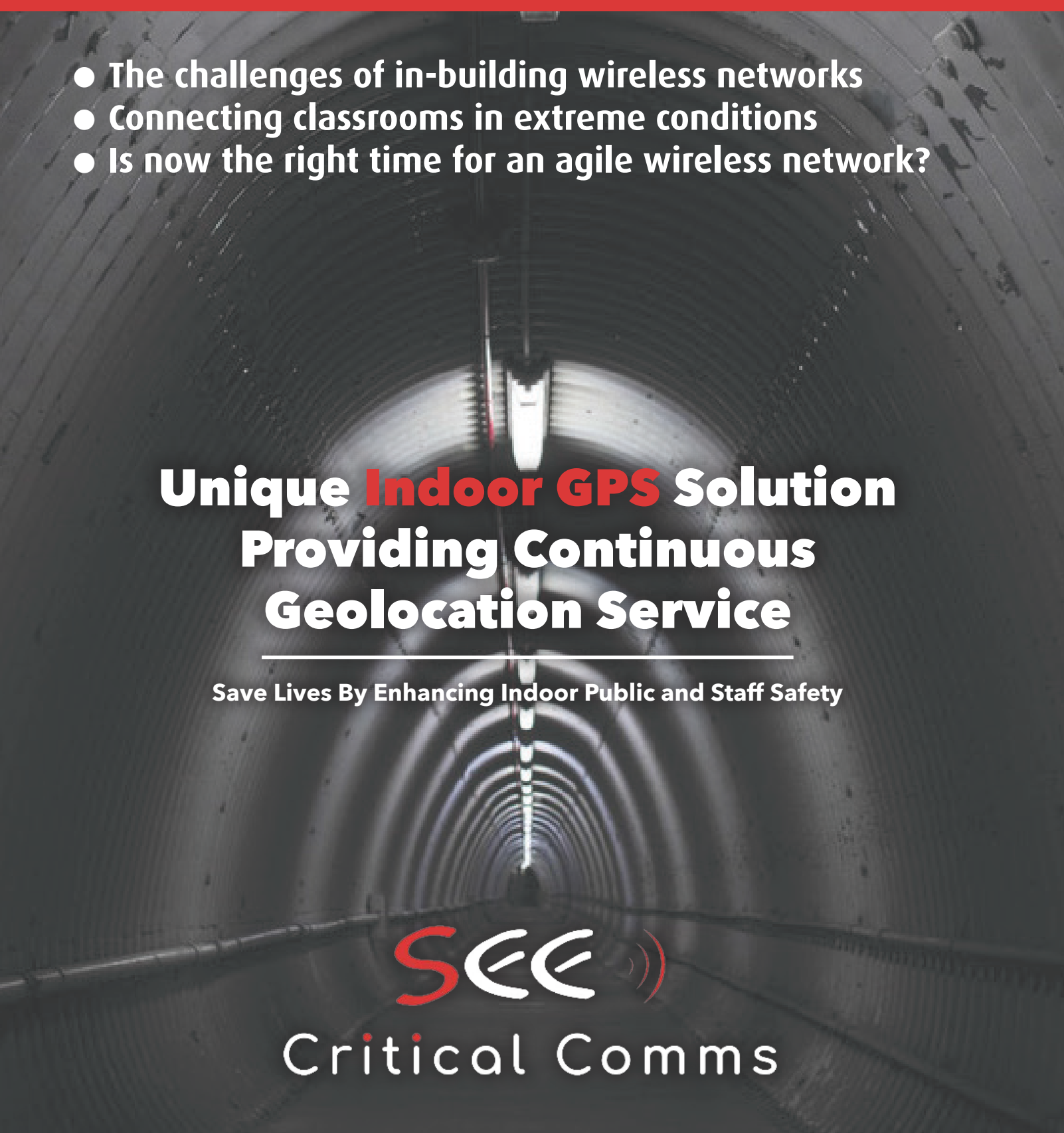
For communications professionals in the southern Asian region

SOUTHERN ASIAN WIRELESS COMMUNICATIONS

Q2 2019 Volume 12 Number 2

- The challenges of in-building wireless networks
- Connecting classrooms in extreme conditions
- Is now the right time for an agile wireless network?



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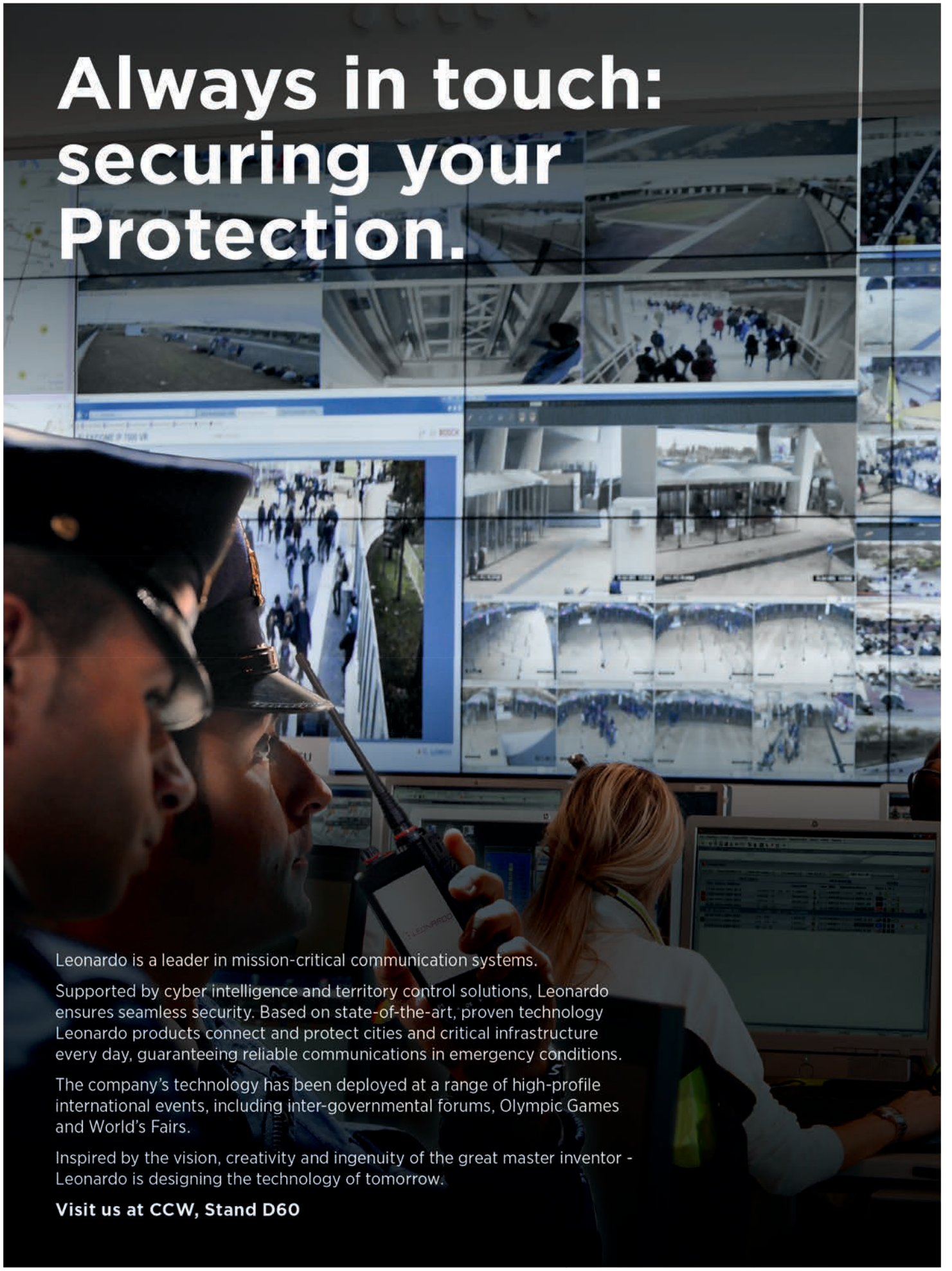

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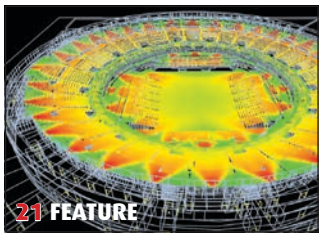

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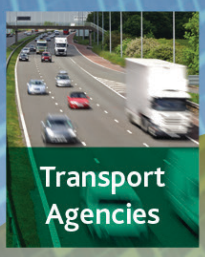
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India Department of Telecom targets fixed number portability

India's Department of Telecom (Dot) has asked the country's regulator to present recommendations for the planned implementation of nationwide fixed number portability.

The department has sent a communiqué to Trai on fixed line portability in line with the government's planned 'one nation, one number' policy.

Part of the proposal would see the largest country in southern Asia by land mass transition to 10-digit fixed line numbers, by merging current STD codes with the existing seven to eight-digit landline numbers.

India started implementing mobile number portability in 2010, starting with specific telecoms circles or service areas. The ability to port numbers between service areas was introduced in July 2015.

Since 2010 India's mobile operators have fielded more than 428.4 million porting requests.

However, the DoT expects the implementation of fixed number portability to be significantly more complicated, due to issues including copper last mile connectivity and the presence of competing fixed line service providers.

As a result, it said the consultation and recommendation drafting process would be a protracted one.

Furthermore, porting landline numbers could also take more time than porting mobile numbers – which can currently be completed in two to four days.

Since 2010 India's mobile operators have fielded more than 428.4 million porting requests

Thailand's TOT loses case against fellow operators

A fight by Thailand's state-owned telecom operator TOT to obtain unpaid access fees from the country's three main players has been thrown out by the Central Administrative Court.

The court ruled that the rates TOT demanded for access charges went against regulator NBTC's interconnection notification and was therefore invalid,

TOT filed the cases in 2011, in which it tried to recoup money from dtac, AIS and True Move. It argued that since it connected the other operators' subscribers to its network, it was owed access charges.

With the inclusion of VAT and interest, TOT claimed THB246bn (USD7.77bn) from dtac and THB5.45bn from AIS. Details of the amount claimed against True Move were not made available before *Southern Asian Wireless Communications* went to press.

TOT has 30 days to appeal the decision with Thailand's Supreme Administrative Court.

BSNL partners with Bahrat in Andaman Nicobar Islands

India's state-run telecom business BSNL is launching its Bharat Fibre services in Andaman Nicobar Islands by partnering with local cable operators as part of a strategy to provide internet and voice services to customers. The company said broadband services are not feasible due to non-availability of copper cable across the islands, so BSNL has partnered with local cable TV providers due to the fact they are available in almost all households across the islands.

"This is the first such Bharat Fibre service deployment in A&N Islands," said Mr. Jagadeshan, chief general manager BSNL A&N Islands. "Now customers can enjoy the internet delivered along with digital entertainment services through our partners."

BSNL also said that since the Bharat Fibre services are provided on optical fibre right up to the customer premises, reliability and better quality of services to the customers were assured.

Philippines gets third telecom player

Chinese-Filipino businessman Dennis Uy's bid to be the third player in the Philippines' telecom sector has been rubberstamped after changes to the franchise of Mindanao Islamic Telephone Company (Mislatel) cleared Congress.

The House of Representatives adopted the changes to Mislatel's franchise, which was initially approved by the Senate in February.

House Concurrent Resolution No. 23 approves the sale of additional Mislatel shares to Uy's Udenna Corp., its subsidiary Chelsea Logistics Holdings and China Telecommunications (Chinatel). This paved the way for Uy to challenge current incumbents PLDT and Globe Telecom.

The company's new ownership structure will give a 35 per cent stake to Udenna, 25 per cent to Chelsea Logistics and 40 percent to Chinatel respectively. As a result, the Udenna-Chelsea-Chinatel consortium will have the majority and controlling interest in Mislatel, allowing it to take over operations.

Mislatel committed to cover 37 percent of subscribers on its first year and will rise to 84 per cent in its fifth year. It also promised to put up a thousand cell sites in a year.

Dennis Uy recieves the Global Excellence Award at the 44th Philippine Business Conference and Expo (PBC&E) at the Manila Hotel, Manila in 2018

Nearly 87 per cent of Cambodians use the internet – regulator

Around 14.1 million (86.7 per cent) of Cambodia's 16.2 million population now have access to the internet, according to a report issued by Telecommunication Regulator of Cambodia.

According to the findings, 13.9 million or 85.6 percent, subscribed to mobile internet service. Meanwhile, 181,036, or 1.1 per cent used fixed internet service.

The report also said that the south-east Asian country has seven mobile internet and 34 fixed internet service providers. Cambodia also currently has six mobile phone operators.

To date, those operators have sold out 19.7 million SIM cards, exceeding the country's population of 16.2 million because many subscribers own more than one line.

In April, Chinese technology giant Huawei signed a memorandum of understanding with Telecom Cambodia to build a 5G network in the country. Huawei added that when it is developed, the internet speed in Cambodia will be improved.

BTRC to air user complaints

Bangladesh Telecommunication Regulatory Commission (BTRC) has organised a second public hearing on June 13th to let citizens share their experiences on service quality in the telecom industry.

The watchdog made a decision to go ahead with it against the backdrop of a huge increase in complaints.

Senior officials at BTRC, including its chairman and the commissioners, will be present. Top officials from different operators will also be invited so they can respond directly to customer complaints.

BTRC hosted its first ever public hearing on service quality on November 22nd, 2016.

This time it has decided to host the feedback session inviting around a few hundred customers through a registration process at the Institution of Engineers, Bangladesh at Ramna in Dhaka.

Officials at the regulator said the hearing would help improve quality of mobile telecom operators' services which has been a major issue for long - made apparent through frequent complaints on complexities and loopholes of different internet packages and call rate offers.

BTRC received 7,908 complaints from May 2018 to April 2019 centring the service quality of the four mobile operators. Some 7,390 of those have been addressed, the regulator said.

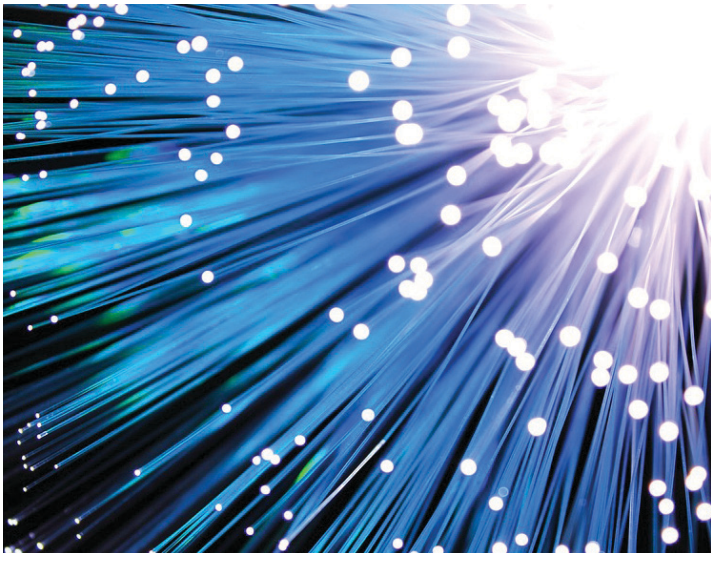
Most complaints were about SIM barring, network and tariff issues and mobile number portability.

Thailand's Interlink selects Viavi's test solutions to support fibre network

Thai operator Interlink Telecom has chosen the Viavi T-Berd/MTS-4000 V2 optical test platform to support building, certifying, maintaining and troubleshooting its fibre optic network.

Interlink delivers a range of telecom services throughout Thailand and other countries in southeast Asia, supporting enterprise data, video and voice transmission and internet connectivity. It also enables backhaul transport for a number of mobile network service providers.

"We initially selected VIAVI as a second source for our network test and measurement, but we soon opted to use only VIAVI OTDR systems, due to their commitment to service and high quality of professionalism," said Vinai Paiboonkulwong, deputy director of network operations, Interlink Telecom. "We've found the VIAVI OTDR solution to be very accurate, helping our technicians quickly find faults and allowing us to reduce truck rolls, saving time and money while improving our competitive position in regional markets."



Interlink delivers a range of telecom services throughout Thailand and other countries in southeast Asia, supporting enterprise data, video and voice transmission and internet connectivity

As part of its mission to increase its 30 per cent market share, Interlink has also expanded into the data centre space market, offering server storage space and disaster recovery services to meet mission-critical big data transmission requirements.

Thai firm set to offer 5G satellite backhaul

Thai satellite operator Thaicom plans to tap into a new revenue stream by offering satellite backhaul capacity to the nation's operators for their upcoming 5G networks.

The company's chief commercial officer Patompob Suwansiri told the Bangkok Post that satellite will be critical to the future of 5G networks.

He said Thaicom is currently working with operator AIS, an affiliate of its parent company InTouch Holdings, to prepare for the transition. The company already provides transponder capacity for backhaul for AIS, as well as TrueMove and operators in other Asian markets.

The firm is looking to replace the revenue that will be lost as a result of the exit of seven Thai digital TV channels in August 2019.

Thaicom's concession to operate three of its five satellites will also expire in 2021, but the company is planning to bid to obtain the operating rights to the satellite under a public-private partnership model for after the rights expire.

While satellite will not be able to deliver the low latencies expected for 5G networks, Patompob said around 80 per cent of data traffic usage in the 5G era will be from applications that do not require low latency and will therefore be suited to satellite backhaul.

U Mobile chooses Nokia for Single RAN deployment

Malaysian operator U Mobile has selected Nokia to help expand the delivery of mobile data services across the nation.

Under the terms of the three-year deal, U Mobile will deploy a Nokia Single RAN network at greenfield locations across Malaysia, as well as microwave and IP-based mobile transport technologies.

As a result, U Mobile can end its reliance on RAN sharing agreements by extending its own footprint across the country.

Both companies also plan to collaborate on a live 5G network trial later this year aimed at demonstrating enhanced mobile broadband capabilities, as well as 5G use cases, including VR streaming and e-sports.

"U Mobile has been aggressively expanding our network across Malaysia in our drive to bring our customers a superior experience. We are delighted to be able to leverage on Nokia's expertise in our network expansion journey," U Mobile CTO Woon Ooi Yuen said.

"We are of course also looking forward to working with Nokia as part of our Road To 5G Strategy. We have in our plan to conduct several 5G live trials with Nokia later this year for various use cases. Currently, we already have in place Nokia's AirScale base stations which are 5G-ready and hence, ready for trials.''

Mobile data usage in Malaysia is expected to double between 2017-2022, to 10.4 GB per user per month, while Nokia has now signed 37 commercial 5G contracts around the world, 20 with named customers.

VNPT deploys 60,000 3G/4G base transceiver stations

State-owned Vietnamese telecom firm VNPT has completed the deployment of 30,000 additional 4G base transceiver stations across the country, bringing the total number of 3G/ 4G base transceiver stations to 60,000.

The total number of VNPT base transceiver stations, including 2G BTS, now stands at 76,000.

VNPT had previously said it planned to expand its 4G VinaPhone mobile service coverage to 95 per cent of the Vietnamese population by the close of 2019.

Having become aware of the important role of 4G LTE, in late 2016 Vietnam's ministry of information and communications licensed four telecommunication carriers, including Viettel, VinaPhone, MobiFone and Gmobile in order to establish the network and provide 4G LTE-advanced public land mobile telecom services.

Ooredoo launches SuperNet in Maldives atoll

Ooredoo Maldives has finally launched its SuperNet fibre broadband services in Fuvahmulah, making it the first "Gigabit city" in the atolls.

The services were launched by minister of communication, science and technology Mohamed Maleeh Jamal, chief executive of communication authority of Maldives Ilyas Ahmed, mayor of Fuvahmulah Falaah Shareef and managing director (MD) of Ooredoo Maldives Najib Khan, at a Maahefun celebration (marking the beginning of Ramadan) hosted by the company for the locals.

Khan, who was made the new MD of Ooredoo Maldives in April, having previously served as its chief executive officer, said he had high hopes for the area.

"Fuvahmulah City continues to evolve into a flourishing digital hub in the south of the Maldives," added Khan. "As such, we're excited to support their digital transformation journey with the launch of the first SuperNet Fixed Broadband connection in the Maldives which is powered by Ooredoo's own gigabit capable fibre network."

The service comes with various packages with speeds going up to 100mbps. In addition, and telecom giant is also waiving off all connection fees for new customers.

Sri Lankan Telecoms expands teleshop network

Sri Lanka Telecom (SLT) has expanded its branch network to Weliweriya and Kadawatha with the opening of its most recent teleshops to serve the growing number of customers in Gampaha district.

Both teleshops will provide the full range of teleshop services and facilities including the provision of new connections, bill payments and fault reporting as well as the selling of equipment. The teleshops also provide Mobitel services.

Customers can activate Mobitel connections and all other value-added services provided by SLT's subsidiary.

In addition, customers in Kadawatha and Weliweriya can obtain e-channelling facility from the teleshops.

Special opening ceremonies were held for the opening of the branches

Special opening ceremonies were held in the presence of SLT Group Chairman P.G. Kumarasinghe Sirisena, SLT chief executive officer Kiththi Perera, SLT Chief operating officer Priyantha Fernandez, Mobitel regional management staff, SLT human capital solutions as well as other officials.

Singaporean fibre firm ViewQwest to offer services via Telekom Malaysia

Singaporean fibre operator ViewQwest is expanding its footprint in Malaysia, courtesy of a new network reselling agreement with Telekom Malaysia.

The former, which currently has its own fibre network in parts of the Klang Valley and Johor, plans to use Telekom Malaysia's HSBB network to significantly enhance its availability.

Through the partnership, ViewQwest will offer services anywhere Telekom Malaysia offers its Unifi fibre service.

ViewQwest plans to introduce new broadband plans under the agreement imminently, while speed and pricing will depend on available bandwidth and last mile infrastructure.

The company will bundle Mesh WiFi products to new subscribers to ensure optimal Wi-Fi experiences, as well as value-added services including a geo-block circumventing Freedom DNS service.

ViewQwest said it is open to pursuing more joint ventures, acquisitions or network sharing partnerships aimed at allowing it to continue expanding in Malaysia.

Malaysia's airports upgrade to Sepura's SC21 series

Malaysia Airports Holding Berhad (MAHB) has upgraded its TETRA terminals to Sepura's SC21 series across its four biggest airports, including Kuala Lumpur International Airport (KLIA).

The move, which follows on from the initial integration in 2012, was made to "enable further efficiency gains from the use of data applications".

Handsets are being rolled out across the four airports' customer service teams, with the plan to distribute them more widely among the security and maintenance staff.

"We are very pleased with the SC21 Hand Portable Tetra Radio which is currently being used by our Airport CARE Ambassadors. As you know the airport environment can be very noisy, so we require a device that can provide powerful audio," said Azhari Mohd Taib, senior manager, Malaysia Airports (Sepang) Sdn Bhd. "The SC21 is also a very robust device and this is important to us as the airport is in operation 24/7."

The handsets are being rolled out across the four airports customer service teams

Taib added that the SC21 "is also very compact" making it easy for staff to carry it around "all the time" thereby making it convenient to attend to the needs of airport guests in a timely fashion.

"The SC21 has certainly helped contribute to the Malaysia Airports 'Happy Guests, Caring Hosts' service culture," Taib said.

MAHB currently operates 39 airports in Malaysia.

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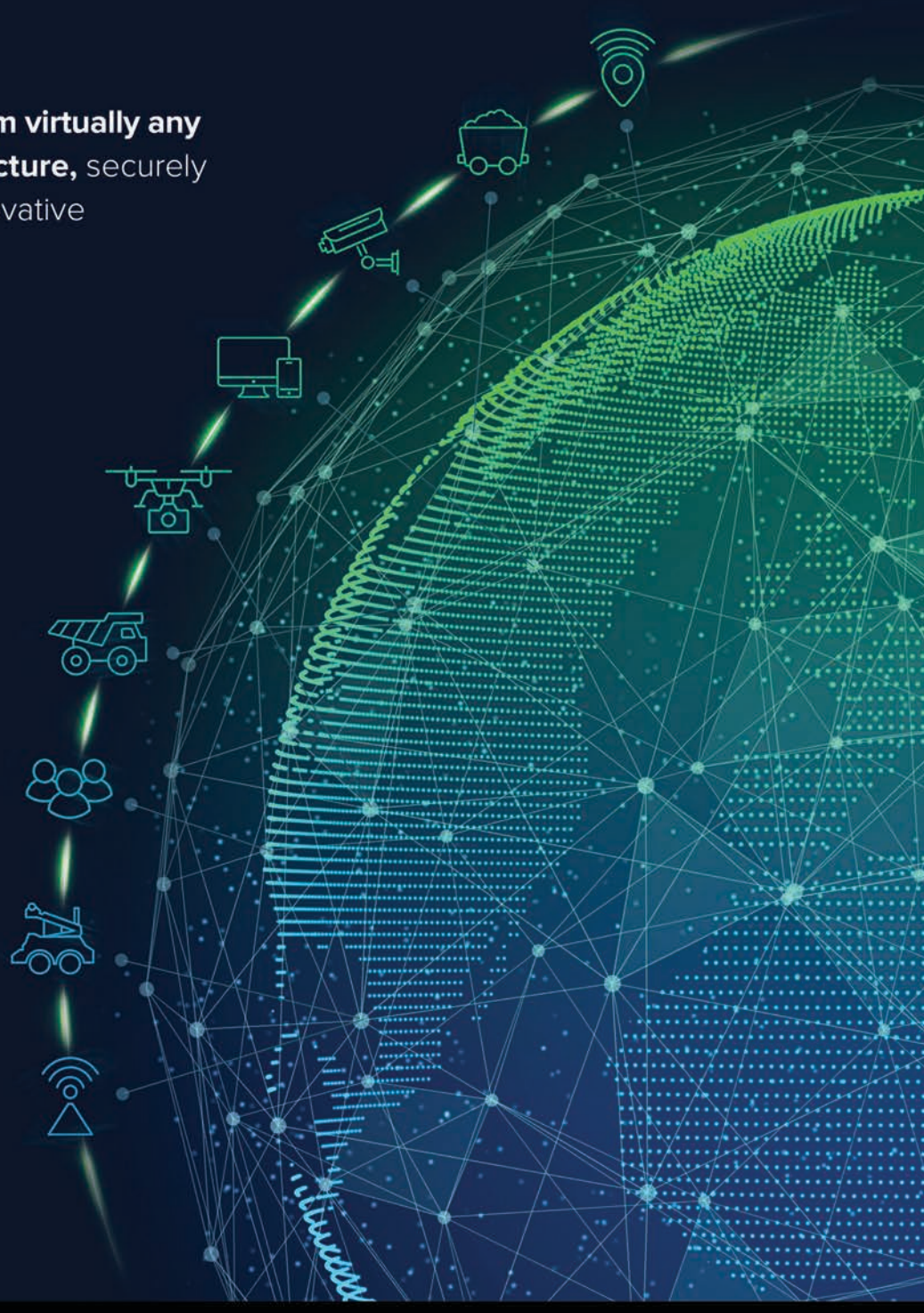

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Indians are kings of the apps

India installed more mobile apps than any other country in the world, with 4.5 billion added in the first quarter of 2019.

According to data from intelligence firm Sensor Tower, India was way ahead of the US, ranked second with three billion installs.

India also witnessed the largest number of new installs on Google Play Store worldwide, more than 29 per cent compared to Q1 2018.

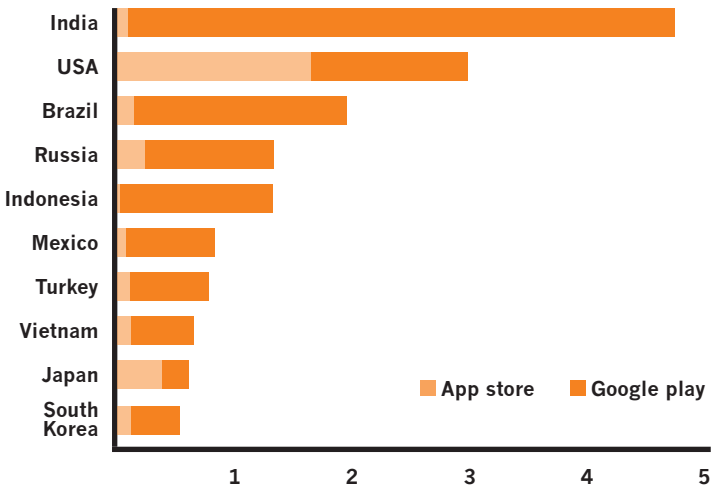
Current internet sensation TikTok was India's most-downloaded app.

Overall growth of apps in the country was driven by increasing smartphone penetration and dropping mobile internet rates, allowing Indians from across towns and villages to become a part of the internet ecosystem for the first time.

"The growth in app installs we're tracking in India is closely tied to the growth in new smartphone owners there, particularly Android users," said Randy Nelson, head of mobile insights at Sensor Tower. "Since the growth is closely tied to new smartphone users — that will be the largest factor in its stability."

India has close to 400 million smartphone users today and is expected to more than double that number by 2022, according to a Cisco study. More than 60 per cent of the population is expected to own smartphones by then.

Overall Q1 countries by worldwide download (billion) SOURCE: SENSOR TOWER



BTRC ordered to report on mobile tower radiation

A Bangladeshi court has ordered the country's telecom regulator to submit a report on the impact of radiation from mobile phone towers. It demanded the report following a writ petition seeking the court's directive to the regulator calling for measures to minimise the radiation impact on people and the environment. The Bangladesh Telecom Regulatory Commission (BTRC) was given four months to submit a feasibility report based on an 11-point directive. Some of the directives, include replacing over-radiated towers with new ones and taking security measures to control higher level of radiation. Human Rights and Peace for Bangladesh, a local rights body, filed the petition as a public interest litigation with the court following reports that the towers have been emitting radiation detrimental for human health.

Bangladesh's mobile phone operators currently use over 35,000 towers.

The total number of Bangladesh's mobile phone subscribers reached over 158 million at the end of February 2019, with the addition of 1.449 million new users in the first two months of this year, statistics from the BTRC showed.

Vietnam is fastest growing market for mobile payments in the past year

Vietnam has witnessed the highest growth in mobile payments in the past year, according to the *Global Consumer Insights Survey 2019* conducted by PwC.

The survey, which covered over 21,000 respondents from 27 territories, showed that the percentage of consumers using these services in Vietnam increased to 61 per cent, up from 37 per cent last year. The increase was also the largest in the six southeast Asian countries that took part in the survey.

In Singapore, mobile payments climbed from 34 per cent in 2018 to 46 per cent in 2019.

The rest of Southeast Asia also saw increases in mobile payments with Thailand up 19 percentage points to 67 per cent, Malaysia up 17 percentage points to 40 per cent, and Philippines up 14 percentage points to 45 per cent.

Indonesia reflected the slowest increase in the usage of mobile payments with a rise of just 9 percentage points to 47 per cent.

In the Middle East, which was the second fastest growing region with regards to mobile payments adoption globally, the percentage increased by 20 percentage points to 45 per cent. However, China remained unchanged at 86 per cent. Across all territories, 34 per cent of consumers paid for purchases using mobile payments, up from 24 per cent a year earlier.

The survey further found that consumers in Asia are more socially engaged online than their counterparts in Europe and the Americas.

Respondents from Thailand, Indonesia and Vietnam led the way globally in making purchases directly through social media posts on platforms like Instagram and Facebook, with 50 per cent, 49 per cent and 48 per cent of survey respondents indicating they do so, respectively.

Globally, only 21 per cent of respondents made purchases directly through social media. Among product and service categories, the survey found that social media is most likely to affect purchasing decisions related to fashion.

"Social media platforms are already mature in Southeast Asia. The trend in online shopping, moving forward, is the consolidation of e-commerce players with fewer big players providing that gateway," said Charles Loh, southeast Asia consumer and industrial products consulting leader at PwC. "There seems to be a consolidator present in every market."

Elsewhere, nine per cent of global consumers said they use voice technology to shop online either weekly or even more frequently.

Ncell expands 4G (LTE) reach accross Nepal

Ncell, the telecom operator in Nepal, has expanded its 4G (LTE) service to 1000 locations across the country.

The company said it now provides the widest 4G coverage in the country and the expansion means pre-paid, post-paid and all customers with U-SIM and a 4G handset will have access to the service. Customers can also transfer bigger files and watch high quality video.

"We are glad to announce the expansion of 4G service to our customers to different areas of the country, even outside the city areas and will be expanding more for nationwide coverage," said Ncell's acting managing director, Andy Chong.

Andy Chong, acting managing director at Ncell says "we are glad to announce the expansion of 4G service"

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Teleglobal and SES delivers broadband to rural Indonesia

Telecom firm Teleglobal and satellite operator SES Networks have joined forces to deliver satellite-based broadband access to the most underserved parts of Indonesia.

Communities in remote areas of the country will soon be able to access more reliable broadband internet access delivered by the former, enabled by SES's managed data services and the SES-12 satellite.

The partnership is aligned with the Indonesian Ministry of Communication and Information Technology's universal service obligation (USO) project, via its USO agency Badan Aksesibilitas Telekomunikasi dan Informasi (BAKTI). This project aims to provide broadband Internet access and mobile backhaul services to 150,000 sites in some of the remotest parts of the nation.

It will see Teleglobal contract 1.3 GHz of capacity on SES-12, one of SES' high- throughput satellites (HTS) covering the Asia-Pacific region, with an option to extend for a further five years. SES said the largest GEO HTS covering Asia-Pacific has six regional beams and 72 high throughput user spot beams and can provide cost-effective solutions for broadcasters, content operators, mobile network operators, internet service providers, enterprise, maritime and aeronautical and government customers across Asia-Pacific. The new service will be rolled out across 15,000 locations in Indonesia in the first phase, which will enter service in Q3 2019.

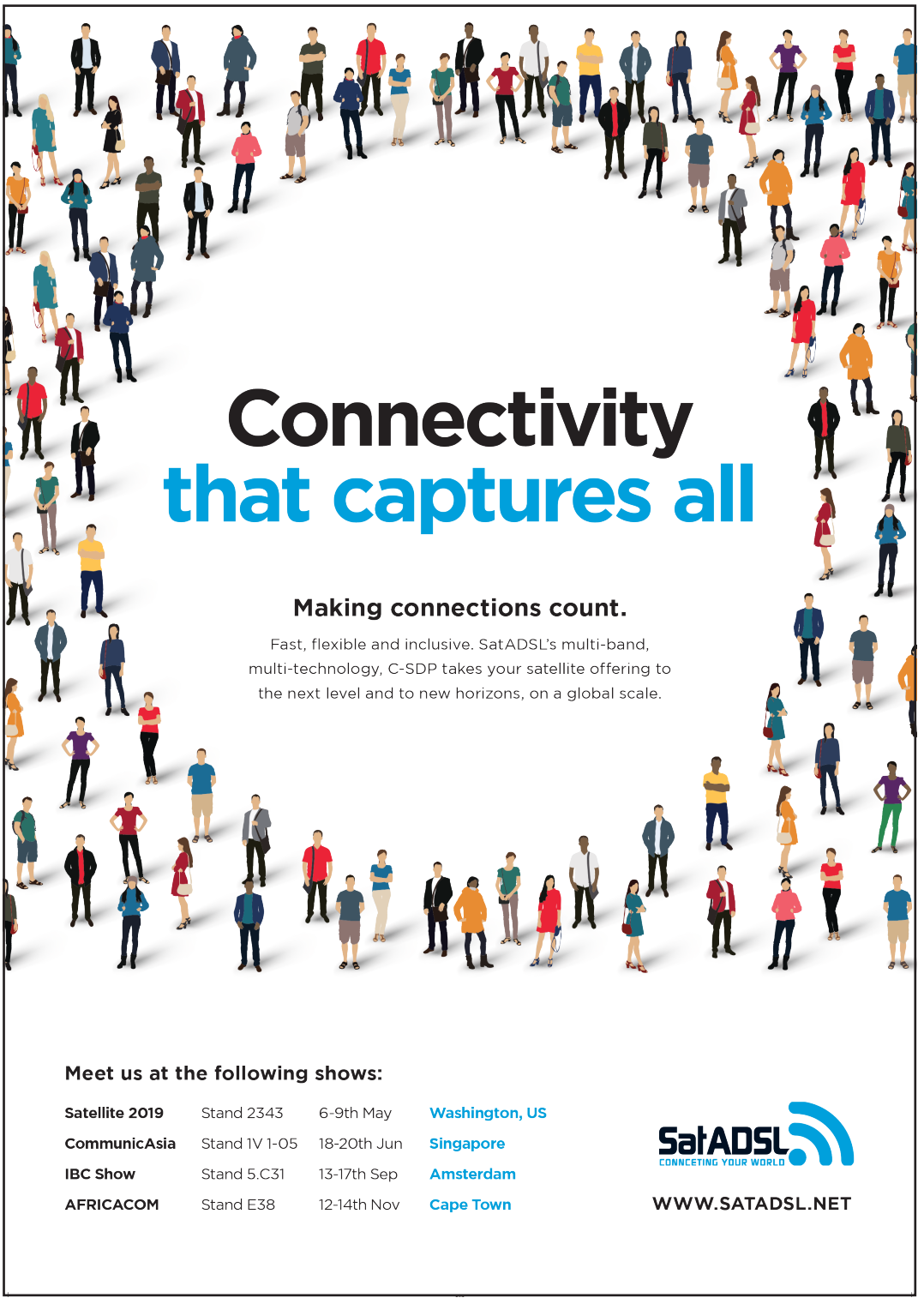
Sri Lanka bans social media again

Sri Lanka temporarily banned social networks Facebook, Instagram and YouTube, plus instant messaging apps Snapchat, Viber, WhatsApp, and IMO after a Facebook post sparked attacks on Muslim-owned businesses and mosques across several towns the day before.

The move, Monday 13th May, came three weeks after jihadist bombers killed at least 300 people in the country, sparking fears of sectarian violence against the country's minority-Muslim population.

Sri Lanka's largest mobile carrier, Dialog Axiata, said it had restricted the Twitter website and app, following a directive from Sri Lanka's telecom regulator. NetBlocks, a non-profit organisation that tracks internet outages, tweeted that this was the third time in weeks the country had banned social media in the wake of religious tension.

On April 21st, Sri Lanka banned social media for 10 days after the Easter Sunday bombings and did so again May 5th after ethnic tensions erupted in the city of Negombo.



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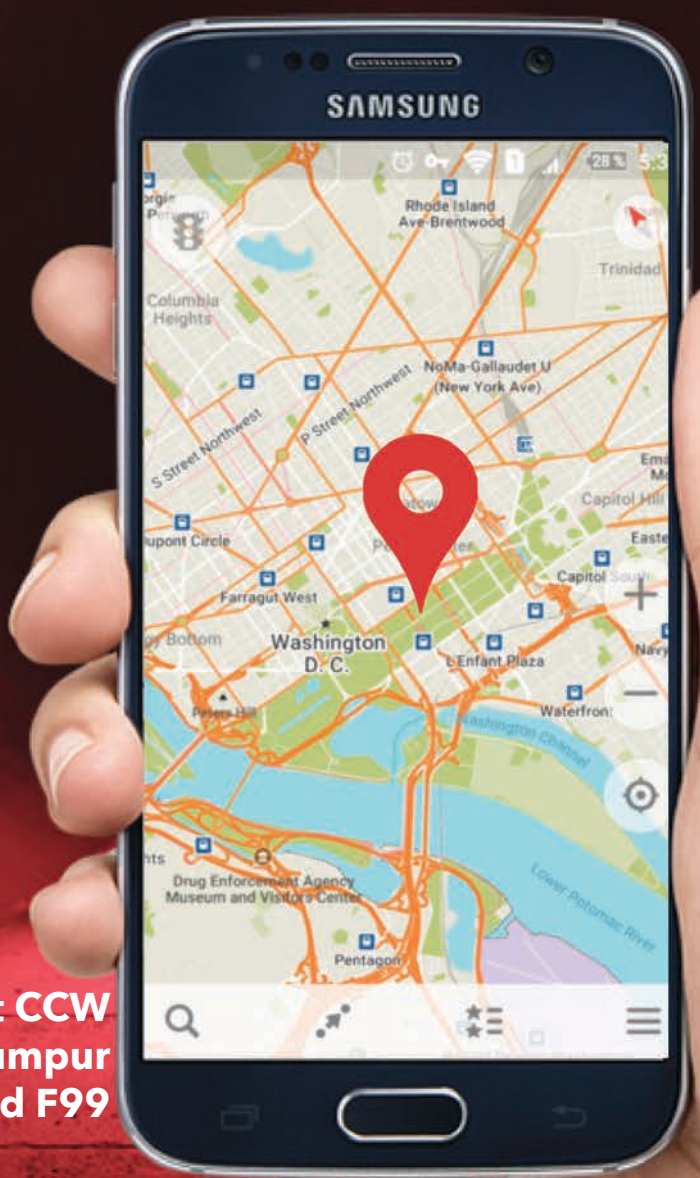

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Pakistan to introduce new system

Pakistan's federal minister for science and technology has said that his ministry is all set to introduce a novel system wherein all payments made using debit and credit cards will be executed via cellular phones in the future.Chaudhry Fawad Hussain said that the breakthrough came thanks to the introduction of a modern moon sighting system that uses space technology.

Now Telecom joins 5G party

Philippines operator Now Telecom has confirmed plans to launch 5G services locally, offering it to both residential and business customers. The company also announced that its board of directors approved an 11 per cent share swap with parent company Now Corp., which will increase the company's share in Now Telecom to 30 per cent. Local competitor PLDT and its mobile business Smart Communications launched 5G cell sites in the Makati central business district and at the Clark Freeport Zone (CFZ) in Pampanga last year, while Globe Telecom said it also planned to introduce 5G by Q2 2019.

Tariff cuts and service boosts

Bhutan Telecom has introduced the cheapest mobile data plans for late night and weekend users, in response to the consumer shift from voice to data communication and emergence of over the top technology (OTT). Late night subscribers (12am to 6am) will get 2,066MB for Nu 110. Weekend plan (midnight Friday to midnight Sunday) will get 3,255MB for Nu 220. Located in the Kingdom of Bhutan's capital Thimphu, Bhutan Telecom operates the B-Mobile mobile service and the DrukNet internet service.

Indian body calls for government clarity on Huawei involvement

The Cellular Operators Association of India (COAI) has called on the Indian government to clarify its stance on the use of Huawei equipment in telecom infrastructure, so operators can make investment decisions.

Rajan Mathews, director general of the industry association, told the media that it is for the government to decide on whether telecom equipment supplied by the embattled Chinese tech giant will be allowed in 5G networks, but an early decision on the matter would help operators plan for the future.

"The industry is saying it is really up to the government to decide on Huawei," he said. "All we are saying is let us know earlier rather than later because we have to make decisions on 4G. Operators are buying 4G equipment that future proof, in terms of forward compatibility for 5G...any sudden change of rules midway, will mean financial loss to us."

The US recently placed Huawei and its affiliates on a so-called "blacklist", which essentially blocked the firm from purchasing parts and components from American companies without the Trump administration's approval. However, the US subsequently relaxed some of the restrictions to reduce disruption for its customers.

Although some countries backed the US's stance, India has yet to communicate whether it intends to follow the US or allow Huawei to participate in the upcoming 5G trials, which are expected to start in a few months.

India's IT minister Ravi Shankar Prasad said in May that it was a "complex" matter and would be looked at seriously, taking into account the security aspects.

"We will take a firm view on it," he said. "There are also security issues... it is not only a matter of technology. As far as their participation in 5G is concerned, it is not conditional upon the trial being started. Whether a particular company is allowed to participate or not is a complex question including security issues."

The same day Prasad made his comments, Huawei said its engagement with the Indian government for 5G trials had so far been "positive" and hoped that India will make its "own independent decision" on the issue.

SLT and BOI sign deal

Sri Lanka Telecom (SLT) has signed a deal with the country's investment promotion agency, the Board of Investment (BOI), which will allow the former to install telecommunication equipment across 157 sites.

The Telecommunication Regulatory Commission of Sri Lanka (TRCSL) has also permitted the approval, the BOI said in a release.

SLT chairman P G Kumarasinghe Sirisena, who signed with agreement along with company secretary Mahesh Athukorala and BOI chairman Mangala Yapa, said the deal showed the company was becoming digitalised and that the aim was to provide better service to the country.

"I believe we are the only company in Sri Lanka investing over Rs. 17 billion in human capital annually to build a loyal, smart workforce with high productivity and quality," said Sirisena. "As the most successful business venture under the privatisation program, during the year 2018 alone, our company contributed Rs.35 billion to the government by way of dividends and taxes despite high investments."

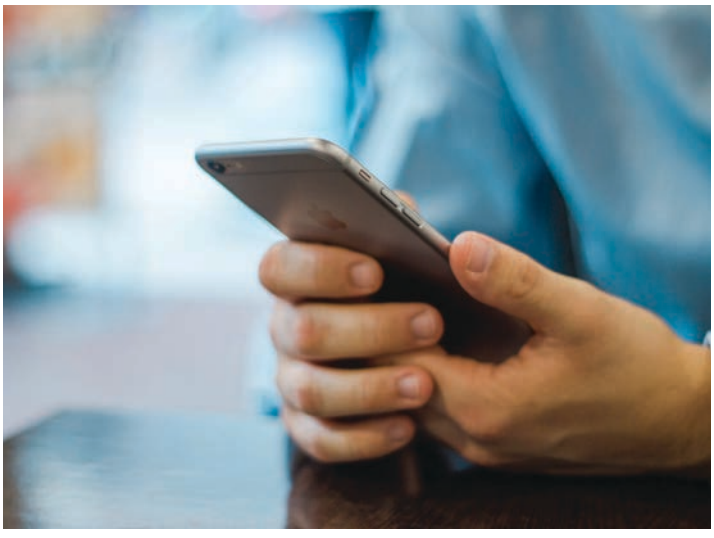
Nepal Telecom's profit plunges amid increasing use of OTT platforms

Nepal Telecom, the state-owned operator, saw its profit drop by 16 per cent year-on-year to NPT3.64bn in the quarter ended March 31st, 2019.

The revenue decline is mainly due to customers' increasing preference for OTT messaging services WhatsApp and Facebook Messenger over long distance and domestic voice calls. "In recent years, due to the popularity of over-the-top services, the interconnection business was negatively affected, and the result is seen in the company's revenue", the company said.

Nepal Telecom also said it has taken measures to offset the impact of OTT services with new revenue sources. "There is an industrywide slowdown in revenue from long distance calls, which used to be a major source of income, mainly because of over-the-top services", said Dilli Ram Adhikari, managing director at the Nepal Telecom. "To offset the impact of over-the-top services, we are expanding our 4G network, particularly focusing on rural areas to meet mobile data needs and replacing ADSL lines with fibre to the home connection", the company executive also said.

He added that although revenue from voice calls and mobile data services increased, the shift from standard tariffs to packages slowed down profit growth despite the growing mobile and data traffic and subscriber base.



The revenue decline is mainly due to customers' increasing preference for OTT messaging services WhatsApp and Facebook Messenger

Vietnam fires mobile money starting gun

Vietnam's communications ministry hosted a two-day workshop in Hanoi highlighting international success stories in the mobile money sector.

The event was held to highlight the benefits ahead of planned trial deployments in Vietnam and was attended by some of the country's leading politicians.

Minister of information and communication, Nguyen Manh Hung, said adoption of a mobile-based payment system would help people living and working in remote regions to access a range of banking and online services.

He added that mobile money could not only increase financial inclusion, but expand access to services in the health, education, employment services as well as social welfare.

The event also attracted organisations from countries with positive stories in the sector, giving them a platform to share their experiences.

According to Vietnam government statistics, 60 per cent of the country's 95 million citizens do not have access to a formal bank account, while the majority of those that have tend to live in urban areas.

Syniverse to improve mobile users' global connectivity service

Syniverse, the technology and business services provider for telecoms said it has partnered with Japanese mobile operator NTT Docomo "to help improve mobile users' experience when roaming and seeking global connectivity service" in Asia.

The former has developed Syniverse Mobile Policy Control Centre and integrated it as a core service to help the operator's mobile users. The roaming data management platform gives service providers the option to offer data packs based on service preference, duration, monetary value or geography.

"Syniverse is the world's most connected company, and through our Syniverse Mobile Policy Control Centre, we give mobile operators the opportunity to decrease roaming complaints by 10 times and increase mobile service usage by 20 times," said John Wick, senior vice president and general manager, service provider group, at Syniverse. "For more than three decades, we have been unlocking roaming value for mobile operators around the world, and we are excited to be a key enabler of NTT DOCOMO's global connectivity service."

John Wick, senior vice president and general manager, service provider group, at Syniverse

Sri Lankan telecom firm sets 5G pace

Sri Lankan telecom firm Dialog Axiata has showcased download speeds in excess of 1.4 gigabit per second using a commercial 5G mobile handset - the fastest speed that has been ever been achieved through a mobile handset in southeast Asia.

The firm, which is headquartered in the capital Colombo, said it had demonstrated 5G services on the 3.6 gigahertz trial spectrum that the Telecommunications Regulatory Commission of Sri Lanka (TRCSL) had allocated for the 5G pre-commercial trial.

Dialog Axiata presently covers more than 90 percent of the Sri Lankan population with its 4G broadband offering. The company has upgraded over 20 per cent of its expansive base station network to a "5G Ready Status" by deploying massive MIMO (multiple input multiple output) technology.

5G connectivity offers ultra-low latency, which will enable major breakthroughs in areas such as robotics, remote surgery, autonomous transport and next generation entertainment.

PTA makes data leak admission

The Pakistan Telecommunication Authority (PTA) has admitted to leaking the personal data of passengers even before they reached mobile registration counters.

A state-owned enterprise responsible for the establishment, operation and maintenance of telecommunications in Pakistan, the PTA made the admission to the Senate Standing Committee on Information Technology.

The leaked passport number and ID card number of the passengers were used to register mobile phones in the victims' names.

However, when wanting to register their mobile phone at the airport, the passengers found out that there were mobile phones already registered in their names.

The PTA has received a flood of complaints and the case has been referred to the Federal Investigation Agency (FIA).

Vietnam and Cameroon seek solution to Nexttel crisis

Vietnamese and Cameroonian authorities have waded in to resolve a drawn-out managerial crisis rocking Nexttel, the brand name of Viettel Cameroon, which is the third privately-owned mobile telecommunications network service provider in the west African country.

It is a joint venture between Viettel Global Investment Joint Stock Company (a subsidiary of Vietnam military telecoms company - Viettel) and Bestcam, a local shareholder.

The crisis stems from

disagreements in the management of the company by the Cameroonian and Vietnamese stakeholders.

Vietnamese shareholders have denied allegations by their Cameroonian counterparts of flouting Cameroonian business laws, including the Organisation pour l'harmonisation en Afrique du droit des affaires (OHADA) law, which translates into English as "Organisation for the Harmonization of Corporate Law in Africa". The OHADA Treaty is made up today of 17 African states.

El Hadji Baba Danpullo, board chair at Bestcam has accused the general manager of Viettel Cameroon "of running Nexttel like his private business".

He further claimed that the Vietnamese were recruiting their counterparts at the expense of unemployed Cameroonians.

However, the dispute is also predicated on other issues, such as signatures for financial transactions, engagement of foreign partners, purchase of telecoms hardware and transfers of technology, amongst others.

Lao Telecom enters start-up pact

Lao Telecom has partnered with local co-working space business TOHLAO to form an enterprise aimed at helping young Lao start-up entrepreneurs to utilise digital technologies to achieve their full business potential.

Both companies said they expect to see an increase in the use of information and communication technologies as a result of their efforts. Furthermore, they believe that it is the innovation and creativity of young businesspeople that can give the country's economic development a boost.

"This is a remarkable initiative that can be of great help to Lao start-ups," said founder and chief executive officer of TOHLAO Group, Souphaphone Souannavong. "We are very excited that Lao Telecom, the largest telecommunication service provider in the country, has decided to step in as another key stakeholder," the founder and CEO of TOHLAO Group, Souphaphone Souannavong.

She added that the new partnership would help more start-ups "disrupt and rock" Lao society.

To get things started, TOHLAO ran a competition called "Start-up Weekend Vientiane presented by Lao Telecom" from May 24-26. The idea was to select five teams to take part in TOHLAO's one-year start-up incubation programme.

Pakistan agrees mobile operators licence renewal terms

The government of Pakistan has approved proposals from the telecom regulator to renew the licences of the country's three leading mobile operators.

All three will spend a combined USD1.37bn renewing their licences, with Jazz and Telenor Pakistan each set to fork out USD450m.

China Mobile's Zong is paying a slightly higher USD470m, with all operators receiving licences in the 900MHz and 1800MHz bands that will be valid for 15 years.

First allocated in 2004, the licences of Jazz, Telenor Pakistan and Zong were set to expire May 25th. However, the cabinet approved proposals by the Pakistan Telecommunication Authority (PTA) after the authority finalised them in a process that led to a delay of several months.

This prompted Jazz and Telenor Pakistan to bring a legal challenge against the PTA. The operators demanded an injunction that would allow them to continue delivering services once their licences had expired.

Mytel third largest operator in Myanmar in less than a year since launch

Mytel, Viettel's mobile business in Myanmar, is now the third largest telecommunication operator in the country after nearly a year of operations. As of May 9th, the firm had 5.5 million subscribers, accounting for more than 14 per cent of the market share.

The three other telecoms operators in Myanmar are stated-owned Myanmar Posts and Telecommunications (MPT), Norwegian-owned Telenor and Qatar-headquartered Ooredoo, which make up 44.5 percent, 28.4 per cent and 13 per cent of market share, respectively.

Mytel launched services in Myanmar in June 2018 and is also backed by the Myanmar government.

It is also the only operator in the country to provide 4G services nationwide using its 30,000km of fibre-optic cable, which makes up half of the country's total cable infrastructure.

Ooredoo Group names new CEO

Ooredoo Group, the Qatar—based telecom firm, has appointed Rajeev Sethi as chief executive officer of Ooredoo Myanmar.

He succeeds Vikram Sinha, who continues to stay on as a member of the company's board.

Sethi joins from Airtel Africa, where he served most recently as chief commercial officer.

He comes with over 24 years of work experience, of which 15 have been in the telecoms industry, holding leadership roles in multinational companies including Grameenphone in Bangladesh, Uninor India, Vodafone India, Hewlett Packard and Hutchison Telecom.

Ooredoo provides mobile, wireless, wireline and content services with market share in domestic and international telecommunication markets and in business and residential markets.

PEOPLE MOVES & CHANGES

Date	Name	New employer	New position	Previous employer	Previous position
28/3/19	Foster Plender	AfricaOnline (subsidiary of Gondwana International Networks (GIN)	Managing director	GIN	Consultant
20/5/19	Rajeev Sethi	Ooredoo Myanmar	Chief executive officer	Airtel Africa	Chief commercial officer
10/5/19	Damian Philip Chappell	Ooredoo Maldives	Chairman	Ooredoo Qatar	Chief consumer officer
1/6/19	Hauke Holm	DAMM Cellular Systems	Vice president R&D	Hytera Mobilfunk	Chief technology officer
31/8/19	Rafiah Ibrahim	Ericsson	Advisor to the CEO	NA	Head of market area Middle East and Africa

INVESTMENTS, MERGERS, ACQUISITIONS

Date	Buyer	Seller	Item	Price	Notes
22/3/19	Maroc Telecom	Millicom	Tigo Chad	NA	The acquisition forms part of Maroc Telecom's strategy to expand operations in north and central Africa, while Millicom focuses its efforts on Latin America
22/5/19	Echotel International Proprietary	iWayAfrica Kenya	80 per cent stake	NA	Echotel International Proprietary has purchased a controlling stake in iWayAfrica Kenya

Thailand's mobile money growth spurt

Thailand has emerged as the second-fastest growth for mobile payments in Southeast Asia behind global leader Vietnam, according to PwC's Global Consumer Insights Survey 2019.

This showed the region of Asia to be leading the customer shift to mobile payments.

Meanwhile, Thailand's mobile payments grew from 19 per cent to 67 per cent, followed by third-ranked Malaysia (17 per cent to 40 per cent) and the Philippines (14 per cent to 45 per cent).

Vilaiporn Taweelappontong, consulting lead partner at PwC Thailand, said it is no surprise that Thailand is one of the leading countries in terms of fast-growing mobile payments in Southeast Asia.

The reasons for the growth include Thais' increasing use of e-commerce to shop, as well as the country's status as one of the top social media markets in the world. This has prompted retailers of all sizes to embrace online shopping, competing via promotions and discounts.

Furthermore, Thai banks have scrapped digital transaction fees, helping to stimulate growth in online payments.

The PwC survey was conducted in 27 territories and countries worldwide.

Maldives telecom names new chairman

Telecom Ooredoo Maldives has appointed Damian Philip Chappell as the company's new Chairman.

Although Chappell was also appointed as an independent board director of the company, a statement released by the firm said that Chappell was a representative nominated by Ooredoo's main shareholder Wataniyya International FZ-LSD.

Chappell currently holds the position of chief consumer officer at Ooredoo QPSC.

Having worked in the telecommunications field for over 17 years, Chappell received an undergraduate degree from Swinburne University of Technology, Australia.

Following the appointment, Ooredoo Maldives said it hoped and expected progress and many accomplishments to be brought to the company under Chappell's leadership.

SingTel annual profit slides to 16-year low amid challenges in India

Singapore Telecommunications (SingTel) recorded its lowest annual profit since 2003, stressing the tough competition in southeast Asia and India that has triggered a wave of consolidation in the telecom sector.

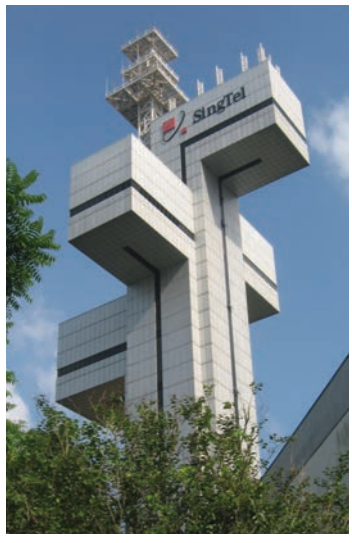
However, the company said the worst may be over and that it expects contributions from associates to improve.

Full-year net profit for Singtel, the parent company of Optus in Australia and which has large stakes in other companies such as India's Bharti Airtel, plunged 44 per cent to SGD3.10bn due to the absence of one-time gains and a 38 per cent drop in contributions from associates.

Underlying net profit, which excludes exceptional items, dropped by 21 per cent to SGD2.83bn in the year ended March.

The net profit figure was the worst since 2003.

Analysts said Singapore's second-biggest firm by market cap was under to cut costs and find new sources of revenue, as other telecom firms seek ways to boost margins through measures such as job cuts and mergers.



SingTel Tetris Tower, Singapore

The Philippines introduces mobile phone unlocking regulations

The Philippines' National Telecommunications Commission (NTC) has released a set of regulations that order operators to unlock mobile phones for subscribers after the expiration of their initial lock-in period.

All operators are now required to post on their websites their policy on mobile phone or device unlocking. For post-paid subscribers, operators will have to unlock mobile phones or provide the necessary information related to device unlocking after the completion of their service contracts, device financing plan, or payment of early termination fees.

"Mobile phone and device users, after having complied with the terms and conditions of the subscription agreement within the agreed lock-in period and are the absolute owners of the mobile phones or devices, should have the option of changing between compatible wireless service providers", the NTC said.

Operators will have to unlock devices or initiate a request to the equipment manufacturer within two business days after receiving the customers' unlocking request. Operators will also have to explain the reason why a device does not qualify for unlocking, or why additional time to process the request is needed. Any operators that fail to comply with the obligations will face penalties.

The Philippines' Department of Information and Communications Technology ordered the NTC to craft guidelines on the mandatory unlocking of mobile phones in December last year. The new mobile phone unlocking regulations are mainly designed to support Philippines' mobile portability system.

In February 2019, the country's president Rodrigo Duterte (also known as Digong and Rody) signed the Mobile Number Portability Act, which allows mobile users to keep their numbers after they change service providers or subscription plans/tariffs.

All qualified subscribers should now be provided with mobile number portability (MNP) for free.

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
29/3/19	Huawei	China	Annual	USD	107bn	NA	NA	NA
23/4/19	C-Com	Canada	Q1	CND	2,948	NA	NA	Relates to revenues
25/4/19	Nokia	Finland	Q1	EUR	5.032bn	NA	NA	In the three months to March, revenues rose two per cent to EUR 5.032bn but were down two per cent on a constant currency basis.
25/4/19	Telia	Sweden	Q1	SEK	20.85bn	NA	NA	Revenues of SEK20.85bn (-1.0% vs cons).
25/4/19	Ericsson	Sweden	Q1	SEK	2.4bn	NA	NA	Net profit for the first quarter of 2019, partly as a result of the growth opportunities being afforded by 5G.
30/4/19	Orange	France	Q1	EUR	4.4bn	NA	NA	Orange saw a sales decline of 1.8% in its domestic market, to around EUR4.4bn (USD4.9bn), compared with the year-earlier period, citing a "challenging competitive context" in its domestic market.
04/5/19	Safaricom	Kenya	Q1	KSH	234bn	NA	NA	Safaricom's total revenues increased seven per cent to KSH251bn (USD2.51bn) from KSH234bn (USD2.34bn), with M-Pesa revenues contributing close to 75 per cent of the revenue growth.
14/5/19	MTN Nigeria	Nigeria	Q!	N	48.4bn	NA	NA	company grew its revenue by 13.2 percent to N282bn driven by voice, which accounted 74.9 percent of the total revenue.
14/5/19	Nepal Telecom	Nepal	Q3	NPR	NPR9.98bn	NA	NA	Nepal Telecom profit declined by 15.65%, from Rs 11.83 billion to Rs 9.98 billion.

Western Union brings online money transfer service to Thailand

Western Union has launched an online international money transfer service in Thailand, as part of its growth strategy in Asia.

Launched in tandem with Central Department Store — one of the country's largest department store chains— it will allow customers to remit funds around the world, 24/7, via the Western Union mobile app or transactional Westernunion.com/th.

Western Union's digital services in Thailand will be compatible with billions of bank accounts in nearly 100 countries and territories, in addition to the company's more than half a million agent locations in over 200 countries and territories.

Customers can pay for their transactions in their local currency within the digital channels using a choice of card or account, or commence their transaction on app or web.

Mobile money is the fastest-growing segment of the market that is bringing new customers and increased business to Western Union.

Telekom Malaysia gets new CEO

Malaysian prime minister Mahathir Mohamad confirmed that a new chief executive officer (CEO) for Telekom Malaysia (TM) has been appointed, but stopped short of saying who it is.

Instead, he only confirmed that it will not be acting CEO Imri Mokhtar.

"He has been appointed," said Mahathir. "They have not announced yet, but I think he has been appointed."

The announcement came after an alleged stalemate in the recruitment process and followed reports that TM chairman Rosli Man had refused to make Imri the permanent CEO.

The decision to appoint Imri was made by its special shareholder, the Minister of Finance (MoF).

TM has been without a permanent CEO since last July, following the resignation of Mohammed Shazalli Ramly, who was also a media adviser to former prime minister Najib Razak, resigned.

LG set to launch affordable smartphone in India

LG is set to release a smartphone that is targeted at the affordable segment of the Indian market.

The South Korean manufacturer shared a teaser of the device with its customers with a 'Coming Soon' tag on its official website.

It will form part of the brand's W series and will come with triple rear cameras and a water drop notch display.

LG said that its W series smartphone will have a "pocket-worthy price tag" and it is thought the phone will most likely compete with Samsung's Galaxy M series in the budget and affordable end of the market.

It has also been listed on Amazon.in with the same teaser images as the official website, which means it could be the official online partner for the new W series.

Philippines mobile internet speeds leave a lot to be desired

Mobile internet speeds in the Philippines are still far slower than in most other counties, according to the latest report of mobile analytics company OpenSignal.

Its The State of Mobile Network Experience report showed that the country was among the 20 whose download speed experience were under 10mbps.

However, the Philippines' download speed of seven mbps was just slightly better than that of Indonesia and India's 6.9mbps and 6.8mbps, respectively.

Fellow Asian nation South Korea came top, being the only country where smartphone users enjoyed average mobile download speeds of over 50mbps, followed by Norway with 48.2mbps.

Meanwhile, the report showed mobile upload speeds in the country is at 2.2mbps, slightly faster than India and Côte d'Ivoire's 2.1mbps.

"Upload speed is becoming increasingly important as consumer mobile habits shift away from downloading and consuming to uploading and creating and sharing content like smartphone-created photos and videos," the report said.

In terms of 4G availability, the Philippines was ranked 21st from last among the 87 countries that featured in the report.

4G availability in the Philippines was at 72.4 per cent, better than ranking it higher than Albania, Brazil and Tunisia among others.

Bangladesh sees smartphone sales bounce back

Bangladesh experienced a smartphone sales renaissance in Q1 2019, following a year-long difficult period.

According to data from Bangladesh Mobile Phone Importers Association (BMPIA), sales rose 19 per cent to 20.5 lakh pieces in January-March, helped by a fall in the price of handsets following the introduction of local assembling. However, the total sales of handsets dropped one per cent to 68.67 lakh units.

Rezwanul Haque, chief executive officer of Transsion Bangladesh, a Chinese brand that assembles handsets in Dhaka, said 2018 was a bad year for the industry as sales dropped in almost every quarter after the government raised taxes on imports.

"The situation is changing and the second quarter will be much better than the first one," he said.

Major businesses said that as the sales of basic and feature phones have dropped rapidly, it has affected the total sales. Furthermore, enhanced monitoring has also made it more difficult to smuggle in devices through illegal channels.

There are currently five local and international brands that are assembling smart devices in the country, which now accounts for about 13 per cent of the total device consumption.

"From Samsung's point of view, we are happy with our assembling growth but the overall industry has not kept pace with us," said Mesbah Uddin joint secretary of BMPIA and chief marketing officer of Fair Electronics, which imports Samsung phones to Bangladesh.

He added that there is huge potential in the market, but the business volume is not growing as expected.

"Maybe, the network quality of mobile phone operators is an issue. If people do not get expected speed on their device, what will they do with smart devices?" he said.

Smartphones account for 30 percent of the handset sales, up from 23.8 per cent in the first quarter of 2018.

According to the BMPIA, 3.07 crore handsets worth Tk 9,000 crore were sold in Bangladesh last year.

India falling behind on internet speeds - Ookla

India still lags behind most of the world when it comes to internet speeds on its mobile and fixed broadband networks, according to new data from US analytics firm Ookla.

Its ranking on the Speedtest Global index for mobile internet speeds, slipped to 121 in April this year, compared with 120 in March. The index is a monthly ranking of 138 countries.

In fact, India's position in the index has been sliding since December 2018, when it was ranked 108. It subsequently dropped to 119 in January and then to 120 a month later, before it plateaued in March.

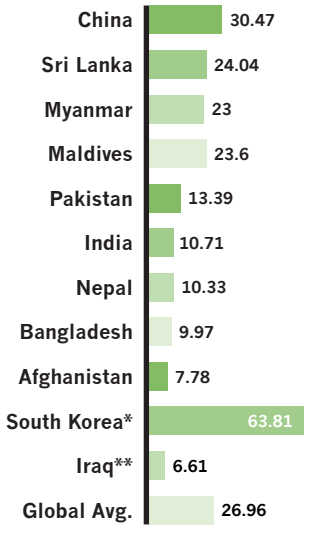
India's descent shows that despite Reliance Jio's entry and expansion, mobile internet speeds in the country remain poor.

Average speeds of mobile downloads in the country stood at 10.06mbps in December 2018, improving only marginally to 10.71 Mbps in April 2019, putting it behind neighbouring China, Sri Lanka, Myanmar, and Pakistan fare better.

However, there was some positive news for India in that it fared much better in terms of fixed broadband download speeds.

It managed to hold on to its 68th rank among 179 countries, in Ookla's Speedtest Global Index for fixed broadband in April. Download speeds in this category stood at 29.25mbps.

Download speeds for mobile networks in and around India (mbps)



IN BRIEF...

Financial services giant Visa said that Cambodians are some of the most prepared citizens in terms of adopting mobile and cashless payments. In its Cambodia's Visa Consumer Payment Attitudes report released in early June, Visa said Cambodia will continue to increase digital payment transactions within the next seven years. Data from the Telecommunications Regulator Cambodia revealed that there were 13.6 million mobile and fixed internet users in the country as of 2018.

GL introduces new Network Simulation Test Suite

GL Communications, the telecom test and measurement solutions specialist, has announced its End-to-End Wireless Network Simulation Test Suite (4G LTE + IMS, 3G, 2G).

GL says the new suite is enhanced to support variety of procedures for testing inter-operability between the networks simulating voice, and SMS (circuit switched (CS) traffic) and WEB HTTP browsing (packet switched (PS) traffic) with roaming/non-roaming users in the network. It adds that the test suite also supports a "massive number of subscriber profiles" (up to 64,000 Voice/SMS) using a single CSV database system shared across the 4G, 3G, and 2G networks.

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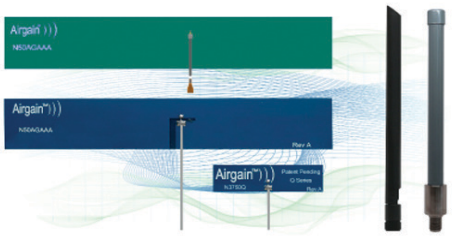

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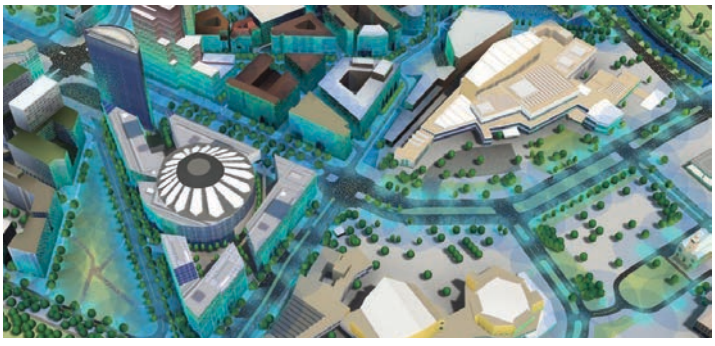

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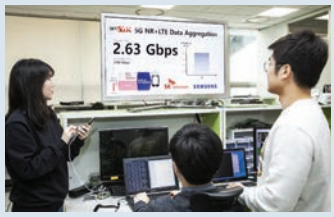

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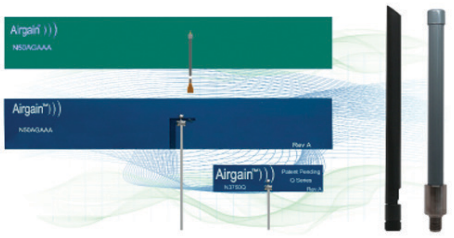

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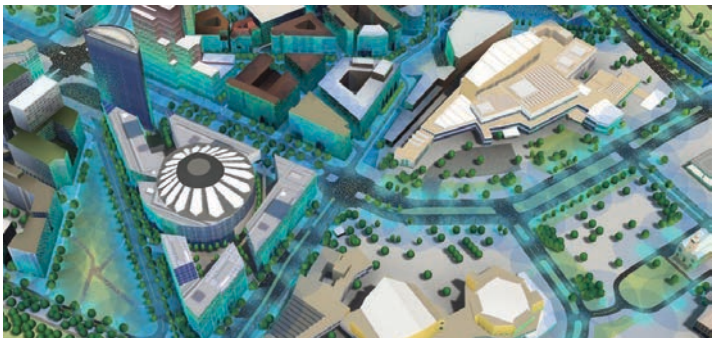

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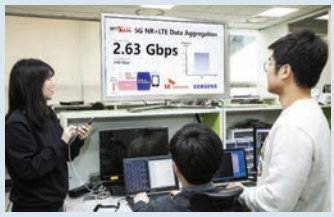

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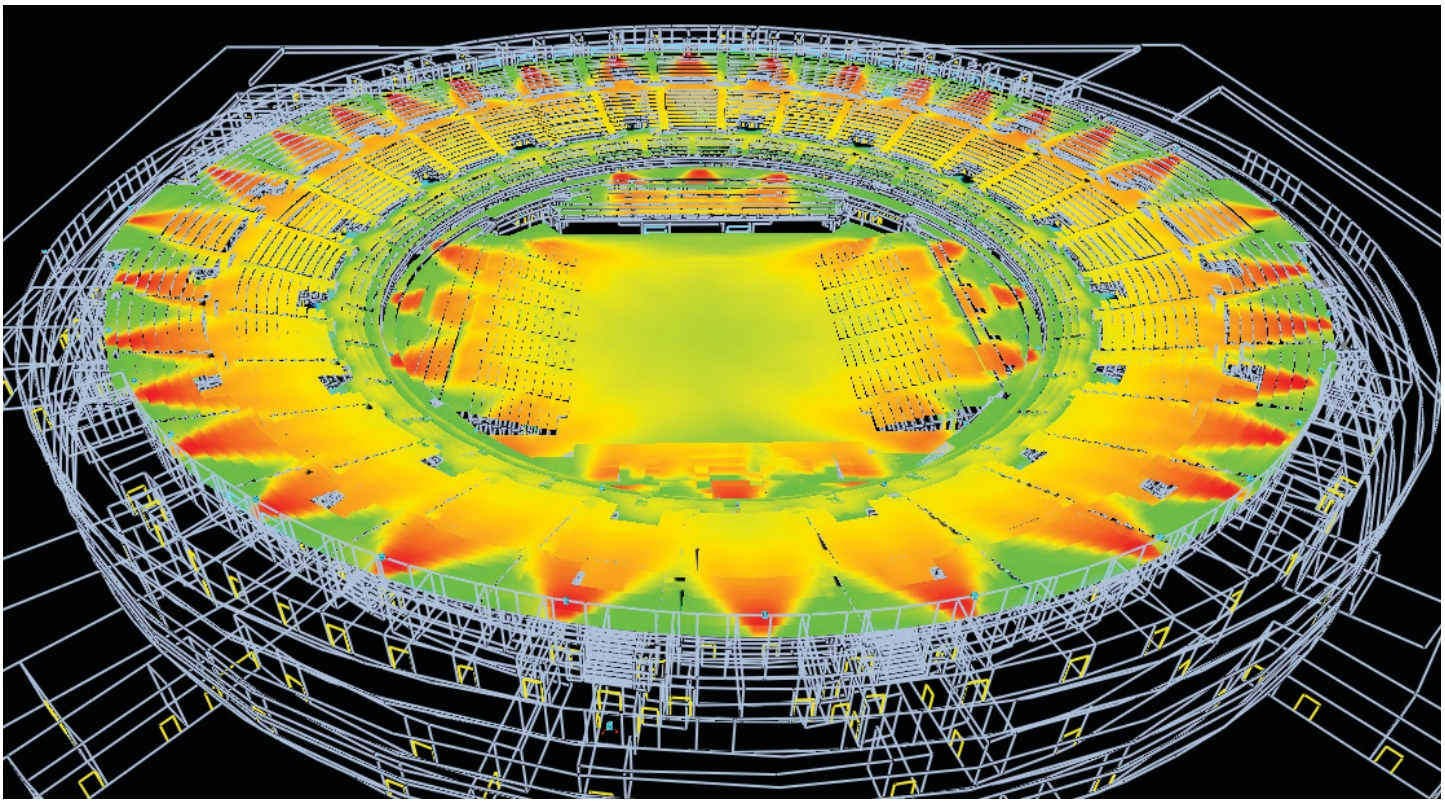

Filling the holes

Jon Howell investigates the challenges of in-building wireless

Ever since the introduction of smartphones the demands on mobile networks have increased and each device is now capable of consuming ever-increasing amounts of data.

The pressures are only going to increase. There is still plenty of expansion left in Africa for the adoption of smartphones. For example, in countries such as Tanzania although over three quarters of the population own a mobile phone less than a fifth of those are smartphones. Even some of the most mature markets in the continent, such as South Africa, still have a sizeable potential for growth of these data-hungry devices.

Keeping up with demand

As you would expect, mobile operators are rising to the challenge by beginning to look at 5G. Both Vodacom and MTN have run trials in South Africa and Rain, a data-only network, launched at the end of February in the country. This makes South Africa one of the first countries in the world to launch commercial 5G services.

However, it's not just a new generation that is going to help out. "Operators can increase their number of mobile cells, as that will enable them to service a larger number of simultaneous users," says Joe Chiou, vice president, Zyxel IBS Business Unit. "For increasing data demands there are two ways through which smartphone users can obtain faster data speeds.

"Firstly, there is MIMO: multiple-input multiple-output. With multiple antennas, each can act as one communications channel and each additional channel can add to the data transmission speed. Secondly, there is carrier aggregation. This technology allows the smartphone to communicate with multiple carriers (wireless signal distribution devices, such as cell towers) at the same time." Carrier aggregation would mean that a phone which can support multiple bands, such as 900MHz, 1800Mhz, and 2600MHz, could be talking to three separate towers using each band to avoid signal interference.

So, operators will have methods to increase the bandwidth available to users, but the pressure will come from more sources and indeed in new ways. You only have to look at how wireless networking has changed in homes to see the problem.

"In-home networks have to keep up with more and more devices - from smartphones and TVs to household appliances - all wanting to access the internet, especially since most of them need high speed connections and high bandwidths," says Sebastian Richter, director of product management for home networking at Devolo. You might think of Devolo as a consumer firm, providing power line Wi-Fi extenders, but they also have a commercial arm where similar products are put into use to solve in-building wireless connectivity issues for businesses.

Businesses won't see their in-building networks struggling under a plethora of Wi-Fi enabled fridge freezers, though. "The primary driver for network growth is connected devices for IoT applications in the home and in the community, including imbedded smart nodes for home controls, public safety and connected automobiles," says Keith Pennachio, EVP at Squan.

Technology such as connected automobiles might seem far off for now, but the rise of IoT has already exceeded 21 billion devices worldwide in 2018, expected to rise to 50 billion by 2022, according to Juniper Research.

As Mervyn Byleveldt, solutions sales manager Africa at Cradlepoint, says, "Smartphones aren't the only consideration for indoor wireless networks, organisations need to consider CCTV, failover for retail outlets, vending machines, ATMs etc." So, the proliferation of devices wanting to share the network is going to be an issue, but it doesn't stop there. "When it comes to the smartphone, too much is still never enough.

With the imminent rollout of 5G and increasing demand for unlimited data, we are starting to see new consumer behaviours," warns Byleveldt.

This shows that there will be demands that might not even be predicted yet. Apps or services which may suddenly strike a chord with users. Maybe it will be a new platform, something that can be data hungry like WhatsApp with its video calling, which will suddenly have users chewing through more bandwidth than ever before. So, what can operators do to prepare for this?

5G to the rescue?

Just like 3G and 4G, 5G is going to offer faster data rates and lower latency. Over the three generations, maximum data rates have increased from 42mbps to 1gbps to 10gbps and latencies have dropped from 100-500ms to 50-100ms to 1-10ms.

"Mobile carriers need to start preparing for their pathway to 5G and start their adoption of Gigabit-Class-LTE with a combination of cloud-based applications and services. We are seeing increasing numbers of devices that need to access networks, meaning that additional network on-ramps will be needed as well as remote, cloud-based network management," says Byleveldt. He also predicts that the adoption of 5G will be even faster than was seen for 4G.

However, Pennachio is more reserved: "Some network operators have taken a 'Build it and they will come' approach, while others have been more reserved in their rush to claim success with 5G. Use cases for faster speeds and lower latency are still coalescing around the need for more clearly defined ROI."

There are also lessons to be learnt from existing technology, such as LTE. "While traditional LTE is already widely recognised by mobile and distributed enterprises as a critical business enabler, one potential drawback is the potential for radio spectrum interference in densely crowded areas like urban centres and stadiums," warns Byleveldt. "Today, cellular carriers are aggressively deploying small-cell radio access nodes in many urban centres in concert with their efforts to expand their LTE-A coverage."

On the plus side, existing networks should be able to add 5G, at least for outdoor networks. "Towers can be upgraded, equipment rooms can be expanded, and fiber can be overbuilt. Most 3G and 4G networks are upgradable, through a mix of equipment adds and backhaul augmentation," says Pennachio.

Unfortunately for 5G, and those who are hoping it will solve their in-building wireless connectivity issues, is that the new technology has some severe drawbacks. Alastair Williamson, CEO of Ranplan, explains, "5G signals will be deployed using the C-band (3GHz-5GHz) and mmWave frequency bands (26-28GHz); and as such have shorter ranges compared to sub 3GHz frequency bands currently employed by 4G (LTE). With these higher frequencies, 5G signals will find it even harder to penetrate most building materials such as steel frames, glass, insulation, and wood, leading to increased penetration loss if outdoor 5G macrocells are used to cover indoor areas."

To provide some technical data to show how much of a problem this will be, C-band frequencies will generate an additional 8-18dB wall penetration loss and it's even worse for the mmWave band which will generate over 80dB wall penetration loss. So,it's not going to be feasible to rely on a mobile operator's outdoor network to provide coverage for office blocks, shopping centres, campuses, or stadiums.

There's also bad news for those who are hoping that 5G might come to their current in-building DAS solution. "Most existing indoor networks are passive DAS and cannot be upgraded to 4G/5G," says Zyxel's Chiou. "Likewise, existing Wi-Fi equipment cannot be upgraded to support 5G through firmware. To support these new technologies, modern equipment is required." So, it could be that you'd be looking at a building refit, which could be expensive, or to have a repeater in the building, to bring the outdoor network inside, but there are problems with that approach too.

Solving the problem

"There are numerous issues to consider when deploying an in-building solution," says Chiou. "How large is the building? Is the building to-be-built or existing? Which parts of the building needs signal provision/strengthening? What is the building layout? Which operator(s) do we want to support? Which operator is or is not willing to pipe a signal source to the building? What cellular technologies (2G/3G/4G/5G) do we need to support? Is it better to use a Repeater, a DAS, a small cell, or a combination thereof? So what's the client's budget?"

Certainly, if you are in the position to be designing a network for a building that is still yet to be constructed then that gives you much more flexibility in the planning. This gives you the potential to feed back into the plans before work starts, possibly suggesting the use of different lighting or separating wall material to reduce interference and signal loss. Although there are limits. "Given that seven stories are considered as a reasonable maximum for outdoor signal penetration from street level, people in tall buildings may get a good view but no connectivity," says Williamson, reiterating at how even for new buildings that there are limits on what outdoor wireless networks can achieve.

Some existing networks will have extra capacity available, others might need 'rip and replace'

You also need to consider what your goals are. "You need to address the tenant or owner's need," says Pennachio. "Maybe it's public safety or mechanicals monitoring/proactive maintenance, then again it could be something more wide-ranging such as improving the existing wireless coverage. Once a use case is established, it is critical to understand the cost and logistics of designing and building a system. Questions around ROI, who will fund, who will operate and who will manage the network once deployed are all questions needing to be answered."

Pre-existing installations or old buildings can make things more difficult. "The 'problem' with older venues is that they typically have older in-building solutions installed, most likely in the form of 2G/3G passive DAS. And the problem with those is that they cannot be upgraded to provide 5G and cannot fully support 4G (uplink signal loss and inability to support MIMO being major issues).," says Chiou.

"Adding such support will mean a separate DAS (active DAS, due to above reasons), and most older buildings - with their pipes already full from decades of installing this and that - simply have no more room," he continues, before suggesting that Zyxel's active DAS solutions can help because they use CAT5 cables in lieu of coaxial or fibre optics. "Unlike coaxial and fiber, CAT5 cables are easy to handle (thin, light, highly bendable), easy to install, and easy to afford. Installing ZoneDAS is basically the same thing IT cabling and Wi-Fi planning!"

There are other solutions to help with old buildings which don't have space for new networking cable deployments. "It's important to avoid 'dead zones' and this can best be achieved through a combination of powerline communications and Wi-Fi with mesh functionality and additional 'smart' features," says Devolo's Richter. "This solution combines the best of two worlds: powerline communications as the backbone uses the existing wiring to transmit data across the entire property, without the signal being blocked by thick walls or ceilings, and the latest generation of G.hn-based products recently made a huge step forward in terms of speed."

Pre-existing wireless networks will also cause problems, unless you are in the lucky position of being able to 'rip and replace' the whole network. "As the number of wireless network installations increases on a daily basis, the potential for signal interference is becoming a serious threat to the reliability of new and existing wireless broadband networks alike," says Byleveldt. He warns that you absolutely must take into account all the possible sources of interference, if you want to provide a seamless service. "The key is to choose the right equipment that can dynamically adapt to congestion and interference; older buildings tend to have more interference factors like steel

and concrete rather than dry or temporary walling, and fluorescent lighting rather than the LED lighting newer venues might have."

DAS is all?

Distributed antenna systems (DAS) have often found favour for solving in-building networking problems. The central idea of replacing one big antenna with multiple low-powered antennas linked over a transport medium solves many of the problems which buildings raise. Each antenna can be placed to work around the penetration losses that internal walls can cause and reach what would otherwise be dead zones.

It certainly seems as though DAS will remain a relevant option to be considered for deployments. "Distributed antenna system (DAS) network solutions will continue to play a role in the effort to expand network connectivity for the foreseeable future," says Byleveldt.

There are certainly benefits to DAS. Pennachio explains: "DAS utilizes a RAN architecture, which is highly secure and adaptable across a broader platform of wireless applications. Think about a user moving from their mode of transportation and crossing the transom of any facility while maintaining connectivity and without interruption of use." Certainly, much like unified communications, the seamless hand-off from one wireless technology to another has not always been easy to accomplish.

Chiou also raises the point that DAS solutions have traditionally been expensive, difficult to install, and complex, although he points out that Zyxel's ZoneDAS/SlimDAS uses Cat5 cabling which can help with the cost and ease of installation. He suggests that some sites might be better served using small cells, because they can live with small cell limitations: each small cell supports one operator only, and supports just two cellular technologies (pick 2 from 2G/3G/4G; no affordable 5G small cell exists yet). Ultimately though he still believes in the power of DAS. "However, because most building cannot accept small cell limitations, because many are too big or populous to settle for repeaters, and because passive DAS is unable to support newer technologies, active DAS is still the best solution (or part of the solution) for medium/large scale in-door needs," he recommends.

Small cells are also suggested by Cradlepoint's Byleveldt. "DAS's role in smaller indoor and outdoor venues is likely to be reduced as small cell technology continues to mature and evolve. Although DAS technology is currently the preferred method for larger venues, some advancements in small cell network technology will allow them to support additional bands and carriers, making them more competitive with DAS systems," he says.

However, Chiou still sees them as a less than ideal solution. "Small cells (including picocells and femtocells) are good in that they are designed to be a part of cellular networks. But they are meant to be sold to operators, and strengthen the networks of only single operators," he says. "As a result, they are widely used outdoors, where they help operators complete their grids, and a lot less suitable for indoor applications, where we want single devices to provide signals from all of the area's major operators. Imagine installing multiple sets of four small cells all over a building, just to make sure that users of all four cellular operators can stay connected! Also, because each small cell is an independent cell site, areas with overlapping small cell support will experience interference and poor signal."

The proliferation of smart devices is putting ever greater strain on in-building wirless networks

It's all about planning

Yet another solution is that of heterogeneous networks, or HetNet for short. These networks are comprised of a combination of cell types and different access technologies. The basis tends to be a cellular network, with its various generations of systems (2G-5G), with macrocells being complemented by microcells, picocells, and femtocells in order to fill in coverage or provide extra bandwidth in particular areas. Then HetNets also add Wi-Fi into the mix.

So, it might seem as though there is no simple solution for in-building wireless connectivity. Ultimately there are different choices which are applicable to different ages and sizes of buildings. Various implications depending on how many people use the build and how many IoT devices (and other automated connected devices) are on the network too. However, there is one thing that all in-building networks can benefit from - planning.

As Byleveldt says, "Determine where users will congregate, the type of Wi-Fi-enabled devices they'll be using, as well as how they'll be using them. Another key step you should consider is to do an active site survey at the venue prior to equipment deployment. This step will help you determine optimal network reach."

Active site surveys are valuable, but there is a lot you can do from the comfort of your own PC. Williamson explains how Ranplan's products can take a lot of pain and legwork out of network planning. "An indoor solution has to be built around small cells or DAS networks, while also integrating seamlessly with Wi-Fi networks. For effective radio planning inside buildings, the structure has to be defined and modelled in as much detail as possible, including a detailed knowledge-base of propagation characteristics of different materials and the leakage out into the external environment, potentially causing handover issues."

Ranplan has In-Building and In-Building Lite, the latter aimed at small or medium-sized enterprise projects. There is support for multiple technologies, such as 3G, 4G, 5G, NR, IoT, Public Safety, and Smart Cities. Passive DAS, small cells and Wi-Fi are included, so a network designer can try out different possible configurations.

The product information promises an advanced propagation engine with 3D ray tracing to calculate a coverage map. It's possible to get a feel for how actual hardware will respond because there is a live database featuring multiple vendor-approved components that are validated and compatible for all wireless technologies.

Ranplan isn't the only firm that has network planning tools, obviously most vendors of access points (AP) have their own coverage tools to help you choose the correct number of APs for your situation. However, the best way to find which solution is right for you - DAS, small cells, a HetNet, Wi-Fi - is to plan before you buy. ■

ICT transforming classrooms in rural areas of Myanmar

UNESCO is making big strides across Myanmar, with the introduction of its ICT pedagogy integration in classrooms

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) is a name we all know, mainly because of the 1092 landmarks or areas it lists as important to the collective interests of humanity. However, you'd be forgiven for asking what it actually does on a day-to-day basis.

Based in Paris, UNESCO's raison d'être is to "contribute to peace and security by promoting international collaboration through educational, scientific, and cultural reforms in order to increase universal respect for justice, the rule of law and human rights along with fundamental freedom proclaimed in the United Nations Charter.

Put simply, it gives help to those who need it most and one of those countries is a southeast Asian nation bordering India, Bangladesh, China, Laos and Thailand.

A country that was long seen as the forgotten land until a few years ago when it finally – some might say reluctantly - opened its doors to foreign overtures, Myanmar (still known to many as Burma) is understandably playing catch-up.

While the rest of Asia-Pacific and indeed southeast Asia is tweeting and interacting on tablets and smartphones, the rural schools of Myanmar are only just discovering ICT.

Daw Ei Mon Aung, who teaches English in the Bago region of central Myanmar puts it simply when she says: "When I teach the chapter about

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earthquakes, I can show videos to the students rather than merely newspaper clippings."

She is among 155 teachers across 31 rural schools in Myanmar who was trained by UNESCO and the Myanmar Department of Basic Education to use ICT in her work. Whether to enrich classroom lessons with sounds and images, to be connected to a network of teachers sharing good practice, or to foster digital citizenship in Myanmar, ICT is viewed as a tool with the potential to improve the quality of education at a time when its use is booming in the country.

Like any country, embracing new technology does not come for free. Until five years ago, only the privileged had access to mobile phones.

In 2014, reforms in Myanmar's mobile communications services significantly lowered the cost of SIM cards. The result? A three-fold increase in the number of mobile phone subscribers in only one year. Some 84 per cent of these subscribers are using smartphones, giving UNESCO and partners the impetus needed to launch the ICT for Education in Myanmar project in 2014/15. Since then, steps have been taken, for the first time in Myanmar, to promote the use of mobile broadband and ICT in teaching in rural schools.

Across the regions of Mandalay, Bago, and the Mon state, UNESCO programme staff and experts tirelessly trained 22 government officials, 155 teachers, 17 township education officers and 31 school leaders not only to use ICT for innovative teaching approaches, but also to spread their knowledge among peers and pupils, organically growing Myanmar's ICT skills.

Mandalay, Bago and the Mon state are home to many rural and semi-urban schools teaching marginalised children, thus the use of ICT in classrooms can be critical in shifting from a top-down, teacher-oriented class, to a student-centered approach to learning.

With the help of Ericsson, UK Department for International Development (DFID) and Qualcomm, the project distributed 3,100 tablets and 186 laptops for teachers to use at the 31 target schools. The tailor-made LoudClass app provided by UNESCO was a particular favourite among Myanmar teachers in making their classrooms more interactive, with real-time assessment of student learning.

In just 18 months, teachers involved in UNESCO's project have gone from having little to no ICT knowledge, to harnessing ICT to create engaging, child-centered lessons. In March 2018, UNESCO and all stakeholders gathered in Yangon to celebrate and reflect on the progress made in promoting ICT for education in Myanmar.

By fostering exchanges on good practice and harnessing involvement from donors and partners, UNESCO says it aims to contribute to improving the quality of education in Myanmar, by equipping future generations with the skills they need to face the challenges and opportunities in the 21st century.

While still a long way behind its more tech-savvy affluent neighbours, Myanmar has now taken its first steps into a larger world. They are also the most important steps. ■

With the help of Ericsson, UK Department for International Development (DFID) and Qualcomm, the project distributed 3,100 tablets and 186 laptops for teachers to use at the 31 target schools

Thinking outside the box

Schools in the Himalayas have long found it difficult to recruit teachers, so they had to find a new way for their children to learn about the outside world.

Bringing connectivity to some of the remotest places on earth will always have its challenges, but few parts of the world, if any, offer more treacherous terrain than that of the Himalayas.

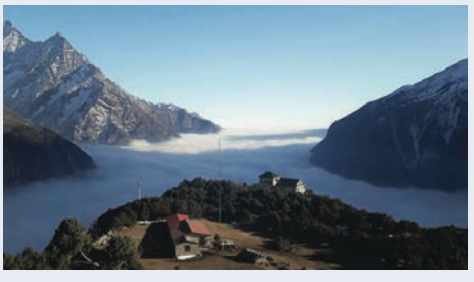
Its stony hills, slippery ice and swift rivers have always presented humans with major logistical headaches, so it comes as no surprise that this environmental hindrance of regional technological development has long been a challenge for education, health services, and communication capabilities in general. Another major obstacle is access to power. The only option is renewable energy, but all the solar panels and devices had to be carried to installation sites by either people or pack animals. Needless to say, schools in the area have always had it tough.

Until last year, the people living in and around the world's most famous, yet treacherous, mountain range had few choices when it came to internet-based services.

In 2017, the Nepali government allocated USD18m in USO (Universal Service Obligation) funds to affordable connection regions of the land-locked country.

A raft of businesses bid for parts of the project and internet service provider (ISP) WorldLink was one of them. The company won funding to build wireless networks in two regions based on unlicensed 2.4 GHz and 5 GHz bands – to reach villages that thus far have had no connectivity of any kind.

The target was to provide three 1mbps connections to each village, one each for the school, the health office and the government administrative office. WorldLink used Cambium Networks as the wireless solution provider for the new Himalayan wireless network.



Few parts of the world, if any, offer more treacherous terrain than that of the Himalayas

WorldLink won funding to build wireless networks to reach villages that thus far have had no connectivity of any kind

Fellow ISP Everest Link also uses Cambium Networks solutions to connect the most daunting areas at the very top of the world, bringing communications for climbing expeditions, community projects, and education to northeastern Nepal.

Cambium's compact, lightweight, energy efficient solutions made it the ideal choice.

"Given our hostile terrain, there are areas where to check on your system, it may take a couple of days of hard work just to get there," says Tsering G. Sherpa, chief executive officer at Everest Link: "But today, we've deployed over 200 hotspots in more than 40 villages. We connect 34,000 locals and over 40,000 tourists annually, which is a new record for tourism. We also reach more than 1,600 climbers on the various mountains including Everest. Our goal is to give them a perfect connection across the toughest terrain in the world. With the PTP 650 we have a solid link all the time – it gives us high throughput and perfect reliability. At the moment, we're connected to the Everest base camp. There, at 5,320 meters altitude, we have a solar powered cnPilot e500 outdoor Wi-Fi hotspot."

Everest Link's commitment to its community goes far beyond the call of duty. With access to high speed connectivity has offered a solution to many regional challenges, the company has started a distance-learning programme to compensate for the lack of teachers available to work at remote Himalayan schools.

Today the schools on the Nepalese side of the Himalayas now have instant access to what's going on in neighbouring countries and beyond. ■

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Preparing businesses for future wireless networking

Mervyn Byleveldt, solution sales manager, Africa at Cradlepoint explains why now is the time for an agile wireless network

Enterprise networks need to be conditioned to keep pace with the speed at which cloud, mobile devices, and the Internet of Things (IoT) technologies are evolving – and the way businesses now operate. In Asia, today's organisations require networks – and connected devices – to be easily manageable, deployable, and maintainable. From day one Internet to cloud management, modern enterprises need an agile network they can manage at exceptional scale with unparalleled visibility.

The 2018 Gartner Magic Quadrant for Data Centre Networking explains: "As enterprises scale digital business initiatives, they must balance refreshing equipment and expanding capacity, while improving agility and maintaining uptime in their data centre networks."

For many organisations looking to increase network agility, this starts by leveraging wireless, cellular-based broadband for enterprise networking. The rise of wireless is all around us, but with IoT, cloud, and 5G constantly swirling, thousands of organisations looking to 4G LTE, Gigabit LTE and soon 5G, to increase agility and future-proof their network architecture.

There are still concerns about the immediate relevance of 5G in Asia, while a significant portion of the continent is still struggling with basic connectivity. With connectivity a staple of the business world, organisations need to be

better prepared and future-proof their networks to ensure that whatever leaps technology makes, they can adapt.

As the landscape continues to evolve, here are some areas where IT teams can utilise wireless to improve the agility of their networks.

Operational ease

Agile IT departments are finding ways to save time and resources while adding new applications and deployments. For example, day one Internet is an on-demand style of connectivity with a painless deployment process and little to no cost to install the network. It also provides the option to relocate the network quickly and easily or open a new location with minimal advanced notice.

This makes wireless networking and software-defined networking (SDN) invaluable when networks need to be spun up and down quickly and easily, such as pop-up networks. Often wired connectivity has a lengthy installation time and is difficult to relocate. Pop-up networks allow a business to deploy an Internet connection before the network infrastructure has been developed within the business. Situations like this are a perfect opportunity for a wireless solution, offering day one deployment, a reliable connection, and bypassing installation delays.

Pop-up networks also allow businesses to utilise a wireless network while the wired network is being installed. One unique example is the opportunity for retail stores that are still in the process of opening to spin up instant networks for technologies like interactive kiosks outside the doors. People passing by can enter their email addresses into the kiosks to receive notification for when the store will open, and even shop from the store's online catalogue resulting in an overall profit and relationship with customers before they even open the doors.

Improving network security

A secure network also increases wireless network agility by giving organisations the confidence to deploy a pop-up network and continue business operations securely, for instance with credit card transactions when sensitive data is involved.

This also extends to enhanced IoT device security. When combined with SDN, Software-defined Perimeter (SDP) makes it easy to connect IoT devices to applications and resources quickly and securely. Multiple device types can be connected with SDPs, including Windows, Mac, Linux, iOS, Android and even Docker containers. For unsupported devices, such as IoT sensors or security cameras, admins can easily connect the device to the perimeter network behind a router acting as an SDP Gateway.

This technique adds a layer of security to an IoT deployment, reducing the attack surface by integrating IoT devices into an enterprise network. This can also be combined with LTE air-gapped connectivity, which prevents a compromised IoT device from infiltrating your core business information systems. Data is protected, and the rest of the network is secure from breaches that could occur through IoT devices.

Moving to the cloud

Cloud networking provides centralised management, device and application visibility, real-time web-based diagnostics, reporting, and control. These benefits provide more agility by making a company savvier within their networking architecture. Organisations can scale IT infrastructure resources both up and down to meet unpredictable usage requirements, while also saving time with instant updates from one location.

Cloud management offers zero-touch deployment to remotely deploy and manage all the devices on a business's network without the need for on-site IT staff. Cloud management also provides instant insights to WAN/LAN analytics and visibility to manage data usage, performance, and costs.

Adapting to the pace of technology advancements

The prevalence of IoT is increasing the need for business connectivity. Whilst 5G for business use is potentially longer way off for some parts of Asia than other parts of the world, it is a technology that will be implemented in the future.

There will slowly start to be a reliance on connections to 4G LTE to ensure continuous coverage. 5G won't replace LTE; it will continue to evolve along with LTE – and the two will work together to handle different types of traffic most efficiently. 5G will allow for higher bandwidth, lower latency, and more favourable data plans. Organisations that want to take advantage of these benefits will need to evolve from legacy networks to an agile wireless network.

Organisations will want to develop a clear picture of how 5G fits within their existing technology and business roadmaps and how it will impact the network design. An agile wireless network will help to seamlessly transfer networks to LTE and 5G and better embrace IoT.

This pathway to 5G will be pioneered with a variety of use-cases across a variety of industries. In medicine, tele-health frameworks are already using 5G-ready routers to enable remote practitioner access to patients using high-resolution cameras, 4K video, and remote medical equipment. Providing a remote subject matter expert dramatically increases patient outcomes at a vastly reduced cost, essentially creating an 'Uber for doctors' – where patients no longer need to wait days or weeks for an appointment.

The same principle can be applied to other industries, for example the Oil & Gas industry, where specialist knowledge is needed in hazardous or hostile environments. In retail, smart stores are already leveraging 4G LTE connectivity and leading the way in testing and implementing customer engagement and operations strategies that someday will be adopted across virtually all industries.

With Gigabit LTE now available and 5G coming around the corner, wireless is poised to overtake wired WAN as the link of choice — both for failover and primary connectivity — for enterprises of all shapes and sizes. Organisations across all industries will need to be adaptable and ensure their wireless network is agile, to allow for new developments in technology and keep up with the increasing pace of change. ■

Cloud networking provides centralised management, device and application visibility, real-time web-based diagnostics, reporting and control

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Mexico pilots new payment systems

Mexico's central bank Banxico has begun trials of its cashless QR and NFC Cobro Digital electronic payment system with employees across a number of banking institutions.

The system works by using QR codes to make electronic transfers through mobile phones which are linked to a user's bank account.

For counter sales, the merchant generates a collection message in the form of a static or dynamic QR code or NFC message which is sent to the customer's mobile.

The financial institutions currently able to use the service include: BBVA, Bancomer, Citibanamex, Santander, Banorte, Banregio and Fincomun with more expected to join in preparation for a national rollout at the end of September.

Gerardo Esquivel, deputy governor of the Bank of Mexico, said the introduction of electronic payments aims to reduce consumers' dependence on cash and drive use of bank accounts.

"CoDi will be a mandatory payment system for all banks in the financial system," he said. "It will have a few months of evaluation and learning for its full implementation at national level and will become very important in terms of financial inclusion."

A additonal aim of enabling cashless payments is to crack down on problems such as money laundering, tax evasion and corruption in the country.

China threatens US with retaliation in Huawei row

China has threatened to retaliate against US sanctions seen as an attempt to restrict international trade by controversial Chinese technology firm Huawei.

Foreign ministry spokesman Lu Kang said Beijing opposed countries imposing unilateral sanctions on Chinese companies and would take action.

The Trump administration effectively blocked Huawei products from being used in US networks. However, the order does not name any company, but is believed to target Huawei.

The latter has long denied its products pose a security threat and says it is ready to engage with the US to thaw frosty relations.

Beijing accused President Trump of engaging in industrial sabotage by using state security as "as a pretext for suppressing foreign business".

Huawei products have been effectively been blocked from being used in US networks after claims that use of their equipment posed a security risk

"We urge the US to stop this practice and instead create better conditions for business co-operation," Lu said, but he did not share details over how China planned to retaliate.

The confrontation over Huawei comes amid a broader trade war between the US and China, with both countries imposing aggressive tariffs on imports.

Ex-France Télécom directors face charges

Former executives at France Télécom, now known as Orange, have gone on trial over a spate of suicides among staff a decade ago.

The seven accused are facing charges linked to "moral harassment" and allegedly creating a climate that drove at least 19 employees to take their own lives.

The trial is expected to last two months and is said to be the largest case in which a major company and its former directors have been brought to court to justify their treatment of staff.

In the dock are Didier Lombard, the former president of France Télécom and six other former senior executives. All deny their actions led to any loss of life.

Lombard, his second in command Louis-Pierre Wenes and the former director of human resources, Olivier Barberot, are accused of "moral harassment", and the others of complicity in it.

The court will examine how the executives carried out a restructuring of the company in 2006, two years after it was privatised, during which 22,000 jobs were cut and 14,000 workers changed jobs.

Accusations against the directors include deliberately creating a culture of anxiety among staff and attempting to push some out by isolating, intimidating and demoting them or transferring them away from their families.

Ericsson chief executive makes 5G rallying call

Ericsson chief executive officer and president Börje Ekholm has called on European regulators to act quickly to remove barriers to deploying 5G if the region wants to remain competitive against the US and China.

In his keynote address at the Viva Technology Conference in Paris in May, he said the US and China see 5G as "critical national infrastructure" and the backbone of digitalising society.

"We can't afford to have our European entrepreneurs and enterprises innovate on an old and aging infrastructure. 5G must be seen as a critical national infrastructure—just as vital as trains or ports or airports," he added.

Ekholm said Europe lacked a concerted regulatory effort for facilitating what he calls 5G digitalisation. "It's up to countries to decide if they want to be part of the revolution that 5G is going to bring," he said.

In addition, Ekholm called for 5G spectrum auctions to be coordinated across the region and offer spectrum at "reasonable prices" to help accelerate the rollout of 5G infrastructure. He said spectrum licences should also be overhauled, to remove investment uncertainty. Ekholm further added that addressing security in 5G networks, no network can be 100 per cent secure.

"Given the complexity of future architecture, and future networks, the security in 5G will not only depend on the equipment in the networks," he said. "It will also depend on the security solutions deployed, and the operating parameters of the network—basically decisions the operator will make."

Ericsson chief executive and president Börje Ekholm

PHOTO: ERICSSON

Telecom market rises in Romania

Romania's telecom market grew 1.3 per cent in 2018 and was worth RON16.1bn, according to the latest data published by the regulator ANCOM.

To put this into context, the figure was equivalent to 1.7 per cent of the country's GDP.

ANCOM said that that on average each Romanian generated a monthly income of nearly RON60 for companies providing electronic communication services, or two per cent more than in the previous year. Meanwhile, ARPU per household stood at RON179, up 1.3 per cent on the 2017 figure.

The biggest growth was experienced by the fixed and mobile and internet sectors, where revenues rose by 12 per cent to reach RON4.8bn.

ZTE launches first cyber-security lab in China

ZTE has launched its first cyber-security lab in Nanjing, China and said it plans to do likewise in Italy and Belgium in the near future.

With the vision of 'Security in DNA, Trust through Transparency,' the firm is committed to providing customers with end-to-end security products and services and integrating security considerations and controls into every aspect of the product's life cycle.

ZTE said that the establishment of the cyber-security lab this time represents a milestone for itself to increase transparency and enhance trust with all third parties.

The rationale behind the lab is to provide global customers, regulators and other stakeholders with security assessment and audit services, such as source code review on ZTE products including 4G and 5G, security design audit, procedural document review, black box testing and penetration testing.

InfiNet solutions deployed to create digital oilfield

Fixed broadband wireless connectivity specialist InfiNet Wireless has successfully delivered a wireless infrastructure solution at a major Kazakhstani oilfield to provide real-time control and accounting of oil production, marking a major step in the transition to a digital oilfield future.

InfiNet and JSC Karazhanbasmunai, one of Kazakhstan's major oil producers, collaborated to provide the solution at the Karazhanbas oil field located in Mangistau region. With telecommunications firm KRIS-Service responsible for the development and implementation of system of facility remote monitoring (SFRM), the solution was designed to automate oil production processes and reduce illegal oil turnover.

The infrastructure allows for the transmission of real-time data on the volume of oil produced, the number of different impurities, the condition of the equipment and other parameters of the automated system from the intelligent control stations installed at each well.

In total, 114 existing wells and 100 new wells were equipped with devices

In total, 114 existing wells and 100 new wells were equipped with devices, from which data was transmitted online to the operator's console to enable full control of the oil production process. The project includes a planned upgrade of 370 wells and installation of new ICS for 2,500 wells.

Telensa contracted to deploy smart streetlights as part of 2030 Vision initiative

A council in the west Midlands has contracted connected lighting and smart city data applications specialist Telensa to deploy smart street lighting infrastructure as part of the region's 2030 Vision initiative.

Sandwell Council plans to install some 4,000 lights by 2020, with the intention to increase this to more than 11,000 by 2022. It is also converting all its streetlights to LED as part of the upgrade.

The streetlights will be wirelessly connected and managed using Telensa's PLANet system, which, among other things, will give the council control over lighting levels. The council will also be able to remotely tailor the streetlights for each location, in addition to delivering energy and maintenance cost savings.

PLANet is described as an end-to-end intelligent street lighting system, made up of wireless nodes connecting individual lights, a network owned by the city and a central management application. It improves quality of maintenance through automatic fault reporting and turns streetlight poles into hubs for smart city sensors.

The project is backed by government-funded Salix Finance as part of an "invest-to-save" initiative into which the council is also investing. Furthermore, the investment is expected to pay for itself within seven years.

Salix has provided over £190 million of interest-free funding towards street lighting upgrades with 81 local authorities in England. Furthermore, those projects are expected to deliver annual savings of over £36 million and 130,000 tonnes of carbon.

The streetlights will be wirelessly connected and managed using Telensa's PLANet system, which, amongst other things, will give the council control over lighting levels

"Our 2030 Vision project seeks to inspire our residents by creating a local atmosphere in which they can say they're proud to be from Sandwell," said Amy Harhoff, director of regeneration and growth, Sandwell Council.

"We are excited to be working with Telensa on a project that will reduce the council's carbon footprint and provide crucial financial savings."

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Bahrain moves forward in race for 5G rollout

The Kingdom of Bahrain said it has finished preparations for the rollout of 5G networks and claimed it will be one of the first countries globally to provide commercial 5G services by June 2019.

The news was announced by Bahrain minister of transportation and telecommunications, Kamal bin Ahmed Mohammed, who added that the achievement was pending availability of consumer handsets and equipment.

Manama, the capital and largest city of Bahrain

All of the regulatory requirements for full 5G implementation have been met, with the licensing and spectrum allocation set to be finalised before mid-April by the Telecommunications Regulatory Authority (TRA).

"Bahrain's state of readiness is a testament to the leadership of the government of the Kingdom of Bahrain in enabling the implementation of cutting-edge technology and promoting innovation, and the continuous support of all stakeholders including the TRA and the national Spectrum Strategy and Coordination Committee (SSCC), all of which serves to highlight the Kingdom's continued role as a regional leader in telecommunications and ICT," said Mohammed.

Mobile operators in Bahrain have already begun rolling out the necessary network infrastructure.

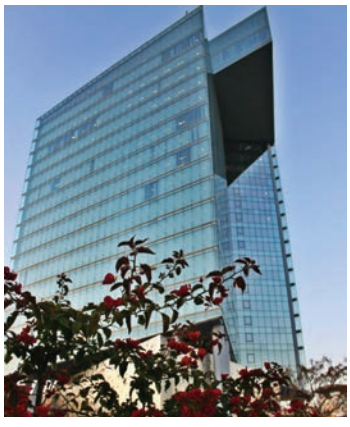
Maroc Telecom acquires Millicom subsidiary

Maroc Telecom has acquired Swedish-listed Millicom's subsidiary Tigo Chad, the leading provider of digital services in the African nation, for an undisclosed sum.

The acquisition is part of Morocco's largest operator's plan to step up operations in the region. For Millicom, it is part of its strategy to gradually exit Africa and increase its focus on Latin America. However, the deal is not expected to have a material impact on the group as a whole.

Controlled by the United Arab Emirates' Etisalat Group and the Moroccan government, Maroc Telecom already has a presence in more than 10 African countries, including Chad's neighbours Niger and Central African Republic.

The completion of the deal is subject to approval by Chadian authorities. Once the sale goes through, Millicom's only remaining market in Africa will be Tanzania.



Maroc Telecom offices in Marrakech, Morocco

MTN launches affordable smartphone in Nigeria

MTN Nigeria has launched its new Smart S 3G phone – an affordable new smart feature device that runs on the Kai Operating System (KaiOS) in Nigeria.

The MTN Smart feature phone is said to come with almost all of the features of the high-end smartphones and allows customers to upgrade from a typical feature phone with just voice and capabilities, to a fully connected device with a fast 3G connection, Wi-Fi, bluetooth, GPS and dual SIM 3G capabilities.

It also comes with two cameras, a 2-day battery life with 2,000mAh battery, the SC7731EF processor, 2.4-inch screen, 256MB RAM and 512MB of storage. The MTN Smart is available in all MTN stores across Nigeria for USD22.14 and comes with 500MB monthly data free for the first six months.

MTN Nigeria, chief marketing officer (CMO), Rahul De described the development as the first African smart feature phone.

"We want to bring connectivity to everybody," he said. "We believe that connectivity leads to growth in the nation's economy. With connectivity, the growth of the economy becomes faster." He added that affordability of smartphones remained a challenge, "hence the reason for a smartphone with so many features selling at USD22.14".

Côte d'Ivoire operators in mobile money tax row

The Telecommunications/ ICT Regulatory Authority of Côte d'Ivoire (ARTCI) has issued a stark warning to the country's mobile operators to stop passing the additional cost of mobile money transactions onto the end user.

In a statement, the regulator accused operators of ignoring the law on telecommunications and telecommunications technologies, which requires them to communicate the tariffs and T&Cs of the service offered, one month before making them public.

"The new rates on mobile money transfer services have not been subject to prior notification to the ARTCI," the regulator said. "Therefore, ARTCI requires all mobile operators to immediately stop their application."

Operators in Côte d'Ivoire have increased the rate charged for mobile money transfers to 7.2 per cent, which they argue is in line with a government increase in mobile money tax.

The warning from ARTCI followed complaints from consumer association Confederation des Consommateurs de Cote d'Ivoire, which was angered by taxes on mobile money transactions in the country and demanded the complete removal of the levies.

In a statement to the media, the federation, which represents 10 different consumer groups across the west African nation, stated that less than a fifth of consumers in the country have access to bank accounts.

It noted that the traditionally low cost of transactions using mobile money services had led to a "dynamic" industry, but the increase in government levies made it "more expensive for consumers to use an accessible service that has started to enter our habits".

ARTCI was created through the merger of the Telecommunications Council of Côte d'Ivoire (SITC) and the Telecommunications Agency of the Côte d'Ivoire (ATCI).

Telecel buys out Limba

Telecel Group has acquired Gibraltarian mobile operator Limba for an undisclosed fee as part of an international growth plan. Limba is the British Overseas Territory's second mobile operator behind Gibtelecom. Telecel said its new acquisition can provide fixed services and sees it as a strategic gateway into Europe. Telecel already owns several mobile operators in Africa and has associated itself with local communities by supporting technology-related start-ups across the continent.

Huawei given restricted role

Britain will allow Huawei Technologies a restricted role in building parts of its 5G network as it seeks a middle ground in an unpleasant row between the US and China over the next generation of communications technology. Huawei, the world's biggest producer of telecom equipment, is under intense scrutiny after the US told allies not to use its technology because of fears it could be a vehicle for Chinese spying. "It's essential that we get the balance right, ensuring that our networks are built in a way that is secure against interference from whatever source, but also are competitive," said chancellor Philip Hammond.

SP to build fibre network

SP Telecom has commissioned PCCW Solutions as a consultancy partner to help design and deploy the company's planned alternative fibre network. SP has provided details of its plans to build an alternative to Singapore's next-generation national broadband network (NG-NBN). A joint venture between ST Engineering and Singapore Power Group, SP is deploying its network alongside the power lines operated by SP Group to create a separate fibre infrastructure to the NG-NBN.

Mozambique disaster sees PCCW Global and TSF connect

PCCW Global and Télécoms Sans Frontières (TSF) have received official recognition from the Mozambique National Institute for Disaster Management (INGC) for their combined and ongoing mission to provide critical communications services following the two tropical cyclones which recently hit the country.

One VSAT communications system was installed in the Matarara coordination centre, from which relief operations to five surrounding communities were conducted. A second VSAT was also installed at the Médecins Sans Frontières (MSF) cholera treatment centre in Mafambisse. A further two VSATs provided by PCCW Global have been handed over to Mozambique's INGC, enabling the organisation to rapidly deploy critical communications for any similar emergency in the country.

The cyclone also devastated the region's electricity and communications infrastructure, frustrating disaster response teams that require effective communications in order to coordinate emergency services and relief efforts. Beira city itself suffered extensive damage, with almost 80 per cent of the economic infrastructure destroyed.

One VSAT communications system was installed in Matarara, from which relief operations to surrounding communities were conducted

One month later, Mozambique was struck by yet another tropical cyclone, Kenneth, resulting in the deaths of more than 40 people, displacing a further 21,000, and again damaging infrastructure critical for rescue and relief efforts.

"PCCW Global's prompt reaction and instrumental aid, since the beginning of our operations in the country, have been essential for the positive impact of our mission for the affected population," said Jean-François Cazenave, chairman, Télécoms Sans Frontières. "The situation on the ground has been very difficult since the beginning, with isolated areas hard to reach and a significant need for rapid telecommunication connections. The contribution of PCCW Global's team on the ground has thus been very important for the success of TSF's operations."

Japan to introduce 10 billion 14-digit mobile numbers by 2021

Japan's communications ministry said it plans to create around 10 billion 14-digit phone numbers in anticipation of the upcoming 5G era.

The 14-digit numbers starting with the code 020 will be introduced by 2021 at the latest, while the current stock of 11-digit mobile numbers is expected to run out as early as the 2022 financial year.

A panel of experts has proposed to introduce the new numbers once the necessary preparations are complete, and Japan's big three mobile operators NTT Docomo, KDDI and SoftBank have agreed to the proposal.

Now the ministry said it will draft a report on the matter as early as June 2019 and aims to complete a ministerial ordinance before the end of the year.

New numbers will be allocated to the operators early if they complete the necessary upgrades ahead of schedule.

Japan currently uses 11-digit numbers starting with 090, 080 and 070 for mobile phones and with 020 for IoT devices.

TDC shuns Huawei for Ericsson

Denmark's biggest telecom group TDC has chosen Swedish firm Ericsson and turned its back on existing provider Huawei to roll out its ultra-fast 5G mobile network across the country.

The US and several other western nations have shut Huawei out of tenders for the development of 5G networks, because they are concerned about the company's close ties to the Chinese government.

"TDC has chosen Ericsson to build and deploy its 5G network," TDC chief executive officer Allison Kirkby said in a statement. "Over the past year, TDC has negotiated with several suppliers about the upcoming 5G rollout."

However, there was no mention of Huawei, which had equipped TDC's network since 2014.

TDC did not disclose the value of the Ericsson deal, which will run until the end of 2023.

The firm said it hopes to offer its customers 5G by the end of 2020.

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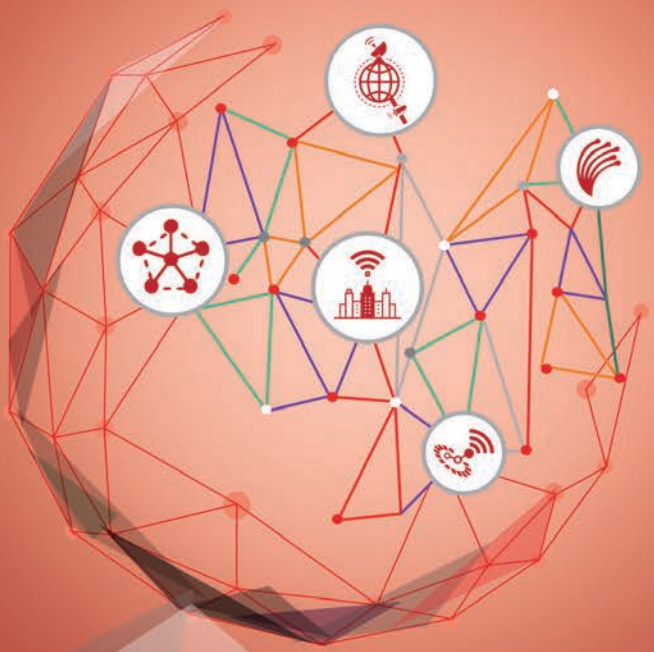

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