitment to the plan but made some changes. The network was broken down into 77 small clusters of hotspots, one in each province and local companies in those provinces given responsibility for the rollout.

Too Late

Aside from the possible budget deficiency and the challenges of Thailand's geography, there was also the issue that the utility of the WiFi service being undermined by the evolving cellular networks.

Initial statements on the nationwide WiFi plan said it would give free



access at speeds of 2-5Mbps, impose a 20 minutes cap per access and a maximum usage of two hours daily. Some Thai end users particularly in the urban areas of Bangkok are already enjoying much higher access speeds over LTE and are not expected to abandon their high-speed connections for WiFi with greatly inferior performance, even if it is free.

The private sector telcos have been busy developing their mobile networks. Thailand's second largest telecom company by subscribers, DTAC, has launched commercial 4G LTE data services on its 2100MHz network in the Bangkok metropolitan area. True Corp's 3G/4G offering has debuted at 2100MHz and it has signed up 250,000 4G-LTE mobile users. It expects to reach a million users by the end of this year. State owned CAT Telecom is currently awaiting approval to bid in the next auction of LTE spectrum The auction was suspended when the military administration (the National Council for Peace and Order (NCPO) took control of the government.

The uptake of current 4G LTE services is a clear indication of what end users

are likely to require in the future. With both state-owned telecoms preparing to bid in the next spectrum auction it is clear that the mobile industry has confidence in demand for LTE, suggesting that the offer of offer 2Mbps access via WiFi would be a futile and expensive exercise.

In August the ICT Ministry accepted the fate of its nationwide WiFi plan and announced that it was being abandoned. Rollout deadlines had not been met, funds allocated were insufficient and there was insufficient infrastructure available for rural deployment. The ICT ministry said that the project had already stagnated and the money allocated had been returned to the Universal Service Obligation (USO) funds.

The demise of the project once again demonstrates that any plan that fails to anticipate how rapidly technology evolves is in danger of foundering. Remember cordless telephony 2 (CT2) in the nineties? It was designed as a 'poor man's' alternative to cellular telephony at a time when the cost put cellular services out of reach of many. That soon changed, and CT2 quickly foundered.



when Telecom Review Asia Pacific spoke to him in June. "Think of us as a business within a business," he said. "We are about 2000 employees worldwide, and we are 100 percent cloud. Customers rent our software."

For the six months to 30 June 2014 the SaaS division accounted for \$318m, 21 percent of total Citrix revenues of \$1.53b. Citrix does not break out the division's AsiaPac revenues but \$54.4m of that \$318m came from outside the Americas. For the three months to 30 June 2014 the SaaS division's revenue was 12 percent up on the same period in 2013.

Product categories

The division divides its cloud products into three categories: collaboration, documents and workflow. The collaboration offerings comprise primarily GoToMeeting, GoToWebinar and the audioconferencing product OpenVoice. Brown said: "We are the fifth largest audio conferencing provider worldwide."

The main product of the documents cloud is ShareFile. It has functionality similar to Dropbox but built for business from the ground up to offer the right level of security. "Because we are publicly listed I cannot tell you the growth of this, but it has been phenomenal," Brown said.

"We acquired ShareFile as a start-up about two years ago and it has been going from strength to strength. It is a global product and we are selling it very aggressively to enterprises and small business. Our sweet spot is any document-centric or highly-regulated industry, because of its security features. And we are starting to add to it the ability to edit the files had to access the files remotely on different devices."

The main workflow cloud product is Podio. "The way I like to think of workflow is that it is the glue between documents and the collaboration cloud," Brown said. "People want to work on documents together and we have technology that allows people to create their own customised project

targets SMEs and offerings

Citrix SaaS, originally known as Citrix Online, has been part of Citrix's business since its early days a quarter of a century ago. Today Citrix SaaS accounts for about 20 percent of total revenues and is headed in Asia Pacific by Lindsay Brown who explains the business' offerings and target markets.

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itrix seems to take an odd approach to its Software as a Service (SaaS) business.

The division is a clear and distinct entity, with its own global head, Chris Hylen, but the company seems to want to deny its existence. It's very hard to find mention of it on the Citrix web site and it does not feature in Brown's title. He's simply 'regional director APAC, Citrix Systems Asia Pacific' and has a counterpart responsible for the rest of Citrix's regional business with the identical title.

Brown was six months into the role after spending 10 years at Adobe

workspace and work together in their own way. In ANZ we see between six and 10,000 triallists on this each month.

"What we are trying to do is to help SMBs differentiate themselves in a way that they run their businesses. If you are a small business it can cost you a bomb to automate processes and Podio does that. Think of it as Google Plus and Facebook mashed together. It manages the flow of documents, the flow of meetings and the flow of tasks."

Geographically Brown is responsible for the Citrix SaaS business in the whole of Asia, including China, Japan and Korea although it has limited presence in Japan and Korea because it has not yet localized its products for those markets. "We would look at that, but at the moment we want to make sure we get good coverage in China and India and Southeast Asia, and ANZ," Brown said.

He added: "The luxury of us being a small business within a larger business is that we have a presence in all the Citrix offices across Asia, although I concentrate my staff at present in ANZ and India and we are looking at how we are going to target Southeast Asia more aggressively."

Target markets

In terms of its targets within these geographies, "Our sweet spot for the SaaS division is SMBs predominantly," Brown said. "We still sell to enterprises, but it's predominantly to teams and departments within large organizations."

He added: "We want to define our market as first and foremost an SMB market and to help them interoperate and work with enterprises but we don't want to be the wall-to-wall player."

The key verticals for the business are high-tech, financial services, architecture, engineering and construction and health.

Also, in line with the way that business generally is moving,



the SaaS division and Citrix as a whole are moving to a 'mobile first' approach across all product and service offerings. "There's a blurring between what is a work device and what is a personal device and were experimenting in these areas," Brown said. "We think it's a new market to explore and were doing a lot of innovation."

This also tends to put the focus on SMBs, where policies around the use of mobile devices are often less rigid than in large enterprises. "One of our key value propositions is that we can add value to a business almost instantly, but for that to happen there needs to be a little less restriction on the client device, whereas enterprises want to tie these down, but we are seeing that change," Brown said.

Content marketing mastered

Citrix SaaS is a direct marketing business that sells primarily online and it relies heavily on content marketing to drive sales. According to Brown the company has this down to a fine art.

"Content marketing is a buzzword that is being bandied around a lot but is something we've been doing for the last 10 years," he said. "I think our content marketing funnel is one the most mature I've ever seen. We get tens of thousands of leads every quarter just for ANZ."

"We bring in international authors, we bring in thought leaders, we bring in industry experts, we do weekly webinars and we focus on topics that we know are relevant to our customer base.

"We start generic to keep people engaged and then as they follow things we get more specific around the use case to draw people closer to the products and the technology."

He added: "Last week we ran a webinar and we got a few thousand registrants. We regularly get anywhere between 500 and 1500 people on the call. And that just comes down to the content being relevant.

"All the content marketing is English and based out of ANZ. Eventually we will see the need for localization but at present we haven't seen a need. The organic demand we get out of Southeast Asia and India based on that content would account for more than 50 percent of the demand."

Indonesia embraces branchless banking

With a robust economy, 17,000 islands, a largely 'unbanked' population of 250 million and a large and growing community of smartphone users, Indonesia is ripe for mobile banking. It has been slow to take off, but things are starting to change.

ndonesia, the world's fourth most populous nation, is considered to be one of the world's strongest economies. Usually such countries possess a vigorous and stable financial industry, but this is not the case with Indonesia. Only a quarter of its population of 250 million have access to banking facilities and about 70 million live below poverty line.

Indonesia sought the help of the Consultative Group to Assist the Poor (CGAP) to address this issue as early as 2004. According to CGAP, mobile wallets have been on offer since 2007 but uptake has been poor with only 0.4 percent of the population holding registered accounts (ewallets with a maximum balance of Rp5 million) and only eight percent holding unregistered accounts (ewallets with a maximum balance of Rp1 million). According to CGAP one impediment to uptake has been the identification requirements. Banks usually require two identification cards for unregistered ewallet users but only one for registered users.

However, by 2012 the regulatory framework for ewallets and branchless banking was beginning to take shape and regulations were relaxed. The new regulations allow full encashment of person-to-person (P2P) transfers via electronic wallets at approved agencies. The regulation on funds transfer also allows cash payment points to provide cash-out services without requiring any individual funds transfer license per agent. At the same time, mobile network operators started to build agent networks and to promote their ewallet services.

Favorable regulatory change

The most important change in regulations occurred in 2013 when the Bank of Indonesia released guidelines for banks and mobile network operators to outsource some banking operations to agents, known as UPLKs (Unit Perantara Layanan Keuangan) or Financial Intermediary Service Units. These guidelines came into effect at the end of 2013. They allow five banks and three mobile network operators to engage in pilots of their respective ewallet initiatives.

There is a requirement for some pilots to be run in rural areas. The regulations encourage bank-led, telco-led and hybrid (or jointly implemented) products to be developed and allow outsourced agents to provide cash-in and cash-out services, but require compliance with requirements placed on banks to have full details of their customers.

Aside from the ewallet products, the Financial Services Authority (OJK) is preparing a regulation on branchless banking. According to the head of its banking research and regulation department, Gandjar Mustika, the new regulations are designed to make use of mobile phones as a medium to provide basic banking services to all Indonesians, especially to low-income people in remote places.

Mustika said that, under the regulation, domestic banks participating in the Laku Pandai (branchless banking program) need to appoint their own agents, who will assist people with the three basic products: savings accounts, micro loans and micro insurance. The OJK says that Laku Pandai will be able to generate up to Rp200 trillion (\$16.9 billion) in savings within the next five years.

Branchless Banking

Branchless banking began to take shape in October 2014 when Bank Indonesia (BI) launched an electronic payment system to support the transfer of government direct cash assistance to poor families in several provinces in the country. The program has been a great help to 1,860 low-income households in Jakarta, West Java, East Java and Nusa Tenggara.

Under this scheme low income families only need to text Bank Madiri and BRI mobile banking to receive an identification number that they can present to the bank's registered agents in their town or village for encashment. However some of the beneficiaries interviewed by the Jakarta Post are still reluctant to use the system. They say it is too slow and complicated to be understood by people from the rural areas, most of whom still use the traditional ways of moving their funds.

This is understandable. The country has just started branchless banking. But the potential for Indonesia can be clearly seen, not only in terms of its size and population but in the access to better financial services that it will provide."



a progress report

It's been just over two years since the Government of Myanmar announced plans to open up its telecoms market to competition, and things have moved rapidly since then. There are two new competitors offering mobile services and the former monopoly has taken on partners to help it face the new competitors.



yanmar's Pro democracy leader had been under house arrest with no access to the telephone for seven years when

Internet access was provided for her home in Rangoon in 2011. According to her staff, she was reluctant to use it, doing so mainly to communicate with the country's younger generation through social networking.

Coming from a military junta that had ruled the country for almost half a century, the decision to give its most high profile opponent access to modern technology was a significant sign of change, and that change has continued.

For a long time, foreign investment in the telecom sector remained low due to the political situation but in 2012 the barriers facing the development of Myanmar began to fall. Telecommunications reform was seen as a prerequisite to the development of other sectors and to improving the lives of Myanmar's people.

Competition barriers come down

Change has been swift. Government reforms are now being implemented in several industry sectors including finance, tourism and most of all in telecommunications. In July 2012 the government announced that it would open up the telecom sector via three public-private joint ventures.

In June 2013, Myanmar authorities handed nationwide telecommunications licenses to Norwegian telecoms groups Telenor and Qatar's Ooredoo. The Ministry of Communication and Information Technology (MCIT) of Myanmar mandated that all MNOs increase coverage to 70 percent of the population by 2017 and to 95 percent by 2020.

Prior to that announcement, stateowned incumbent operator Myanmar Post and Telecommunication (MPT) struck a partnership with Japanese operators KDDI and Sumitomo. MPT's general manager, U Khin Maung Tun said in an interview that the partnership would help modernize the telco and further assist it to provide better services and to compete effectively against the new entrants.

From the time the two concessionaires got their licenses, it took them more than a year to have services available to the Burmese people. Both companies encountered challenges on all fronts: regulatory, technical and logistical, but say they received enormous support from the government to help them address these, because telecommunication development is uncharted territory for the private sector as well as for the government.

Ooredoo first with mobile services

After two weeks of trials, in August 2014, Ooredoo Myanmar launched free mobile services in Mandalay, Nay Pyi Taw and Yangon. The company has since launched full commercial services ending MPT's monopoly. The service is now available to around 7.8 million citizens across some 71 cities and towns.

The people's desire for alternative services has resulted in a huge demand for SIM cards. Ooredoo reported that its monthly SIM allotments sold out in just two days. By the end of August, Ooredoo Myanmar had signed up one million subscribers in less than three weeks since launch.

By the end of September Norwegianbacked Telenor Myanmar had joined in the fray and launched its commercial mobile service. Its initial coverage is concentrated in the nation's second largest city, Mandalay, but the company has promised to expand its reach to Nay Pyi Taw and Yangon within the year and to have coverage of 90 percent of the population within five years. It is selling SIM cards for MMK1,500 (\$1.48).

Looking Forward

The GSMA has forecast both Ooredoo's and Telenor's subscriber base will grow to 22 million increasing the penetration to approximately 40 percent of the population by 2017, a CAGR of 43 percent.

In just 18 months telecommunications has greatly improved the lives of Myanmar's citizens III



Managed mobility services: backed by BYOD demand

Innovations in technology have reached another milestone; smartphones are the greatest proof of that. For the first time, last year alone, the total number of smartphone units shipped exceeded one billion. Increasingly they are being used by employees on company business, creating a demand for management technology and services.

nternational Data Corporation (IDC) expected that in Q2 of 2014 300 million smartphones would be shipped worldwide, 96.4 percent of them Android or iOS devices, with demand fuelled by the bring-your-owndevice (BYOD) phenomenon.

According to Gartner, "The rise of BYOD programs is the single most radical shift in the economics of client computing for business since PCs invaded the workplace." Gartner added that the BYOD movement shows no signs of abating; rather it continues to gain momentum.

Another study reported that about 132 million people around the world use smartphones at work. This figure is expected to swell by 30 percent to reach 174 million by the end of this year and it is expected that, by 2017, 328 million workers will be using smartphone applications for work related requirements.

Today, enterprise applications account for 54 percent of the total, an increase of 42 percent in six months. These figures complement Gartner forecasts that by 2018, 70 percent of mobile professionals will conduct their work on their personal smart devices, with the United States workforce taking the lead. Intel says that 49 percent of IT managers in the US strongly agree that BYOD improves work productivity.

The challenge of BYOD

But this burgeoning trend brings challenges. BYOD is complex. It involves a series of multi-faceted operations and various responsibilities. BYOD brings with it the security implications of accessing pertinent corporate resources and information from a personal device. This is where managed mobility services (MMS) come in.

Analyst firm, Exact Ventures, surveyed the MMS opportunity in enterprise businesses of 100 to 4999 employees in the United States and European Union. It concluded that there is a \$100 billion market opportunity for enterprise mobility services, most of which are driven by key evolving trends in computing and telecommunications like mobility and the accompanying need for BYOD policies and control, cloud computing and the emergence of enterprise small cell systems that enable telecommunications services beyond coverage and capacity.

CIOs favor outsourcing MMS

According to GigaOM, there is a clear consensus from IT managers favoring the outsourcing of mobility management to a third party MMS provider. This is because of the complexities of the technologies required, which must cover all aspects of mobile devices and their lifecycle - incorporation into and eventually exclusion from the corporate IT environment.

The technologies of MMS include containerization, application management, security, enterprise application stores and telecom expense management. Professional services, consulting, management and support in terms of device integration, testing and deployment are also part of the outsourcing package.

It is these complexities that underpin the growth of the MMS market. The simple task of requesting access to a file entails a complex system of provisioning as well as security. Making BYOD and integral part of the company's operations is a hard task. Outsourcing devolves most of this work to the outsourced provider, requiring minimal intervention from the IT and human resource departments.

Outsourcing MMS can be both efficient and cost effective. With the growing demand for BYOD they are increasing finding favor with enterprises of all sizes.

Cisco adds 250 data centers in 50 countries to Intercloud

cisco

More than 30 companies, including Deutsche Telekom, BT, NTT DATA and Equinix, have added their support to Cisco Intercloud, its worldwide network of interconnected data centers, adding 250 data centers in 50 countries, and "advancing Cisco's plan to address customer requirements for a globally distributed, highly secure cloud platform capable of meeting the robust demands of the Internet of Everything."

Cisco said it would begin offering a hybrid cloud service and that Cisco Intercloud Fabric, "a highly secure, open, and flexible hypervisor-agnostic cloud interconnect technology," was now shipping to customers.

Cisco also announced that its Evolved Services Platform (ESP) now enables cloud providers to deliver two new virtualized and automated managed business services: Security and Cloud VPN. ESP is billed as "a comprehensive virtualization and orchestration software platform that creates, automates and provisions services in real time across compute, storage and network functions."

Cisco Capital has earmarked \$1 billion to help Cisco customers and partners accelerate the adoption of the Cisco technologies needed to transition to Cisco-powered clouds. Cisco Capital's offers will finance Cisco Application Centric Infrastructure, facilitate technology migration and provide flexible payment structures.

Global Cloud Xchange launches global network for cloud computing



Global Cloud Xchange (GCX) – formerly Reliance Globalcom - has launched its Cloud X platform to support cloud services, applications and content across its privately owned global fiber optic network.

According to GCX, Cloud X has been designed to deliver infrastructure provisioning in a few clicks and to support the deployment of complex multi-tiered enterprise applications directly on to customer's enterprise networks in minutes, rather than months.

GCX CEO, Bill Barney, said: "As cloud computing becomes more prevalent, the network that supports it becomes ever more complex. The network must now undergo a profound transformation: from a static entity to a dynamic, intelligent, application-aware fabric that can support multiple traffic requirements, diverse geographies and flexible pricing models.

"This is precisely the evolutionary leap that GCX has embarked on for the better part of this year since rebranding the company from the former Reliance Globalcom. The company's focus has been on delivering a true Cloud ecosystem for next generation enterprises enabling secure and efficient cloud content and applications distribution. ... OUR new infrastructure will accelerate cloud traffic across the world, facilitate global content and application distribution, enable enhanced customer experience and transform the way people think about rolling out applications and services."

GCX says its new platform consists primarily of two key components: first a global integrated network which supports 'cloud nodes' that serve up cloud services. Secondly, the transformation of 20+ facilities by mid 2015 into 'cloud nodes' aligned with an automated orchestration layer.

W3C Launches Web Payments Initiative



The World Wide Web Consortium (W3C) is calling on all industry stakeholders — banks, credit card companies, governments, mobile network operators, payment solution providers, technology companies, retailers, and content creators — to join its newly formed Web Payments Interest Group. E-Commerce is thriving and predicted to reach \$1.471 trillion this year, an increase of nearly 20 percent from last year. According to Forrester research, one third of those transactions will take place on a mobile device.

However W3C says a number of obstacles stand in the way of even stronger growth on those devices. "The first is usability. People shopping online add to their shopping carts, but they rarely complete their purchases. ... A second reason is fraud. Highprofile stories of massive credit card number theft have demonstrated both the inadequacy of today's approaches to sharing sensitive information and their high cost."

W3C says these risks must be addressed if online commerce is to flourish. Its new group will study the current gaps in Web technology regarding usability, security, and privacy, and recommend new work to fill those gaps. It will also liaise with other organizations in the payment industry that are using Web Technologies to foster alignment and interoperability on a global scale.

NTT Docomo puts forward 5G proposals

NTT Docomo has released a white paper on 5G, ahead of plans to launch 5G on a commercial basis in 2020 when Tokyo will host the Summer Olympic and Paralympic Games. The paper shares Docomo's views on the technical requirements, evolution concept and candidate technologies for 5G radio access.

Docomo says it is keenly developing 5G, targeting data speeds of more than 10Gbps and 1,000 times the capacity of today's LTE, to cope with the rapid increase of smartphone data traffic and to address the future surge of machineto-machine (M2M) communications and the Internet of Things (IoT) in a more interconnected world. It says the white paper promotes 5G global activities and discussions based on its technical content. "Examples of the technical components include hybrid usage of lower and higher frequency bands based on the Phantom Cell concept, non-orthogonal multiple access (NOMA) and massive MIMO."

Phantom Cell, is "An enabler of intercell collaboration in a multi-layer architecture, with small cells being overlaid over a macro cell. Specifically, the control plane and user data plane split is used to transmit U-plane and C-plane from different cells on different frequency bands." Non-orthogonal multiple access (NOMA) is transmission technology to multiplex signals designated to multiple users. "NOMA makes use of the power domain, not sufficiently utilized in the past, to multiplex multiple users and rely on the improved signal processing capability of the receiver to cancel inter-user interference" Docomo says.

In Massive MIMO "a large number of antenna elements are arranged in horizontal and vertical dimensions of an antenna to improve its performance and provide stable, high-speed data transmission even in higher frequency bands. "

Huawei bets \$4 billion on fixed broadband's future

Huawei has announced plans to invest more than \$4 billion over the next three years in fixed broadband (FBB) technology research and development. It says the investment will focus on products and solutions that will enable telcos to providing an improved service experience to end users.

Huawei says it will continue to expand pipeline capacity through innovative thinking and investment in chips, algorithms, silicon photonics and other basic technologies and will "continue to innovate software defined networking and network functions virtualization to initiate open and intelligent ultra-broadband networks that help customers simplify operations and management, realize fast service innovation and improve network efficiency."

Huawei predicts the next three years will be a turning point for FBB development. "While the outlook for the industry remains bright, there are areas where industry-wide cooperation is essential," it says.

Huawei's Products and Solutions president, Ryan Ding, said: "Huawei recognizes fixed broadband as a key direction for strategic investment and will continue to increase the scale of investment in related technologies, core products and solutions. Our investment will further develop technological advances, help customers increase their competitiveness and decrease overall operating costs."

Huawei says the global FBB industry is set to develop as ICT investment increases. "Existing technologies are changing, nextgeneration high-efficiency video coding is maturing, 4k panel and content production costs are reducing and the development of the 4k video industry are all driving new solutions.

"As LTE and 5G deployment continues, construction of high-quality, highperformance networks which guarantee a superior experience is expected by carriers. FBB technologies will be progressed by leveraging big data, data centers and cloud computing to meet their needs."

China's comms standards body to work with OMA

China's national communications standards organization, the China Communications Standards Association (CCSA), has signed a MoU with the Open Mobile Alliance (OMA) to strengthen their relationship and foster closer cooperation.

OMA delivers open specifications for creating interoperable mobile services that work across countries, operators, networks and mobile terminals. Its member companies stimulate the adoption of new and enhanced information, communication and entertainment services. All the key elements of the wireless value chain are represented in its membership.

OMA general manager, Seth Newberry, said: "OMA is looking forward to working with CCSA to bring requirements from the Chinese communications industry into OMA's work. CCSA has a strong history of technical contributions to the international ICT community and OMA is pleased to have this MoU in place that will allow for closer cooperation."

CCSA's membership represents more than 300 vendors, carriers, Internet service providers and academia, both domestic and multinational in information and communications. It aims to keep pace with global standardization progress, to promote communications standardization in China, and to make contributions to global standardization activities.

Akamai names Graeme Beardsell managing director APJ

Akamai Technologies has appointed Graeme Beardsell as managing director, Asia Pacific and Japan markets. He is based in Singapore and reports to Sanjay Singh, senior vice president and general manager, Asia Pacific and Japan. He joins Akamai from Solace Systems where he was senior vice president and general manager. He has also worked at IBM, Salesforce and Experian.

Brocade snaffles two senior Juniper Networks executives

Brocade has named Eric Yu as vice president for Greater China and Brian Levy as vice president of technology. EMEA. It says the new appointments are the latest in a series designed to strengthen its leadership team and enable it to more effectively serve tier one service providers and technology areas such as software-defined networking and network functions virtualization. Both Yu and Levy join Brocade from Juniper Networks. Levy served as Juniper Networks' CTO for the service provider sector in EMEA. Yu was most recently vice president for Greater China. In his new role he has been tasked with accelerating Brocade's business growth in software networking with partners across the Greater China region (China, Hong Kong, Macao and Taiwan).

Digital Realty gets new Asia Pacific managing director

Data center operator Digital Realty Trust has promoted its current managing director for EMEA, Bernard Geoghegan to the role of managing director EMEA and Asia Pacific. He joined Digital Realty in April 2013 and has taken over leadership of the Asia Pacific region from Kris Kumar, who has resigned from his position as senior vice president and regional head, Asia Pacific. Prior to joining Digital Realty Geoghegan was executive vice president of Colt Data Center Services focused on Singapore, Japan and Hong Kong. This is his second stint with Digital Realty.

Hitachi Data Systems gets new head of Comms, Media and Entertainment Keith Roscarel has been appointed to head Hitachi Data Systems' (HDS) Communications, Media and Entertainment Practice in Asia Pacific. He is responsible for solution development, alliance and partner development, sales enablement and customer engagements in the region and is based in Sydney. He is also tasked with adding big data solutions and other industry innovations to HDS's solutions portfolio.

Kaspersky Lab names Peter Hewett Asia Pacific MD

Computer security specialist Kaspersky Lab has appointed Peter Hewett to the position of managing director for Asia Pacific. He started his career in information security with Sophos in 2004 and has since held various technical, sales and senior management positions in that company. He has joined Kaspersky Lab after serving as sales director for Australia with the Westcon Group.

Mitel ramps up focus on Asia Pacific with new VP/GM

Business communications technology vendor, Mitel, has named Bob Agnes as executive vice president and general manager of its Asia Pacific operations, to "strengthen the company's regional leadership and expand Mitel market share in this key geography." He is based in Hong Kong.

ShoreTel aims for Asia Pacific growth with new regional VP

Phone and unified communications systems vendor ShoreTel has named Frederic Gillant as vice president and managing director for Asia Pacific, based in Singapore. He reports to ShoreTel's US-based senior vice president of worldwide sales, David Petts and is responsible for overseeing the regional sales teams led by Jamie Romanin, managing director in Australia and New Zealand, and Bruce Downing, managing director for Asia and South Africa. In addition to directly leading the sales, channels, marketing and sales operations, Gillant provides local leadership to support ShoreTel's regional growth plans. He joined ShoreTel from Orange Business Services where he was most recently vice president of unified communications and collaboration.





China and Brian Levy as vice president of technology, EMEA, Brocade

Graeme Beardsell, managing director, Asia Pacific and Japan markets, Akamai

TELECOM Review

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

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Date: 17-20 November, 2014 Place: Washington, DC-Gaylor<u>d National</u>

Telecom Review Summit 'Its all about Networking' 2014



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

Mareh 2015

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The GSMA Mobile World Congress is the place for mobile leaders to gather, collaborate and conduct business. The annual event provides the planet's best venue for mobile industry networking, new business opportunities and deal-making.

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July 2015

MOBILE ASIA EXPO



Now in its fourth year, the 2015 Mobile Asia Expo will provide a midyear update on the state of the mobile industry.

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Date: 15-17th July 2015 Place: Shanghai, China

Latest updates on: www.telecomreviewasia.com

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