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Technology attacks by drones

Today, drones are everywhere; their commercialization is big business and their regulation is becoming an issue.

US research firm, Forecast International, puts global spending on drone technology over the next 10 years at $28.7b, with Asia outspending Europe. It says China, Japan, South Korea, Indonesia, and Thailand will spend close to $7.7b, compared to $5.5b in Europe, but well behind the US at $11.0b.

The 2015 Consumer Electronic Show (CES), held in Las Vegas in January, had a strong focus on drones, and many manufacturers are already seeing opportunities in this field.

Amazon has been selling drones for quite a while, offering a range of options, while other websites sell old military drones.

What are drones exactly? Are the general public allowed to have them, and are they regulated? The range of drones is large; there are drones with low capacity, various flying ranges, altitude requirements and complex audiovisual (AV) equipment.

Drones equipped with a 4K TV camera have been on the market for more than two years, at high prices that reflect the extra dimension of high definition - four times that of standard HD. Experts expect lower prices in 2015 and even higher definition.

There were hundreds of drones at CES, partially due to the fact that the same technology that has advanced smartphones - small chips and sensors - has been used to create drones that are smaller, cheaper and easier to make. Many use the small GoPro action cam, the wildly popular camera favored by action sports enthusiasts.

Getting an eagle-eye view of the world of drones was not easy. Drones need special technology to fly, though manufacturers boast that drones are getting easier to use.

The Federal Aviation Association (FAA) has not authorized the public use of drones; meanwhile, Amazon has been trying to get FAA authorization since last July.

Many analysts say it will take years to make the use of drones public, because an array of concerns remain: safety, as drones can fall like any flying object, and privacy. The HD equipment in drones makes it easier to use them to spy and collect information.

Many manufacturers are trying to hire ex-military personnel with drone experience by offering them generous monetary packages, which will result in drones becoming even more sophisticated.

To put it into perspective, the Border Patrol in the US is using drones with a flying range of 1600 miles, and that can fly up to 10,000 feet. And this is nothing compared to drones used by the US Army.

More concerns have centered on the drones being shot out of the sky, compromised by hackers or used the wrong way. Are we going to totally lose our privacy?

Toni Eid
Editor in Chief
Telecom Review Asia Pacific

Singtel, Sony and Warner launch Asian VoD service

Singtel, Sony Pictures Television and Warner Bros Entertainment have established HOOQ, a joint venture startup, to offer a regional over-the-top (OTT) video service in Asia.

According to Singtel, HOOQ will deliver Hollywood blockbusters and television series, popular local movies and programs to customers anytime, anywhere by enabling them to stream and download these to their device or platform of choice.

"At launch HOOQ will have a catalogue of over 10,000 movies and TV series including titles from partners Sony Pictures Television and Warner Bros. Entertainment," Singtel said.

"The service will offer customers a wide variety of programs ranging from blockbusters such as Spider-Man and Harry Potter to TV favorites such as Friends and Gossip Girl. Customers can also look forward to an extensive selection of Indian, Chinese, Thai, Filipino, Indonesian, Korean and Japanese movies and TV series."

HOOQ will be rolled out progressively in the Singtel Group's Asian footprint, including Indonesia, the Philippines, India and Thailand, from the first quarter of 2015, with the movie studios providing access to their premium content and know-how.

Singtel will provide access to its customer base of over half a billion mobile customers. Also, HOOQ will use Singtel's billing capabilities, a crucial enabler in developing markets where credit card ownership is limited, according to Singtel.

KDDI funds US wireless charging startup Ossia

Japanese telco KDDI, through its KDDI Open Innovation Fund, has invested an unspecified sum in US-based Ossia, the company behind the Cota remote wire-free charging technology.

In recent months Ossia has raised more than $10 million to accelerate research and development of Cota and to integrate the technology with its business partners in preparation for commercialization.

The Cota technology is designed to charge many devices simultaneously, regardless of whether a device is stationary or moving. According to Ossia, "at an effective charging radius of 30 feet, a single Cota charging station can charge the battery-operated devices in every room of an average home or office suite."

It says that, under license from Ossia, consumer electronics OEMs and ODMs will be able to include Cota receivers in new products and will have the opportunity to build their own branded Cota transmitters.

"Existing battery-powered devices will be able to be retrofitted with Cota receivers. In addition, some construction and energy businesses are already exploring non-consumer electronics applications for Cota-based wire-free power."

Hatem Zeine, founder and CEO of Ossia, said: "There has been tremendous interest in Ossia's Cota remote wireless power technology in Japan. Ossia has been working diligently to create meaningful partnerships with Japanese companies that, like KDDI, understand the benefits and long-term possibilities remote wireless power will create."

NTT Com to expand operations in India

NTT Communications Corporation (NTT Com), the ICT solutions and international communications business within the NTT Group, has announced that its wholly owned subsidiary NTT Communications India Private Limited (NTT Com India) will establish a branch office in Ahmedabad, Gujarat to begin offering ICT solutions from June, 2015.

Also, NTT Com will acquire a unified license for national long-distance services (NLD) that will allow it to begin providing domestic network services in India by the end of 2015, via a new group company NTT Communications India Network Services Private Limited, that will be established in May, 2015.

By obtaining a unified license, the NTT Com group will be permitted to offer total ICT solutions to enterprises in India. At present, NTT Com India is providing system-integration services and Netmagic Solutions Private Limited, another NTT Com group company, offers data center and cloud services from its eight data centers in India.

Once NTT Com obtains its license it says it will provide a range of network services urgently sought by enterprises that are expanding in India. Specific offerings will include secure, high-quality private network services, such as IP-VPN connecting data centers or the cloud to the domestic sales or production bases of customers.

India to get 'nationwide' WiFi

The Indian Government is planning to install up to 60,000 WiFi hotspots in 2500 cities and towns over the next three years, the Times of India reports.

The network will be built and operated by state-owned telco Bharat Sanchar Nigam (BSNL) at a cost of Rs 7000 crore (Rs70b = $1.14b) the paper said, and would initially be free to use.

"The measure seems to be in line with the Modi government's ambitious 'Digital India' program that aims at boosting Internet connectivity across the country," the paper said.

It added: "Also, it is being seen as a measure that will give a boost to struggling BSNL, which has been in the red for the last nearly four financial years and suffered a loss of about Rs70b in 2013-14. Telecom minister Ravi Shankar Prasad has already listed revival of BSNL and MTNL among his top priorities."

BSNL chairman and managing director, Anupam Shrivastava told the Times of India that services would be available in some cities in the next financial year (2015-16) and would be offered to the customers of all mobile operators.

"BSNL is hoping that a favorable tariff plan offered for WiFi services will help it gain mobile subscribers," the Times said. "Stiff competition from private operators and the slow pace of infrastructure upgrades have seen a flight of mobile customers from BSNL at a time when its landline base is also shrinking."

SpeedCast offers PNG satcoms via O3b

Global satellite communications service provider SpeedCast International is to use O3b's network of medium earth orbit satellites to provide services in Papua New Guinea.

SpeedCast said using O3b would enable it to deliver high throughput and low latency Internet services to local customers. "SpeedCast's high bandwidth new IP trunk from Port Moresby to the international Internet backbone will enable high throughput voice and data services whose performance will be similar to or even exceed that of traditional fiber connectivity," it said. O3b's MEO configuration provides "unprecedented" low latency in satellite communications of less than 150 milliseconds.

The new network will complement SpeedCast's existing global network, which uses geostationary satellite capacity. This network will serve as backup in the event of an outage of the O3b service. SpeedCast said the service would be expanded to other territories in the Pacific.

Pierre-Jean Beylier, CEO of SpeedCast, said: "We are pleased to extend our value proposition in partnership with O3b to enable our wholesale customers to deliver the highest combination of bandwidth, speed, low latency and availability at a more accessible price for an even wider range of end-users."

SpeedCast's partnership with O3b follows its acquisition of PNG-based telecommunications provider, Oceanic Broadband Services, and its new teleport facilities in Port Moresby in 2014.

Megaport offers Google Cloud Internet in Asia

Australia based Megaport - a company that claims to have created a new paradigm for networks and cloud services to interconnect – has started offering Google Cloud Interconnect into the Asian region through Hong Kong.

The move follows the company's recent announcement that it had become a Google Cloud Platform Authorized Services Partner for interconnection services to Google Cloud Platform GCI.

"This latest announcement means Megaport can now offer users and affiliates the ability to reach the Google Cloud Platform via Enterprise-grade connections to Google's network edge, from wherever their data or their consumers reside," the company said. "Users can also tie their private data center directly to the Google Cloud Platform with a virtual private network, or 'VPN tunnel'."

Megaport claims to enable a differentiated reach to Google Cloud Platform through a fully automated quote, activation and management platform of network services from a user to Google Compute Engine, Google Cloud Storage, Google BigQuery, Google App Engine, or a variety of other Google Cloud Platform services.

"Megaport users can do all this in minutes from the Megaportal; or developers can use an advanced set of APIs to write applications that orchestrate between their Google Cloud Platform assets and the Megaport Platform," the company claims.

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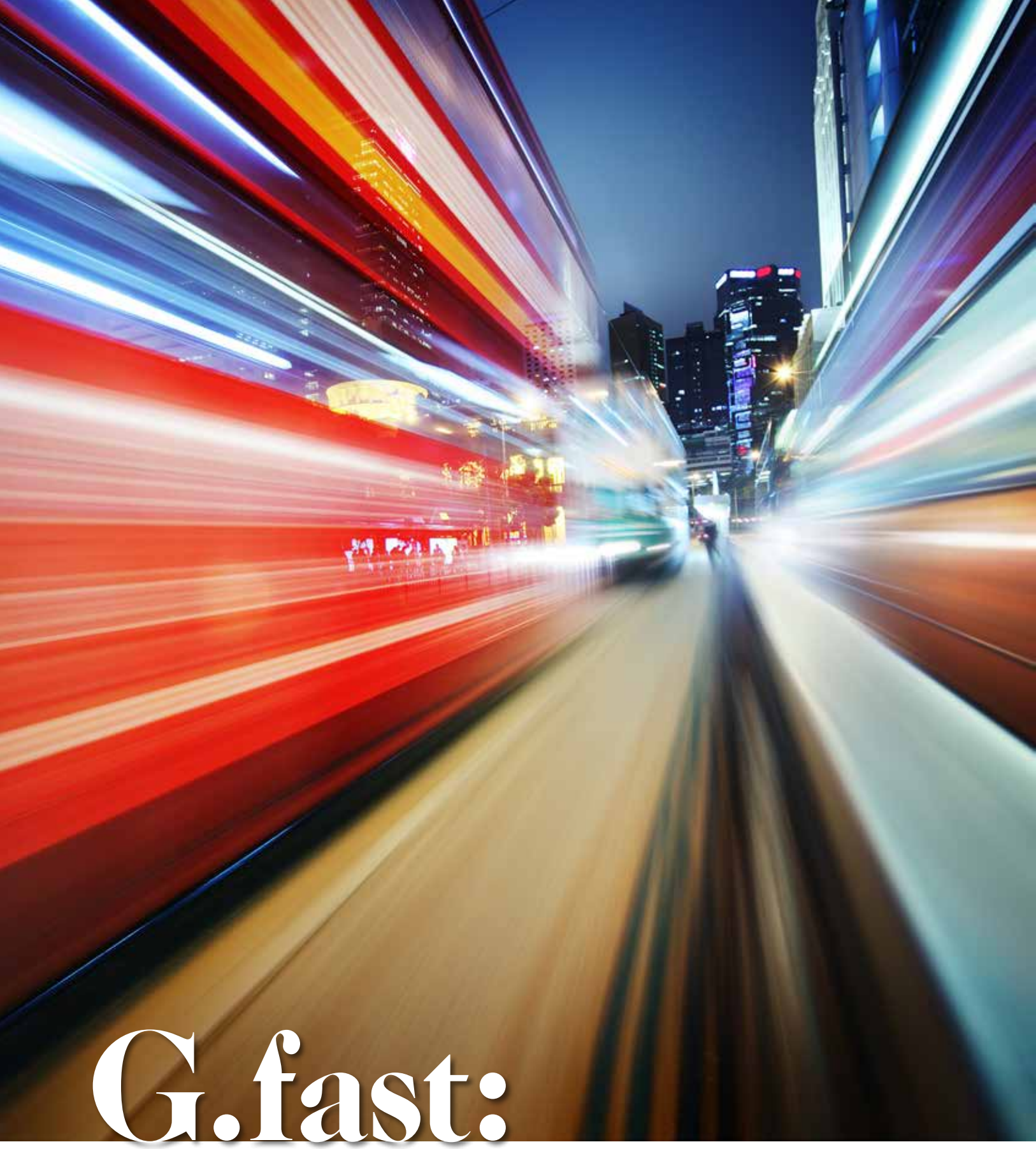


G.fast:

fast data, fast uptake

G.fast - the newly standardized copper broadband technology is tipped for rapid uptake in Asia as a more economical and more easily deployed alternative to FTTP.

Back in August 2013, Tony Brown - then a senior analyst with Informa Telecoms & Media but now public affairs manager at Australia's government-owned broadband access network builder, NBN Co - wrote in a blog post: "With G.fast scheduled for commercial deployment in around 2016 Asia Pacific operators wanting to deploy or expand their high-speed services are now faced with something of a dilemma. ... Do they proceed with fiber-to-the-home (FTTH) services – an option which will cost a lot of money and take a long time – or do they wait for G.fast to arrive and allow them to launch ultra-fast services on existing last-mile copper networks?"

The answer, he said, "will depend very much on a case-by-case basis but there is little doubt that G.fast can play a significant role in Asia Pacific."

He explained: "Even in the region's leading FTTH markets such as South Korea, Japan and Hong Kong, there is still potential for G.fast to play a role in helping operators achieve ubiquitous high-speed broadband coverage.

"For example, in South Korea and Japan a substantial portion of fiber subscribers are still receiving fiber-to-the-building (FTTB) services with the last-mile services by VDSL – probably around 40 percent – rather than full FTTH services."

This, he said, "means that operators are faced with the choice of either going in and connecting those subscriber residences – most of which are in multi-dwelling units – with FTTH or waiting a while and – as long as the copper is in good enough condition – using G.fast."

His prediction was that these operators would mainly use G.fast as a means to deliver ultra-fast broadband in situations where it would be too expensive to deploy FTTH. "This will usually be because in-building fiber installation in some buildings is just too problematic, because of either administrative or logistical reasons, so they need to find an alternative delivery mechanism using existing copper."

G.fast now standardized

Fast forward 18 months. G.fast is now standardized and the first trials are being announced. The International Telecommunication Union (ITU) announced final approval of G.fast in December 2014, saying: "within 400 meters of a distribution point, G.fast provides fiber-like speeds matched with the customer self-installation of DSL, resulting in cost-savings for service providers and improved customer experience."

And it looks like G.fast is going to be fast by name and fast by nature, in more ways than one. Then ITU secretary-general, Dr Hamadoun Touré, said: "The time from G.fast's approval to its implementation looks set to be the fastest of any access technology in recent memory. A range of vendors has begun shipping G.fast silicon and equipment, and service providers' lab and field trials are well underway."

The development of G.fast, or to give it its full title "Recommendation ITU-T G.9701 Fast Access to Subscriber Terminals (FAST) - Physical layer specification" was coordinated with the Broadband Forum's FttDP (fiber to the distribution point) system architecture project to ensure that G.fast solutions can be quickly placed into FttDP deployments.

Broadband Forum CEO, Robin Mersh, said at the time: "The Broadband Forum is working closely with the ITU to ensure compliance with the G.fast standard and certify chipsets and equipment. We have already set our first plugfest for January 2015."

FttDP is very similar to FTTC/FTTN but moves the end of the fiber to within meters of the boundary of the customer's premises, enabling near-gigabit speeds.

According to Analysys Mason, in a white paper, 'The business case for VDSL2 vectoring, 30MHz vectoring and G.fast', "The ITU has defined target aggregate downstream and upstream bitrates [for G.fast] of 500Mbps with copper loop lengths of 100m and in practice this only defines the lower limit of what vendor systems will be capable of delivering. These speeds mean that G.fast offers a bit rate advantage over VDSL2 on very short loops.

G.fast rollout scenarios

"G.fast also differs from VDSL2 because it allows for configurable downstream/upstream bandwidth ratios, furnishing operators with additional flexibility and helping to meet the needs of specific customer segments such as small- and medium-sized enterprises."

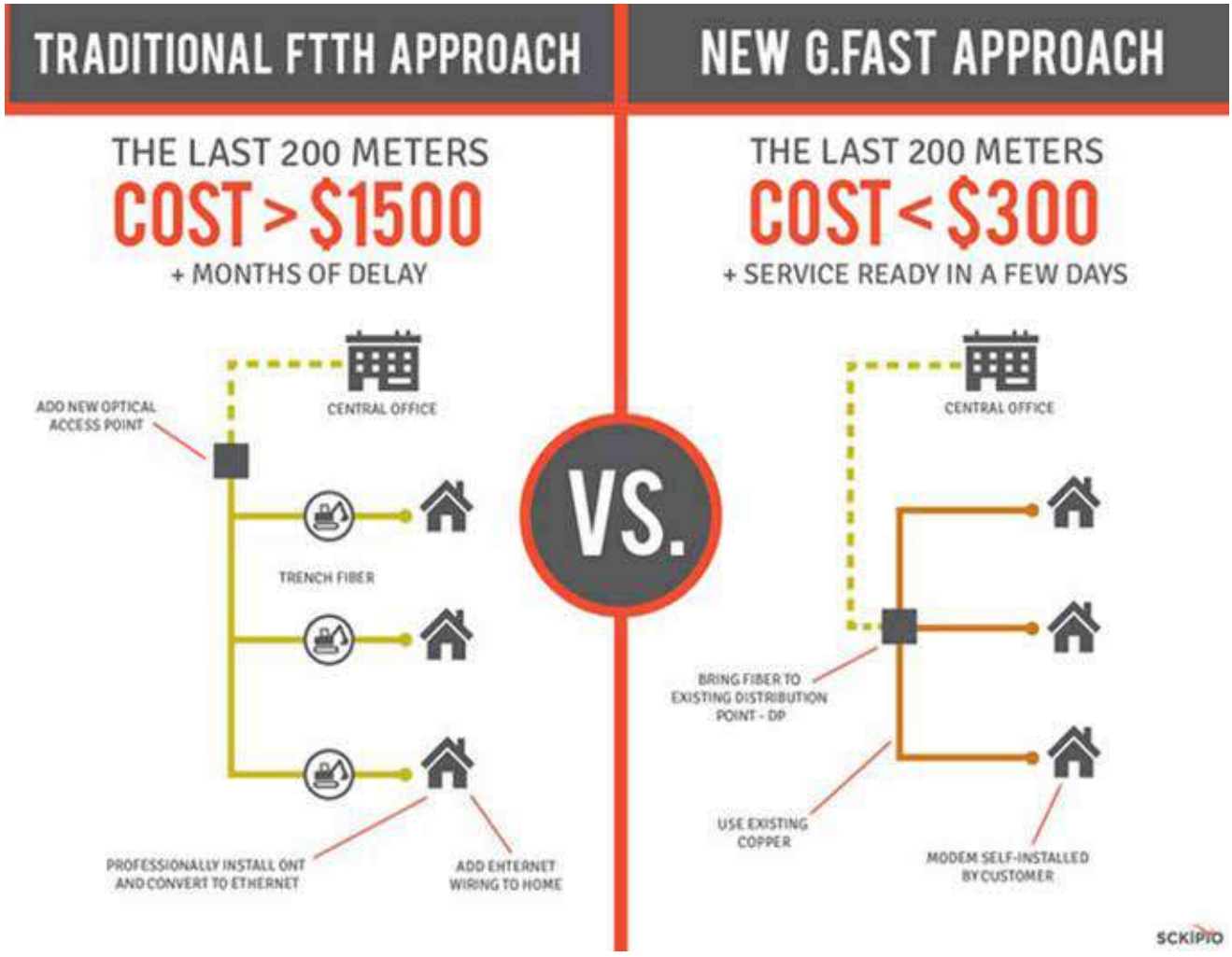
According to Analysys Mason, the very high bitrates that G.fast can provide on very short loops makes the technology applicable for three main deployment scenarios:

- Fiber is rolled out to multidwelling units in an FTTB deployment and G.fast is then used to connect subscribers from the building basement or floor;
- Fiber is rolled out to a distribution point between legacy street cabinets and subscribers' homes and G.fast is then used to connect subscribers from the distribution point;
- Fiber is rolled out to just outside a single dwelling, for example, where entry to the property to install FTTH is problematic, and G.fast is then used for the final connection.

It expects significant growth in these three deployment scenarios over the next few years and forecasts that, by 2019, there will be 60 million premises connected with either VDSL2 or G.fast.

End of the FTTH love affair?

Brown's 2013 predictions for G.fast are also supported by Ronan Kelly, CTO EMEA & APAC at Adtran, who wrote in a blog post on European Communications'



web site in January: "There is increasing recognition that our long running romance with pure fiber-to-the-home (FTTH) strategies may fail to bear the fruits once promised.

"Where FTTH has always been positioned as the panacea for all industry ailments, mass adoption has not taken hold, thanks mainly to barriers like cost and availability. ... From the bottomless pockets of the UAE, to the unique scale economies achievable from the mega-MDUs of Asia, the sad truth remains that these unique attributes don't translate to the majority of broadband markets."

He predicts that 2015 will see the commercial deployments of broadband over copper technologies, like G.fast, that are capable of delivering multiple gigabits per second over short distances, in conjunction with fiber.

"G.fast offers a standards-based approach that will permit service providers to eliminate many traditional sources of delay faced by full FTTH deployments," he says. "No more landlords seeking their pound of flesh, no more missed subscriber appointments, no more planning delays."

According to Kelly, G.fast is more than capable of addressing the headline speed threat posed by the cable industry. "G.fast offers the predictable rollout schedule that investors demand, coupled with a time to market proposition which will facilitate a rapid response to cable erosion," he says.

"Leveraging existing assets prevents subscriber churn to cable, while simultaneously offering continued access to wholesale Bitstream revenue streams. This also eliminates the risk of opening up an LLU optical super highway that competitors can poach on the backs of others' FTTH investment."

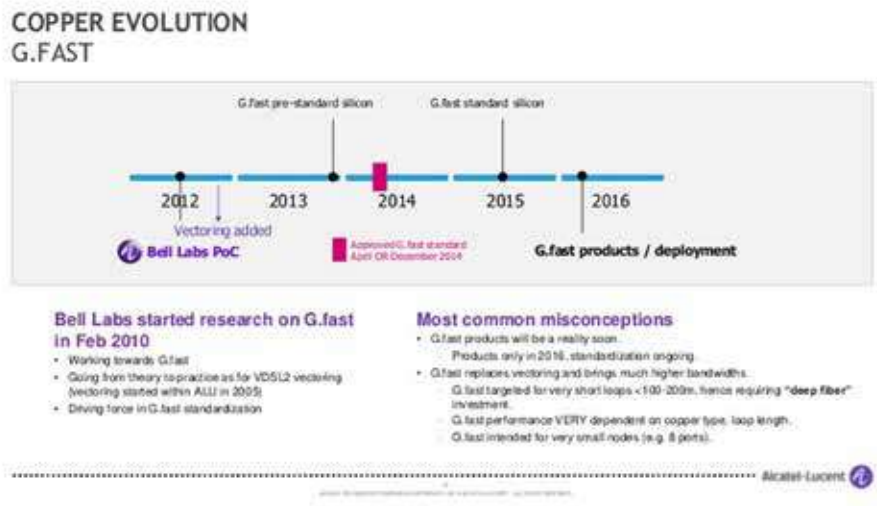
Cashing in G.fast chips

WinterGreen Research is extremely bullish about the G.fast market. It has published a study 'G.fast Chips: Market Shares, Strategy, and Forecasts, Worldwide, 2014 to 2020, saying: "Consideration of G.fast chips market forecasts indicates that markets at $31 million in 2014 will reach $2.9 billion by 2020."

The company says growth will be driven by every industry seeking growth through social media and smartphones and thus dependent on broadband services. "G.fast is able to make the benefits of broadband available to consumers and support network flexibility for consumers, data centers, and cell tower backbone communications."

WinterGreen justifies these bullish forecasts on the basis of the high cost of fiber to the premises. "FTTH is too expensive and DSL continues to be a viable alternative, with DSL set to be replaced at the high end initially by G.fast. Copper based broadband technologies promise to last for a long, long time. Though for many years FTTH has threatened to make xDSL obsolete, this has not proven to be the case."

And, it says, this is particularly true for many Asian nations. "Smaller islands, the Philippines, countries with lots of rural areas, like India, are struggling to deliver useful speeds."



None of this will be music to the ears of the FTTH Council Asia-Pacific, an organization dedicated to promoting the growth of FTTH networks. It announced in November 2014 a "major milestone: 100 million households in Asia Pacific subscribed to FTTH services."

Julie Kunstler, principal analyst at Ovum - which researched the market for the Council - said: "Asia-Pacific is leading the world in FTTH subscribers and this is a major milestone which represents a tremendous financial investment and a strong understanding of the future of networking infrastructure."

FTTP uptake overestimated

Leading the world it may be but its uptake, and that of FTTx as a whole, has fallen far short of Ovum's predictions of 2011. In July of that year Computerworld reported: "Fiber-to-the-Home (FTTH) and Fiber-to-the-Building (FTTB) are set to overtake the number of wireless Internet connections in the Asia-Pacific region from 2014, Ovum has claimed. The analyst firm predicts that FTTH and FTTB wireline broadband subscribers in the region will exceed 285 million in 2014 with a compounded annual growth rate (CAGR) of 26 percent over four years."

According to ITU statistics, in 2014, Asia and Pacific had 920 million wireless broadband subscribers, a number far in excess of the 313 million total for all fixed network Internet access services.

Ovum now sees the roll of FTTx in Asia Pacific as providing backhaul to the ever increasing number and decreasing size of mobile base stations that will be needed to support a billion plus mobile broadband subscribers. Kunstler was reported in January 2015 saying: "We're seeing more passive optical network equipment being used for mobile backhaul ... As operators evolve to 4G, we're seeing new architectures emerge that include small cells and centralized RAN that will require alternative backhaul access and transport capabilities. ... The biggest trend affecting backhaul is unrelenting growth in traffic driven by smartphones. Operators will find it very difficult to keep pace with that."

First G.fast chips

G.fast technology is still in its infancy. Israeli company, Sckipio, claimed to have produced the first G.fast chipset as recently as October 2014. It announced, at Broadband Taiwan, "the world's first G.fast modem chipsets," saying these would "fundamentally change how telecom service providers can deliver 1Gbps ultra-broadband Internet access to bandwidth-hungry customers at the lowest cost per megabit."

Shortly after that the company secured $17m of series B venture funding from Pitango Venture Capital and the original Series A investors; Gemini Israel Ventures, Genesis Partners, Amiti Ventures and Aviv Ventures. That took total venture funding in the company to $27m.

In October 2014 Alcatel-Lucent announced that its commercial G.fast product would be available in early 2015 following 12 trials with operators, including A1, a subsidiary of Telekom Austria, "in which a regular subscriber was connected in order to independently test G.fast in the field." The company said that other trials had been undertaken with BT and Orange and that eight more operator trials had been confirmed.

BT big on G.fast

Rollout commitments are few, but one major carrier, BT, has extremely high hopes for G.fast. In January 2015 BT CEO, Gavin Patterson, revealed that BT planned to deliver much faster broadband for homes and small businesses via a widespread deployment of G.fast, subject to successful pilot rollouts.

"We believe G.fast is the key to unlocking ultrafast speeds and we are prepared to upgrade large parts of our network should the pilots prove successful," Patterson said.

BT says it expects to offer initial speeds of a few hundred megabits per second to millions of homes and businesses across "most of the UK" by 2020, but says speeds will then increase to around 500Mbps as further industry standards are secured and new kit is developed.

Despite the great enthusiasm for G.fast expressed by BT, it appears to be the only major telco to have gone public with its G.fast intentions. Nevertheless the views of the pundits, backed up by the millions of dollars being poured into companies like Sckipio, suggests that G.fast will have a very big impact on the broadband market in Asia within a very few years.. TR

China and Cambodia ICT deals: the ties that bind

A $50 million loan from China's Export and Import Bank to help Cambodia build a broadband network is the latest development in a relationship between the two countries that has brought telecommunications to Cambodia and business to Chinese vendors.

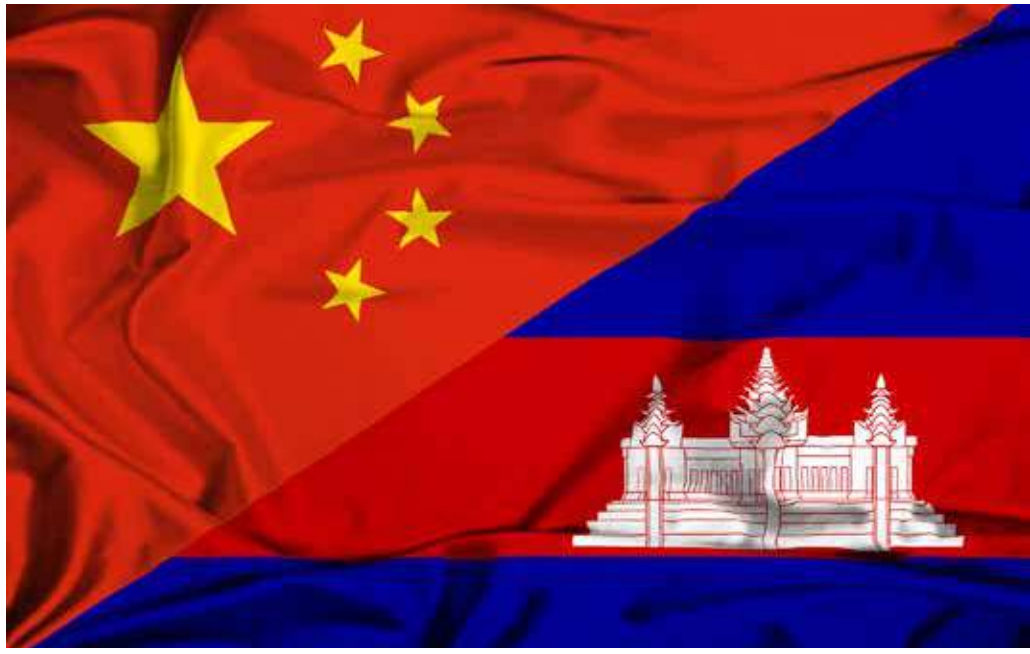
"Reliable neighbor, friend and brother..." That was how Wu Bangguo—the then chairman and party secretary of the Standing Committee of the National People's Congress—described Cambodia, according to China's Xinhua news agency. Wu Bangguo—one of the most powerful men in China's communist hierarchy—made this statement while witnessing the signing of 16 Sino-Cambodian deals amounting to $6.4billion in 2010 and ranging from energy exploration, agriculture to infrastructure construction.

Partnerships of this magnitude between China and Cambodia are no longer rare. Bilateral relations between the Kingdom of Cambodia and the People's Republic of China have strengthened and developed considerably since the end of the Cambodian-Vietnamese War.

In 2006 both nations signed several bilateral agreements and a treaty of "Comprehensive Partnership of Cooperation." China diversified its aid and investments in Cambodia. It promised to

provide $600 million in loans and grants. In addition, the Chinese Government cancelled much of Cambodia's debt to China and granted a fresh loan of $12.4 million for the construction of a building to house the Cambodian Government's Council Of Ministers and for the restoration of the Angkor Wat temple and heritage site.

According to Economy Watch, China is the third largest source of imports into Cambodia after Thailand and Vietnam, accounting for 14.7 percent of Cambodia's imports.



Long history of friendship

The long history of friendship between these two countries is evident today: between their respective governments and between private companies. Many of these are in the ICT sector.

In 2011, China-ASEAN Investment Cooperation Fund (CAF) invested in Cambodia Fiber Optic Communication Network Co (CFOCN) to develop Cambodia's national fiber optic backbone communication network along with a comprehensive range of telecommunication network services. This was CAF's first investment in the country. Meanwhile Chinese telecoms manufacturers have benefited significantly from the buildout of Cambodia's telecommunications networks.

Cambodian operator Sotelco—one of the largest and fastest growing mobile operators in Cambodia—chose equipment from Chinese manufacturer ZTE for its 2G, 3G and 4G networks. The company is also set to replace Huawei equipment in hundreds of sites including the capital city, Phnom Penh.

ZTE & Huawei win 4G deals

ZTE also won the bid for 4G LTE project construction from Southeast Asia Telecommunications Holdings Limited (Seatel). The two companies have signed a memorandum of understanding and a strategic cooperation agreement. Seatel is expected to have its FDD LTE mobile network operational in the first half of 2015. The cooperation between the two companies will focus on mobile Internet strategy. Seatel aims to provide "the most advanced technology, abundant applications and the best network."

Huawei also inked a contract with Cambodian telecommunications company EMAXX in September 2014 to roll out 4G base stations in eight Cambodian cities. The project is expected to be completed in two years. EMAXX is expected to launch its 4G commercial network in Phnom Penh this year.

Huawei's Li Zhigong said that the Chinese government was pleased to see Chinese companies making investments in Cambodia and he expected more Chinese companies would contribute to development in the country.

In November 2014 another significant deal was signed between Cambodia's government and Huawei when Cambodia selected Huawei to be a strategic partner for its ICT development. Cambodian prime minister, Hun Sen, met with Huawei's acting CEO, Ken Hu during the Asia-Pacific Economic Cooperation (APEC) leaders' summit in Beijing. They discussed further cooperation on the development of wireless communications networks and ICT in Cambodia.

Hu said: "Huawei will strive to become a knowledge partner for the Cambodian government and help them identify and train local ICT professionals." Notably, Huawei also disclosed that it had developed extensive partnerships with local telecom carriers and the government over the past 15 years. Huawei directly employs nearly 200 locals in Cambodia and has also provided a virtual desktop system that can be used by over 500 people when working remotely and as part of the government's plans to develop ICT within the country.

In January 2015 Cambodia and China signed a new memorandum of understanding (MoU) for cooperation in telecommunication and information and communication technology (ICT). Under the deal, both sides will exchange information, experience and expertise in the development of telecommunications and ICT. Cambodia currently has two fixed phone operators, six mobile phone operators and around 27 Internet service providers.

$50m loan for broadband network

This latest MoU between the two governments has strengthened the bond between the two countries. The deal encompasses not only current, but also future development of ICT in the nation.

In the latest expression of this relationship, Xinhua news agency reported on 5 February that China would finance broadband network construction in Cambodia. The Export and Import Bank of China has agreed to lend $50 million to Cambodia, which will use the funds to construct a national broadband network. The Bank said the funding was in line with China's focus on strengthening its ties with Cambodia. TR

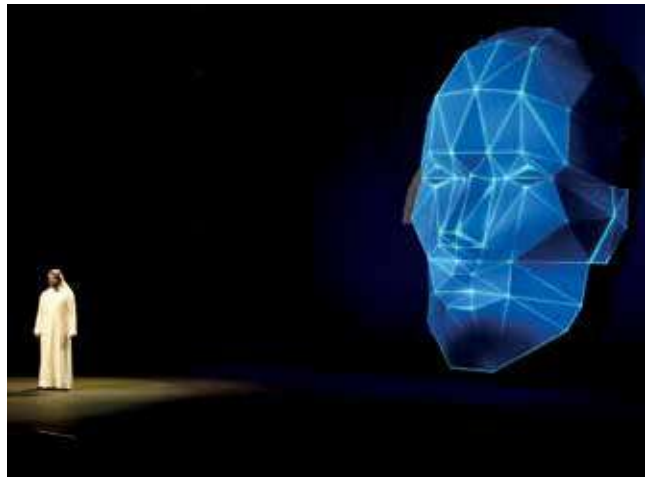
ITU Telecom World 2014: envisaging a connected future

Under the central theme of 'Future in Focus', ITU Telecom World 2014 explored how disruptive developments in technology, business and society are transforming the ICT industry – and examined potential scenarios of the future.

N ITU Telecom World 2014 opened its doors on the 7th of December 2014 to a packed program of conversations and debates. The event was organized by the International Telecommunication Union (ITU), the United Nations specialized agency for ICTs, and hosted by the government of Qatar, with the support of leading international communications company, Ooredoo.

A spectacular opening ceremony was held at the Qatar National Convention Centre in Doha in the presence of Sheikh Abdullah Bin Mohammed Bin Saud Al Thani, chairman of the board of directors, Ooredoo Group; Sheikh Abdullah bin Nasser bin Khalifa Al Thani, prime minister of Qatar; Hessa Sultan Al Jaber, minister of Information and communications technology, ictQATAR; and ITU secretary general, Hamadoun I Touré. (Touré ended his second four year term on 31 December 2014. His deputy, Houlin Zhao, is the new secretary general)

The event focused on the latest innovations, technologies and ideas shaping the future of ICTs, and played host to 3500 participants, and 205 speakers from 52 countries. It featured interactive high-level debates, networking sessions and impressive showcases that highlighted the future of technology and its impact on society.



The thousands of participants from around the world included representatives from Cisco, Huawei, Intel, LS Telcom, Nokia, Ooredoo, Rohde & Schwarz, Vodafone and ZTE. There were also pavilions from Argentina, Azerbaijan, Cameroon, Chad, China, Hungary, Nigeria, Malaysia, Qatar, Tanzania, Thailand and Zimbabwe while Kenya, Uganda, South Sudan and Rwanda came together in the Smart Africa zone on the show floor.

"Over the last few days, I've seen the evolution of a roadmap that provides an immersive, interactive and deeply informative view of the future of ICTs," said Touré. "This has been evident in the Leadership Summit and Forum, bringing insights into industry shifts and macro trends from top names on the show floor and looking at new technologies developing in The Lab."

He added: "I was also deeply impressed by the bright sparks who are building the future of technology and business, in the Young Innovators Program."

Sheikh Abdullah Bin Mohammed Bin Saud Al Thani, said: "Ooredoo was delighted to work with ITU to organize ITU Telecom World 2014 on behalf of the Government of Qatar. Helping host this unique platform for global experts to share views and insights on how we can use ICTs to enhance lives is in line with Ooredoo's and Qatar's strategic vision. It has been an inspirational experience. We were also very pleased to be able to showcase our latest technologies to this global audience, and to shine a spotlight on Qatar as a global technology hub."

Smart and futuristic visions

"Huawei was delighted to showcase its vision of 'Building a Better Connected World' and outline a more convenient and smarter lifestyle featuring futuristic 5G connectivity technologies, ubiquitous broadband connectivity, connected smart cities and smart homes to the global audience convened at ITU Telecom World 2014," said Ken Hu, deputy chairman of the board and rotating CEO of Huawei.

"At the event, Huawei also shared our views and insights on technology, business and investment model innovation and called for collaboration among stakeholders to rejuvenate global broadband development."

The event featured sponsored sessions from Alcatel-Lucent, BBC, CNN, ESOA, Geddes Consulting, Huawei, IPv6 Forum, ITU-D, Nokia, TDIA, TCCA and TM-Forum. It covered a range of different areas such as big data to universal broadband, enabling the digital future, hidden risks, unexplored opportunities from circuits to packets, LTE for public safety, ICTs for saving lives and more.

Mind-blowing innovations

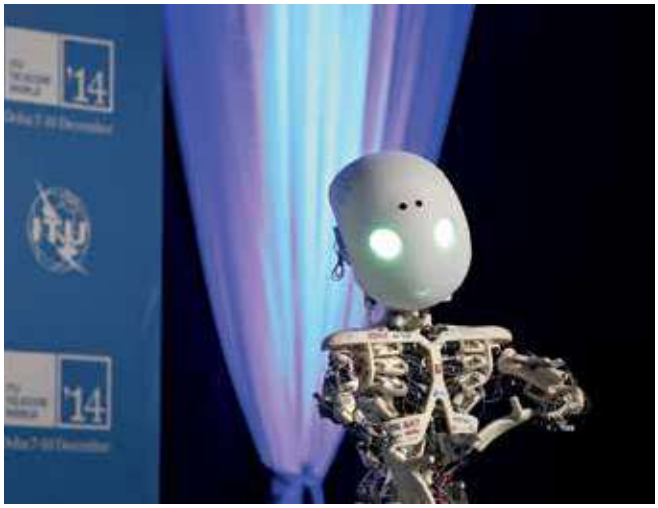
The future of innovation was showcased in The Lab and by winners of the Young Innovators competition. Social entrepreneurs aged between 18 and 30 from around the world highlighted innovative digital solutions with positive social impact.

"ITU Telecom World was a great opportunity," said young innovator, Hemant Purohit. "I was able to make contacts and receive advice that will be a huge help in taking my work forward. Getting this level of incubation and international exposure has been a dream for a long time. Now, though, the hard part begins. I have to turn all this into a successful start-up. It won't be easy, but I have a good start."

Further examples of innovation in action could be seen in The Lab on the show floor, including MineKafon, a wind-powered mine detector; Perpetual Plastic Project, an interactive recycling installation that transforms plastic into new products through 3D printing; Parametric Hybrid Wall, a responsive surface able to re-model its own shape; and Bhoreal, an open source interface that can be used to control all types of hardware and software.

Also in The Lab, participants from across the globe were delighted with the humanoid Roboy. It presented a new face to human robotic interaction with its ability to interact and move its anthropomorphic tendon-driven arm, and with its charming blushes, winks and waves.

Leading players showcased new developments as well. Nokia Networks, Ooredoo Qatar and China Mobile achieved a record-breaking speed



of 4.1Gbps over TDD-FDD LTE in an experiment to demonstrate future user demand. At this speed even the most demanding mobile users would be able to download a full-length 5GB high definition (HD) movie in just 11 seconds and simultaneously upload a five minute 30MB video clip from a concert in less than a second.

Thematic pavilions showcased the latest innovations in ICTs to address specific issues related to emergency telecommunication in saving lives and small island developing states. The government of Qatar also highlighted ICT development.

The event also saw the launch of the Global Cybersecurity Index 2014, a joint project undertaken by ABI Research and ITU, providing insights into cybersecurity engagement in countries.

A transforming industry

Forum discussions at the event covered the key trends and developments in technology, regulatory and policy issues, business models, services and applications. They focused on three major scenarios: disruption, cross-sector partnerships and the intelligent future.

Sessions took a variety of different formats from top-media moderated 'Big Conversations' to ministerial round tables and panels.

The underlying focus of discussions was the radical transformation of the ICT industry. Hot topics included the different uses for big data, including 'Big data for development', 'Mobile networks in the cloud', the 'Softwarization of network elements', 'Bringing IT into ICT', cross-sector partnerships, collaboration and cooperation and broadband rollout in emerging markets.

Discussions brought together informed speakers from the worlds of government, industry, academia, research and international organizations, with audience members encouraged to join in, share their insights and experience, and quiz the panels on their views.

Everyone on the big data panel believed that the issue of big data, and how it should be monitored, regulated, extrapolated and leveraged, needs to be addressed, but some disagreed as to whether this could ever be achieved. Rohit Talwar, CEO of Fast Future Research, said: "[I do] not think that we will ever sort it because innovators will always stay ten steps ahead, and there are seven billion creators of information. No amount of regulations will be able to keep them in check."

Big data a big issue

The final portion of the panel session saw discussion and overall agreement that governments need to get much more savvy, and very quickly; that they need to create dedicated groups to study and gain a true understanding of big data, and try to predict its future, or they will be setting policies in a vacuum.

Panel members also agreed that governments should not plan for long term big data, based on the short term behaviors of the population. They expressed the view that best practice would be the key to potential success in cracking big data, and that conversations had to occur at an intergovernmental level to produce agreed international norms and treaties.

The Leadership Summit on the Future launched debates in an eye-opening and inspiring journey into the future of the ICT industry and of business and society. Renowned futurists and international experts from a range of disciplines came together to explore potential scenarios of the future with leaders of public and private sectors from across the global ICT sector.

Led by moderator and futurist Gerd Leonhard, the Summit gave a unique perspective into where the industry was heading in the next three to five years. According to Leonhard, "We are moving into an exponential future and away from linear changes, as the pace of development means that things we thought were science fiction a very short time ago, such as an app for automatic translation from Japanese to English, are now happening every day."

Simon Torrance, keynote speaker at the Leadership Summit on the

Future, said that telcos had to find a new more dynamic role in the digital economy, bringing in different people, sectors and backgrounds, to add value in the hyper-connected, hyper-programmable world of the digital economy.

Cloud computing, infrastructure investment, partnerships with other industries and appropriate regulation to ensure the viability and success of cross-border, cross-industry collaboration were rated as very important.

The future is exponential

Yuri van Geest, author and Dutch ambassador of the Singularity University, in his keynote, argued that exponential technology called for exponential organizations. "The convergence of so many strands of development - such as solar technology, bio technology, nano-technology, neuro-technology, 3D printing, sensors and artificial intelligence – is pushing down the half-life of an average business competency from 30 years to five years," he said.

"Exponential organizations are those which have transcended the linear, top-down, hierarchical, industrial and physical control models of the past. Now, in a future where every company will be a software company in one way or another, we need to scale additional building blocks of structure, process, culture, KPIs and people to keep up with the pace and flexibility."

An impressive line-up of industry figures debated the role of the Internet of Thing (IoT) in the intelligent future.

Reminding the audience that the Internet of Things is nothing new, François Rancy, director of the Radiocommunication Bureau, ITU, emphasized that the scale of the connections had changed greatly: "Everything which can be measured will be in digital form, will be transmitted, processed, evaluated and better understood," he said.

"Mobile networks are essential, and the fuel for those networks is the spectrum upon which they rely. Having the pervasive network that the IoT calls for in areas such as the connected car, for example, represents a major challenge for regulators seeking to allocate and manage spectrum without compromising on public safety."

Greg Young, CEO, Ooredoo Oman, explained that fifteen years ago we were wowed by a smart fridge, but little progress had been made and we now had to ask ourselves what would drive the consumer to adopt these things. Delivering value was key, he said. "It's got to deliver the convenience factor, improve quality of life, add comfort, save energy or money. The wow factor of just being able to do it is not enough."

Another important consideration was the role of the private sector in ICT development partnerships. The panelists explained that successful public private sector partnerships now rely on more than just finance; the public sector must provide a clear role for private partners to take in the implementation of ICT projects.

The show floor included for the first time pavilion Smart Africa (representing Kenya, Uganda, South Sudan and Rwanda) that highlighted the Smart Africa initiative. ICT ministers and representatives from each attending country took center stage to inform a room full of international journalists of the latest milestones reached.

A particular point of interest was making Internet access affordable to all African citizens. Uganda's minister explained that sacrifices must be made in terms of public sector revenue to achieve affordability.

Networking was a key component of the event, with delegates from public and private sectors using the Event App to actively network with other participants and share their experiences.

Next stop, Budapest

As the event concluded in Doha, Qatar, on the 10th of December, the ITU Telecom World baton was ceremoniously handed over to Hungary. Conversations that began at ITU Telecom World 2014 are set to continue in Budapest, from the 12th until the 15th of October 2015. TR

LBS: keeping kids in China safe

Kidnapping of children in China is rampant. Some estimates put the number taken annually at 70,000, many from their schools. Cellular network based location monitoring and reporting technology is helping combat the problem.

"Safety and security don't just happen; they are the result of collective consensus and public investment. We owe our children, the most vulnerable citizens in our society, a life free of violence and fear." - Nelson Mandela

There is no doubt that the World agrees with those words from the anti-Apartheid revolutionary and former president of South Africa. For any society, the welfare and safety of its children are of the utmost importance. China has a long running problem with child abduction on a large scale, but now communications technology is helping to combat this.

Since the 1980s China has had a reputation as a nation where kidnapping and human trafficking are widespread. The victims of these crimes are often children. Independent estimates put the number of children abducted each year as high as 70,000. Official estimates from the Chinese government put the number at less than 10,000. The US State Department says the figure is closer to 20,000. (In the US less than 200 children are kidnapped each year).

The UK's Telegraph newspaper reported that, between 1991 and 1996, Chinese police freed an estimated 88,000 kidnapped women and children and arrested some 143,000 kidnappers. In 2011, Chinese Police said they had rescued more than 13,000 children in the previous two years. According to Xinhua news agency, from 2009 up to the present, police have rescued over 54,000 children and eliminated 11,000 traffickers.

Child abduction rampant in China

In China Children are mostly kidnapped for sale into slave labor, prostitution or to be turned into beggars to work on the streets. Rarely are they taken for ransom. Some are sold to couples—at home and abroad—that want children but are unable to have any of their own. They are taken from poor families that have neither the financial means nor any capability of tracking down the kidnappers.

Because of the substantial fees and the rigorous documentation required for lawful adoption, some couples turn to human traffickers, who give them what they want for a fee. According to a report from The Telegraph in the UK in 2011, families were willing to pay up to £10,000 ($15,000) for a baby boy. Authorities

are often complicit in permitting registration of the stolen child.

In China kidnapping often takes place from schools. In Shenzhen in Guangdong Province, the Nanfang Daily reported a spate of abductions in the area and said that parents had started questioning the authorities on what steps were being taken to deal with the problem. Kidnappings were reported in many schools, including the Shenzhen Nanshan Foreign Languages School, the Yuanling Primary School and the Xinzhou Primary School. Schools the have taken strict measures to prevent children leaving school premises unless they are picked up by a family member.

These measures are now being enhanced and supported by technology. Edusafety is an organization dedicated to the safety and well being of school students in China. It has selected W-Locate's SIM-based location based services (LBS) solution, XimLoc, to provide parents of the four million children in Guangdong Province with accurate location monitoring services. The project, which is supported by the Ministry of Education China, is specifically designed to provide parents with peace of mind that their children are safe in school.

Technology to the rescue

After successful trials last year the service is now in full swing. The SIM-based solution can alert parents through SMS, an app and web alerts when their children leave a pre-defined area. The system will also send an alert if a child does not enter the pre-defined area, for example the school, by a specified time. The system also has a SOS notification feature for emergencies.

W-Locate, the company that provided the technology, describes it as a highly scalable and customizable location-monitoring platform that has been designed from the ground up with third-party API support. Its SIM-based algorithm allows mobile operators to deploy location-based services (LBS) over their own network with minimal capital investment. Because the system is SIM based, new services can be offered via any device with a SIM card.

Chen Jun, GM of Edusafety, said: "We looked at a number of different technologies to decide what solution would provide parents with peace of mind. W-Locate's solution was a cut above the rest. What made it stand-out was its ability to provide accurate location information in both outdoor and indoor environments – ideal for schools."

According to Stevie Ooi, CEO of W-Locate, in comparison to a GPS device, a SIM-based LBS solution uses less battery power and is capable of tracking someone for a much longer period of time. Unlike GPS, it will work indoors.

LBS is not a new technology but market studies suggest it is gaining popularity particularly in the public safety arena. The global LBS platform market has been tipped to grow at a CAGR of 19.53 percent over the period 2013-2018.

Market Info Group forecasts the global LBS market to almost triple over the next eight years, with public safety—a market it says is presently underserved—being a major driver of this growth.

Healthcare applications of LBS

Another area where LBS is expected to find significant application in coming years is healthcare. The global LBS market in the healthcare industry is expected to grow at a CAGR of 31 percent from 2015-2019. LBS are used in hospitals for indoor navigation, for tracking down staff and patients, messaging, asset management, location analytics, and for integrating clinical systems. In 2014, around 10 million units of wearable devices were sold worldwide. This number is expected to grow nearly tenfold in the coming years. The use of wearable devices in the healthcare industry is expected to reduce hospital costs by a significant amount over the next six years. TR

Health, safety: how far can smart fabric go?

Smart fabric is a very promising technology: potential applications range from highly useful and potentially life-saving biometric clothing to the dubious and decidedly gimmicky. Would you like to stink like a drunk, all the time?

Among the amazing technologies that the IoT has brought us, smart fabric (aka eTextile) - used to manufacture wearables and connected clothing - is having a huge impact on many different fields, especially medicine.

Thanks to embedded digital components such as small computers and electronics, smart fabric is revolutionizing health monitoring techniques and will probably soon be able to save lives.

Université Laval in Canada has published research stating that smart fabric with integrated sensors and able to prevent a cardiovascular incident by alerting rescue teams in real-time will be available in a few years. It will enable a garment to monitor and transmit its wearer's biomedical information through WiFi or cellular networks to a monitoring center where the data can be examined and analyzed by specialists.

Jeff Viens, director in charge of technology transfer, explained that, in a couple of years, numerous applications would be available. The majority of these will have medical purposes. Others will enable kidnapped or lost children to be easily found thanks to 'sensor-stuffed' clothing.

Monitoring of multiple bio functions

"Textiles have many functions and clothes will become a communication

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Track Highlights!

Tuesday, 2nd June 2015

- Broadband – Sustaining Growth in Asia's Broadband Markets
- Internet of Things
- Getting into the Digital Dialogue – Telco Apps Development
- Cloud Networking

Wednesday, 3rd June 2015

- Broadband - From 3G to LTE and Beyond
- Asia's Satellite Industry – The Next Decade
- Mobile Marketing – Marketing on the 7th Mass Media
- Software-Defined Infrastructures for Networks, Clouds and Services

Thursday, 4th June 2015

- Broadband - Maximising your Revenue Via DSL, Fiber and Wireless
- The 'New' Value Proposition for Satellite End Users
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- Big Data Workshop
- Mobile Marketing Workshop
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platform and information relay," he said. "A possible application will be monitoring heart rate disorders, making it possible to warn rescue teams whenever a sleeping person is having an infarct [tissue death caused by a local lack of oxygen resulting from an obstruction of the tissue's blood supply]."

The research team, led by Younès Messaddeq at Université Laval, designed the smart fabric's fiber by superimposing multiple layers of copper, polymers, glass and silver. "The fiber acts as both sensor and antenna. It is durable but malleable and can be woven with wool or cotton," said Messaddeq.

The surface of the fiber can capture different kinds of signals enabling it to monitor information related to glucose levels, heart rhythm, brain activity, movements and spatial coordinates. "Some issues are yet to be solved before the smart clothes are commercialized, such as the connection to a wireless network and the question of power supply," said Messaddeq.

He added "It is very important to make sure that the fabric is washable" and resistant to detergents, which may contain harmful products."

If these hurdles can be overcome these smart clothes could save lives by helping chronic disease suffers or the elderly living alone. They could also assist firemen and police officers in their work.

Smart fabric for road safety

The applications of smart fabric are not limited to clothing and wearables, or to health monitoring. Smart fabric has proven road safety applications. According to the US National Council on Alcoholism and Drug Dependence (NCADD), an estimated 32 percent of fatal car crashes involve an intoxicated driver or pedestrian.

"Drinking alcohol and driving simply do not go together," NCADD says. "The human brain has to deal with many things and process countless data all the time. Alcohol affects attentiveness and one's ability to make quick decisions on the road, react to changes in the environment and execute specific, often difficult maneuvers behind the wheel."

The recent Autocar-Courland Next Generation Award 2014 for innovation went to a 23 year old Coventry University graduate who invented a steering wheel that could measure a driver's alcohol consumption. Nicole Agba won the prize for her 'Steer Right' system.

Using built-in sensors, the smart fabric interactive textile woven into the steering wheel can monitor the driver's heart and respiration rates, physiological signals that could indicate fatigue, anger or nervousness.

However, what really caught the judging panel's attention was the potential for the steering wheel to be used to detect alcohol in the driver's system, immediately stopping the car if the driver was over the blood alcohol limit. The smart fabric is also capable of coordinating with autonomous driving elements, allowing the vehicle to assist the driver in case they have consumed large amounts of alcohol.

Nicole, who is indirectly contributing in the "anti-drink and drive" campaign, won a £7,500 ($11,300) prize and will spend five months touring the research and development departments of Jaguar Land Rover, McLaren Automotive, Peugeot, Skoda and Toyota.

Whiskey Galore!

It is very early days for smart fabric, but it clearly holds great potential. We could well be on the cusp of a new era that will introduce us to a whole gamut of new products from the useful, even life saving, to the not so useful: like this one.

"Heriot Watt University's School of Textiles and Design in Scotland has just developed a 'smart fabric' that emits the smell of Johnnie Walker's Black Label whisky," reports Drinks Business.

According to Diageo, Johnnie Walker's parent company, the fabric smells like a "rich malt, golden vanilla, red fruit and dark chocolate tones," and the odor will outlast simple washing and dry cleaning.

We'll drink to that! TR

Dyn:

adding intelligence and insight to the Internet

Martin Ryan, managing director Asia Pacific for 'Internet Intelligence' provider Dyn, explains how Dyn's services help companies that depend on the Internet get the best performance from it.

It's well known that the Internet is a best effort service: it comes without performance guarantees. That might have been alright 20 years ago but today multibillion dollar global businesses are totally dependent on the Internet and how good those 'best efforts' are can make a huge difference to revenues, and profits.

However, Internet users large and small are not totally at the mercy of these 'best efforts. By monitoring, analysing and changing how they use the Internet they can optimize performance.

That's where Dyn comes in. The US based company that opened its Asia Pacific headquarters last year in Australia claims to be "the leading Internet performance provider to the most visited web properties in the world, as measured by the Alexa 500."

Dyn describes itself as "a cloud-based Internet performance company [that] helps companies monitor, control and optimize online infrastructure for an exceptional end-user experience [using] a world-class network and unrivaled, objective intelligence into Internet conditions." This according to Dyn "ensures traffic gets delivered faster, safer and more reliably than ever."

Asia Pacific: an Internet hotbed

The company announced the opening of its Asia Pacific office in March last year, describing the region as 'strategic'. It cited a report from ComScore saying: "More than 40 percent of global Internet users are now based in Asia Pacific [and] Asia Pacific is home to some of the most innovative and fastest growing companies in the world. In fact, seven of the Alexa Top 25 websites are headquartered in the Asia Pacific region."

At that time Dyn claimed more than 90,000 customers in the region ranging from multinational businesses to consumers. Today the region accounts for 13 percent of the company's base, according to Martin Ryan, who took on the role of regional managing director Asia Pacific in July 2014. "And I would like to think I can double that in the next 12 months," he told Telecom Review Asia Pacific. "The Internet performance category is the one we want to win."

The next phase of this plan will be a presence in Singapore. "Work on the Singapore office is under way right now," Ryan said. "The plan is to try and keep our operations as close as we can to each other because that is how we can best scale to meet our customer needs. Service and support is already spread around the world and we use a 24-hour model." He added: "There is a good customer base in Australia and a good base of employees."

Fuelling Ryan's optimism is the rapid growth in the Asia Pacific smartphone population: the users of these devices are putting ever increasing loads on the region's Internet infrastructure and increasing expecting immediate responses and smooth delivery of online video.

"The region is adding millions of new Internet connections every year, and the vast majority of those are on mobile devices," Ryan said. "Users want good performance, a good experience and security. If the experience is not good they will go somewhere else."

Ryan said this is only one driver of the market for Dyn's services. "As a public Internet becomes one of the dominant mechanisms for interacting with customers more of the public performance and Internet is going to affect how companies deploy infrastructure. Our customers can see how they exist inside of the fabric of Internet compared to other organisations, and how their applications are being delivered to the end-users in real time."

When every millisecond counts

He added: "Milliseconds means millions of dollars. For Amazon.com, every one millisecond difference in performance translates to $7.2m in annual revenue."

Dyn's Asia Pacific office might be new, but its infrastructure is well established. "We have been in the region for five or six years," Ryan said. "We have data centers in Sydney, Tokyo, Shanghai, Beijing, Singapore and Mumbai."

Dyn started life in 2001, initially offering DNS servers, and launched its DNS network in China in June 2014. This it said, enabled DNS requests to be resolved in country, resulting in increased performance.

"Unlike other DNS services, Dyn's China Network, which spans multiple locations to ensure reliability and performance, allows the majority of requests from within China to stay inside the country.

This results in increased performance and reliability," Dyn said.

The company claims this increased its reliability in China from 95 percent to 99 percent and that "average query latency from Chinese locations has improved by 70 to 90 percent over existing performance, which translates into a better user experience since web-pages load much faster."

Acquisition of Renesys

Its Internet monitoring and intelligence services were added in 2014 when it acquired Renesys, identified in December 2013 by Gartner as a "cool vendor".

Dyn said at the time: "Renysys operates a real-time, global sensor grid that continuously monitors, collects, analyzes and correlates Internet routing and performance data. The current suite of Renesys products make doing business over the Internet more reliable and secure by monitoring the current state of the Internet, which enables enterprises to see beyond their network's perimeter into the Cloud. Internet-dependent organizations have relied on Renesys since 2000 for situational and operational awareness, and real-time business and competitive intelligence."

Dyn founder and CEO, Jeremy Hitchcock, said: "Renesys' global and granular visibility into the Internet will allow us to make better traffic and message decisions, helping our customers more efficiently connect with their audiences. Our new performance assurance product line will help businesses optimize their Internet and cloud network performance, in a world where any downtime or milliseconds of delay can have a real business impact."

The first outcome of this acquisition was the launch by Dyn, in July 2014, of its IP Transit Intelligence service. This was followed by Dyn Internet Intelligence in September 2014, billed as "a SaaS-based product that provides real-time visibility into critical Internet connectivity and routing data so enterprises get a comprehensive look into how the Internet affects their online presence."

Unique Internet insights

According to the company: "With Dyn Internet Intelligence, users get a unique view into the broad world of cloud-based providers, Internet service providers and global network infrastructure that constitutes today's Internet. Whether applications are hosted in a public cloud, a private cloud, a content delivery network (CDN), or a company's own data centre, Dyn Internet Intelligence provides unprecedented visibility into how the Internet ecosystem impacts user connectivity and customer experience."

In February 2015 the company announced availability of this service in Asia Pacific. According to Ryan, "Through our intelligence tools you can model how an application will perform based on certain criteria. Let's say you want a one second response time. We can map that and it will show you how far you can go, anywhere in the world, before you fail that test. Then you can decide what you want to do about it. You might be happy with three seconds in Europe and two seconds in the US. LinkedIn, for example, wants the same performance no matter where they."

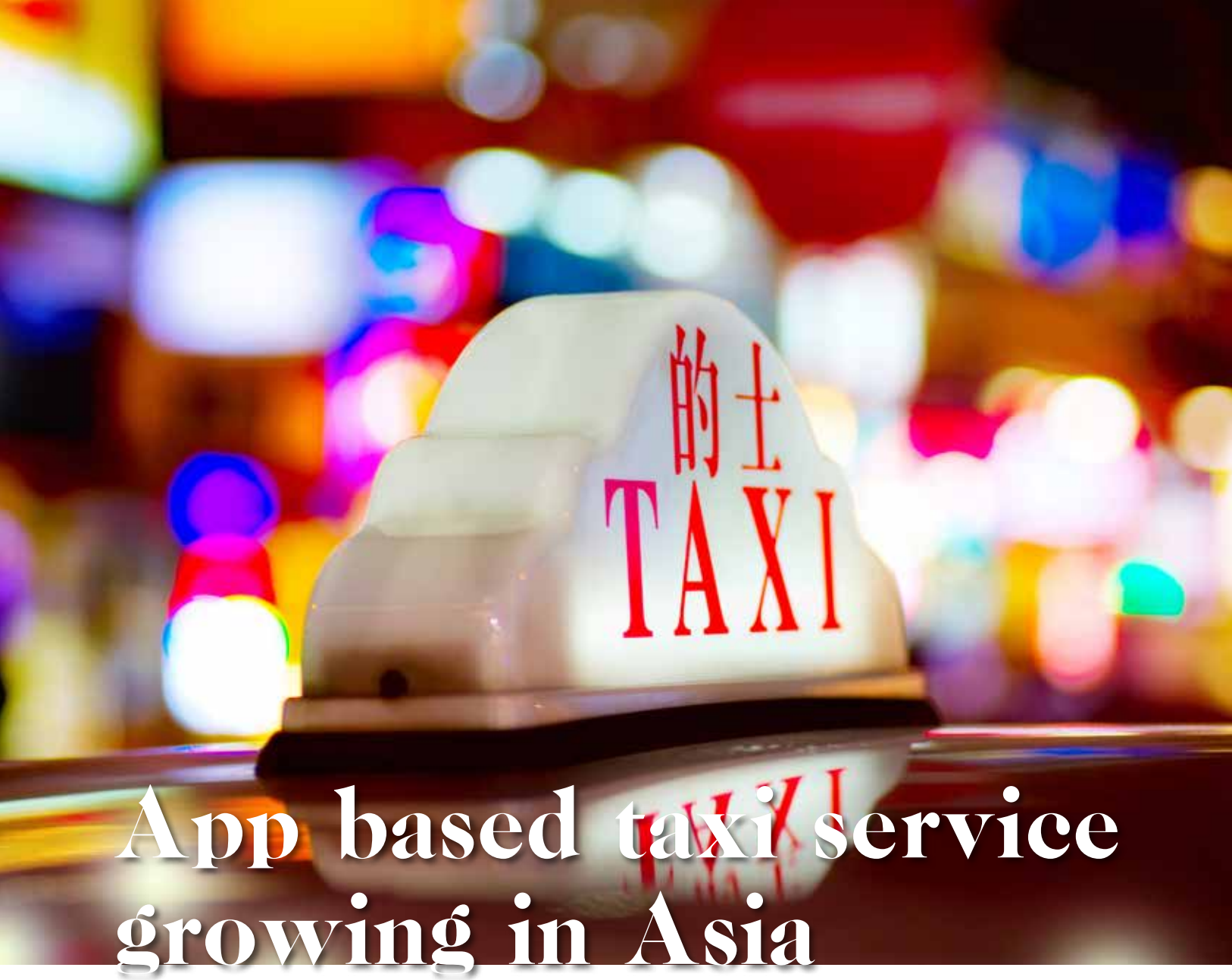
He added: "We have customers who use our tools for very different reasons: some to find out how their own network is performing and sometimes how their competitors' networks are performing. We share our intelligence with everybody."

Dyn's network intelligence can also be used to decide which location of a public cloud service will deliver the best response. Because many cloud companies are new to the region, performance is often not as expected, according to Dyn. "Amazon AWS has two hosting locations that could serve the South Korean market – Singapore and Tokyo. Intuitively, Tokyo, being closer, looks like the best choice. But in this case, [our] visualizations show that Singapore provides better performance to South Korea than Tokyo."

Conversely Dyn Internet Intelligence can assist companies to choose an optimal data center location. "By providing performance visibility into where to place data centers [customers can] see market-targeted performance metrics, and try 'what-if' location scenarios, Dyn says. "Dyn Customer Vantage Points can be deployed at data center locations to get direct performance data to over 1.5 million advertised IP addresses."

The company goes to market both directly and through a range of channel partners. "We work predominantly through cloud infrastructure and service partners, ISPs and MSPs, cloud consultancy partners, specialist application providers who are taking their applications to market," Ryan said.

He added: "a lot of people are not taking our product directly to customers but using it to solve their own problems. We have customers who are building services and solutions for their customers around multiple cloud services and they are using Dyn inside their business to manage this multiple cloud infrastructure." TR



App based taxi service growing in Asia

Following in the steps of Uber a host of other services have sprung up around Asia to bring the process of booking a taxi into the era of ubiquitous and always-on communications.

Gone are the days when you had to wait for hours in long queues just to ride a cab, or shout your lungs out in the middle of the street to get the attention of the cab driver in order for him to stop and notice you.

In today's digitally driven world, hailing a cab is done with just a click of a button (or an application) and in an instant the cab will be there waiting right at your doorstep. It's just like having your own chauffeur.

This is how app-based taxi booking services are bringing new convenience and efficiencies to the daily lives of many people in Asia. There are now several, all seeking to exploit a market created by US based Uber, which originated in San Francisco and which now operates in many cities in 53 countries and inn more than 200 cities worldwide. Would be passengers use a smartphone application to identify the locations of nearby taxis and to send requests to the drivers.

Uber is currently valued at around $40 billion and continues to widen its reach internationally, but meanwhile an increasing number of similar operations have emerged and are expanding both nationally and regionally across Asia.

GrabTaxi now in 17 cities

In Malaysia, GrabTaxi, or MyTeksi, has taken the taxi industry by storm and has become the standout performer of Malaysia's startup scene. GrabTaxi grew from humble beginnings and overcame numerous hurdles. During its early days, nobody would accept its app based business model, particularly big taxi companies. Eventually one tiny company with only about 30 taxis took it up, and the rest is history.

The company now boasts 5.1 million bookings per month. About two bookings are made every second in the app itself. The company now has 50,000 registered drivers and operates in 17 cities and is in Thailand, Philippines and Vietnam in addition to Malaysia. It boasts of 2.1 million app downloads and 400,000 active users. Its annual revenue has been estimated at $13 million.

In Vietnam, where motorbikes are the main form of transport, the company is looking to expand its service with GrabBike, which applies its business model to motorbike hiring.

GrabTaxi recently received substantial financial backing from Singapore's Temasek Holdings arm Vertex Venture Holdings. However the amount was not disclosed. Vertex Venture CEO, Chua Kee Lock, said: "We invest in potential champions who have developed new technology platforms or business models." Japan's Softbank also invested heavily, pumping $250 million into GrabTaxi late last year.

The Brazilian based company, Easy Taxi, has also been reaping benefits from its Asian expansion. Easy Taxi was founded in 2011 and expanded into the Middle East and North Africa in 2013. Since then it has reached Thailand, Malaysia, Vietnam and the Philippines and is now in more than 80 cities across 27 countries. According to reports, by November 2013 it had three million users and about 80,000 taxi drivers using its service.

Easy Taxi is backed by Rocket Internet and iMENA holdings. Its app supports 11 languages: English, Portuguese, Spanish, Korean, Thai, Traditional Chinese, Tagalog, Malaysian, Vietnamese, Arabic and Urdu. Language and currency are automatically adjusted in response to what the app detects on the user's phones.

Last year another service, Hailo, launched in Singapore in partnership with Singapore's SMRT Road Holdings Ltd. Hailo claims that its app enables driver to complete more job in less time and boosts earnings from a shift by 30 percent.

The company was launched in 2011 in London and is now in Ireland, Madrid, Barcelona, Osaka and Singapore. It has secured $100 million in funding from Union Squares Venture, Accel Partners, Wellington Partners, Atomico Ventures, Sir Richard Branson and Japanese telco KDDI.

Didi and Kuaidi merging

Meanwhile, in China another development could lead to the biggest taxi booking service in Asia: the merger of two giants of the taxi industry, Didi Dache and Kuaidi Dache.

According to Reuters, Didi Dache and Kuaidi Dache said they would merge to create one of the world's largest smartphone-based transport services. The combined entity would be valued at roughly $6 billion.

Didi Dache CEO, Wei Cheng and Kuaidi Dache chief, Dexter Chuanwei Lu, would become co-chief executives. Didi and Kuaidi are backed by Chinese Internet giants Tencent and Alibaba respectively. Didi is estimated to have a 55 percent market share and Kuaidi most or the remainder.

Analysts say that they have between them they have more than 150 million Chinese taxis using their services. Didi raised $700 million from Tencent and Russian private equity fund DST in December. Kuaidi raised $600 million from a range of backers including Softbank and Tiger Global.

The newest entrant to the app based taxi reservation business is Kakao Taxi. According to the Wall Street Journal, the mobile messaging giant Kakao Talk of South Korea signed a deal with Seoul Taxi Association and Korea Smart Card Corp earlier this year to form the company. Kakao Taxi is expected to start operating before the end of the first quarter of 2015.

The latter part of 2014 was a hectic time for all these players as they expanded their presence across Asia. The amount of money that has been pumped into them is proof that the business model is viable and growing.

The regulatory hurdles that Uber has faced across the region have provided valuable lessons to all other players locally and internationally.

For drivers, the use of these services gives them additional income and guaranteed passengers without the cost of fuel looking for passengers. For passengers, they eliminate the hassle of hailing a cab or waiting in a long queue. In theory at least they provide security because all drivers and their cabs are registered to the apps and they can easily be tracked down if anything untoward happens.

Singapore is spearheading the creation of an office to regulate these services. The Land Transportation Authorities (LTA) is expected to unveil the details before the end of June. TR

MVNOs spice up China's mobile market

It's been two years since the Chinese Government allowed the entry of mobile virtual network operators (MVNO) and while they still account for a tiny percentage of the user base they have brought significant innovation to the market.

One of the most important recent developments in the telecommunication sector in China has been the rise of the mobile virtual network operator (MVNO). There has been a significant increase in the number of new players in the market over the past two years.

These MVNOs do not have their own mobile network. Instead, they resell the services of incumbent operators and operate telecom businesses under their own brands offering voice, SMS and data services.

MVNOs first appeared in Europe in the early 1990s as these markets matured. From Western Europe the MVNO concept spread to North American markets during 2000 and into the Asia Pacific about five years later. As of May 2013 there were 1207 MVNOs in the world, about 790 in Europe, 197 in Asia Pacific and 174 in North America.

It was in 2013 that China announced it would open its market for MVNOs. The Ministry of Industry and Information Technology (MIIT) issued the first licenses for MVNOs in December 2013.

First MVNOs in Jan 2014

Among the first companies to be awarded MVNO licences were: www.net.cn, an Internet service subsidiary of Alibaba; e-commerce giant JD.com; and mobile phone retail chain store D Phone Group. All started operating in January 2014. The licences specified a two year trial period.

The entrance of MVNOs into China's mobile service market was welcomed by the population. It was expected that they would bring innovation and would address dissatisfaction with some aspects of the incumbent operators' services.

MIIT estimates that MVNOs could be serving 50 million customers or about three percent of China's total mobile customer base by the end of 2015 and account for about one percent of total service revenues. According to AsiaOTT News, there were about 42 Chinese MVNO by the end of 2014 with about 2.2 million subscribers between them, out of a total of 1.28 billion mobile subscribers.

JD.com is using the networks of both China Unicom and China Telecom to support its service. Zhao Guoqing, vice-chairman of JD.com said at the launch of its service that the company intended to offer a range of enhancements to basic voice services, short messages and mobile data packages. The company is banking on its huge base of 140 million registered users, most of whom are in the 23 and 45 age bracket, which is a key segment of the mobile phone market in China.

Online retail giant Alibaba's subsidiary, Ali Telecom, and electronics retailers Suning and Gome are all using China Telecom, China Mobile and China Unicom to provide their MVNO services.

According to a report in the Commercial Times, the world's largest contract maker of consumer electronics, Foxconn, also plans to become a MVNO in China early this year through its subsidiary Xunjie, which will resell the services of China Telecom. Foxconn has more than one million employees spread across China and Taiwan and is banking on these to enable it to quickly build a substantial subscriber base for Xunjie.

Largest MVNO has 1 million subs

According to AsiaOTT News, Snail Mobile is the largest MVNO with about one million users. Snail Mobile launched its MVNO, branded Mian Card, in April 2014. It achieved rapid uptake by offering a 999CNY ($160) six month subscription that included unlimited voice calls and 3G data.

Mian Card also has its own gaming store, Mian Store - a mobile game platform providing sponsored data services - and the W3D gaming smartphone. It has physical gaming controls similar to those on the PlayStation Vita, and a 3D screen similar to the Nintendo 3DS.

According to Snail Mobile CEO, Chen Yan, the company's strength derives from sticking to its core principle of being more of an Internet company, always paying attention to consumers' needs and addressing them in a non-traditional way. The company expects to attract more subscribers this year by developing innovative offerings and by cultivating long term partnerships with end users through better services.

More MVNOs coming

A host of other China Mobile based MVNOs are expected to launch commercial services in the first half of 2015, particularly during the first quarter. These include 35.com, Aisidi, Gome, Telling, Zhongyou century, D-phone, Longmaster, Suning, Yinsheng telecom and Ali. Dr Peng, 21 vianet, Huaxiang telecom, ZTE SeeCom, Bus online and Bewinne are expected to launch services in June. China Mobile expects them to have about two million subscribers in total.

Early reports indicated that China Telecom would be offering wholesale services to MVNOs at a 40 percent discount on retail rates, and China Unicom 35 percent. This enables MVNOs to undercut the MNOs' retail rates. However, MVNOs insist that their offerings are based on better and innovative services rather than simply competing on price.

Not all new MVNO players are likely to be successful. Substantial consolidation and fallouts are expected. Meanwhile, as the MVNOs jockey for position and as MVNO competition heats up, end users are enjoying better and more innovative price and service packaging. TR

SK Telecom and Nokia sign 5G MoU

SK Telecom and Nokia have signed a MoU to work together on the development and verification of core 5G network technologies such as gigabit-level data communications technology and cloud-based virtualized base station technology.

At the signing ceremony the two companies announced plans to make all-out efforts to demonstrate 5G in 2018 and to launch a commercial 5G service in 2020. To this end they plan to establish a test bed at SK Telecom's corporate R&D center in Bundang, Seoul, to verify and demonstrate 5G technologies.

The move follows the signing of an MoU by the two companies in June 2014 for cooperation on the development of technologies including virtualization, software-based network establishment and next-generation cloud network management, all of which are critical in developing base stations for the 5G network.

As the result of this MoU they claim to have successfully developed 'Cloud vRAN,' billed as the world's first base station virtualization technology, in November 2014.

The two companies say they plan to develop 'cmWave/mmWave 5G technology,' which uses wideband spectrum at frequencies of 6GHz and above for data communications. The technology is currently being discussed as one of the core 5G technologies by the 3rd Generation Partnership Project (3GPP). Combined with MIMO (multiple-input and multiple-output) technology, it is able to support communications at rates of several gigabits per second.

Huawei launches open NFV lab in China

Huawei has open a network functions virtualization (NFV) lab in Xi'an, China, that it says is "dedicated to developing multi-vendor integration verification capabilities, expanding joint service innovations with customers, partners, industrial organizations and open source organizations and accelerating development of the open eco-system for NFV infrastructure, platforms and services."

Dr Howard Liang, senior vice president and president of Global Technical Services at Huawei, said the lab was: "an open innovation center of ICT convergence dedicated to being open and collaborative, expanding joint service innovations with partners, and developing the open eco-system of NFV to aggregate values and help customers achieve business success."

According to Huawei, "In the process of enabling NFV, operators must overcome several challenges including ensuring multi-vendor product consistency, reliability and interoperability, tackling integration complexity, creating an optimized NFV O&M experience and identifying new revenue streams."

To address this, Huawei says it will build a multi-vendor integration verification platform based on typical service scenarios and accumulate experience through ongoing tests and projects to eventually build an NFV big data analysis platform.

"In addition to providing reliable data support for operator NFV network service planning and decision-making, Huawei will leverage the big data platform to develop joint solutions with industrial organizations, operators and partners to obtain certifications and authorization from cross-parties, while gradually enriching the eco-system chain," the company said.

SingTel and Ericsson partner on 5G

SingTel and Ericsson have formed a partnership to evaluate and test technologies that are candidates for future 5G standardization.

The two companies have signed a MoU to explore future 5G networks and to address a wide range of use cases from consumers to industries. They will also study how 5G technology can support Singapore's vision of being a "Smart Nation".

The two companies will form a team to study potential 5G candidate technologies applicable to Singapore. "The agreement allows flexibility for Ericsson and SingTel to explore a wide range of areas including, but not limited to, technologies to support massive machine type communications (MTC) and evolution to a cloud-based network," they said.

Tay Soo Meng, group chief technology officer, SingTel, said: "We see 5G as a potential technology that will support very advanced communication needs in the future. We will endeavor to explore, study, and possibly trial, the 5G technologies to ensure SingTel continues its technology leadership in the mobile communications domain."

SK Telecom & KT join global NFV standards body

The Open Source Network Functions Virtualization (OPNFV) Project, a community-led industry supported open source reference platform for network functions virtualization, has announced that Enea, Korea Telecom, SK Telecom, Spirent and Xilinx have joined "to advance the industry's first integrated, open source NFV platform."

OPNFV, launched in September 2014, says it is "enabling widespread collaboration between users and vendors who are developing an integrated and tested open source NFV reference platform that can enable faster implementation of new products and services."

It claims to have 49 members and to be "leading the way toward broad adoption of open source NFV [with] a community gearing up for its first software release."

Enea, headquartered in Sweden, is a global supplier of Linux and real-time operating system solutions, including middleware, tools and databases. Spirent provides communications test hardware and software. Xilinx is a chipmaker.

Ericsson and Chinese Academy of ICT team for 5G

Ericsson and the Chinese Academy of ICT (CAICT) have signed a MoU to launch joint research and development of 5G, the next generation of mobile technologies.

Ericsson and CAICT have pledged mutual cooperation and support in promoting 5G standardization, and agreed to mutual cooperation in 5G technology research covering key areas such as radio access technology, core network architecture and 5G application scenarios. The two have also agreed to share information in the areas of convergence in vertical industries, industry transformation, applications, and eco-system development.

Announcing the move, Ericsson said: "While the industry explores the possibilities of 5G and its underlying technologies and architecture, there is a need to drive broader cooperation among different stakeholders around the world in order for standardization and industrialization to be achieved.

"CAICT, the leading national ICT think tank in China, has been a pioneer of 3G and 4G standards," Ericsson said. "With this cooperation, Ericsson aims to join hands with CAICT to speed up the research and standardization of 5G technologies towards its commercialization around 2020."

Bridge Alliance adopts Ericsson platform for single SIM multinational M2M

Bridge Alliance, an alliance of 36 mobile operators from Asia-Pacific, Middle East and Africa, has chosen to deploy the Ericsson Device Connectivity Platform (DCP) multi-domestic solution for the Internet of Things (IoT), enabling any original equipment manufacturer (OEM), enterprise or service provider to deploy IoT solutions across multiple countries.

According to Ericsson, "With Ericsson DCP deployed on a global scale, operators and their customers will enjoy a unified experience. This includes a single global SIM card, harmonised service levels and business processes. They can also leverage access to DCP consumer services to manage new B2B2C business models. The solution significantly reduces barriers to deployment for these enterprises, keeping total cost of ownership low while maximising quality of service."

Alessandro Adriani, CEO of Bridge Alliance, said: " Offering this unified experience requires more than just harmonising interfaces across mobile operators. We have done more with Ericsson, including standardising our footprint on a common core network. This will truly guarantee harmonised sets of features and service levels within the footprint to our customers."

According to Matt Hatton from Machina Research, mobile operator revenues in Asia-Pacific should increase from $3b in 2015 to $9.2b in 2020 and account for nearly 40 percent of global revenue.

Qualcomm and Virgin back new global satellite plan

WorldVu Satellites - operating as OneWeb - plans to build, launch and operate a low-earth-orbit satellite constellation to help bring high-speed Internet and telephony to billions of people around the world, and has named Qualcomm and The Virgin Group as initial investors.

Qualcomm executive chairman, Dr Paul Jacobs, and Virgin Group founder, Sir Richard Branson, will join OneWeb founder Greg Wyler – former head of global satellite operator O3B - on the company's board of directors. Financial terms of the deal have not been disclosed. OneWeb says it plans to bring in additional investors to fund construction, launch and operation of its system.

OneWeb says it will introduce the first fleet of telecom-class micro satellites. This projected fleet of 648 micro satellites to provide low-latency, high-speed Internet access directly to small user terminals deployed around the world.

OneWeb plans to work with local operator partners to provide this access. OneWeb terminals will act as small cells with the ability to provide access to the surrounding area via a WiFi, LTE, 3G or 2G connection using an operator partner's licensed spectrum, or only LTE or WiFi on unlicensed spectrum.

OneWeb aims to provide users terminals that are self-installable, enabling coverage in these areas for any nearby phone, computer or tablet. OneWeb's network would also be able to provide global emergency and first responder access for disaster situations, refugee camps or other areas in need.

Telstra launches Global Media Switch

Telstra has launched Global Media Switch, a professional video delivery platform that allows broadcasters and content creators to schedule, manage and distribute video in real-time across the world. It says the move is designed to accommodate evolving broadcast needs in today's fast paced media environment.

Global Media Switch is billed as "A highly resilient, IP-based delivery network [that] provides customers with codec-level connectivity directly from the originating content source all the way to the broadcast destination."

Jim Clarke, director of marketing, products and pricing in Telstra Global Enterprise & Services, said Global Media Switch would offer greater control over media assets and 'Codecs as a Service' through a zero-capex pricing model so as to accommodate the significant transformation that the media landscape is experiencing.

"With new models of on-demand consumption and audience fragmentation, media companies have had to make some substantial changes to the way they acquire, distribute and manage media assets," he said.

"With the Global Media Switch web portal, video contributors can take direct control of service booking, scheduling and delivery to broadcasters themselves in a cost effective way, and even advertise content to other media providers to further maximize revenues."

Focus on high end devices pays of for Huawei's consumer arm

Huawei has boosted global revenues of its Consumer Business Group by 30 percent year-on-year to $12.2 billion. Shipments grew by 7.8 percent to a total of 138 million devices in 2014, including 75 million smartphones, representing a year-on-year increase of 45 percent.

The company said: "Our strategy of focusing on premium mid- to high-end products has borne fruit, with 2014 resulting in significant achievements in a number of areas including product R&D, brand awareness, channel development and growth in market share which further consolidated our number three position in the global smartphone market. The global influence of our brand has continued to grow, and Huawei has become the first mainland Chinese company to successfully enter Interbrand's Top 100 Global Brands of 2014 list."

Huawei says its Consumer Business Group has been focusing on mid- to high- end premium devices since 2012. "The company's P series redefines smartphone design and offers superb cameras; the Mate series stands out by its large screen and strong battery life; and the Honor products provide consumers outstanding connectivity, quality and strong battery life," the company said.

Palo Alto Networks names Steve Redman VP for APAC

Enterprise security technology vendor, Palo Alto Networks, has named Steve Redman as vice president for Asia Pacific, based in Sydney.
He has spent the past two years as president of worldwide sales at McAfee and before that was president of the Asia Pacific region for McAfee for four years. Before joining McAfee he was managing director of EMC Australia and New Zealand.
Palo Alto Networks claims that "unlike fragmented legacy products, our security platform safely enables business operations and delivers protection based on what matters most in today's dynamic computing environments: applications, users and content."

VMware gets new VP for partners in APJ

VMware has appointed Sharat Sinha as vice president, partners and general business for Asia Pacific & Japan (APJ), based in VMware's APJ headquarters in Singapore and reporting to Sanjay Mirchandani, senior vice president and general manager, VMware APJ.
Sinha will be "responsible for driving the go-to-market strategy with VMware's entire ecosystem of more than 13,000 partners in the region." Prior to joining VMware he was theater vice president and general manager for the Asia Pacific region at Palo Alto Networks and before that vice president and general manager at Tellabs APJ He also worked at Cisco for over 11 years in sales and marketing leadership roles.

DocuSign names Drew Kelton VP & MD for APAC

DocuSign, the operator of a global digital transaction management platform that supports legally compliant electronic and digital signatures, has named Drew Kelton as vice president and managing director of DocuSign APAC, reporting to chief revenue officer Neil Hudspith.
Kelton has more than 30 years of international operations leadership at blue chip technology and telecommunications companies.
Prior to joining DocuSign he was executive vice president of T-Mobile USA's Business Markets division where he led the "uncarrier revolution" and turnaround effort for business and enterprise customers. Prior to T-Mobile, he held senior leadership roles at Bharti Airtel and Telstra.

Regional role for Pure Storage ANZ MD

Pure Storage has promoted the head of its Australia and New Zealand business, Nigel Peach, to the role of director of alliances and systems integrators for APJ. He was Pure Storage's first employee in ANZ when the company opened its doors there in late 2013.
Michael Alp, vice president APJ for Pure Storage, said: "Nigel's new role is critical for our business across the region. It affirms our commitment to our partners and reinforces our strategy to grow hand-in-hand with like-minded companies."
Peach's former role as head of ANZ will be taken by Mike Sakalas, a 20 year veteran of the storage industry who has held sales and business management roles with EMC in the US, NetApp in the US and Australia and, most recently, with Australian systems integrator, Southern Cross Computer Systems, where he was CEO.

Kaseya names two to strengthen APAC channel business

Kaseya, a global provider of cloud-based IT management software, has named Kellie Hackney as APAC sales director and Craig Allen as technical director for APAC. The company says the moves demonstrate its continued commitment to growing a strong APAC channel business that will be "uniquely structured compared to other vendors in the space, with Kaseya field teams strategically aligned to support Kaseya resellers."
Before joining Kaseya Hackney served for eight years as the senior manager for partner management at Citrix Asia Pacific. Prior to that she held various roles with Express Data. Allen was previously chief information officer at itLab where he had operational oversight of systems performance and was responsible for improving technical efficiencies across the business.

Telecom Review Summit 'Its all about Networking' 2015
Dubai, UAE
December 2015

March 2015

Mobile World Congress

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.

Date: 2-5 March, 2015
Place: Barcelona, Spain

May 2015

Broadband TV Connect Asia 2015

The show is the region's top networking forum bringing together 800+ senior level decision makers and buyers from the broadband and connected entertainment industry from across the Asia- Pacific region and beyond.

Date: 12th-13th May 2015
Place: Suntec, Singapore

June 2015

CommunicAsia2015

Asia'smost comprehensive info-communications technology exhibition will featurethe technological advancements in the whole ICT ecosystem. CommunicAsiacontinues to be THE one-stop venue for the ICT industry to determine futuredirections of the information technology sector, address critical issues within Asia Pacific markets, establish strategic partnerships among keyplayers of the ICT ecosystem and source for the latest industry-specifictechnologies and innovations to adapt and respond to challenges andopportunities.

Date: 2 - 5 June 2015
Place: Marina Bay Sands, Singapore
http://www.CommunicAsia.com/

July 2015

Mobile World Congress Shanghai

Previously known as Mobile Asia Expo, Mobile World Congress Shanghai will celebrate the amazing possibilities that mobile brings. It will feature a massive technology exhibition with 250+ exhibitors, including Alcatel-Lucent Shanghai Bell, China Mobile, Huawei, LeTV, Mozilla, Nokia, NTT Docomo, Visa, SK Telecom, Visa and ZTE and world-class thought-leadership conference with engaging keynote speakers and compelling panel sessions Incredible C-Level networking opportunities.

Date: 15-17th July 2015
Place: Shanghai New International Expo Centre, China

Latest updates on: www.telecomreviewasia.com

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