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SAMENA TRENDS

EXCLUSIVELY FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

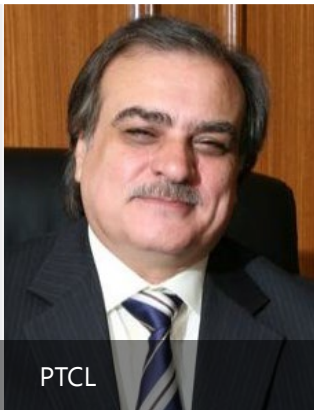
BUILDING DIGITAL ECONOMIES

A SAMENA Telecommunications Council Newsletter



Ooredoo Group

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Dr. Nasser Marafih
Advisor to Chairman



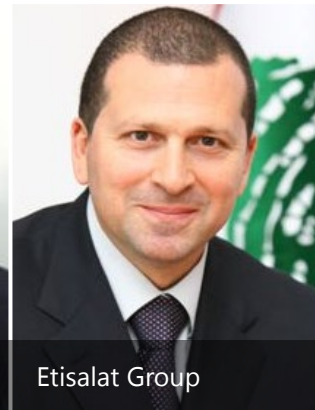
PTCL

Vice-Chairman
Mr. Walid Irshaid
CEO & President



Batelco

Director
Mr. Ihab Hinnawi
Group CEO



Etisalat Group

Director
Dr. Kamal Shehadi
Chief Legal &
Regulatory Officer



Omantel

Director
**Mr. Talal Said
Marhoon Al Mamari**
CEO



Orange, JTG

Director
Mr. Jerome Henique
CEO



STC Group

Director
Dr. Khaled Biyari
Group CEO



Turk Telekom Group

Director
Mr. Hakam Kanafani
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CEO



SAMENA Council

Director
Mr. Bocar A. BA
CEO

Telecom Operators' leadership in the digital economy: Catalytic roles toward accelerating socio-economic development and innovation enablement in and beyond 2016

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Editor-in-Chief
Bocar A. BA

Contributing Editors
Izhar Ahmad
Javaid Akhtar Malik

Contributing Members
Analysys Mason
A.T. Kearney

Publisher
SAMENA Telecommunications Council

Subscriptions
subscriptions@samenacouncil.org

Advertising
ads@samenacouncil.org

Legal Issues or Concerns
legal@samenacouncil.org

SAMENA TRENDS
trends@samenacouncil.org
Tel: +971.4.364.2700



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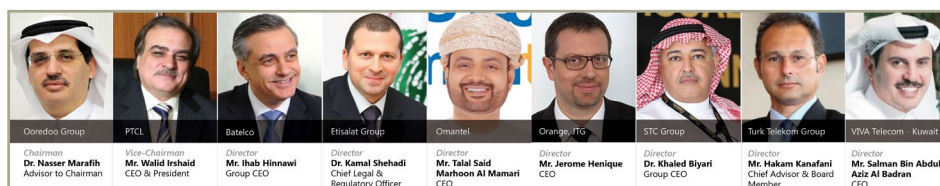
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Telecom Operators' leadership in the digital economy: Catalytic roles toward accelerating socio-economic development and innovation enablement in and beyond 2016



Sufficient scholarly evidence exists to support the socio-economic development role that telecommunications services and the adoption of ICT play in both developed and developing economies. Equally so, however, substantial proof exists that imposing costs on telecommunications products and services, thereby directly or indirectly transferring the fiscal burden to the end-customer, results in impeded adoption of digital services.

A major reason why many of the markets within the SAMENA region have appeared, and some continue to do so, in ITU's list of top 50 nations where ICT-specific taxes and tariffs continue to be imposed, is mostly because many incorrectly continue to see telecommunications and ICT as luxury and not as necessity. Moreover, in many countries, raising tax burden on ICT continues to be exploited as a means to make-up for the loss in government revenues, caused by poor tax collection systems and absence of transparency in governance.

The end result is expectedly nothing more than delayed or altogether reduced investment in digital communication infrastructure development, and hence further delay in making progress in economic development. Such a situation poses formidable challenges and affects all the stakeholders:

For policy-makers, it is the renewal of the vision into the future that poses the biggest challenge. In other words, the flawed understanding or perspective that access to faster broadband and ICT services is a luxury good -- rather than a development tool, which, in a short period of time, can physically transform a society-- and overcoming it, is the biggest barrier. Only a shift in national priorities and gaining perspectives on societal needs can break this barrier.

For telecommunications or ICT service providers, among other challenges related to tax burdens, the critical challenge of balancing tax compliance risks with customer loss or being disadvantaged by competition, presents itself as a major feat. That is, an operator's stance on a particular taxation issue in favor of customers or the industry could increase

the risks of confrontation with government bodies. And, on the other hand, a position on a tax proposal against the interest of the private sector as a whole, could create complexities of its own.

In either of the above scenarios, the solution seems to lie only in understanding and visualizing the policy imperative that be: Understand the role of communications technologies and services and make the adoption of ICT and telecommunications affordable at all tiers of the society by rationalizing all forms of taxation to encourage sustainable investment in infrastructure development.

The Year 2016 is upon us, and it is ever more important that we enter the new year with new visions and resolutions on this important matter. The government sector must playing a central and a visionary role in enabling and embracing the next way of Internet connectivity. This means, perspectives and policies have to be based on achieving more and connecting more. In the age of Internet of Things, whereby more of everything will be connected in very sophisticated and complex ways, the continuing lack of rational taxation policies would not only impede digital progress, it would be akin to regression in our technological and consequential socio-economic development.

The presence of comprehensive, rational taxation policies and effective government strategies for mitigating the loss of tax revenues would help create more direct ways to generate revenues for national governments, and would help fulfill national socio-economic agenda more naturally.

SAMENA Council wishes national policy-makers, the regulatory bodies, industry stakeholders, and the members of its community a very successful and prosperous Year 2016. We look forward to being at the disposal of both the public and private sectors to help needs and ideas coagulate into implementable action plans that foster digital growth.

Yours truly,



Bocar A. BA
Chief Executive Officer
SAMENA Telecommunications Council



Chairman

Dr. Nasser Marafih
Advisor to Chairman
Ooredoo Group

Dr. Nasser Marafih is Member of the Ooredoo Group Board and Advisor to the Ooredoo Group Board's Chairman. He was Chief Executive Officer of the Ooredoo Group from 2006 until November 2015. In his role as CEO, Dr. Nasser has spearheaded Ooredoo's global growth in recent years to expand to 15 operations in Middle East, North Africa and South East Asia, including Ooredoo's acquisition of Wataniya Telecom, Ooredoo's strategic partnership with ST Telemedia in Singapore, as well as the company's purchase of a controlling stake in Indosat of Indonesia. Dr. Nasser ranked #41 among the 100 powerful Arab leaders in 2015.



Ooredoo is a leading international communications company delivering mobile, fixed, broadband internet and corporate managed services tailored to the needs of consumers and businesses across markets in the Middle East, North Africa and Southeast Asia. As a community-focused company, Ooredoo is guided by its vision of enriching people's lives and its belief that it can stimulate human growth by leveraging communications to help people achieve their full potential. Ooredoo has a presence in markets such as Qatar, Kuwait, Oman, Algeria, Tunisia, Iraq, Palestine, the Maldives, Myanmar and Indonesia. The company was named "Best Mobile Operator of the Year" at the World Communication Awards 2013.

The company reported revenues of US\$ 9.1 billion in 2014 and has a consolidated global customer base exceeding 115 million users. Ooredoo's shares are listed on the Qatar Exchange and the Abu Dhabi Securities Exchange.

Corporate Achievements

- Delivering impressive results in 2015, reaching an all-time high of more than 114 million customers across its footprint, Ooredoo won the "Best Operator" award at the Telecoms World Middle East Awards 2015 and "Telecoms CEO of the Year" award for Dr. Nasser Marafih at the CEO Middle East Awards.
- Ooredoo pledged its commitment to the United Nations Sustainable Development Goals ("Global Goals"), which aim to eradicate extreme poverty, improve the lives of people and create an all-round healthier world for tomorrow.

"By investing in network excellence and a superior customer experience, we have positioned our operations as leaders in data services, B2B innovations, and as supporters of people's digital lifestyles."

- Ooredoo's flagship initiatives were recognized at the 17th annual World Communication Awards: "Best Brand Campaign" for the Simply Do Wonders campaign with Leo Messi; "Digital Experience Award" for Ooredoo's Mozaic GO App; and the "Social Contribution Award" for Ooredoo's Mobile Health Clinics.
- Ooredoo continued to see strong returns from its focus on providing innovative business services across the Middle East, North Africa, and Asia. In Ooredoo's home market of Qatar, the company pioneered a range of services aimed at the SME market, including its Ooredoo Web Builder solution.
- Ooredoo was recognized at the CommsMEA Awards, winning a total of four top prizes including the highest honor, "Overall Operator of the Year" for Ooredoo Group, and a new category, the "Network Optimization Award" for Ooredoo Qatar's inspiring initiative to enhance the Ooredoo Supernet.
- Ooredoo's data revenues represented more than 34% of total revenues – a new record for the company. The company also held data leadership positions in five out of nine key markets in 2014 – Algeria, Iraq, Qatar, Tunisia and the Maldives. Well into August 2015, Ooredoo continued to lead in data services by enhancing its offerings and by investing in infrastructure to support customers' digital lifestyles and the development of knowledge-based economies.
- Ooredoo's Mobile Health Clinic initiative, launched in 2013 with the support of Ooredoo Group, has continued to expand its reach across Ooredoo's international footprint. Among the milestones achieved by this initiative, the Indonesia clinics received three Millennium Development Goal Awards in 2015 from the UN.
- In efforts toward becoming a leading entertainment provider in the SAMENA region, Ooredoo signed an exclusive multi-year OTT video deal to offer more "smart entertainment" options for its customers.
- Ooredoo took a leadership role to build and fund online start-ups, with ventures ranging from online retail and marketplaces to classified services. It also co-created the Asia Pacific Internet Group (APACIG) to this effect.
- 10. Ooredoo was awarded the GSMA's Connected Women: Leadership in Industry Award for its work to empower women in Myanmar.
- Utilizing its new M2M service, Ooredoo started offering its smart car technology solution that allows customers to switch on the air conditioning in their car via their smartphones. The company also defined its leadership role in smart-city technologies across its global footprint. In December 2014, Ooredoo Qatar was confirmed as a Lead Partner in the Smart Cities Council, a leading industry coalition formed to accelerate the move to smart, sustainable cities.
- Ooredoo's range of M2M services for businesses cover a multitude of essential industries, including the energy generation and consumption sector in Qatar. The company pioneered smart-metering solutions for residential and business complexes.





Vice-Chairman
Mr. Walid Irshaid
CEO & President
PTCL



Mr. Walid Irshaid is the Chief Executive Officer and President of Pakistan Telecommunication Co. Ltd. Mr. Irshaid also served as the President of Middle East and Africa of Flag Telecom Group Ltd. He has worked for more than 25 years in the telecommunications and IT industries based in Dubai.

Before joining FLAG, he served as Director General of the Palestine Telecom Corporation (PALTEL) and before then worked as Managing Director for the Investcom Group in Beirut developing data & business communication services in Lebanon.

He also spent 17 years with Emirates Telecom where he was responsible for the development of a number of major projects and key services.

PTCL is the largest ICT services provider in Pakistan, encompassing fixed line voice telephony, broadband internet, digital television and corporate solutions for organizations. The company has revolutionized the broadband eco-system of the country by providing high-speed fixed and wireless broadband services at affordable rates nationwide.

PTCL holds credit for pioneering and steadily revolutionizing the broadband culture in Pakistan. PTCL's ability to support both individual and corporate customers on a cross-border basis is anchored by its extensive network of submarine cables. Apart from a wide array of services for businesses and enterprises, PTCL also offers white-label products and services, and maintains a network of earth stations.

Corporate Achievements

- Swiss organization ICERTIAS's survey undisputedly established PTCL as the most preferred broadband service provider in Pakistan, a country of over 190 million citizens.
- As the largest ICT services provider in Pakistan, PTCL took decisive steps to promote e-commerce by collaborating with a leading e-commerce platform and through attractive discount options on its fixed-line and next-generation wireless products.
- PTCL extended technology support to industry and enterprise growth through its its GPON technology, Triple Play, Smart Link, I-Sentry, Voice Over IP, High Speed Broadband, Primary Rate ISDN (PRI), Basic Rate Interface (BRI), Cloud Computing, Data Hosting and Data Management services.
- PTCL implemented its strategic human resource development agenda to enhance employment engagement and productivity through greater flexible work timings under its "WorkEase" initiative.
- PTCL defined a new direction in Pakistan's e-learning and online education delivery becoming the provider of the fully managed Blackboard Learning

"PTCL is in a strong position to lead the telecom industry towards a brighter future. To cater to the increasing data needs, PTCL introduced the next generation wireless broadband in Pakistan."



- Management System in Pakistan.
- PTCL sponsored R&D in sports engineering to promote professional cricketers' performance management and boost potential.
- PTCL expanded footprint of its leading high-speed Charji EVO wireless broadband service in Pakistan, complemented by Pakistan's first 4G LTE Charji EVO Tab, supported by full backward compatibility for seamless 3G connectivity throughout Pakistan.
- PTCL introduced another first SmartLink service for its customers for dialing and receiving landline calls through mobile phones on-the-go, anywhere and anytime.
- PTCL introduced a collaborated initiative to enrich video and mobile content delivery for its customers by leveraging Akamai's globally-distributed Intelligent Platform to deliver its solutions across its nationwide telecoms infrastructure.



Director

Mr. Ihab Hinnawi

Group CEO

Batelco



Batelco

Mr. Ihab Hinnawi was appointed as Group A/CEO in February 2015. He joined Umniah as Chief Executive Officer in 2009, drawing on over 20 years of extensive managerial experience to lead the company's industry-pioneering operations. Prior to assuming the CEO role at Umniah, Mr. Hinnawi held the role of General Manager Enterprise Division at Batelco Bahrain and subsequently the role of CEO at Batelco Jordan. His repertoire of key expertise portfolio includes increasing revenue, effecting management change, developing new businesses, managing high stake negotiations, strategic planning, developing key partnerships, building corporate and marketing strategy, effecting risk management, and leading organizational restructuring.

Batelco, is the leading integrated communications' provider in the Kingdom of Bahrain and a company of reference among the region's key telecommunications players for innovation and customer experience. Batelco serves both the corporate and consumer markets in one of the most liberalized and competitive environments in the SAMENA region. It delivers cutting-edge fixed and wireless telecommunications services to its customers in Bahrain. Batelco offers end-to-end telecommunications solutions. As a part of its commitment to continuously enhance its networks in order to provide customers with unrivalled services and solutions, Batelco has enhanced its 4G LTE network speed from up to 100 Mbps to up to 150 Mbps. Batelco Group has evolved from being a regional Middle Eastern operation to become a major communications company with direct and indirect investments across 14 geographies, namely Bahrain, Jordan, Kuwait, Saudi Arabia, Yemen, Egypt, Guernsey, Jersey, Isle of Man, Maldives, Diego Garcia, St. Helena, Ascension Islands, and Falklands.

Corporate Achievements

- Batelco Group, with operations across 14 countries achieved strong results for the nine-month period ended 30 September 2015, reporting a net profit of US\$108.5 million and net assets valuing at US\$1,504 million. Overall, Batelco's overseas operations performed well and at the end of the nine month period, 58% of Revenues and 57% of EBITDA were attributable to operations outside of Bahrain.
- Batelco's mobile subscriber base has increased by 10% year-on-year with its 4G LTE products and services playing a significant part in the growing numbers, due to the popularity of its bundled packages with the latest smart devices.
- Batelco achieved Gold status in the Palo Alto Networks NextWave Programme, the first company in Bahrain to achieve this milestone.
- In another first in the Kingdom, Batelco, as part of its business empowerment initiatives, made cloud-based services available to its customers and clients.
- In 2014, Batelco won the "Customer Service Provider of the Year" at the annual CommsMEA Awards, the "Best Contact Centre Award" at the Customer Experience Management (CEM) in Telecoms: Middle East Summit Awards, and the "eEconomy Award" at the Bahrain International eGovernment Forum, and was also presented with the "ICT Company of the Year Award" at MEET ICT 2014.

"We operate in very diverse markets, each with its unique needs. Accordingly, we are continuing to undertake significant investments depending on the various needs of our individual operations, for the benefit of the group as a whole."





Director

Dr. Kamal Shehadi

Chief Legal and
Regulatory Officer
Etisalat Group

Dr. Kamal S. Shehadi is Etisalat Group's Chief Legal and Regulatory Officer since 2012. Prior to that, he was Senior Vice President for Regulatory Affairs at Etisalat Group. Kamal is currently the chair of the GSMA's Chief Regulatory Officers' Group for Arab States. Prior to joining Etisalat Group, from 2007 to 2010, Kamal was the Chairman and Chief Executive Officer of the Telecommunications Regulatory Authority, Republic of Lebanon. He chaired the ITU's Global Industry Leaders' Forum and the Global Symposium for Regulators in 2009. He has published widely on private participation in infrastructure, telecommunications liberalization and regulation, public finance, Euro-Mediterranean economic relations, and many other public policy issues.



اتصالات
etisalat

Etisalat is the UAE's leading telecommunications operator, one of the largest corporations in the GCC, and one of the world's leading telecom groups in emerging markets, ranking amongst the most profitable telecom groups in the world. Apart from establishing several "firsts" over almost four decades of operations, Etisalat has deployed many innovative mobile and fixed technologies that have helped the UAE maintain its position as a leading global ICT economy.

The company has the widest coverage of 3G and 4G mobile technologies in the UAE and has established an extensive Fibre-To-The-Home (FTTH) network, making the UAE rank as the most fiber-connected country in the world with 85 percent fiber-optic penetration.

As a leading integrated telecom operator and ICT solutions provider, Etisalat provides a range of end-to-end managed solutions to a range of industry verticals. Etisalat has also pioneered several "green" initiatives such as Emirates Energy Star (EES) which have directly impacted the UAE's carbon footprint by reducing CO2 emissions.

Corporate Achievements

- Etisalat Group, the leading Telecommunications Operator in Middle East, Africa and Asia, was ranked thirtieth amongst LinkedIn's "EMEA's 2015 Top 100 Most InDemand Employers."
- Etisalat won "The Best Use of Mobile for Retail, Brands & Commerce" category for its Mobile Cashier product offering and "The Mobile Connect Award for Best Authentication & Identity Solution" for Etisalat Mobile Connect service at GSMA's Global Mobile Awards 2015. Etisalat was also recognized for its "Data Center Project of the Year" at the Network World Middle East Awards.
- Etisalat continues to be the most valuable company in the UAE as well as in the region, with diversified portfolio across 18 markets, 170 million aggregate subscribers across its international footprint, and with some of the highest EBITDA margins in the telecom industry. Earlier this year, Etisalat also

"Responsible for identifying regulatory or public policy opportunities to create value, managing regulatory risk, and contributing to shaping the regional and international policy and regulatory environments"



- started allowing foreign and institutional investors to own Etisalat's shares.
- Etisalat increased its capital spending in the UAE by 40%, focusing on network modernization and enhancing eLifeproduct portfolio and ICT capabilities.
- Etisalat took a leadership role in creating smart living possibilities by introducing the Smart Living experience to customers in the UAE, allowing the residents to monitor, automate, secure, and control their homes remotely from anywhere and at any time, using a phone, tablet or a computer.
- Etisalat became one of the first telecom operators to carry out NFV/SDN deployment, aimed at enhancing user experience and increase service agility and innovation.
- As part of its ongoing support to people with special needs, Etisalat initiated a special offer of 50 percent discount on prices of mobile internet packages and video calls.
- Etisalat Carrier & Wholesale Services partnered with Telecom Italia to extend video transport services availability across the globe. The partnership was built on the strengths of TI Sparkle's global network focused in Europe, Africa, the Americas and Asia Regions, with Etisalat's leading network and leading position in the UAE, Gulf Cooperation Council (GCC) area, and the Middle Eastern region.
- Etisalat UAE's mobile app crossed more than one million downloads since launch in the second quarter of 2014. The app has registered over 56 percent increase in downloads in 2015 due to enhancements focused on improving customer experience. Etisalat's survey revealed 96 percent users frequently accessing the app. The number of payment transactions on the app increased by 70 percent in the first two quarters of 2015.



Director

**Mr. Talal Said Marhoon
Al Mamari**

CEO

Oman Telecommunications
Company



Together

Mr. Talal Said Marhoon Al Mamari is the Chief Executive Officer of Oman Telecommunications Company. He is also the Vice Chairman / Director of Worldcall Telecom Limited (an Omantel Company in Pakistan).

He has 22 years of experience in telecom sector working for Omantel. Prior to his appointment as CEO, he held several leadership positions including his last stint as Chief Financial Officer of Omantel.

Talal Al Mamari has had played instrumental role in different initiatives and projects carried out by the Company including the IPO in 2005, the restructuring of Omantel by bringing the mobile and fixed operations together and later the full legal merger of Oman Mobile with Omantel. He sits on the boards of several companies and investment funds including Worldcall Telecom, Infoline, United Securities Investment Fund and Al Roya Fund (Al Khair Investment Fund compatible with Sharia).

Omantel is the pioneer of total communications solutions in the Sultanate of Oman, offering the widest choice of state of the art services with the broadest network coverage. Oman Telecommunications Company (Omantel) is the first telecommunications company in Oman and is the primary provider of internet services in the country.

Omantel is considered one of the most prominent and competitive wholesale telecommunication providers in the Middle East region. In addition it is one of the leading companies in the field of submarine cable networks and a key participant in several submarine cables, which link Asia, Europe and America passing through the Middle East region, meeting the international capacity requirements of clients locally and internationally, thereby sustaining the Company's leading position among its competitors.

As a pillar of the Omani economy, Omantel has been a leading player in Oman's progress and national development. Omantel acquired a 65% share in WorldCall Pakistan in April 2008.

"Telecommunications infrastructure is an enabler for economic and social growth since it is an essential tool for empowering people at the same time as creating a business climate that nurtures innovation and efficient business processes."

Corporate Achievements

- Omantel, according to the annual brand survey of Brand Finance, was voted as the "Most Trusted Brand" in the telecom sector in the Sultanate.
- Omantel moved 8 positions upwards to become 33rd among the 50 "Most Valuable Brands" in the MENA region. The Omantel brand also received (AA-) "very strong" rating in terms of brand strength.
- Omantel launched Session Initiation Protocol (SIP) Trunking service for its corporate customers, enabling a large number of enterprises to benefit

from the Internet protocol and value added services provided by SIP.

- Omantel continued its commitment of supporting the growth of SMEs by all means to ensure their viability and competitiveness in the marketplace. It celebrated the winners of the Omantel Business Excellence SME Awards.
- As the owner of Oman's largest IP network, Omantel launched a world-class IPTV platform by du to offer its customers a tested and high-quality TV viewing experience.
- In 2Q-2015, Omantel realized revenue growth rate of 7.5% to R.O 256.6 million as compared with R.O 238.6 million in the corresponding period of 2014. It's revenue growth was mainly driven by domestic retail revenues which have recorded a growth of 8.3%. All major segments – Consumer, Corporate and Wholesale revenues recorded a growth.





Director

Mr. Jerome Henique

CEO

Orange, Jordan
Telecom Group



Mr. Jerome Henique has over 20 years of experience in the ICT field, during which he worked in a diverse array of markets that span France, Spain and Senegal, cultivating an extensive experience in the management of international teams, consumer behavior, strategic planning and corporate communications. Prior to joining Orange Jordan as CEO in September 2015, he worked as Deputy CEO of SONATEL Group — an Orange subsidiary based in Dakar covering four countries in West Africa — between 2010 and 2015, where he also served as Chairman and member of several of the group's boards. His insightful leadership and solid marketing and customer centricity background contributed to SONATEL's booming sales record over the past four years and helped propel the operator's rapid growth. He has been a member of Orange Executives Network. He also worked as Chief Marketing Officer of Wanadoo Spain from 2003 until 2006, managing the company's nationwide marketing operations.

Orange Jordan is a leading provider of integrated communications services in the Kingdom, with a broad lineup of fixed, mobile and Internet services and an expanding customer base now exceeding 4 million. Today, the company constitutes the backbone of Jordan's ICT landscape, offering advanced wireless broadband, digital TV, and a host of mobile services.

Leveraging on its international brand status, Orange Jordan has contributed significantly to placing the Kingdom on the regional telecommunications map, and it has been celebrating milestones ever since.

the company launched its new strategy for the years 2015-2020 under the title: "Essentials 2020" which focuses mainly on providing unmatched customer experience. To achieve this goal, the company will invest more than JD 300 million between 2015 and 2018, including a JD 200 million investment in its fixed and mobile network infrastructure.

Corporate Achievements

- Orange Jordan won the "Customer Delight Award" in the 2015 Middle-East, North Africa & Asia Awards (MENAA) for its efforts in delivering an unmatched customer experience to each and every customer; a primary objective of the operator's Essentials 2020 vision.
 - Orange Jordan conducted its "A Good Number for a Good Cause" campaign in support of its long-term CSR strategy, to raise funds to support the King Hussein Cancer Foundation.
 - Orange Jordan launched its Business Innovation Growth (BIG) startup accelerator program aimed at young entrepreneurs. BIG will help Jordanian startups expand into new markets and reach more customer segments.
 - Orange Jordan continued its leadership as the digital trendsetter in Jordan, as evident in the company's efforts in redefining broadband benchmarks, expanding upon its fiber connectivity, and offering 4G services.
- In July 2015, Orange Jordan became the first operator to launch 4G/ LTE roaming services with the first two international roaming agreements signed with Saudi telecom operators. It continued its data roaming bilateral partnerships in the Middle East, Asia, Europe, and America.
 - Orange Jordan's 3G network coverage exceeds 90% of the population, whereas its 2G network reaches more than 99%. By end-2015, Orange Jordan's 4G network is expected to reach more than 85% of the Jordanian population.

"With the recent launch of Orange's Essentials2020, the operator has defined for itself a series of ambitious targets. I look forward to collaborating with the team toward ensuring the realization of our ambitious strategy, delivering an unmatched experience to Orange Jordan's customers."





Director
Dr. Khaled Biyari
 Group CEO
 STC Group

STC
 الاتصالات السعودية



Dr. Khaled Bin Hussain Biyari has been Chief Executive Officer of Saudi Telecom Company since April 2015. Dr. Bin Hussain Biyari served as Senior Vice President of Technology and Chief Operating Officer of Saudi Telecom Company until April 27, 2015. He served as Senior Vice President of Technology & Operations at Saudi Telecom Company. Prior to joining STC, he served as the Senior Vice President and General Manager at Advanced Electronics Company (AEC). Dr. Bin Hussain Biyari serves as the chairman of STC Advanced Solutions. He was twice-elected chairman of the IEEE Saudi Section. He also served as a member of the committee responsible for developing the Long-Term National Plan for Electronics Industry in the Kingdom. In 2009 he was elected by the Council of Ministers to the BoD of the Electricity and Cogeneration Regulatory Authority (ECRA) in Saudi Arabia.

Saudi Telecom Company (STC) is the leading provider of telecommunications services in the Kingdom of Saudi Arabia and it is among the largest ICT service providers in the region. Its Saudi operations generated over SAR 46.108 billion in revenues in 2014. STC empowers more than 100 million consumers across the globe with customer-centric, cutting-edge solutions at the forefront of the knowledge economy. Today, STC comprises 16 local and international companies in 10 countries, with a fiber-optic cable network spanning 137,000 kilometers across Asia, the Middle East, and Europe. Based in the Kingdom of Saudi Arabia (KSA), where it is the top-ranked telecom operator, STC's network covers more than 99% of populated areas, with a mobile network capacity of 28 million lines, 8.4 million landlines, and broadband capacity of 3.75 million. Believing in the importance of its customers and fulfillment of their needs, STC has adopted a new Broadband Strategy that aims to support and re-enforce its leading competitive position.

Corporate Achievements

- Saudi Telecom Company (STC) demonstrated the latest 4.5G (LTE TDD+) Technologies, which will enable STC network to deliver the fastest LTE data rates in the Middle East, Europe, and North Africa.
- STC was ranked at 240 as one of the 500 most valuable brands in the world, according to the Global 500 2015 report by Brand Finance, the leading independent brand valuation consultancy.
- STC continued its investment in infrastructure, advanced networks, and new technologies, delivering strong financial performance, especially the 10% increase in consolidated revenues and the 3.7% increase in EBITDA for the 9 months period as compared to the same period in 2014.
- STC took leadership in offering self-services customer experience, allowing customers to take full charge of their transactions without the need for intervention by a service provider, thus ensuring confidentiality and complete privacy. It won Cisco's "Outstanding Self-Service Customer Experience" award.
- STC launched Big Data and data analytics, and took steps to boost innovation and entrepreneurship environment in order to transform creative ideas and projects into reality across a number of business sectors.
- STC expanded its satellite telecommunications services portfolio by completing the establishment of a new ground station in collaboration with Arabsat, operating with the satellite Badr5.
- Being a socially responsible organization, STC continued to place emphasis on sound corporate governance practices, transparency, fairness practices, and effective corporate governance.

"For an operator in general, if it's to capitalize on its major asset – which is the network – I think we have the right to venture into things that are attached to it, such as M2M, IoT and cloud-based services."





Director

Mr. Hakam Kanafani
Chief Advisor & Board
Member
Turk Telekom Group



Mr. Hakam Kanafani serves as Chief Adviser to the Chairman of Türk Telekomünikasyon A.S and is member of the Turk Telekom's Board. Previously, Mr. Kanafani served as the Group Chief Executive Officer at Türk Telekom. He served as Chief Business Development Officer and Chief Synergy Officer of Oger Telecom Ltd. He served as Chief Operating Officer of the PalTel Group, where he led strategy, acquisitions and financial consolidation of the Group. Prior to this, Mr. Kanafani served as the Chief Executive Officer of Jawwal, Palestine's first private cellular network. Mr. Kanafani is in GTB's Power100 list for Telco executives worldwide and named Best CEO for Investor Relations in Turkey in 2011, 2012, and 2013. Türk Telekom, Turkey's leading communication and convergence technologies company, successfully continues to sustain its mission of providing Turkey with the latest communication technologies.

Today, Türk Telekom is Turkey's leading integrated telecommunication and technology services provider with its Group Companies. It offers its customers a wide range of services from fixed voice to mobile voice, data, Internet, and innovative convergence technologies.

Türk Telekom, Turkey's leading communication and convergence technology group, offers integrated telecommunication services from fixed voice and GSM to broadband. As of 30 September 2015, Türk Telekom Group has 12.9 million access lines, 7.8 million broadband and 17.0 million mobile subscribers. Group companies capitalize on its modern network infrastructure spanning the entire country to offer individual and corporate customers a wide range of services. Türk Telekom owns a 100% shares in broadband provider TTNET; one of the three mobile operators in Turkey, Avea, the convergence technologies company Argela, IT solution provider Innova, online education company Sebit, call center company AssisTT, wholesale data and capacity service provider Türk Telekom International AT AG, and its subsidiaries. 55% of Türk Telekom shares belong to Oger Telekomünikasyon AŞ and 30% of shares belong to Turkish Republic Prime Ministry Under-secretariat of Treasury. The remaining 15% is publicly traded.

Corporate Achievements

- Türk Telekom, with its group of companies, and as Turkey's leading communication and convergence technologies company, continued to successfully sustain its mission of providing Turkey with the latest communication technologies.
- Türk Telekom continued its success in 2015. Its products, services, success in regional growth, social responsibility projects that target to add value to Turkey, and international awards rendered Turk Telekom as the "Most Valuable Telecommunication Brand" with its brand valued at US\$2.475 billion, according to a study of Brand Finance.
- Türk Telekom is listed as one of the 15 companies in BIST 30 (Borsa İstanbul, the sole exchange entity of Turkey) to be included in the newly created BIST Sustainability Index, thanks to its long standing emphasis on Environmental, Social and Governance (ESG) policies and practices.
- Türk Telekom achieved strong performance in 3Q-2015: Consolidated revenues increased by 5.2% year-on-year. Mobile

"If the telecommunications industry had not introduced innovations, today's world would not have been possible. From payment systems to HR and from marketing communications to logistics, we need to explain better the role the telecommunications industry plays in every field."

business grew by 14% year-on-year, driven by continued subscriber growth and mobile data revenue increase. Mobile subscribers increased to 17 million, with a 50% postpaid ratio (the highest in the market). Data revenues increased by 38% year-on-year supported by ongoing increase in smartphone penetration at 64% (also the highest in the market).

- Türk Telekom Group gained more than 12.9 million access lines and 7.8 million broadband subscribers.
- Türk Telekom, a member of Cloud Security Alliance, offers various options under cloud services, such as BuluTT Göz, BuluTT Konferans, BuluTT Ölçüm, BuluTT

Akademi, BuluTT Radyoloji, and BuluTT e-posta.

- Türk Telekom obtained the strongest position in strategic bands such as 800 MHz and 1800 MHz, the most essential bands for 4G LTE. The company is also the only operator that has higher spectrum market share than its subscriber market share.
- Türk Telekom continued to expand its fiber network, with the network's total length now exceeding 206,000 kilometers in Turkey, one of the largest markets in the SAMENA region.
- Türk Telekom completed its share transfer of Avea and became the sole owner of the company.





Director

**Mr. Salman Bin
Abdul Aziz Al Badran**
CEO

VIVA Telecom, Kuwait



Mr. Salman Al-Badran has been the CEO of VIVA since January 2011. Prior to joining VIVA, Salman acted as the General Manager of Al Jawal Network in Saudi Telecom Company (STC). His initial role in VIVA was Project Director in charge of the implementation and commercial launch. He successfully built and led the combined Commercial, Technology, HR and Finance team for the commercial launch of VIVA in December 2008, in a record time span of six months.

His tenure as the Chief Technical Officer in VIVA is marked by the timely implementation of the Technology strategy to meet the market demand for the high volume of Mobile Broadband usage. Mr. Salman has been pivotal in driving the company's ever growing brand and market share of the Kuwait's Mobile telecommunications sector. Eng. Salman Bin Abdulaziz Al-Badran made the list of the Best 100 Chief Executive Officers (CEO) in the Gulf Cooperation Council (GCC) region for 2015.

VIVA is the newest, most advanced mobile telecommunications service provider in Kuwait. VIVA has rapidly established itself in the market through its customer and employee-centric approach.

With the objective of providing shareholders value, and return on investment, VIVA is focusing on corporate governance activities in the following key areas: Strategic Guidance, Active Monitoring, Strategic Management, Active Auditing and Organization and Human Resources to meet business requirements.

VIVA offers superior Internet speed due to the implementation of the most advanced 4G LTE and High Speed Downlink Packet Access (HSDPA) network in Kuwait resulting in high network performance.

The company continues to take a considerable share of the market by offering an innovative range of advanced products and services, a state of the art network, and access to a world-class service.

Corporate Achievements

- VIVA Kuwait realized net profits of US\$ 108.01 million (KD 32.8 million), an increase of 12% during the nine month period of 2015. Total revenues reached KD 204 million, a strong growth of 17% as compared to the same period in 2014.
- VIVA Kuwait continued to lead in offering high quality services to its clients and increasing operational efficiency to create more value. The company successfully contributed to the growth and development of Kuwait's telecom industry.
- VIVA was able to maintain its position as the second largest telecom operator in the Kuwaiti market in term of subscribers and revenues.
- In 2014, VIVA Kuwait won several awards for excellence, including the "Best 4G Package" award at the 2nd Annual Teknotel Awards, the "Best Mobile Operator" Award from Service Hero, the "Editor's Choice Award" from Network World Middle East, the "Best Speech Analytics Implementation" from INSIGHTS - Middle East Call Centre Awards 2014, and the "Best Middle Eastern Operator" at the 2014 Telecom Review Summit Awards.
- VIVA Kuwait's network coverage exceeds 99% of Kuwait's residential areas and other geographically equipped areas.

"Our network, which covers all regions in Kuwait, has now been upgraded so that our customers can benefit from the latest mobile broadband technologies. It is our goal to meet our customers' every expectation and to lead the development of the telecommunications sector in Kuwait."





⊙ TAXATION LANDSCAPE ACROSS THE REGIONS

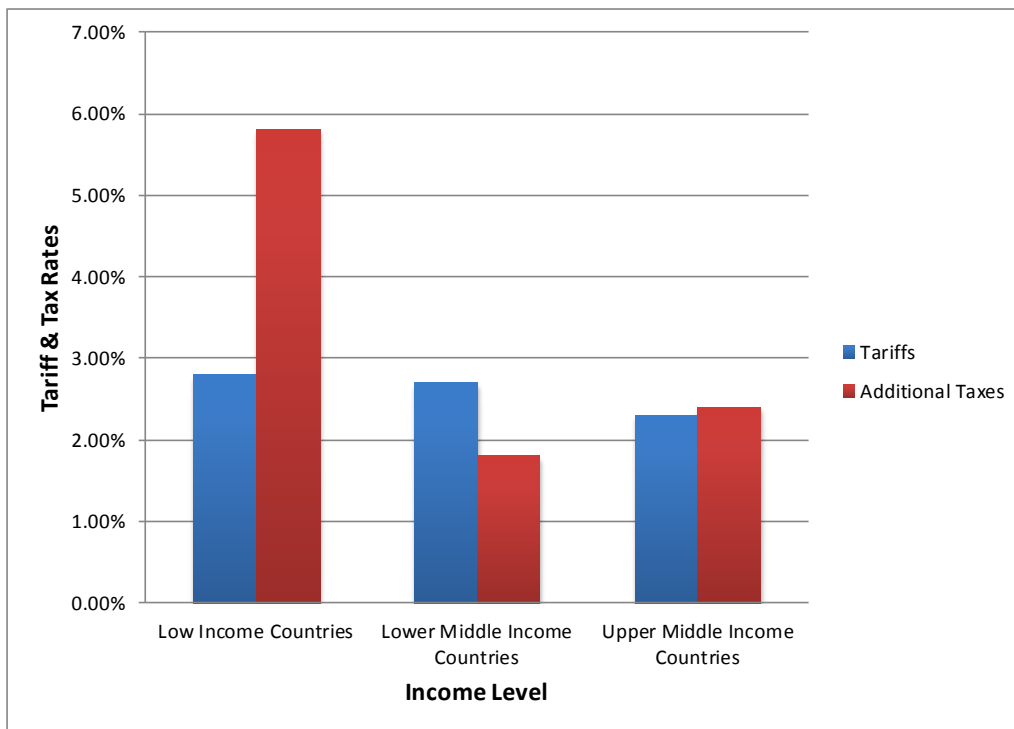


Figure 1: Country Income Levels vs Costs of Telecoms/ICT Services

Research Note: It appears that the relationship between taxation and the countries' income level are counter-intuitive: Low income countries tend to have higher taxation and are more prone to introducing and suffering from unnecessary or irrational costs of ICT services. This visibly shows flawed perceptions on telecoms/ICT costs. Moreover, it also shows that countries with a clearer understanding of the role of communications technologies, products, and services in socio-economic development, combined with their overall commitment to economic development through cross-border engagements, trade, and open visions into the future have higher probability of having lower additional taxes, in addition to having a competitive tariffs structure.

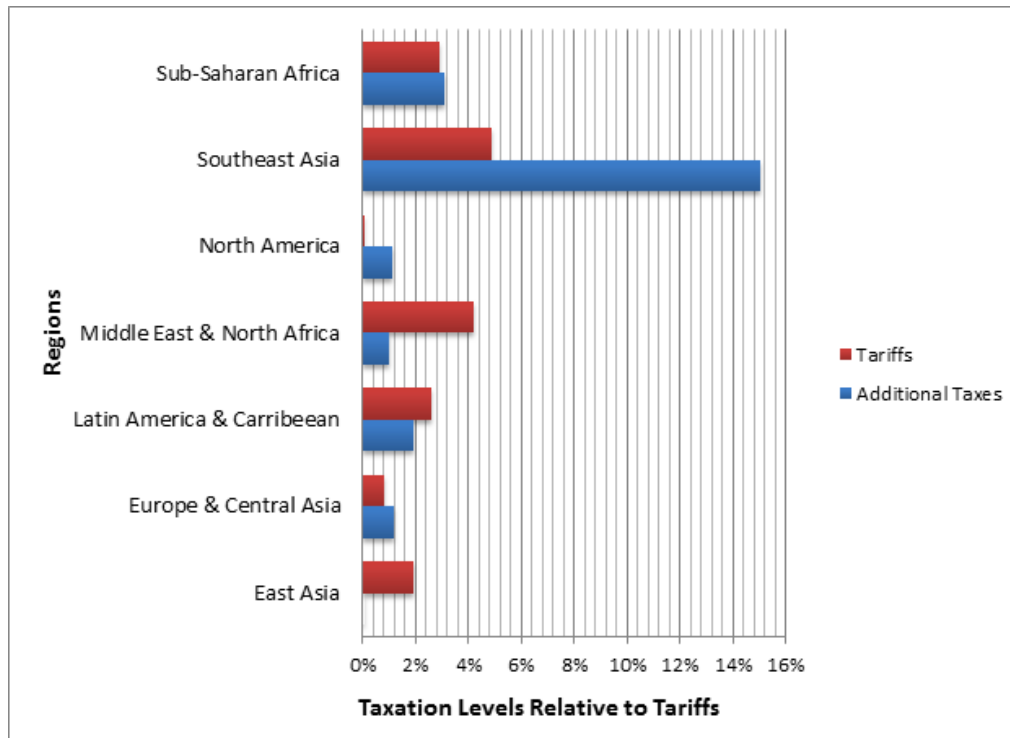


Figure 2: Region-wise Taxation Levels

Research Note: Figure 2 shows that some countries, particularly in the developing world, impose noticeably higher additional taxes on the provision and access of telecommunications/ICT products and services. Southeast Asia, among many nations of the world and among many countries within the SAMENA region, appears to take lead in imposing additional costs. This is also the region with some of the highest population and poverty levels in the world, and where the presence of additional taxation has been hampering ICT growth, and unfortunately, that too after the growth actually began to bear fruitful results. Notably also, Southeast Asia is also the region where some of the world's most advanced communications technologies and digital services, such as m-banking and m-health, have been more successfully launched and tested. Thus it is apparent that the developing world most definitely requires easier and cost-effective access to ICT to achieve economic development, and any additional costs will continue to result in the loss of time to develop, in greatly reduced foreign direct investment, mismanagement or poor utilization of existing communications infrastructure, and presence of an overall business environment that is unconducive to sustainable investment. Rational taxation policies must be framed and put into effective implementation in regions like Southeast Asia and Sub-Saharan Africa.

Data Source: Based on the October 2014 findings of The Information Technology & Innovation Foundation (ITIF)



MEMBERS NEWS

MEMBERS UPDATES

Mobily offers "Connect roaming" packages for the holiday season

Etihaad Etisalat (Mobily) has announced its packages, 'Connect Roaming' keeping in mind the needs of its customers roaming outside the Kingdom. This will help eliminate the need to try looking for viable internet solutions in a foreign land through available connectivity from Mobily connection, even while traveling abroad. Connect Roaming packages come in four distinctive offers; the starting package price is SR 50 for daily package which provides a capacity of 500MB and can be activated by sending "Safar1" to 1100, second offer costs SR 150 and a capacity of 2GB which can be activated by sending "Safar2" to 1100; third category provides a weekly package with 5 GB data size and costs SR250 and can be activated by sending the symbol "Safar3" and, finally, the largest category of "Connect Roaming" is a monthly package providing unlimited data costs SR350 and can be subscribed by sending "Safar4". In addition, these packages can be activated through a system of USSD by entering * 1100 # and then "roaming" and then to " Connect Roaming Packages"; even another way to subscribe to these packages is through Mobily website by accessing "My Services" and moving on to "Connect Roaming Packages" for activation; the packages can also be

activated by visiting one of the company's branches throughout the Kingdom. Mobily has launched the roaming service by partnering with the best service providers in the world to ensure highest quality of services to our customers, this includes, AT&T in USA, Vodafone in UK, Germany and Spain, Organe in France, Switzerland and Jordan, Telstra in Australia, Celcom in Malaysia, Etisalat in UAE, Batelco in Bahrain and Ooredoo in Qatar. Mobily is considered as one of the top operators in the region providing best in class international roaming services based on 4G LTE; for this, Mobily has partnered with 117 operators worldwide. Mobily has announced the offers in line with Mid-Year holiday season in the school year to facilitate effective and easy communication to its subscribers while travelling abroad through various solutions to meet everyone's needs.

Batelco partners with Turk Telekom International

Batelco, in keeping with its global expansion plans, has signed a series of agreements with different operators across the world. Turk Telekom International (TTI) now joins Batelco 's diversified portfolio of global partners. Turk Telekom International is a leading telecommunication operator in Central and Eastern Europe, Turkey, Caucasus, the Middle East and Asia, providing

a full range of Internet and data infrastructure, data center and wholesale voice services and solutions. Batelco stresses the importance of forming strategic partnerships with organizations that share a similar vision, to drive its growth plans forward and provide exceptional value to its customers. The new cooperation with Turk Telekom fits neatly with Batelco's major plans to expand its global presence and solidify its global data offerings. Global data connectivity has become a necessity for businesses as operations are increasingly digitized and data intensive. Accordingly, the availability of a resilient and reliable data connection can be considered as a crucial element required by these businesses. The Batelco -Turk Telekom International agreement will meet this demand and further support organizations with their complex world-wide connectivity requirements. Batelco Chief Global Business Officer Adel Al-Daylami and Turk Telekom International CEO Cengiz Oztelcan signed the agreement in the presence of officials from both organizations recently. This new partnership will allow the two organizations to access each other's networks thereby enabling them to extend their reach into newer markets. This will further reinforce Batelco's positioning, especially in the Middle Eastern and Eurasian regions, and will allow customers and carriers more access and reliability. Similarly, Turk Telekom International will be able to utilize Batelco's presence to reach its customers in more locations. "We are continuing with our expansion plans at a very rapid pace," said Mr. Al-Daylami. "We are looking forward to the partnership with Turk Telekom International and are sure it will open new avenues of cooperation for both our organizations allowing us to provide services at outstanding value," added Mr. Al Daylami.

du and MediaTek cooperate on the deployment of advanced LTE technologies and terminals

MediaTek, a pioneering fables semiconductor company and a market leader in systems-on-chip (SoC) with the world's first octa and deca-core Smartphone platforms, announced that du – the Middle East's fastest growing telecom service provider

– has agreed to cooperate on the deployment, testing and validation of the next generation technologies in LTE, LTE-Advanced, LTE-Advanced Pro and high definition voice services such as VoIP over LTE and Wi-Fi. The cooperation is agreed under a general Memorandum of Understanding (MoU) where both companies will also exchange information and ideas towards the advanced technologies in 5G and Internet of things (IoT). du, the first telecom service provider in the Middle East to achieve GCF accreditation, founded the Terminal Innovation lab to improve their mobile device testing and validation and further enhance end-users' experience. du has recently announced the completion of Middle East's first 10 Gbps live 5G demo at GITEX Technology Week. As an integral part of this agreement, MediaTek's wide range of devices and turnkey solution allowing manufacturers to reduce the development time of new products, and extend a competitive edge, which will help to improve du's customer satisfaction and provide a new range of devices supporting technologies deemed as key to du's network performance. du will use MediaTek's breadth of modem technology solutions to efficiently and comprehensively test, validate, and troubleshoot mobile device and benchmark performance in both lab and field based environments to ensure seamless and fast time-to-market of new devices and technologies. Saleem AlBlooshi, Executive Vice President of Network Development and Operations at du, said: "We are very pleased to cooperate with MediaTek as a leader in Smartphone platforms in order to enhance our user experience." He continued: "Bridging the gap between terminals and network is our aim to offer seamless experience to our customers. Also, the cooperation in 5G and IoT development is another aim to realize our leaders' vision to build the smartest city and to be on the top of technology evolution." "MediaTek looks forward to working with du to test and validate next generation technologies including the areas of advanced LTE standards and high definition VoIP services over LTE/Wi-Fi," said Cheng-Te Chuang, Head of Wireless Communications Technology Businesses Unit and Vice President of MediaTek. "We see operators in MEA as some of the most advanced when it comes to investing and implementing new technologies. MediaTek's chipset

solutions, including the launch of the first Deca-core SOC with our Helio X20, along with our continuous investment in R&D, is an attractive proposition for advanced LTE and Wi-Fi operators like du to roll out," he said. "Cooperation with du allows MediaTek to continue empowering end-users with the latest technologies and showcase our extensive experience in developing chipsets with fast time-to-market."

Syniverse Supports Roshan's Revenue Assurance

Syniverse has signed a multiyear agreement with Roshan, Afghanistan's largest telecommunications company, to provide revenue assurance and fraud detection services. The agreement will provide Roshan with predictive analytic solutions that protect the company against the latest forms of mobile fraud and optimize its revenue flow.

Mobile fraud has surged to present an especially penetrating threat to businesses and consumers, as companies now stand to lose on average of \$92 million in revenue each year from mobile fraud, according to a report by J. Gold Associates.

"At Roshan, we not only strive always to provide the best quality products and services to our customers, but also to bring best business practices and international expertise to Afghanistan through collaborations with leading global companies," said Karim Khoja, CEO of Roshan. "By working with Syniverse, Roshan will be able to use the strongest fraud protection tools available to optimize its revenue flow and better serve its 6.5 million customers."

Roshan will implement Fraud Management and Revenue Assurance solutions, which are based on Syniverse's Risk Management portfolio. The Fraud Management solution helps both companies and operators combat the full range of today's mobile fraud by using predictive analytic capabilities to enable the best collection of data and use of it to respond to particular patterns. Syniverse's Revenue Assurance solution provides clear and accurate data on an operator's

entire revenue flow and identifies any problem areas in the end-to-end billing cycle that can be enhanced to help eliminate revenue loss.

"With the Communications Fraud Control Association reporting that mobile fraud is responsible for \$38 billion in revenue loss for operators globally, it's imperative that operators have a full-scale strategy for protecting themselves and their customers from this threat," said Joseph George, Senior Product Management Director, Syniverse. "Syniverse's fraud strategy – based on a global, mobile and data-driven approach – will enable Roshan to quickly implement a full-strength fraud-protection solution to provide the best user experience to its customers."

PTCL launches Pakistan's first online gaming lounge

Pakistan Telecommunication Company Limited (PTCL), the country's leading ICT services provider, has launched Pakistan's first online gaming service, 'Pakistan Gaming Lounge – (PGL)' with a live pro-gaming event for the twin cities at Centaurus Mall. The first of many, the two-day event featured an overwhelming number of young gaming aficionados, drawn in by a chance to play network games and win exciting prizes. This

such as online gaming is imperative for the development of our youth." He further added that "PTCL is striving to create a better tomorrow for the country's youth by connecting them with the international information highway, inculcating a sense of greater competitiveness across a global platform. Hence, we have made our PGL platform open and accessible for all" The first of its kind, Pakistan Gaming Lounge – (PGL) comprises dedicated multiplayer game servers focusing on hard core gaming and eSports. Hosted at PTCL's state of the art data centers, PGL's servers are geared towards providing a lag free gaming experience for highly popular computer games such as Counter-Strike, Call of Duty and Minecraft and many other popular gaming titles. The competition presented an exciting opportunity to help boost the profile of Pakistan's burgeoning gaming community, providing a unique and integrated platform for the gaming community to socialize and compete on. Open to all, it was aimed at creating greater awareness for online gaming in the Pakistan and a chance for young gamers to participate in a growing and increasingly popular global trend. Featuring intense rivalries, the event witnessed a highly contested tournament amongst the twin cities' top gamers. Zaki Nasir took the top prize for the Counter-Strike tournament on Saturday, followed by Umair ul Bari who scored top position in the Modern Warfare tournament held on Sunday. With similar events planned for Lahore and Karachi in the coming months, all gaming enthusiasts can register themselves on www.gaminglounge.pk to fully experience this pioneering Online multi-player networked gaming platform.

Cisco, Intersec team up to boost big data analytics capabilities

Cisco and Intersec have signed a strategic partnership designed to offer a more comprehensive big data analytics proposition to operators. The partnership comprises two elements. First, Cisco is making an undisclosed equity investment to finance the creation of a joint business. Second, the two companies have signed a commercial partnership to enrich cellular data with Wi-Fi by connecting their platforms and a reselling

agreement for Cisco to distribute and integrate Intersec's solutions with their own. Intersec is a big data software company whose tech is focused on areas such as customer management, fraud, the Internet of Things and messaging. It counts Telefónica, SFR, MTS, Zain, O2 and Orange among its customer base. CEO Yann Chevalier commented: "We believe [this agreement] will be a tremendous opportunity for both companies to better serve our customers. "Intersec will benefit from Cisco's commercial clout and highly professional approach to accelerate our development in some regions." Frédéric Rombaut, Head of Corporate Development EMEAR at Cisco, said: "Intersec is a pioneer and leader in big data analytics for Telco networks, a key segment for Cisco. "The company is set for strong growth. Intersec's extremely efficient solutions combined with Cisco's platforms will expand the value of our respective proposals. "Our investment is therefore coupled with a technological and commercial partnership that will accelerate the development of our markets globally."

Qualcomm rules out breakup

Qualcomm ruled out splitting up the company, with CEO Steve Mollenkopf insisting that its current structure will best fuel the company's growth. The mobile chip maker also raised its earnings per share (EPS) guidance for its first quarter of fiscal 2016. "The strategic benefits and synergies of our model are not replicable through alternative structures," said Mollenkopf, in a statement. "We therefore believe the current structure is the best way to execute on our strategy to build on our position in the ecosystem and deliver enhanced performance and returns." Qualcomm launched a strategic review in July and confirmed that a breakup was one of the options on the table, after reporting hefty declines in turnover and profit in the quarter ended 30 June. The company also unveiled a strategic realignment plan that includes more than 4,000 redundancies in a bid to save US\$1.4 billion. Reports at the time claimed that Qualcomm was under pressure from an activist shareholder, Jana Partners, to separate the company's chip-making activities from its patent-licensing business. On Tuesday,

premier online gaming event was aimed at providing computer gaming enthusiasts a first-hand experience of PGL's superfast gaming servers geared at promoting multi-player networked gaming within the country. Set up for the nation's tech savvy youth, the launch successfully introduced yet another engaging platform for such community-based and creative online activities by PTCL. Adnan Shahid, Chief Commercial Officer PTCL said "Positive entertainment and sporting activities



Qualcomm said the review assessed the company's current corporate and capital structure, as well as a wide range of alternatives, and tested them thoroughly, including evaluating ways to mitigate risks and challenges posed by these alternatives. "Given the dynamic industry and competitive environment, we decided to take a fresh look at our structure to ensure we were doing everything possible to enhance the value of the company and position ourselves for long-term success," said Qualcomm chairman Paul Jacobs. In a separate presentation, Qualcomm said it is on track to achieve its \$1.4 billion savings target. The company also raised its EPS guidance for fiscal Q1 2016. It now expects to meet or exceed its forecast of \$0.80-\$0.90 per share for the three months to the end of December.

Syniverse extends end-to-end LTE roaming reach for Ooredoo Oman

Syniverse announced a new agreement to enable Ooredoo Oman to extend its LTE roaming reach by leveraging Syniverse's IPX Network Solution and Diameter Signaling Service. The Syniverse IPX network interconnects the world's mobile networks to make LTE data and VoLTE roaming possible, reaching more than 270 operators through more than 2,000 LTE roaming routes. Ooredoo Oman's connection to Syniverse's IPX network serves as a simplified way to reduce the number of one-to-one LTE network connections the operator must manage on its own. "As the leader in LTE enablement, Syniverse allows us to enhance our delivery of the next-generation mobile experience that our subscribers want," said Jim Maxwell, Chief Legal, Regulatory and Wholesale Officer, Ooredoo Oman. "Through a single connection to Syniverse's expansive IPX network, we are able to deliver LTE roaming for our inbound and outbound roamers while gaining access to a suite of hosted solutions that help us navigate roaming complexities." The operator also is leveraging other Syniverse solutions critical for roaming, including Syniverse DataNet to combat roaming fraud as well as its Data Clearing House for GSM and Financial Clearing Services for GSM. "Always-evolving technology requires mobile operators to enhance network efficiency through

improved connectivity and visibility," said Nour Al Atassi, Regional Vice President and Managing Director, Middle East and Africa, Syniverse. "The interconnected global reach achieved by using Syniverse as a single connection point for greater reach and access to services positions Ooredoo Oman to meet its existing needs while smoothly transitioning to VoLTE and other advanced services." The agreement with Ooredoo Oman builds on Syniverse's six-year relationship with the operator and Syniverse's IPX momentum to enable people to enjoy the same high-quality mobile experience that they have become accustomed to at home, wherever they travel. Recent examples include Syniverse's agreement to extend LTE Roaming Reach for Dialog Axiata, Telin and Saudi Telecom Company.

Saudi Telecom to invest in Virtualized Packet Core to transform mobile service

Saudi Telecom Company (STC) has decided to make investment in Cisco Virtualized Packet Core (VPC) to transform its mobile service delivery model and expand its customer offering in Saudi Arabia. Cisco VPC will assist STC to address new demands while reducing network capital and operational expenditures. The telecom network vendor said VPC will allow STC, a leading telecom operator in the Middle East, to accelerate the process of adding new enterprise customers from industries such as healthcare, transportation, retail, banking etc. and launching new applications to market. The Cisco VPC will provide a universal mobile packet core to support all STC's wireless services in a single solution. Flexibility, efficiency, and scale of virtualized cloud services are the main benefits of Cisco VPC. The Cisco VPC solution significantly enhances service agility for telecom service providers, enabling them to scale capacity and introduce new services much faster and more cost-effectively. STC's new mobile platform will provide better network speeds and a higher quality of service over 4G LTE networks. Nasser Al Nasser, SVP for Technology & Operations, STC said: "STC's goal is to maintain its leadership by continuously innovating to meet the ever-changing customer needs. Cisco Virtualized

Packet Core solution will give us the flexibility we need to launch new services quickly and seamlessly for our valued customers."

Batelco continues expansion plans for global growth

Batelco, keen on following its global expansion plans, has signed an agreement with Bharti Airtel Limited ("Airtel"), India's leading operator and the third largest mobile services provider, with operations in 20 countries across Asia and Africa. This partnership follows Batelco's announcement of its major plans to expand its global presence and solidify its global data offerings. In an increasingly digital world with diversified business requirements, global organizations now place larger emphasis on resilient and reliable global data connectivity. In recognition of this trend, the Batelco-Airtel agreement will further support organizations with their multi-faceted world-wide connectivity requirements. To drive its growth plans forward and provide exceptional value to its customers, Batelco stresses the importance of forming strategic partnerships with organizations that share a similar vision. In line with this, Batelco Chief Global Business Officer Adel Al-Daylami and Airtel Director & CEO Global Voice & Data Business, Ajay Chitkara, signed the agreement in the presence of officials from both organizations. This new partnership between Batelco and Airtel will allow the two organizations to access each other's networks thereby enabling them to extend their reach into newer markets. This will further reinforce Batelco's positioning, especially in the Pan-Asian region, and will allow customers and carriers more access and reliability. Similarly, Airtel will be able to utilize Batelco's presence across the Middle East and other regions to reach its customers in more locations. "We are well in line with our expansion plans, and are glad to have signed this agreement with Airtel to drive us forward," said Mr. Al-Daylami. "It's partnerships like these which empower Batelco to meet global demands and provide services at outstanding value. Furthermore, this partnership also comes at a time when Batelco is focusing on its active role in strengthening the Bahraini market.

These partnerships, especially with well-established operators like Airtel, help Batelco in being a driving force to capture investment opportunities for the Kingdom of Bahrain," he added.

Huawei drives Agile Network innovation unveiling its latest in SDN-ready solutions

To better compete in today's digital economy, Huawei—a leading global ICT solutions provider—unveiled its Agile Distributed WiFi solution along with its Advanced Persistent Threat (APT) Protection solution. The launch marks the latest solutions under the Agile Network 3.0 concept, announced globally earlier this year and is set to give users drastically faster and uninterrupted network connectivity that will provide an overall, much more enjoyable and seamless experience. With the integration of the latest APT Protection solution, businesses will also be able to securely embrace the future mode of Software-Defined-Networking (SDN), protecting their infrastructure even against the most sophisticated cyber threats today. The launch was hosted at the regional edition of Huawei Network Congress Middle East 2015 and included key notes from network industry experts across the value-chain eco-system including representatives from Huawei's global and regional team, its alliance and go-to-market partners that included Intel and Alpha Data's 4Sight in addition to its end-users.

Apple releases first Arabic version of Siri

Apple Inc released a version of its virtual personal assistant Siri for Arabic speakers in the United Arab Emirates and Saudi Arabia, potentially

making iPhones more attractive in a largely affluent market of more than 30 million people. The move, part of Apple's latest software updates, means people in those countries will be able to use Siri in their native tongue on iPhones, iPads and the Apple Watch. The availability of Siri in Arabic may make some consumers more receptive to Apple software, said Ken Singer, managing director of the Center for Entrepreneurship and Technology at UC Berkeley. "These devices are incredibly personal," said Singer, who has counseled entrepreneurs in the Middle East. "(Consumers) are going to want to feel like the device is designed for them." Apple has steadily broadened Siri's reach since the first edition was released in 2011, and the digital assistant now supports 18 languages spoken in 31 countries. Arabic speakers outside Saudi Arabia and the UAE will be able to use Siri, though it will not be tailored to their dialect.

PCCW Global wins MEF Best Wholesale Service Provider – Global award

PCCW Global, the international operating division of HKT, was presented the award of Best Wholesale Service Provider – Global for its robust wholesale offering and global coverage at the recent Metro Ethernet Forum's (MEF) Excellence Awards 2015, further enhancing its reputation as a world leader in Carrier Ethernet service provision. The MEF's annual awards recognize excellence and leadership in the development, marketing and delivery of Carrier Ethernet retail and wholesale services. The judging panel was comprised of senior analysts from independent research firms including IDC, Infonetics, Vertical Systems, Gartner, Frost & Sullivan, and Ovum. PCCW Global is a leading service provider and has established structured interconnect relationships with a large list of local and regional service providers to extend its pre-existing robust core global coverage and deliver increased value to its customers. Through the extensive deployment of its infrastructure, PCCW Global is able to deliver end-to-end managed services to nearly every corner of the globe. PCCW Global's managed services ensure guaranteed bandwidth and

performance, backed by rigorous SLAs, and monitored 24x7 by Global Service Operating Centers (GSOC) positioned in various time zones. PCCW Global invests a great deal of time and resource to guarantee its customers reliable end-to-end connectivity and a resilient service environment which enables them to achieve business goals efficiently and effectively. MEF is a global industry alliance comprising more than 220 organizations. These include telecoms service providers, multiple cable-system operators, network equipment vendors, software manufacturers, semiconductor vendors and testing entities. While many organizations offer isolated solutions to isolated challenges, MEF is the only organization in the SDO (Standard Defining Organizations) landscape that offers a multi-carrier/inter-carrier framework, namely LSO, enabling a streamlined and simple realization of NNIs. This award recognizes PCCW Global's capabilities to integrate multiple elements into an end-to-end orchestrated solution. Mr. Nan Chen, President of the MEF, congratulated PCCW Global on its outstanding contribution to the industry and recognized commitment to delivering innovative Carrier Ethernet solutions to customers throughout the world. Mr. Marc Halbfinger, Chief Executive Officer of PCCW Global, said, "We are grateful to the MEF for this prestigious award which recognizes PCCW Global's world leading Carrier Ethernet capabilities".

Orange, Huawei team to build energy efficient telecom networks

Orange and Huawei announced cooperation to invent and build high energy efficiency telecommunications networks by 2020. The partnership will accelerate the implementation of high energy-efficient solutions in Orange's infrastructures to achieve the company's 2020 objective of reducing CO2 emissions per customer-usage by 50 percent. Huawei will contribute to Orange 2020 environmental objectives by providing better energy efficient solutions, said Zhilei Zou, the president of Carrier Business Group, Huawei. Both companies have been partners since 2013. The cooperation has enabled the design of customer connector cards that reduce energy



consumption by 50 percent for ADSL access and 70 percent for fiber-optic access. Orange is currently assessing the cards for future deployment on their fixed networks. The companies have also developed energy-saving features for mobile networks that can save an average of 10 percent of radio equipment energy consumption. Orange has already started to deploy these features in their mobile networks. Another area of cooperation is to develop a modular convergent infrastructure for both fixed and mobile services. A platform is already set up at Huawei research laboratories in Shenzhen. Orange plan to launch a first pilot trial for this solution in 2016. The companies will focus, further develop and test in field situations and new solutions that bring more energy efficiency and environmental benefits. They plan to design new network architecture, enabled by fibre-optics, use of new components and signal processing algorithms to improve mobile network power amplifiers, and Virtual Network Functions (VNFs) to optimize telecommunications infrastructures. The partnership will also work to improve data storage management within the cloud and improve energy efficiency by improving power supply and implementing renewable energy and advanced cooling technologies. Both companies aim to meet their "zero watt @ zero load" vision.

du deploys Huawei's SingleSON self-organizing network solution

du has teamed up with Huawei—a leading global ICT solutions provider—in an effort to effectively manage the operator's growing mobile network while at the same time delivering on its promise of a superior customer experience. To that end, du has become the leading telecom operator in the MENA region to deploy Huawei's SingleSON self-organizing network solution, empowering the operator to optimize its wireless network performance in an automatic and efficient mechanism. The technology will ultimately help du to manage the explosive growth and development of mobile data traffic which is expected to increase over the

next decade. The solution was recently tested live on du's mobile network. According to du, the performance of the solution achieved remarkable results and exceeded expectations with immediate improvement on both drop call rates as well as users' throughput. It also exhibited better sharing of radio resources between layers and technologies. Mr. Marwan Bin Shakar, Vice President at du, noted: "This latest deployment is not only a leading technological innovation in the region, but more importantly it will allow us to continuously deliver a better performance and great user experience using more simplified and automated network solution." Enabling du to operate an increasingly more complex and intelligent network, the initiative will leverage Huawei's leadership in Radio Access Networks as well as its worldwide research & development efforts around high-speed 4G and 5G mobile technologies. Jiang Wangcheng, President of Huawei SingleOSS Product Line, said: "To address the challenges brought by an ever-expanding mobile ecosystem, networks must become both broader and smarter. Du has clearly made that a priority for its business and will be able to leverage Huawei's SingleSON solution to create a more consistent and intuitive network enhanced with the very latest Huawei innovations in 4.5G and 5G wireless technologies." Today new mobile network technologies such as LTE-Advanced, 4.5G and 5G are being explored as a means for addressing the explosive growth in mobile data worldwide. The next generation of 5G technologies are likewise being defined and developed to serve the huge data requirements as the Internet of Things is expected to become widespread. The experiences gained from du's trial of the SingleSON solution are now being shared by Huawei in several other trials in more than 25 networks in countries and regions such as China, Europe, Asia Pacific, Africa, South America, and Australia

Etisalat Group celebrates graduates of its Global High Potential (HiPo) program

Etisalat Group celebrated the graduation of its latest cohort of

the Global High Potential (HiPo) Program, which is designed to develop 72 future leaders of the leading telecommunications operator in Middle East, Africa and Asia. The collaboration between Etisalat Group, its Operating Companies and the institutions of Harvard Manage Mentor, Informa Telecoms Academy and HEC Paris – all leaders in innovative learning solutions and executive education - is part of a concerted effort by Etisalat Group to grow future leaders from within involving participants from 21 nationalities across the Group's international footprint of 18 countries. The objectives of the High Potential Programme are to: create and implement a long-term sustainable leadership pipeline to meet Etisalat's global business growth ambitions; identify key resources in Etisalat and create a readily available global team of talent; develop these resources for roles of greater responsibility and scope; retain key talent; and align development of HiPo pool with Etisalat leadership profile and relevant to the Group's vision and strategy. Commenting on the program Abulaziz Al Sawaleh Al Shehhi, Chief Human Resources Officer, Etisalat Group said: "The High Potential Program is about developing our most valuable talent for tomorrow. Across our international footprint, Etisalat Group has many employees with the ability, engagement, and aspiration to rise to and succeed in more senior leadership roles. This program will enhance each participant's global mindset and their ability to significantly contribute to Etisalat's future growth." Future High-Potential leaders are identified through a vigorous selection process and those chosen to be part of the program come together for a unique learning experience, which combines classroom learning, business simulations and taking on real business challenges, led by Etisalat Group. Prof. Dr. Wolfgang Amann, Academic Director, HEC Paris in Qatar, one of the institutes contributing to the delivery of Etisalat's HiPo Program, added: "It is a great pleasure to be working with Etisalat Group to deliver this program, and to support its leadership development journey. We have worked closely with the Group's senior team to develop this unique, but challenging learning experience, which will provide participants with hands-on insights, skills, and tools and enhance a global mindset. With the support

of our expert faculty members, it will significantly contribute to Etisalat's future growth."

Ooredoo, Es'hailSat ink collaboration agreement

Ooredoo and Es'hailSat signed a major development and collaboration agreement that will see the two leading Qatari companies work together on a range of new satellite and world-class communication services for Qatar. Under the terms of the agreement, Es'hailSat will become one of Ooredoo's preferred partners, and will work with Ooredoo to develop a cutting-edge portfolio of VSAT (Very Small Aperture Terminal) and other satellite services for customers in Qatar. The two companies will collaborate on designs and specifications for developing world-class VSAT projects for leading enterprises in Qatar. Demand for VSAT services has risen sharply in recent years, particularly from businesses with operations in remote locations, such as deserts and coastal areas, and Ooredoo and Es'hailSat believe there is a strong opportunity for Qatar to achieve global leadership in this



important area. Waleed Al Sayed, Chief Executive Officer, Ooredoo Qatar, said: "Satellite-supported communications are opening new frontiers for businesses in Qatar and across the region. By combining Ooredoo's industry expertise and Es'hailSat's growing fleet of satellites, we can position Qatar as a true leader in this growing field. Ooredoo continues to invest in Qatari-led innovation with our national partners, and we are confident that our work with Es'hailSat will enhance the range of corporate, broadcast, and government services available." Ali Ahmed Al Kuwari, President and CEO, Es'hailSat said: "Our agreement with Ooredoo will help drive home-grown innovation in the field of satellite communication,

and stimulate the development of a full portfolio of new solutions to support business growth. Qatar is entering into an era of innovation and knowledge-led development, and our work with Ooredoo will bring important benefits for many of our nation's most important strategic industries." Ooredoo offers one of the widest ranges of satellite services of any operator in the GCC, including Bandwidth Pooling, Maritime Solutions, and Auto-Acquire Antennas to support ad-hoc remote broadband. By working with Es'hailSat, which already operates Es'hail 1 and is in the process of preparing for the launch of Es'hail 2 to be followed by a full global fleet, the company believes it can build its leadership position to serve the whole region and ultimately the global telecommunications industry.

PTCL Gets Clearance to Participate in DTH License Auction through a Front Company

PTCL, through a subsidiary company, has gotten the clearance to participate in the upcoming DTH license auction in Pakistan. The telecom company's application was previously rejected by PEMRA on various grounds. However, the Islamabad High Court (IHC) has accepted the plea of "SMART SKY", a subsidiary of Pakistan Telecommunication Company Limited (PTCL), to be allowed to participate in the DTH Licenses bidding, according to a senior official of PTCL who confirmed the news to ProPakistani. Previously, SMART SKY, after getting rejected, had submitted before the high court that PEMRA recently issued an invitation for companies registered in Pakistan to apply and bid for three non-exclusive DTH Distribution Services Licenses ('DTH License') for the territory of Pakistan. SMART SKY along with nine other companies, applied in response to the initiation for DTH Licenses. SMART SKY submitted its detailed application to PEMRA on Oct 5th, 2015, along with all requisite information and documents. The plea argued that PEMRA erroneously applied Section 25(c) of the PEMRA Ordinance 2002 to SMART SKY. Smart Sky's petition explained that section 25(c) provides for two restrictive instances, whose majority shares are owned or controlled by foreign

nationals or companies. The SMART SKY's majority shareholder is PTCL, which is a Pakistani company hence SMART SKY does not fall afoul of the first part of Section 25(c). The second being a company whose management or control is vested in foreign nationals or (foreign) companies. The petition further stated that the Board of Directors of the SMART SKY, as well as the Chief Executive Officer of the SMART SKY, are all Pakistani nationals and not foreign nationals. Nor there is any a shareholder or management agreement in existence that vests management of SMART SKY in any foreign company. "Therefore, in strict terms the SMART SKY does not fall within the mischief of Section 25(c) of the PEMRA Ordinance 2002 and hence the decision is without any legal basis," said the plea. The second tier of ownership or control of an applicant company is irrelevant to the restrictive provisions of Section 25 of the PEMRA Ordinance 2002. This is important considering that Etisalat is a minority shareholder in PTCL, a Pakistani company with the majority of its shares owned by the Government of Pakistan. The petition also reminded that PEMRA has previously granted PTCL, the shareholder of SMART SKY, an exemption from the restrictions under Section 25(c) when PTCL directly applied for a media license (IPTV License) which was then granted by PEMRA in 2006. Therefore, PEMRA can not now claim restriction under Section 25(c) to apply upon SMART SKY on account of PTCL being its shareholder. After IHC's acceptance, now Smart Sky will be participating in the auction, which was scheduled for December 7, 2015) but was delayed by PEMRA Chairman just three days ahead of auction.

PCCW Solutions launches digital cloud suite

PCCW Solutions launched a cloud suite consisting of enterprise business applications, e-commerce and data analytics products and services to help enterprises to embrace digital transformation. Named Infinitum, the cloud suite includes basic enterprise business applications like back-office applications, front-office applications and business processes as well as e-commerce, data analytics and the Internet of Things (IoT) products



and services. "Every company is now facing or talking about how to become a digital company, how to be connected with their customers via Web, mobile, other devices or let the machines talk to each other through IoT. Most importantly, how to make use of data and intelligence," said Sinko Choy, SVP of sales and marketing at PCCW Solutions. The company's managing director Ramez Younan added, "Infinitum is not just one product but it is a platform that enables our customers to move their applications to the cloud to streamline their business processes and speed up the implementation." "Customers can focus on their core businesses or innovation of their products and services." The offerings are catered for different vertical industries including travel and transportation, banking, financial services and insurance, retail, manufacturing and logistics, public and hospitality. Aside from products, Infinitum also provides advisory services ranging from cloud strategies, digital transformation and implementation, day-to-day application maintenance and cloud infrastructure support. All the products and services are delivered on a single cloud infrastructure operated by PCCW Solutions. The applications in the Infinitum are developed by both large, branded vendors and technological startups. "We have collaborated with large companies like SAP, Oracle as well as with startups and Open Source. So in all the categories we want to bring end value to customers," noted Younan. Infinitum is delivered to customers through HKT, the cloud partner of PCCW Solutions in Hong Kong. PCCW Solutions has also partnered with China Unicom which will soon provide a series of cloud offerings powered by Infinitum in China.

Ooredoo 'first to deploy' VoLTE in Qatar; available for all users in 2016

Ooredoo Qatar says that voice-over-LTE (VoLTE) will be commercially available for all its users nationwide in 2016, having launched a pre-commercial phase this week covering large parts of Doha, which it claims makes it the first operator in Qatar and the Gulf Cooperation Council (GCC) countries to introduce VoLTE across a substantial part of its network. VoLTE will enable customers to make HD voice calls over the 4G data network with faster call setup times, while users will be able to switch between ongoing voice calls and high-quality video calls, plus browse the internet on the 4G network while still on a call. Ooredoo's press release adds that the VoLTE implementation is based on software-defined data centre architecture and a range of cutting-edge technologies including network function virtualization and software-defined networking.

Qualcomm makes patent deal with Xiaomi

In a move that could help both companies fuel broader ambitions, Qualcomm and Xiaomi announced a patent licensing agreement that will see the Chinese phone maker pay royalties for its 3G and 4G phones. For Qualcomm, the deal means additional revenue for its licensing business and shows that the company is making steady progress in its effort to get Chinese phone makers to pay patent royalties in the wake of an antitrust settlement there. Xiaomi, meanwhile, has been eyeing expansion beyond emerging markets; doing so is likely to mean patent licensing deals with some of the key players. It remains in a dispute with Ericsson and could face actions from Apple or others if it decided to move into markets with stronger intellectual property laws. Xiaomi has said it wants to sell devices in the U.S. eventually, though it has yet to give a time frame. "Qualcomm is committed to the success of its partners in China as they continue to grow their businesses and we are pleased to reach this new agreement with Xiaomi," Qualcomm President Derek Aberle said in a statement.

Zain Group starts fifth Zain Technology Conference (ZTC) in Bahrain

Zain Group kicked-off its fifth Zain Technology Conference (ZTC) today at ART Rotana Amwaj Islands Hotel, with this year's theme being under the title of 'Transforming Our World'. This reflects Zain's strategic aspirations of delivering on a compelling digital lifestyle to its customers. The opening ceremony was attended by over 700 delegates including His Excellency Engineer Kamal bin Ahmed Mohammed, Minister of Transportation and Telecommunications; Zain Bahrain Chairman, His Excellency Shaikh Ahmed Bin Ali Al Khalifa; Zain Group CEO, Scott Gegenheimer; Zain Bahrain General Manager, Mohammed Zainalabedin; as well as Zain Group CTO Hisham Allam. The packed three-day event makes ZTC 2015 one of the biggest technology exhibitions held in the Kingdom, with over 65 global technology providers and vendors participating and showcasing their latest digital innovations and technologies. The conference officially kicked off today, and incorporated a number of keynote presentations including an opening address by Dr. Jean-Pierre Siri, Executive Director of Legal Affairs at Bahrain's Telecommunications Regulatory Authority (TRA), and further presentations by Ericsson, Huawei,



Nokia Networks, and research firm Gartner. These prepared addresses are being followed by 95 pre-arranged breakout sessions to address the latest trends in the sector. A wide range of technology and business topics are being discussed at the event including the Road-map to 5G, Core Virtualization Evolution, Business Enablement Solutions, Big Data

Analytics & Cloud Services, Customer Quality of Experience, Services Innovation, Energy Efficiency, and Site Optimization. On this occasion, His Excellency Engineer Kamal bin Ahmed Mohammed, Minister of Transportation and Telecommunications said "With the continuous development of telecommunications technologies, consumers and businesses are increasingly drawn to adopting a digital lifestyle. This generates greater demand for telecommunications solutions which in turn necessitates the need for the provision of a sound regulatory framework and infrastructure. As the policy maker for the sector, the Ministry of Transportation and Telecommunications works with the TRA to provide support to telecom companies and service providers in providing integrated solutions in more efficient, productive, and innovative ways, in order to position Bahrain amongst the most advanced countries in the field."

Ooredoo first to deploy voice over LTE for Qatar

Ooredoo today announced another major technology breakthrough on the Ooredoo Supernet with the implementation of Voice over LTE (VoLTE) across large parts of Doha. VoLTE will enable customers to make crystal clear HD voice calls over the 4G data network and provide faster call setup. In addition, customers will be able to switch between ongoing voice calls and high-quality video calls as they want. They will also be able to browse the Internet on the 4G network while still on a call - the first time they have been able to do this. The implementation is based on software-defined data centre architecture and a range of cutting-edge technologies including network function virtualization and software-defined networking. The success of this implementation positions Ooredoo in a leadership position on the global innovation path toward fully-converged Information Communication Technology (ICT). With today's launch of the pre-commercial phase, Ooredoo becomes the first operator in the GCC to introduce VoLTE across a substantial part of its nationwide network. Like a handful of other elite operators, Ooredoo has successfully trialled the service at its headquarters and in its state-of-the-

art technology test facilities, and the company has decided to deploy the service on a mass scale now because the strength and scale of the Ooredoo Supernet makes it practical to do so. Ooredoo's engineers are now working in hundreds of locations across Doha to optimise the VoLTE service for the planned commercial launch. Waleed Al-Sayed, CEO, Ooredoo Qatar, said: "The successful deployment of Voice over LTE is another compelling indication of the strength and superiority of the Ooredoo Supernet. We have designed our Supernet to evolve and grow with the latest cutting-edge technology, which enables Ooredoo to be the first to introduce these important new services for our customers. Qatar expects the best, and the Ooredoo Supernet makes it possible for us to deliver the very best for our customers, such as Voice over LTE." Ooredoo launched HD Voice on its mobile network in 2012, and has been constantly improving call quality all across the country. VoLTE HD voice quality will further enhance the quality of calls.

Zain Group deal with Uber gets recognition for the most innovative service

Telecom research company Ovum has recognized the partnership between Zain Group and Uber as the most innovative service for November 2015. Ovum reviewed 82 innovative services launched by telecom service providers around the world in its Telco Services Innovation Radar monthly summary. The partnership between Zain Group and Uber was announced in September 2015. As per the deal, Zain is Uber's main mobile service provider for any future Uber services in any country where Zain operates. Zain Group, which has presence in 8 telecom markets in Africa and the Middle East, will be gaining from the potential to create incremental revenues, attract new mobile customers, and increase wireless customer loyalty as Uber is achieving continual growth across the region. "As we transform Zain into a digital services company, partnering with technology providers such as Uber is a key component of our strategy," said Zain Group CEO Scott Gegenheimer. The Middle East and North Africa is one of Uber's fastest growing regions.

PTCL to offer Zong (China Mobile) its vast network footprint and infrastructure

PTCL (Pakistan Telecommunication Company Limited) and Zong (CMPak) has signed a Memorandum of Understanding (MoU) during a ceremony held at PTCL Headquarters today. The MoU was signed by Mr. Walid Irshaid, President & CEO PTCL and Mr. Liu Dianfeng, CEO Zong. The MoU will facilitate Zong to avail of PTCL's vast network footprint and infrastructure for their rapidly growing 3G & 4G subscriber base. Both companies have emphasized the need for stronger partnership in future to provide innovative and cutting edge telecommunication services to serve the Pakistani market.

Mobily wins hosting and cloud services Assurance Excellence Award

Mobily received Hosting and Cloud Services Assurance Excellence Award during the BMC Exchange 2015 conference that took place in Dubai. The award has been received by Faisal A. Bakhshwain Acting General Manager Infrastructure Technologies Planning and Ahmed A. AlOsaili, Executive Manager of Data Centre Hosting & Managed Services. Mobily together with its strategic partner Devoteam has worked on upgrading the service assurance and monitoring for Mobily Business customers enjoying the hosting and cloud services. This has been achieved through implementation of a complete integrated suite of BMC products considered among the best in the fields of IT Service Assurance and Enterprise Service Management. Through this, Mobily is able to introduce highly proactive infrastructure operations and support for its business customers. The project is focused on utilizing the integrated BMC monitoring technology to alert the operation teams as well as customers on potential issues that could interrupt the hosting and cloud computing services before any complaints are received, resulting in greater system resilience and increased customer satisfaction. Mobily previously had won the Enterprise Private Cloud

award during BMC DAY in Middle East; to crown its efforts in cloud computing services that facilitate the all business clients operations

Orange to test new network for IoT devices

Orange and Ericsson have teamed up to test a new network anticipated to deliver a better job of funneling data from Internet of Things (IoT) devices. These two firms will be launching a series of trials centered on three considerable areas for IoT. Specifically, these tests are hoped to enrich indoor coverage, lower the costs of IoT devices and lengthen battery life. These tests will involve IoT devices over LTE and GSM. Yasir Hussain, strategic product manager of Ericsson's radio business unit, said the result by these trials will start showing up in networks as early as 2017. The initial test is slated to kick off in France, with device reachability as its focus. The test will use the 900 MHz band, which is also used in the U.S. for baby monitors, cordless telephones and microwave ovens. The purpose of the test is to boost the coverage by seven times the existing 2G network, making it possible to reach distant outdoor monitoring locations or basements, for instance. The second and third tests are in collaboration with LTE modem maker Sequans. The primary goals of these two remaining tests are to increase battery life and minimize costs for IoT devices. Sequans will supply to Ericsson and Orange its uniquely built modem, which has an antenna and uses much less processing power and memory. Senior Vice President of Orange Labs Networks Alain Maloberti said that the IoT is a vital area in the Essentials2020 Strategic plan of the company, and France will have to play a substantial part in the takeoff of IoT in Europe. "In order to extend our connectivity offer, we are currently deploying a LoRa network," said Maloberti. "We are preparing the future of cellular networks and we are happy to collaborate with Ericsson to be the first operator to demonstrate IoT over GSM and LTE in order to roll it out ahead of 5G availability in the market."

Business to benefit from Etisalat "Smart Glasses" Initiative

Etisalat, the leading telecommunications operator in Middle East, Africa and Asia, has partnered with Ubimax, a leading provider of wearables solutions to businesses, to trial the next generation of Smart Glasses, which will provide



major benefits to companies in terms of efficiency and productivity. Smart Glasses technology allows users hands-free access to relevant information and supporting documents while conducting their work. As a result, operations are simplified, errors are reduced, productivity increases and time is saved. This has a significant impact on business efficiency. Such solutions will add real value across a number of industries, including; logistics, construction, Oil & Gas, Field Maintenance, training and in the retail sector. Khalifa Al Shamsi, Chief Digital Services Officer, Etisalat Group said: "Smart Glasses are a driver of the next generation of business innovation. By partnering with Ubimax, Etisalat is consolidating its position as a leader in bringing new products and new technologies to market for the benefit of our customers across our international footprint. In addition, this innovative technology will create a new line of solutions, as well an additional revenue stream for Etisalat." Etisalat will leverage its infrastructure and its Internet of Things capabilities to conduct trials of the wearable solutions with Government and

Enterprise customers to demonstrate their business potential before introducing them to the market. Based on the result of the trials and customers' feedback, Etisalat will subsequently create offerings across its international footprint of 18 countries. The wearables were recently demonstrated on Etisalat's stand at GITEX 2015.

du introduces Smart Healthcare Programme at UAE Innovation Week

du has introduced the Smart Healthcare Program on UAE Innovation Week at the interactive du stands displaying how innovation can help save lives! The Smart Healthcare Program will address global healthcare issues, including risk of incorrect emergency diagnosis and lack of patient history access, as well as position Dubai as a global E-Health hub. The aim of the program is to use the current and future Smart City infrastructure to embed medical record profiles into every resident's Emirates ID. This profile will provide GPS applications for Smart Devices and Emirates ID-enabled chips for real-time access, speeding up the medical emergency response and intervention time to save lives. This system will enable all medical entities in UAE to be connected to it. Moreover, all UAE entities will have a unified record system based on the E-ID which will save money, improve emergency response, and leverage access to healthcare in the UAE. Having

patients' medical histories, including previously prescribed medication, allergies, surgery and other medical procedures in one place will lead to savings and better care, helps avoid repetition of prescribed tests and results in overall convenience, leading to increased satisfaction levels. The benefits that this technology can offer are exponential: it has the potential to increase life expectancy by offering intelligent treatment in a timely manner and eliminating the cost of poor medical care quality and wrong medical prescriptions hazards. In addition, the technology will enable patients to be reached regardless of their position using GPS applications enabled on smart wearable devices. "We are addressing a global healthcare issue by identifying the root of the cause and offering a tangible and innovative future solution today. Our aim is to become the lifestyle partner of choice for the citizens of the UAE. Our business works in tandem with a variety of partners to ensure that the products and services we offer are of the best quality and really add value to life, and we are all set to collaborate with the Ministry of Health and all related authorities to execute the Smart Healthcare Programme, which supports our efforts to position the UAE as a global force across a number of industries and aid in its diversification to a knowledge based economy. The newly launched programme will not only position the Emirates as a global leader in the area of health, but also as a front runner in big data assimilation and segregation," said Samer Geissah, Vice President, Consumer, New business and Innovation. The project is special as it is a result of an internal Innovation campaign within the company, which saw three staff members, Basem Temraz, Mohamed Abdallah and Fathi Abdeldayem, put forward the proposal for implementing this technology. "We are very proud of our staff that took part in our internal innovation campaign to come up with this revolutionary idea. This project is a celebration of the value that the staff lend to our company on a daily basis, to stay ahead of the curve when it comes to innovating for a better life," Geissah continued. The end to end Smart City Health Applications will be enabled by the world class technology and network infrastructure that the UAE boasts of. Furthermore, the technology will connect hospitals, clinics and pharmacies under one platform to

reduce medical hazards from wrong diagnosis. Medical record updates will be continuous, updated by authorized doctors and hospitals whenever a patient is admitted to any hospital or clinic across the UAE. The information that will be collected includes a full blood picture, heart condition, sugar condition, hypertension condition, liver and kidney functions, current medical treatment, allergies and geographic genetic mapping.

Orange Business Services joins SAMENA Council as a member

SAMENA Council has announced that Orange Business Services has joined its membership as a global enabler of digital transformation. Orange Business Services is a global telecom operator, and an IT solutions integrator and applications developer. Its 20,000 global employees support companies in all areas of their digital transformation: mobile and collaborative workspaces; IT/cloud infrastructure; fixed and mobile connectivity; private and hybrid networks; applications for Internet of Things, 360° customer experience and Big Data analytics; and cybersecurity with dedicated experts and infrastructure to protect information systems. More than 3,000 multinational organizations and 2 million SOHOs, enterprises and local authorities in France rely on Orange Business Services as their trusted partner. Mickael Ghossein, Senior Vice-President, said, "At Orange Business Services, we are on the lookout for new opportunities to build upon our expertise as a global communications business partner, and to visibly play our role in the overall digital transformation of enterprises and government bodies alike. We feel our relationship with SAMENA Council will help us fulfil our strategic business objectives, while allowing us to keep the stakeholder dialogue active within the community." Bocar BA, CEO of SAMENA Council, stated that "Orange Business Services is a global name, which is known for supporting enterprise and public-sector needs throughout their digital transformation. This is very much in line with SAMENA Council's industry-wide digital objectives, which can only be fulfilled with the

inclusion and active participation of all players within the digital value-chain. Orange is a very well-known name within the SAMENA Council's membership, and we are delighted to welcome Mr. Mickael Ghossein to the membership and to our community of leaders." As a global integrator of advanced communications services, Orange Business Services will be able to leverage the Council's regional and international reach as well as stakeholder relationship-building platforms and activities, which are designed to keep dialogue open to help encourage ICT policy framing and investment in digital infrastructure development, and to enable partnership development among the stakeholders.

Ooredoo named the 2015 Middle East Mobile Operator

Ooredoo was named the 2015 Middle East Mobile Operator of The Year during the 10th CommsMEA Awards. Judged by the panel of experts for its market leadership and vision, the company showcased how its growth strategy is centred on a sustainable cycle; delivering an exceptional customer experience which reinforces the excellence of its innovative products and services. The accolade is the crowning of a very successful year for Ooredoo in Oman which saw its customer-base increase by 10% during the first nine months of 2015 and revenues growing by 12.4% for the same period. The company also consolidated its leadership in network performance, recently acquiring a new spectrum frequency (LTE 800) to provide improved 4G coverage and additional capacity across the country. Considered to be one of the industry's most highly respected telecoms authorities in the Middle East and Africa; CommsMEA annually recognizes the best performing companies and individuals throughout the region. The awards also honor companies that implement winning strategies and for customer experience initiatives that inspire end-users.



▼ REGIONAL NEWS

REGIONAL UPDATES

Troubled Pakistan market sees data revenue rise 69%

It's been a difficult year for Pakistan's mobile players, but the one bright spot in the market has been strong data revenue growth. According to a report by the State Bank of Pakistan (SBP), data revenue in the second half of the year grew 69 per cent from the previous year. Without stating figures, the annual report said the increase in data revenues is likely to continue in the second half of the fiscal year ending 30 June, ProPakistani reported. Operators are starting to see benefits from their investments in 3G/4G networks in the form of rising mobile data penetration and usage, with about one million 3G/4G customers added each month since the commercial launch of these services, the SBP report estimated. The top four operators, which together have 94 per cent of the country's mobile users, added more than ten million 3G connections in the first three months of the year, according to GSMA Intelligence. Mobilink, the market leader by a small margin, added 3.1 million 3G connections during the period, while number two Telenor picked up 3.3 million. Zong, the only 4G player, had 200,000 4G users in Q3. Operators' revenue in Q3 fell 12 per cent to PKR102 billion (\$98 million) from the previous quarter; mobile revenue dropped 1.8 per cent in the fiscal year ending 30 June. Operators are also struggling with low margins and have complained to the government about

high taxes, low return on investments and weak economic growth. The federal government doubled the sales tax on various categories of imported mobile handsets in June to PKR300-1,000 (\$3-\$10), and the government in Punjab introduced a 19.5 per cent sales tax on internet usage in early June. In addition, direct foreign investment (DFI) plunged 72 per cent in the fiscal year ending 30 June and the sector's tax contributions fell almost 50 per cent from the previous year. The drop in DFI was attributed in part to the huge inflows from the operators' parent companies a year earlier for the 3G/4G spectrum licenses.

Saudi e-commerce market worth US\$2.7 billion

Mahir Salib Jamal, chairman of Makkah Chamber of Commerce and Industry, said that his chamber has cooperated with the Alibaba platform of Dubai and are collaborating with Dubai Chamber of Commerce to benefit from their successes in international advancement through their efforts at serving the Gulf, Arab and international business sector. Jamal was speaking on the two-day open meeting introducing Alibaba.com platform. He added that the Makkah chamber now has the exclusive rights to represent the platform in the Kingdom. He added that this meeting comes in line with their efforts to move forward with the e-commerce industry in Saudi Arabia

and to support local establishments, businessmen and businesses to become more international. He added that the world e-commerce business reached \$994.5 billion and it is expected to hit \$1,506 billion by 2018. Speaking about the GGC region, he noted that Kingdom has achieved \$2.7 billion this year while the UAE has achieved \$5.1 billion. Regarding the Alibaba platform he said it will serve intra-exchange and will not be restricted to exports only. Both producers and providers of services will benefit from the platform particularly that it provides for a large-scale market that will result in benefits for both buyers and sellers. The platform also provides different services to producers and traders of different levels. He added that they have arrived at an agreement with the Saudi Post to serve those benefiting from the platform specially entrepreneurs of both genders and productive families. He called on the Saudi chambers to cooperate with MCCI to benefit the entire Saudi economy and advance its performance. Meanwhile the deputy executive chairman of Dubai Chamber for commercial services, Agig ibn Joma'a, noted that MCCI will be the exclusive representative of the Alibaba platform in Saudi Arabia and that will help in various Saudi exports. The platform, he added, has a large-scale use for commercial exchange regionally and internationally and it has a great potential for entrepreneurs of both genders. He called on the business community to benefit from the platform by ensuring economic exchange and cooperation between the countries in the region and also achieving international exchange. Alibaba, he added, saves time and effort needed to reach the target consumers at low cost and it is also recognized by its transparent operations for all parties involved in a commercial transaction. Abdullah Al-Ghalib, secretary general of MCCI, provided a comprehensive introduction about the platform and he explained that traders who buy from factories would benefit from the different variations that the platform provides. Further, he added, that the platform generated sales that are worth \$296 billion in 2014 and its total revenues is \$8.5 billion, exceeding similar platforms like Amazon and Ebay. Despite the great value of total sales Alibaba does not take a percentage or commission for deals and just relies for its income

on memberships and additional services. He said that MCCI, which is now the exclusive representative of the platform in Saudi Arabia, has specified an amount of SR1,530 for membership in the platform for commercial purposes. He added those registering can benefit from training provided by a special visiting team from Dubai. The amount that a trader will pay added, the secretary general, represent 2% of the actual amount needed to start a shop on ground. Further the platform saves effort needed to fulfill license and other obligations from the municipality and civil defense among others. The MCCI he added an initiative for productive families to benefit from the platform under the name "Made in Makkah" and the chamber is now marketing this vital project and is holding workshops for some products.

Mobile sales share in the Middle East surpass world-wide average

Criteo has found that the mobile share of all digital sales in the Middle East is 38.8%, which is higher than the world-wide average of 35%, according to Criteo's Q3 State of Mobile Commerce Report. The study, which analyzed industry wide trends, provides marketers with fundamental mobile commerce intelligence for engaging consumers and increasing sales. Criteo's research highlights that the share of smartphones of mobile sales in KSA and the UAE is at a substantial 79 percent, outshining their tablet counterparts, which hold a current share of 21 per cent. This trend has been observed globally, but is significantly higher in the Middle East. Additionally, Criteo found that mobile order values compared to those of desktop are at a ratio of 82 to 100. "Mobile must be given increasing importance by ad strategies in order to effectively engage with tech savvy consumers in this day and age, and marketers must closely monitor the consumer's purchase journey if they want to entice buyers and capitalize on sales," said Dirk Henke, Managing Director Emerging Markets, Criteo. Criteo's findings are in line with the region's current ecommerce and technology trends, especially with operators in the UAE implementing high-speed mobile internet upgrades to cater to growing consumer

demand. According to Ericsson's mobility report for the MENA region, mobile data traffic is expected to grow 16 times greater than the current 2015 rate, validating the potential mobile has in terms of purchasing power. 2015 has already witnessed a growth of 80 per cent in mobile traffic from the previous year, with the share of mobile digital sales in KSA and UAE markets rising up to 38.8 percent.

ICT R&D Approves Projects to Promote ICT and Agriculture

The National ICT R&D Fund's Board of Director has principally approved three projects, during its 41st Meeting held in MoIT here in Islamabad. The meeting was chaired by Minister of State IT Mrs. Anusha Rehman, Federal Secretary IT Mr. Azmat Ali Ranjha, Chairman PTA Member Telecom, Member HR and other Board Members were also present in the meeting. These three approved projects include "Specialized training in areas of ICT skills", "ICT for women entrepreneurship program" and "Scoping study for National Agriculture information management and dissemination system". CEO ICT R&D Fund co. has been directed by the Board to liaison with Ministry of Agriculture and National Commission for status on women (NCSW) in order to get their buy in. Anusha Rehman said that although Pakistan is ranked 4th on E-lance in terms of top earning freelance countries, however the hourly rate for each developer is quite low. ICT training program can help them to overcome their short comings to improve their skills. The State Minister in recently held meeting of the Senate Standing Committee on information Technology stated that IT/telecom sector of the country registered 46 percent growth during last two years. The number of registered IT companies increased from 300 to 1100, besides around 800 call centers in the country. According to the State Bank of Pakistan, telecom sector exports is \$370 million, however according to the Pakistan Software Export Board (PSEB) study it is around \$2.8 billion as many companies do not bring their total remittances in the country due to flaws in policies. The government has given the target to increase IT exports to \$500 million by 2018. The minister further said that Pakistan is ranked at no 4 in the world after USA, UK and Ukraine with

respective to E-lancing. Currently 75,000 people are involved in the E-lancing and export software; however the data is not being recorded. She further said that SBP has issued policy directives with IT ministry recommendation to introduce six-digit code to ensure transparency in export data. The Minister said that IT sector is enjoying tax holiday status from 2000 till 2016. The Minister further said that its our utmost desire to reduce digital divide in arena of ICT. The ICT for women entrepreneurship program will help us in leveraging ICT capacity for the benefit of our women and girls. Therefore, this Capacity building program will be initiated in federal viz a viz provincial capitals, simultaneously. Anusha Rehman has further said that Agriculture constitutes the largest sector of Pakistan's economy, with 24% contribution in GDP and having huge potential to become Food basket; in the central Asian region. However, utilization of ICTs is required to address the needs of sustainable growth in agriculture to maintain food security and economic growth of the country. A National Agriculture information management and dissemination system will be a step in the right direction for achieving the goal. The Board also directed ICT R&D Fund Company to liaison with Ministry of Agriculture and NCSW to get their input before finalizing the RFP.

Tablets and smartphones impact Middle East & Africa PC market

The Middle East and Africa (MEA) PC market suffered another sharp decline in Q3 2015, according to the latest insights from global technology research and consulting firm International Data Corporation (IDC). Shipments slumped 27.8% year on year, which represents the steepest decline ever recorded in the region for a single quarter. Desktop shipments declined 21.0% year on year to total 1.3 million units, while the notebook segment shrank 32.6% to total 1.7 million units, partially owing to the cannibalization of consumer demand by tablets

and smartphones. "In a continuation from Q2 2015, Turkey and the 'Rest of the Middle East' region (Iran, Iraq, Syria, Yemen, Afghanistan, and Palestine) experienced the sharpest declines within MEA," says Fouad Charakla, research manager for personal computing, systems, and infrastructure solutions at IDC Middle East, Africa, and Turkey. "However, the quarter also saw steep declines in Saudi Arabia and Pakistan, with the former seeing its economy hampered by low oil prices and the latter failing to repeat the massive education projects that caused a spike during the corresponding quarter last year." The top three vendors remained unchanged in Q3 2015, with all of them suffering significant declines. HP continued to lead in terms of market share, but saw its shipments fall 27.7% year on year, while second-placed Lenovo suffered a 37.6% reverse as the vendor made greater efforts to reduce its inventory levels. Third-placed Dell posted a decline of 11.6%, with fourth-placed Acer and fifth-placed Asus experiencing declines of 16.9% and 36.3%, respectively. It is worth noting that the top three vendors combined accounted for more than 65% of commercial PC demand in the region during the quarter. Local desktop assemblers in the region continued to suffer significantly in comparison to the previous year as demand for their devices continues to be cannibalized by the growing availability of aggressively priced refurbished PCs. The final quarter of the year is expected to play host to yet another steep year-on-year decline, with IDC forecasting the market for 2015 as a whole to total 14 million units, down 22.2% on 2014. "Most of the key inhibitors currently hampering PC demand - such as low oil prices, exchange-rate fluctuations, and uncertainty due to the ongoing war against ISIS - are also impacting consumer confidence and are expected to persist for at least the next few quarters," says Charakla. "As a result, IDC has significantly downgraded its regional PC market forecast for 2016, although a recovery is predicted towards the end of 2016 and into 2017." According to IDC's new forecast, 2016 will see mild growth in shipments, with a much bigger recovery expected in the year 2017. Looking further ahead, the years 2018 and 2019 will also experience mild shipment growth, stemming mainly from countries with low PC penetration rates, such as Pakistan, the 'Rest of the Middle East' grouping,

Egypt, Nigeria, and certain other parts of Africa. As previously reported, there will continue to be a gradual shift in the weight of demand from consumers to the commercial segment as a growing proportion of home users switch from PCs to tablets and smartphones and commercial end users maintain their loyalty to PCs. As a result, commercial demand for PCs in the region is expected to surpass that from home users by the year 2017.

Bhutan's ICT global ranking improves

Bhutan's ICT development index (IDI), used to monitor and compare developments in ICT between countries, has improved significantly since 2010, placing the country even above regional neighbors. Bhutan has been ranked 119 in measuring the Information Society Report 2015 compiled by the International Telecommunications Union. Bhutan was ranked 128 in 2010. In comparison, India is ranked 131, Nepal follows at 136, and Bangladesh is at 144. The rankings are based on the IDI score, which is a composite index combining eleven indicators into one benchmark measure that can be used to monitor and compare developments in ICT between countries and over time. Bhutan's IDI score is 3.35 out of 10, compared to 2.02/10 in 2010. The IDI measures the level and evolution over time of ICT developments in countries, progress in ICT development, the digital divide, and the development potential of ICTs. It is measured by looking at levels of ICT access, use, and skills. The report points out that in the Asian region the most dynamic improvements were achieved by Bhutan, Thailand, and Mongolia. Bhutan is currently ranked 21 out of 32 countries in the Asia-Pacific region. Korea, Hong Kong and Japan are the top three ranked countries in Asia. Globally, Korea, Denmark, and Iceland are ranked top three. Department of Information Technology and Telecom (DITT) officiating director, Jigme Tenzing attributed a number of factors for the improved ranking. He said that the farsighted visions of our Monarchs, the government, and donor support are to be attributed. For instance, he pointed out that the Indian government's financial support had made it possible for the laying of fibre optic cables nationwide. This increase in ranking is expected to improve investor confidence in doing

ICT business in Bhutan. "The IDI ranking indicates the effort Bhutan has put into the adoption of ICT in the overall development," Jigme Tenzing said. "Despite the improvement, it can be noticed that there is a lot to be done and it would take efforts from each individual of the nation to progress further." But challenges towards further improving the ICT scenario exist such as ensuring reliable international internet connectivity, affordability, and quality of services. For instance, both of Bhutan's links to the internet pass through a vulnerable narrow strip of land in Siliguri, India. "So, establishing a reliable international connectivity has been a big challenge for Bhutan and this has been an impediment of foreign investment in the country," Jigme Tenzing said. It was also pointed out that the market for telecommunications and ICT services is low given the small population of the country but that the investments required for establishing the infrastructure for the services is high due to the geographical terrain. "This has led to reluctance in investment from the service providers," he said. For instance, the establishment of community centres in the gewogs to provide reliable and fast internet connectivity has been a continuing challenge due to the terrain, he explained. The report also points out that while fixed-broadband prices increased in 2014, entry-level fixed broadband plans in some countries included better quality or higher speeds or more data for money. In the Least Developed Countries (LDC) category, only three LDCs – Bhutan, Cambodia, and Timor-Leste offer a basic fixed-broadband connection speed of above 1Mbit/s (Megabit per second). The most common entry-level speed offered in developing countries is 256kbit/s (kilobit per second) and 5Mbit/s in developed countries. In what may surprise local internet users, the report also reveals that internet prices in Bhutan are considered cheap for some data packages like the pre-paid handset based 500MB and pre-paid computer based 1GB. However, this is calculated by considering the purchasing power of local currencies. On measures to improve reliability, Jigme Tenzing said that tariff and quality of service studies to find avenues to reduce prices and improve quality are underway. Additionally, measures to foster competition among the service

providers through implementation of regulations and creating business opportunities for the private sector in the ICT market are being pursued. The government is working on regulations to increase the uptake of internet in the country so that the increased volume of users would reduce costs. Another measure being pursued is the establishment of a third link to the internet via Bangladesh. The laying of optical fibre to 18 dzongkhags, and ADSS (All-Dielectric Self-Supporting) cables to two dzongkhags and 196 gewogs are underway. This high-speed network has been made available to the service providers for free to ultimately bring down the cost of connectivity. The report also shows that Bhutan's data cap of 4GB, which is in fact now 3.8GB following the imposition of tax, is higher than India (1.5GB), Bangladesh (2GB), but much lower than Nepal's at 7GB.

IoT investment in the MEA region expected to grow to \$7 billion in 2016

The global revenues from the Internet of Things (IoT) will increase more than 18 per cent from \$655.8 billion (Dh2.4 trillion) in 2014 to \$779.9 billion this year, said a top Cisco official. IoT is defined as the network of devices that are connected to the internet and can be controlled remotely, "We have passed the incubation phase, now IoT/smart city solutions are ready to be scaled. Cities who scale first will be the winners in an increasingly competitive environment. Dubai is rapidly transforming into becoming one of the smartest digital cities in the world connecting the unconnected through the power of intelligent networks," Anil Menon, president of Smart+Connected Communities at Cisco, said at the third annual Internet of Things World Forum (IoTWF) taking place in Dubai from December 6-8. The event is showcasing more than 20 digital city and connected industry solution deployments made possible in IoT. Menon said that in 2013, things that are still not connected to the internet stood at 99.25 per cent, but the figure fell to 99.07 per cent in 2014 and this year, it will be 98.85 per cent. The IoT industry is growing two-fold year-on-year while the number of IoT connections in manufacturing have grown 204 percent year-on-

year. According to research firm International Data Corporation, IoT spending in the Middle East and Africa (MEA) is projected to grow 22 percent between 2013 and 2018, compared to the 18 percent globally. The IoT investment in the MEA region is expected to grow 20.7 percent to \$7 billion (Dh25.7 billion) in 2016, compared to \$5.8 billion this year. Ahmad Julfar, CEO of the etisalat Group, said that the "smart future" of the UAE is inherently built on IoT and a well-connected infrastructure. Having invested billions of dirhams in fixed and mobile infrastructures, he said that etisalat is contributing to the enablement of IoT and smart cities in the UAE by investing further in IoT and Big Data platforms and enhancing the ecosystem for a number of solutions. He stresses that 90 percent of the data available with us today has been created during the last 24 months. Out of this, etisalat is effectively using only 1 percent of the data. Etisalat points out that by 2020, energy meters world over will be replaced by Smart Meters. Hundreds of data points per person will be transferred to preferred health care providers. Julfar said that telcos play a vital role that cannot be replicated as connectivity is vital and critical. Within the Mena region, the cellular connections for IoT will increase by 500 percent in the next five years. He stressed that the IoT industry is fragmented and a standard should be set, otherwise it will not be economical. It will not become "efficient and economical" for people to use it. Menon said that it is happening fast (standard). The governments are involved and the protocol discussions are happening within the industry. No two cities are managed the same way.

Middle East's first proof of concept for NFV presented

Ericsson and Zain announced the Middle East's first proof of concept for virtual Evolved Packet Core (vEPC) and virtual IP Multimedia Subsystem (vIMS) solutions combined together with an ambition to offer customers a better user experience. The objective of the proof of concept is to demonstrate cloud use cases that enable Zain to have faster time to market and easy deployment of many ICT services such as, Voice over LTE (VoLTE),

Machine to Machine (M2M), Rich Communication Services (RCS) and Enterprise Solutions. Hisham Allam, Chief Technology Officer, Zain Group said: We are keen to lead the way in the region when it comes to virtualization as it paves the road for implementation of new technologies across all our markets. Partnering with Ericsson enables us to achieve our strategic goals when it comes to enhanced operational effectiveness and customer experience. On her part, Rafiah Ibrahim, President of Ericsson, Region Middle East and Africa said, The successful Proof of Concept exercise showcases the possibility for operators to deploy NFV on a broader scale. By using this technology, telecom operators such as Zain are able to build global standard agile networks and speed up their new service introduction. The Ericsson Cloud Execution Environment and Ericsson Cloud Manager are based on Open stack, OPNFV and ETSI MANO, allowing operators to deploy Ericsson's and other vendors' hardware and virtualized software products. This also helps operators to allocate their network resources more flexibly, simplifying network configuration, and ensuring savings in operational and capital expenditure. "The Networked Society will empower transformation, creating disruptive changes across both industries and society as a whole. This collaboration with Zain to deploy the first virtualization technologies in terms of virtual Evolved Packet Core and virtual IP Multimedia Subsystem demonstrates the trajectory with which regional operators are able to transform to Ericsson's vision of the Networked Society," added Ibrahim.

ICT spending in the Middle East, Turkey, and Africa to top \$260 billion in 2016

ICT spending in the Middle East, Turkey, and Africa (META) will top \$260 billion in 2016 as organizations across the region increasingly embrace digital transformation initiatives in a bid to streamline their costs and bolster their flexibility. That's according to global technology research and

consulting services firm International Data Corporation, which announced a series of 'IDC FutureScape Predictions' for the year ahead. "Sitting at the heart of most digital transformation efforts across the region is some combination of the main 3rd Platform technologies -- mobility, cloud, Big Data analytics and social business," says Megha Kumar (pictured), IDC's senior research manager for software in the META region. "And while this trend undoubtedly signals a positive development for the region's ICT vendors, it is also worth noting that a number of macroeconomic factors are preventing the market from reaching its full potential. Indeed, declining oil prices, political instability, and volatile currency fluctuations have all played their part in IDC adjusting its initial forecast for 2016 down from \$270 billion. With such factors in mind, we feel a more modest year-on-year growth rate of 3.8 per cent is attainable for the region, with software and IT services responsible for much of the increase." IDC expects the region's top three biggest IT spenders to remain unchanged in 2016, with Saudi Arabia leading the way at \$14 billion. South Africa and Turkey will follow up with \$13 billion each, while there is a substantial drop back to Iran and the UAE, which are both tipped to spend \$8 billion on IT in 2016. A key facet of the digital transformation revolution that is beginning to take shape in the region is the emergence of the Internet of Things (IoT) ecosystem, with IDC predicting that IoT-related investments in META will create a market opportunity of \$7.03 billion in 2016. "The adoption of IoT will accelerate the rate of digital transformation as organizations and stakeholders seek actionable insights from the high volumes of data that will inevitably be generated by the proliferation of connected 'things' such as mobile devices, wearables, and sensors," says Kumar. "These insights will transform the way businesses and government organizations interact with customers, citizens, suppliers, and even employees, helping them to become more agile and innovative than they could have previously imagined." IDC believes that IoT applications in the government, retail, transportation, manufacturing, and utilities verticals will offer the greatest growth opportunity for vendors operating in the META region, while security is expected to form a key component of any robust digital transformation strategy. With that in

mind, IDC predicts IT security spending across META to grow 12 per cent year on year in 2016, reaching a total of \$1.5 billion. Cost optimization efforts and a lack of the required skills will drive demand for security services in the year ahead, while the proliferation of IoT technologies will push concerns around privacy and physical security to the top of the agenda. Central to the region's digital transformation journey in 2016 will be the strong growth that is anticipated in public cloud spending. "IDC predicts that investments in public cloud services across META will grow 22.6 per cent year on year in 2016 to total more than \$500 million," says Kumar. "Much of this will be driven by the need to transform capital expenditure into operating expenditure, with public cloud increasingly being viewed across the region as a way of overcoming budget constraints. In light of this, IDC expects most non-core applications to be migrated to public clouds over the coming 12 months, while some organizations will even begin to shift their core applications in a bid to simplify their management processes."

BlackBerry to leave Pakistan after privacy spat

BlackBerry will exit Pakistan on 30 December following an earlier government ruling which cited security concerns, although the company argued that its real motivation is its commitment to user privacy. "The Pakistani government wanted the ability to monitor all BlackBerry Enterprise Service (BES) traffic in the country, including every BES e-mail and BES BBM message. But BlackBerry will not comply with that sort of directive. As we have said many times, we do not support 'back doors' granting open access to our customers' information and have never done this anywhere in the world," wrote Marty Beard, the company's COO, in a blog post. "While we regret leaving this important market and our valued customers there, remaining in Pakistan would have meant forfeiting our commitment to protect our users' privacy. That is a compromise we are not willing to make," he added. The executive added that while the company is willing to help investigate criminal activity, it will not give governments an all-access pass to customer information. Although the government's directive was aimed only at BES services,

BlackBerry said it decided to exit the market completely. The ministry of interior directed the Pakistan Telecommunication Authority to block BlackBerry's secure Enterprise Services after 30 November; it was first reported in July. The government has since then extended the deadline to 30 December and BlackBerry said it will delay its exit accordingly. There are around 5,000 BES enterprise customers in Pakistan, Bloomberg quoted a local newspaper as reporting. Back in 2010, BlackBerry's encrypted services faced possible bans in at least five countries, including India and the UAE, unless the company complied with similar requests. In India's case, security officials pressed the company for a decryption solution for its corporate emails and messenger services.

Mobilink completes acquisition of Warid Telecom

Mobilink parent company VimpelCom on Thursday confirmed Mobilink's acquisition of Warid Telecom — Pakistan's first mobile telecommunications acquisition. According to the statement, Mobilink will first acquire 100% of Warid's shares in consideration for the Dhabi Group shareholders acquiring approximately 15% of Mobilink's shares. Mobilink Chief Executive Jeffrey Hedberg will become the CEO of the combined business, which will serve 45 million customers in Pakistan, giving it a substantial lead in terms of market share. The board of the new company will consist of seven directors, of whom six will be nominated by VimpelCom and Global Telecom Holding (GTH) and one nominated by the Dhabi Group shareholders. The merger is expected to create capital and operating expenditure synergies of about \$500 million. The combined revenue of both companies for the year leading to September 2015 was \$1.4 billion. "We are delighted to announce the agreement with the Dhabi Group [Warid] shareholders today to combine our businesses in Pakistan," VimpelCom CEO Jean-Yves Charlier said. "With the addition of Warid to our already strong customer base at Mobilink, we will serve more than 45 million customers and offer a best-in-class mobile and high-speed data network — a key factor in the digital enablement of Pakistan's economy."

"Creating the largest operator in Pakistan is a significant milestone for Mobilink and Warid but also for Pakistan as a whole," Dhabi Group Chairman Sheikh Nahyan Mubarak al Nahyan said. "Both parties bring their unique strengths to this merger. Warid, with its strong post-paid base and high quality 4G/LTE network will complement Mobilink's position in the market," he added. "The transaction is expected to close within six months from today, subject to obtaining approvals from the relevant authorities in Pakistan."

First smart Wi-Fi bins launched in the Middle East

United Arab Emirates-Sharjah, Bee'ah, the Middle East's award-winning and leading integrated environmental and waste management company, is introducing innovative solar-powered bins across Sharjah that will act as hotspots, in line with the UAE's Innovation Week, which seeks to promote and encourage the finest ideas on innovation from government and private sectors, as well as the public. Designed and built by BigBelly, a leading provider of bin solutions in the US, the units are being rolled out starting in Sharjah, following an MOU with Bee'ah, where the company committed to several hundred Wi-Fi bins to be deployed across Sharjah and the UAE in prominent locations as soon as early 2016. This will make Sharjah the first location in the Middle East to have smart bin technology with Wi-Fi hotspot in parallel with leading cities such as London and New York. The innovative Smart bins will act as Wi-Fi hotspots and are double streamed for increased solar capacity. They also come equipped with sensors to detect when the bin is full, and communicates with the Bee'ah control room allowing "Tandeef"'s team to make the necessary collection in an efficient and eco-friendly way. The solar panels provide the energy required to operate the compactor, which allows the bins to collect five times more trash before needing to be emptied. Commenting on the development, HE Salim Al Owais, Chairman of Bee'ah said: "The smart wi-fi bins being introduced by Bee'ah are a step forward in environmental innovation, optimally merging efficiency and utility. The fact that Sharjah will be the region's first location to offer them is

a testament to our Emirate's growing status as an environmental capital of the Middle East. This technology is part of innovative suite of groundbreaking products and services we are in the process of rolling out, in line with innovative vision of His Highness Sheikh Dr Sultan bin Muhammad Al Qasimi, Member of the Supreme Council and Ruler of Sharjah, to protect the environment and ensure a sustainable future." Khaled Al Huraimel, Group CEO of Bee'ah added: "At Bee'ah, our top priority is innovation to augment the quality of life among communities in Sharjah and the UAE. How we manage waste is one of the most important challenges of our time. Smart solar-powered technology can change our lives". Bee'ah's waste collection division, Tandeef - which plays a vital role in providing coherent and sustainable environmental solutions to meet the challenges of the community it serves - consists of 2000 employees operating a fleet of more than 500 vehicles. Its street cleaning and sweeping services and commercial waste collection, alongside facilities for public, residential, and office and school recycling, work closely together to provide a seamless integrated environmental solution, which has made Sharjah a model to emulate across the region. The new solar bins complement Bee'ah's recently launched Tandeef Smart Eco-fleet - a revolutionary expansion for vehicular green technology and state-of-the-art functions. Encompassing sustainable, low noise electric vehicles - a first in UAE waste management - and vehicles that use Compressed Natural Gas to reduce the negative impact of CO2 emissions, the fleet improves the environmental impact of its operations with lower emissions and better efficiency. As evidenced by such developments, Bee'ah is at the forefront of the region's industry in 'green' innovation, and is constantly seeking avenues and technologies in its quest to ensure a cleaner and healthier environment in Sharjah.

Inwi introduces residential ADSL service

Moroccan telecoms operator Inwi (Wana) has launched a fixed ADSL service for residential users, dubbed I-Dar, a month after rival operator Medi Telecom (Meditel) introduced its ADSL offering, Agence Ecofin reports. Inwi's subscribers in the cities of Casablanca and Rabat can now

sign up to unlimited broadband access with download speeds of up to 20Mbps (bundled with unlimited calls to fixed lines and 120 minutes of calls to mobiles) for MAD249 (USD24.8) per month. In comparison, Meditel's offer comprises unlimited broadband with a 12Mbps connection, unlimited fixed calls and 120 minutes of mobile calls for MAD240.

Smartphone penetration in Pakistan to reach 51% by 2020

Adoption rate of smartphones — as compared to feature phones — is expected to reach 51% by 2020, said a report published by GSMA. Report titled as "Building Digital Societies in Asia" said that current smartphone adoption rate of 15% in Pakistan is likely to grow to over 300% to reach 51% within next five years as primary barrier for adoption of smartphones, i.e. prices are coming down to below \$100. Report said that average price of smartphones dropped down to \$200 in 2014, down from \$329 in 2008. Further down the line, smartphones below \$100 are now becoming a reality, however, there is a clear need for more vendors manufacturing these low priced phones to become more common in growth markets like Pakistan. Report said that under \$100 smartphones currently account for over 40% of total smartphones in India and since below \$100 smartphones have started to surface in Pakistan, the smartphone adoption rate will grow incrementally to around 80 million by year 2020. Report said that ultra-low-end smartphones are of particular relevance in emerging markets because handset subsidy from operators — such as they offer in various developed markets — has comparatively low application in developing markets, making it hard for masses to adopt smartphones. Moreover, since low-income segment dominates in developing markets, these ultra-low end smartphone becomes

handy and only way for them to adopt smartphones and ultimately the internet.

Cognitive technology to help build knowledge-based economies in MENA

Cognitive technology (also known as artificial intelligence) could be part of the DNA of businesses in all sectors in the UAE and the overall Middle East and North Africa (Mena) in the next few years, according to a Mubadala top spokesperson. Mounir Barakat, executive director of Information and Communications Technology at Mubadala, said that some of the region's industries such as healthcare, education, oil and gas, and aviation are on their way to start integrating cognitive systems into their business. This would help raise efficiency, reduce mortality in the healthcare sector, and provide more personalized learning experiences for students in the education sector. Barakat was speaking at an event on Monday to announce the launch of a company called Cognit Technology Solutions, which is the result of a partnership between Mubadala, the Abu Dhabi-based investment company, and IBM, the American technology company. Cognit is set to help provide IBM's computing system, Watson, to organizations in the Mena region, and support entrepreneurs, app developers, and startups that are creating Watson apps and services. Cognit is now the exclusive provider for IBM Watson in the Mena region. Watson came into prominence in the US in 2011 when it defeated two top contestants in the game show, Jeopardy!, signaling the emergence of a new computing system that could process information similarly to humans, reason, and understand natural language. Today, Watson is being utilized in the health-care sector in the US specifically in oncology to help treat cancer patients. During the event in Abu Dhabi, representatives from the Dubai Municipality, Abu Dhabi Education Council, and Tawam Hospital said they had laid out a vision to transform their organizations using cognitive computing. "The collaboration with IBM to bring Watson applications to the region is aligned to the UAE's strategic goal

and vision to become a knowledge-based economy. Establishing this joint venture is a definitive reflection of Mubadala's strategy to foster long-term economic growth and deliver world-class solutions to the Mena region," Barakat said. The partnership with Mubadala will allow IBM "to grow Watson at a much more accelerated pace," according to Brian Mulada, IBM Watson's chief financial officer, who said that the company is now working on introducing Watson in Arabic. Watson is expected to be able to start 'thinking' in Arabic in the first quarter of 2016. "The Mena region is primed for this type of technology. Since introducing Watson through local client engagements, we've seen a strong response, and look forward to broadening cognitive adoption by growing the Watson ecosystem through Cognit.

Ooredoo, Ericsson sign 5G pact

Sweden's Ericsson and Qatar-based Ooredoo Group have signed a Memorandum of Understanding (MoU) for 5G development 'with the ambition of developing use cases, requirements and deployment scenarios for 5G technologies', a press release announced, adding that Ooredoo and Ericsson will evaluate both the performance and applicability of potential key 5G components in a controlled test environment. Sheikh Saud Bin Nasser Al Thani, CEO at Ooredoo, said: 'Ooredoo is striving to support our customers' activities in an increasingly digital, connected world and we are determined to be at the cutting-edge of network technologies. We're pleased to partner on developing next generation technologies with Ericsson, a trusted partner and a major supplier for Radio Access, Core, Transmission, OSS and BSS. We look forward to working towards developing 5G technologies together.' Jan Wareby of Ericsson added: 'We are looking forward to our joint exploration of the possibilities and opportunities that 5G technologies will enable. We believe that next generation networks will have a profound impact in the future by enabling anything and everything to connect, bringing value across a number of verticals in the Networked Society.'



REGULATORY NEWS

OFCOM publishes white spaces rules

U.K. regulator sets out device requirements aimed at avoiding interference with TV, microphones.

The U.K. took another step towards using white spaces spectrum for unlicensed mobile broadband services on Monday, when regulator Ofcom published rules designed to avoid interference with other spectrum users. The frequencies in question sit within the 470 MHz-790 MHz band, which is currently used for a variety of services including wireless microphones and digital terrestrial TV (DTT), among others. Following extensive trials that included the likes of Google and Microsoft, Ofcom in February approved the use of white spaces for mobile broadband. "Based on the trials and stakeholder feedback, there is considerable interest from industry in developing this technology," said Ofcom. The newly-published rules establish the requirements that devices will have to meet in order to be used for white spaces services without a license. The aim is to avoid harmful interference with other spectrum users by limiting the power levels at which these devices can operate. "Ofcom also plans to explore whether the white space in other spectrum bands could be used for similar innovation in future," the watchdog said.

FCC no longer requires telecom operators to share new broadband infrastructure

The FCC will require incumbent local exchange carriers--AT&T, Verizon, CenturyLink and others--to continue to make their existing "brownfield" conduit available to special access broadband business service competitors, including cable operators, but not require similar access to new "greenfield" build outs. That came in the commission's order granting most of the requests of USTelecom in a petition that had asked the FCC to prune outdated rules as telecoms transition from copper to IP nets. The FCC described the decision this way: "No sharing required for new entrance conduits in new developments (greenfields), where competitors have equal opportunity to build. Sharing of newly deployed entrance conduit in existing developments (brownfields) still required, given the advantages the incumbent LECs enjoy in these situations." USTelecom had wanted both the existing and future build outs not to be subject to mandatory access in an IP world, while the American Cable Association, whose members included those competitive carriers, thought ILECs should have to share both. "ACA is disappointed because our view was that the ILECs failed to present adequate

REGULATORY UPDATES

evidence to support not sharing their conduit in greenfield areas," association said in a statement. The commissioners generally supported eliminating the legacy regs, but there were targeted dissents and concurrences, including Democrat Clyburn's dissent from not requiring access to new build out. She pointed out that Congress was working on "dig once" bills that would prevent having to duplicate broadband build outs along roadways and that the same idea applied in requiring access to new builds. She said the FCC should have done a study of the impact of not requiring access to new ILEC builds, as the FCC does for the "brownfield" build outs to businesses and dissented from that portion of the order.

Avoid top-down regulation of spectrum, says EU group

Attempts to harmonize spectrum allocation from the top down risks "sterilizing" the process and could cause inefficient use of radio frequencies, warned EU regulatory body BEREC. It also said the existing regulatory framework should not be extended to include OTT services, which instead should be considered on a case-by-case basis. Regulation of OTT services should be proportionate so not to undermine what is an innovative part of the telecoms market, it said. Berec's views on spectrum and OTT services are contained in an opinion document that is part of the review of the EU's regulatory framework for electronic communications. This forms part of the Digital Single Market process agreed earlier this year. The regulator is a low-key part of the EU hierarchy which was set up in 2009 with a brief to assist the EC and national regulatory authorities. It replaced the European Regulators Group. Berec argues spectrum is key to Europe's connectivity objectives but requirements vary from country to country. Too much centralized planning of how radio frequencies are allocated could hinder innovation, it reckons. "Instead, we would support promoting harmonized approaches to spectrum management from the 'bottom up', "says the regulator. It recommends greater use of the Radio Spectrum Policy Group, working with Berec. On OTT services, the group says the definition of electronic communications services needs more clarification but this does not mean

extending the regulatory framework to include OTT players. Rather each service could be treated individually rather than treating such players in a one-size-fits-all approach.

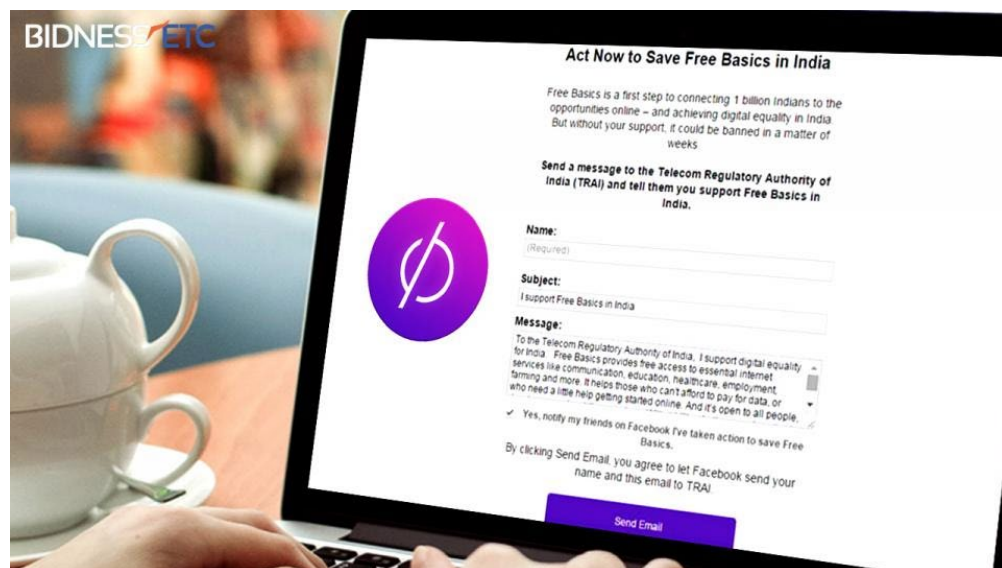
Facebook launches 'save Free Basics' campaign in India

Facebook is urging users to lobby India's telecoms regulator in defense of its Free Basics service which the social media giant claims could be banned "within weeks". The company is urging users to send a prepared email to the Telecom Regulatory Authority of India (TRAI) in support of the service. Facebook recently expanded the reach of the Free Basics app, which is a product of the internet.org initiative, to the whole of India. It is partnering on its rollout with local operator Reliance Communications. But the service has run into opposition from net neutrality advocates. A debate has been raging about so-called zero-rating plans, which allow users to access some apps without paying data charges. Mobile operators and Facebook have been forced to defend the initiatives, claiming they are offered in a non-discriminatory manner. But opponents claim they violate net neutrality. Facebook's message to users claims

9 December, inviting comments by 30 December. "It (Free Basics) helps those who can't afford to pay for data, or who need a little help with getting started online. And it's open to all people, developers and mobile networks," says Facebook's prepared email. "With 1 billion Indian people not yet connected, shutting down Free Basics would hurt our country's most vulnerable people," it adds.

Industry groups challenge regulator on call drop compensation

India's cellcos have challenged the authority of the Telecom Regulatory Authority of India (TRAI) over its October decision forcing operators to compensate users for call drops (effective from January 1, 2016), claiming that the regulator has overstepped its powers. The Business Standard writes that industry lobby groups the Cellular Operators Association of India (COAI) and the Association of Unified Telecom Service Providers of India (AUSPI) have petitioned the Delhi High Court for a stay on the order on the basis that the TRAI does not have the power to grant compensation to end users. 'The grant of compensation requires an adjudication to establish a breach and



"a small, vocal group of critics" are lobbying to have Free Basics banned. If successful, the lobbying would impact the one billion Indians who can't afford access to the internet without initiatives such as Free Basics, it argues. TRAI issued a consultation paper on differential data pricing on

then determine liability of the party responsible for such a breach. TRAI does not have the power to adjudicate under the TRAI Act and therefore, the decision to grant compensation is without authority of law, without jurisdiction and is illegal,' the COAI in its statement. In October this year the

TRAI introduced new rules requiring operators to pay INR1 (US\$0.015) in compensation to mobile customers for each call that is dropped up to a total of INR3 per customer per day. The measures are intended to encourage cellcos to invest in infrastructure, as subscriber growth has outstripped the capabilities of operators' networks, leading to a deterioration of service quality. According to operators, the compensation will cost the industry a crippling INR540 billion per year, although the TRAI claims the figure will not be more than INR2 billion per quarter, or INR8 billion annually.

Irish regulator's review could see Eir split

ComReg to examine incumbent's regulatory governance model next year; rivals complain about fixed network repair times. Ireland's telecom regulator this week announced it will undertake a strategic review of Eir's regulatory governance model that could lead to a separation of the incumbent's retail and wholesale businesses. The move comes as a number of the Irish telco's major rivals launch formal complaints about the service they receive from its wholesale unit. Eir has voluntarily shared information that shows there are still areas in which its own retail business is – or could be – given priority over rival operators when it comes to wholesale services. The operator itself identified these areas and set out a timeline to remedy them. "Nevertheless, they do raise questions about Eir's compliance with its obligations," ComReg said, noting its compliance unit will assess the situation. "We also are concerned more generally at the long lead times experienced by alternative operators in certain cases where they have requested new or amended regulated wholesale products from Eir," ComReg also said. Evidence suggests Eir's rivals are not happy with the service they are receiving. This month Vodafone Ireland, Sky, BT and Magnet all entered into formal disputes with Eir over its repair times on the broadband and fixed-line network, Vodafone revealed on Thursday, alongside its announcement that it has started legal proceedings against KPN in the Netherlands for abusing its dominant position in the fixed network space. Vodafone also made reference to ComReg's review. The review could have a number of different outcomes,

including examining the case for the functional separation of Eir's wholesale business, the regulator said. However, it was keen to point out that there are other options. The review will take place next year.

Bouygues Telecom seeks €2.3B compensation from French state

Bouygues Telecom claims a roaming agreement between Orange and newcomer Iliad caused it a financial loss of more than €2 billion, according to Les Echos. The amount is owed to Bouygues Telecom by the French government because ARCEP, the country's telecoms regulator, did not properly supervise the 2G and 3G roaming agreement, it said. Bouygues Telecom claimed the compensation in a letter to French Prime Minister Manuel Valls dated 4 December. It was signed by the operator's chief executive Olivier Roussat. The agreement enabled Iliad's Free Mobile, which launched its service three years ago, to compete with rivals while it built its own network. The agreement runs until January 2018. However, Bouygues claimed that agreement should have been framed more strictly by ARCEP, effectively providing Free Mobile with an unfair advantage. Without such an advantage, Free Mobile could not have competed so aggressively on price, which cost Bouygues Telecom financially, it said. The letter listed seven shortcomings of the agreement that add up to the €2.3 billion figure. Most important is the loss of income and profit since the launch of Free Mobile in 2012 up to the present day, which is valued at €1.16 billion. In addition, the company added a further €527 million to reflect the 2015-18 period. Loss of customers during 2012-15 cost €206 million and redundancies represent a further €309 million loss. Bouygues Telecom also complained about a rise in the cost of acquiring new customers (€20 million), increased indebtedness (€33 million) and damage to its brand (€24 million). The letter turns up the pressure on ARCEP, which since the summer has had new powers to approve network sharing deals. The regulator is set to issue new guidelines in the coming weeks on how it will regulate such agreements. Bouygues Telecom was earlier this week the subject of renewed takeover interest, this time

from market leader Orange, amid government fears that consolidation will lead to jobs losses and a loss of investment.

EU proposes policy on cross-border access to OTT content services

The European Commission has presented the first legislative proposals in its Digital Single Market strategy, focusing on improved cross-border access to digital content and unifying sales terms for online purchases across the EU. The first proposal is to allow consumers subscribed to an online music, e-book, video or gaming service to continue using it when traveling in another EU country. At the moment, access is often restricted in other countries, as licensing of copyrighted content is limited to national agreements. The EC has proposed a regulation to give consumers access to their subscriptions wherever they are in the EU from 2017. Digital Single Market commissioner Andrus Ansip said it should work the same as roaming, for which surcharges are slated to end in 2017, giving users the same experience in all EU countries. As the copyright change takes the form a regulation, it will come into effect immediately after approval by the European Parliament and Council and will not need to be transposed into national laws. Content providers will have six months after the regulation is passed to adapt their services to the new requirement. The EC said this is the first in a series of planned copyright reforms, with more proposals to be made in spring 2016, based on ongoing public consultations. The second proposal aims to support cross-border e-commerce by simplifying contract rules for consumers and businesses. The EC proposed two directives, one for the online sale of digital products and one for the online sale of goods. These cover similar issues on liability and refunds for defective goods and the right to cancel a contract and use customer data. The changes mean businesses would no longer need to adapt to different contract rules in each EU country and could supply digital content or sell goods to consumers in all member states based on the same set of key contract law rules. The EC estimates the new EU-wide rules could

save a business operating in all 27 states up to EUR 243,000. Consumers would also benefit from increased protection. They could request a product be repaired during the two-year standard guarantee without having to prove the defect existed at the time the product was delivered. In addition, consumers would be entitled to a refund or to end a contract if a digital service or product is found to be defective, rather than just receive a voucher towards a future purchase. They also would gain a standard right to end a long-term contract if the provider makes changes to the terms of service and to have the provider stop using their personal data if the contract is ended.

Regulator floats paper to look into differential pricing in data services in India

The Telecom Regulatory and Authority of India (TRAI) has issued a consultation paper on differential pricing for data services. It has asked if telecom operators should be allowed to have different pricing for accessing different websites, applications and platforms. This comes amid a debate on net neutrality and zero-rating plans. TRAI said: "Till now, the regulatory guidelines on discrimination and transparency in tariff offers were more focused on addressing concerns in voice telephony. The growth of data usage and the manner in which data schemes are being designed by service providers calls for a relook at the regulatory principles of non-discriminatory tariff and transparency measures in the context of data tariff offers." TRAI said some service providers were offering differential data tariff with free or discounted tariffs to certain contents of certain websites, applications or platforms. TRAI has invited comments till December 31. Differential tariffs results in classification of subscribers based on the content they want to access (those who want to access non-participating content will be charged at a higher rate than those who want to access participating content). "This may potentially go against the principle of non-discriminatory tariff. The potential benefits and disadvantages of such practices have to be weighed in order to determine the regulatory approach," TRAI said.

In the consultation paper issued on Wednesday, the regulator has asked if differential pricing for data usage was permitted, what measures should be taken to ensure non-discrimination and affordable internet access among others were addressed. TRAI has also asked stakeholders to specify about alternative methods or technologies or business models, other than differentiated tariff plans available to achieve the objective of providing free internet access to consumers. The paper showed that TRAI will look into the zero-rating plans offered by telecom players. Bharti Airtel had withdrawn its Airtel Zero platform, which would have given users free access to certain websites. Airtel Zero had created a furor as many said it was against the principle of net neutrality. Airtel had said Airtel Zero was just a marketing platform. Under Airtel Zero, companies, including start-ups, could offer applications for free and the app-maker was to pay for the customer's free usage to the operator. Similarly, Facebook's Internet.org allows access to certain websites without mobile data charges. Net neutrality means all internet-based services be treated equally, with no discrimination in terms of speed and cost of access. According to TRAI, there were about 300 million wireless internet subscribers in the country as on June. Out of this, about 207 million subscribers use 2G (GPRS, EDGE and CDMA-1X) networks to access internet, about 92 million subscribers use 3G (HSPA, WCDMA, EVDO) and rest are 4G LTE subscribers. The average data usage per data user for 2G service is 200 Mb per month and average data usage per data user for 3G is about 800 Mb per month.

Bite challenges Competition Council decision on TEO, Omnitel merger

Bite Lithuania, the country's third largest mobile network operator (MNO) by subscribers, has challenged a decision by the Competition Council of Lithuania which asserted that a merger between Omnitel and TEO LT does not require approval from the antitrust watchdog, reports Verslo Zinios. In October Swedish telecoms group TeliaSonera announced plans to combine its two Lithuanian subsidiaries, fixed line operator TEO LT and mobile phone company

Omnitel, in a move that will see the former acquire the latter for EUR220 million (USD239 million) on a cash and debt free basis. The following month, the Competition Council said that the transaction does not require its approval, as both TEO LT and Omnitel are controlled by TeliaSonera. However, on 3 December Bite asked the Vilnius Regional Administrative Court to annul the Competition Council's decision.

Digicel Fiji still waiting on ministry concerning special license for Sky Pacific purchase

Three months after it completed the acquisition of Sky Pacific, a division of Fiji Television, for FJD5.75 million (USD2.66 million), telecoms services provider Digicel Fiji has clarified that it has not yet received the final Special License required to complete the takeover. Digicel Fiji CEO Darren McLean is quoted by local newspaper Fiji Village as saying that, to date, his company has only received documents from the Ministry of Communications with 'draft versions' of the special conditions, which needed 'to be agreed to before proceeding'. Mr. McLean said: 'Digicel and the ministry are working together closely to clarify the conditions in detail and ensure that the intended transaction is in the best interest of all parties including government, Digicel, and Sky Pacific customers.' As reported by TeleGeography's CommsUpdate, in October this year the status of Digicel Fiji's subscription-based pay-TV service was said to be 'in limbo', amid heel-dragging from the government on issuing it with the appropriate operating license. Following the September deal, Digicel submitted an application for an operating license with the Ministry of Communications, as per the rules set down in the Media Industry Development Decree. Digicel Fiji attorney-general Aiyaz Sayed-Khaiyum was quoted at the time as saying, however, that it was still waiting for the ministry to make a decision. 'Until such time, no statements should be made regarding the operational control of or any content to be shown by Sky Pacific service,' he said, adding: 'It is premature for Digicel to announce any programming or content materials before the issuance of a license.'

DoT set to reorganize 1800MHz spectrum into contiguous blocks for 4G use

The Department of Telecommunications (DoT) is set to begin consolidating 1800MHz airwaves in seven circles in a bid to establish contiguous blocks of spectrum, suitable for LTE use, the Economic Times writes, citing two people aware of the matter. The seven circles reportedly earmarked for the harmonization process are Delhi, Kolkata, Madhya Pradesh, West Bengal, North East, Uttar Pradesh East and Uttar Pradesh West. The 1800MHz band in the aforementioned circles is expected to be harmonized before the next spectrum auction in 2016, whilst the same process is expected to be gradually rolled across the following circles afterwards: Assam, Maharashtra, Bihar, Odisha, Tamil Nadu, Andhra Pradesh, Gujarat, Rajasthan, Haryana and Mumbai. By reorganizing the band into contiguous blocks large enough for 4G services, the DoT will boost the value of the airwaves, allowing the regulator to increase the reserve price, one of the sources noted, adding that the watchdog is also expecting to free up an additional 10MHz of spectrum for 4G use.

Bell appeals Canadian Radio-television and Telecommunications Commission (CRTC)'s ruling on fiber infrastructure

Bell has appealed a ruling that would require large telecom companies in Canada to sell wholesale access to their fiber networks to independent ISPs, arguing these smaller ISPs should just build their own fiber networks. According to a report Monday by the CBC, Canadian Radio-television and Telecommunications Commission (CRTC) made the ruling in July in order to enable independent ISPs to offer competing Internet packages, providing more choice for Canadian consumers. Bell is appealing the ruling to the CRTC and directly to cabinet via a petition to the Governor in Council,

the CBC said, and has threatened to scale back its planned fiber installations if the ruling stands. Bell launched its Gigabit Internet service to more than a million households in Ontario and Quebec in August, offering download speeds of up to 940 megabits per second. Bell maintains that as part of the business case for fiber, it needs to sell TV and home phone services. Currently Bell sells its Gigabit Fibe service for \$142.85 per month, but customers get price breaks if they also pay for Fibe TV. Under the CRTC ruling, independent ISPs will pay a single wholesale fee for customer. Though those prices haven't been set yet, Bell expects them to be lower than the prices it charges retail customers. Bell said in its petition that "it is impossible for the CRTC to set a wholesale rate that adequately compensates those who invest in fibre-to-the-home networks for their investments." Bell argues that independent ISPs should just build their own fiber networks. Bill Sandiford, president and CEO of the Canadian Network Operators' Consortium said in an editorial in the Globe and Mail that it would cost independent ISPs far more to build a national fiber infrastructure since they haven't enjoyed the same "taxpayer subsidies and protection for competition." Consumers are getting tired of waiting for big telecom providers to expand fiber networks. In the US, some communities are partnering with Internet services companies like Ting to launch municipally-owned broadband.

Telenor wins biggest in Norway's 1800MHz auction

Norway's 1800MHz spectrum auction raised a total of NOK878 million (US\$103 million) after seven days and 83 rounds of bidding, with market leader Telenor emerging as the biggest winner. The Norwegian



Communications Authority (Nkom) confirmed the results in a statement, with Telenor winning 2 x 10MHz at a price of NOK585.3 million. Rival TeliaSonera took home 2 x 5MHz at a total of NOK292.7 million while number three player Ice Communications, which also participated, failed to secure any frequencies. The 2 x 15MHz available was unsold from the country's 4G multiband auction in 2013, when Ice Communication, then known as Telco Data, surprised the market by winning frequencies at the expense of then established player Tele2. Tele2's failure in the auction led it to agreeing the sale of its Norwegian operations to rival TeliaSonera, with the long mooted deal finally approved by Norwegian competition authorities earlier this year. Nkom said winners of this auction will have until January 20 next year "to negotiate the placement for the spectrum". According to GSMA Intelligence, Telenor has just under 4.3 million connections, with TeliaSonera almost reaching 2.6 million. Ice Communications lags behind with 216,000.

Deutsche Telekom CEO hits out at regulators on attitude to copper

Tim Hoettges rails against definition of fiber as 'good technology' and the likes of G.fast as 'bad technology'. Telecoms regulators should focus on the services received by end users rather than the technologies used to deliver those services, Deutsche Telekom CEO Tim Hoettges said this week. There are no authorities instructing the car industry what type of vehicle to build, but in the telecoms space "they tell me I'm using bad technology or good technology," Hoettges said on the sidelines of the World Communication Awards in London on Tuesday evening. He was referring to Deutsche Telekom's decision to use techniques like vectoring and G.fast to extend the capabilities of its copper access network. Regulators see fibre as "good technology" and G.fast as "bad technology," he explained. But "no customer cares about technology. Nobody," he said. "The telecom regulators made a big mistake," when it comes to their approach to regulating consumer services, Hoettges said. They should categories things like broadband services as a

consumer product, rather than as an access product, he suggested. Deutsche Telekom received the provisional approval of German regulator the Bundesnetzagentur for its vectored VDSL rollout plan last week. It will be required to provide a Virtual Unbundled Local Access (VULA) product to competitors. Hoettges believes the future of fixed-line networks "is going to be hybrid," that is, a combination of fiber and copper extension technologies. Not everyone agrees though. Hannes Ametsreiter, chief executive of Vodafone Germany, last month threw his weight behind fiber, warning in a Handelsblatt editorial that Germany's global competitiveness is at risk if it continues to invest in copper networks. "A country that prefers to extract the last remnants of capacity out of copper networks rather than investing in a future-safe fiber optic infrastructure is jeopardizing its international competitiveness as a business and industry location," he warned. Vodafone itself is offering broadband services in Germany based on fiber-to-the-cabinet (FTTC) and VDSL. But Ametsreiter appears to be looking further ahead, noting that emerging high-bandwidth applications – Google's driverless cars, for example – will require fiber and ultimately 5G mobile access to support them. Hoettges seems to agree on that point. When it comes to 5G, "the backbone's always fiber," he said. Hoettges collected the coveted CEO of the Year award at the World Communication Awards, having come out on top of a poll of Total Telecom readers that attracted 19,000 votes. "He has a forward-thinking attitude and is overseeing investment in fixed and mobile infrastructure, developing a base for the company's future," one of his supporters commented.

PIC acquires second tranche of government's 13.9% stake in Vodacom

South Africa's Public Investment Corporation (PIC), which manages investments on behalf of the Government Employees Pension Fund (GEPPF), has acquired a further interest of 6.812% in domestic telecoms provider Vodacom Group, thus increasing its total shareholding in the company to 15.386%. The South African government sold its 13.910% stake in the Johannesburg-based

operator to PIC in July 2015, in order to help fund a ZAR23 billion (USD1.89 billion) allocation to struggling domestic electricity supplier Eskom. The first tranche of the newly purchased shares – which increased PIC's holding in Vodacom to 8.574% (up from 1.525%) – was acquired on July 31. TeleGeography notes that Vodacom Group, which is listed on the Johannesburg Stock Exchange (JSE), is majority owned by UK-based mobile giant Vodafone Group (65.00%).

RCOM prepares to switch off 900MHz network in three circles

Indian cellco Reliance Communications (RCOM) has issued a notice via SMS to its customers in West Bengal, Bihar and Assam, encouraging those still using 2G technology to upgrade to 3G by December 12, when the cellco will switch off its 2G infrastructure in those three circles. The Economic Times writes that the operator failed to renew its 900MHz concessions for the regions in the most recent spectrum auction and, as such, will shut down its 2G networks when the licenses expire later this month. After December 12, RCOM will continue to offer 2G services in the affected circles via roaming agreements with other operators, including Vodafone India, Aircel and Tata Teleservices (TTSL). Due to the differences between RCOM's coverage and the footprints of its roaming partners, some subscribers will no longer have access to the 2G services.

EE's Swantee says 'competition works', calls for regulatory coordination

U.K. mobile operator's CEO follows in BT's footsteps by addressing lack of competition in pay TV; says telcos are undecided on post-merger brand. The U.K.'s telecoms operators are subject to over-regulation in areas where it is unnecessary and intervention from too many different regulatory bodies, EE chief executive officer Olaf Swantee declared. "There is, frankly, too much regulation around mobile today," Swantee said in a keynote address at the Total Telecom Festival in London. Telcos have three different bodies to contend with: the European Union,

the U.K. government and Ofcom, Swantee said. Meanwhile, over-the-top (OTT) players continue to fly under the radar, he said. "We cannot continue to have three organizations all trying to bring new ideas around regulation," he said, calling for greater coordination between them. However, that would be difficult to achieve, he admitted. Avoiding regulating areas in which there is sufficient competition was a core premise of Ofcom, Swantee said, calling for an end to unnecessary regulation. Today, "there are many areas where competition works and you don't need regulation," he said. Swantee noted that he is not looking for more regulation on OTT companies, just a more balanced playing field. "They are under the radar screen today and that needs to change," he said. Swantee also addressed an area that is close to the heart of its would-be new owner BT: pay television. "Pay TV is very expensive," with prices coming in significantly higher than in other markets, he said. "That needs to be addressed by Ofcom." Regarding EE's takeover by BT, which received preliminary approval from the U.K. competition watchdog a month ago, Swantee insisted that the two companies are currently working on the mundane aspects of the deal, such as making sure staff have the appropriate building security cards and that the WiFi is operational. The question of whether the merged entity will continue with a multi-brand strategy or adopt a single name will be decided "in due course," he said. "It's quite an important decision, but it's not an urgent decision."

Orange, Telecom Italia on renewed merger talk

Telcos deny tie-up rumors, but Orange admits it is looking ahead to the possibility of a single European market. Talk of cross-border European telecoms mega-mergers continually resurfaces and Monday brought the latest reports of a tie-up between two incumbents: Orange and Telecom Italia. Both immediately denied the report, which came from Bloomberg, but an official comment from Orange suggests the telco is considering its future as the borders within Europe begin to blur. "We have a strategy and finance department who work with investment banks looking at our vision of how the European telecoms market might evolve in five to 10 years' time

should the single market in Europe become a reality," a spokesperson for Orange said in an email to Total Telecom. "Today, for Orange, there is no specific target that has been identified and no ongoing discussions with Telecom Italia," the spokesperson said. Meanwhile, Telecom Italia referred Total Telecom to comments made by the Italian incumbent's CEO Marco Patuano, as reported by Reuters on the sidelines of an event in Rome. "I don't know what Orange is doing and I have not had any contacts with any telecoms operators that could be interested in a consolidation at European level," the newswire quoted Patuano as saying. Speculation over this particular pairing has reared its head a number of times over the years. Orange CEO Stephane Richard issued his latest denial on the subject at the telco's five-year strategy presentation in Paris in March. "I confirm the non-existence of any possible discussions... with the managers and shareholders of Telecom Italia," he said, in response to media reports at the time. Despite the repeated denials, it is unlikely we have heard the last of the Orange/Telecom Italia marriage reports. And they will not be the only European telco giants facing similar speculation in the coming years.

TRAI seeks responses to consultation on fixing reserve price for spectrum

The Telecom Regulatory Authority of India (Trai) initiated the process to fix the reserve price for 2G, 3G, and 4G spectrum on Thursday. The authority floated a consultation paper seeking comments and counter comments by December 21 and 28 respectively. The authority on Thursday said that there had been a delay in floating the consultation process as the department had failed to furnish adequate information repeatedly sought by the regulator in the past few months. "However, to save time the authority has decided to float the consultation process based on the available information," the regulator said. The department has sought the pricing of airwaves in the 700,800,900,1800,2100,2300 and the 2500 MHz band through its letter dated July 9. The consultation paper raises key issues regarding quantum of spectrum to be auctioned, spectrum block size, spectrum cap, roll-out

obligations, and methods to be used for valuation and estimation of reserve price.

The Internet Of Things Dominates Recent Mergers & Acquisitions

The lines between industries as well as non-tech and tech companies continue to get blurrier and blurrier. With the ubiquity of cloud and big data, with the Internet of Things (IoT) becoming a hot commodity interwoven through it all, M&A activity has been buzzing nonstop. Companies with digital disruption stories — particularly IoT, big data analytics and cloud or Software as a Service — were the stars of the most recent quarter. In the process, non-tech companies continued to get involved in tech in a deeper way. At the same time, tech providers were shifting away from products to end-to-end services. That's the finding of EY's latest review of global M&A activity. Overall, the consultancy tracked a total of 1,069 deals in the third quarter of 2015 (July-September). The amount of deals set the second-highest all-time record for any quarter since 2000. The data is based on EY's analysis of The 451 Group M&A KnowledgeBase data for 2014 and 2015. However, the overall value of the deals was down, the report adds. Aggregate value of fell 49% the second quarter, totaling \$65.4 billion. But it still ranked as the ninth-highest quarterly total since 1996, the earliest year for which data is available. The biggest deals in terms of money exchanged were driven by the IoT, big data analytics, and payment and financial services technologies, EY concludes. IoT topped the chart in average value per deal in the third quarter, averaging about \$1.2 billion. Big data analytics also was behind the most lucrative deals, close to \$800 million each, on average. "More tech and non-tech companies appear to be pursuing the technology to help monetize data assets that have not heretofore generated revenue," according to EY. In terms of quantity, more than 350 of the deals tracked related to cloud/SaaS, while more than 200 were driven by smart mobility. Another 100 or so deals were connected to big data analytics. There was a continuing blurring between tech and "non-tech" companies. Non-tech buyers acquired the top-value IoT, mobility and

security deals; tied for the top-value big data analytics deal; and had the second-largest deals in advertising and marketing and payments and financial technologies, EY states. The four top non-tech buyers included Honeywell, Audi/BMW/Daimler, Liberty Interactive and McGraw Hill Financial. During this quarter, non-tech buyer volume increased to 151 deals, or 14% of the total. So far in 2015, non-tech buyers have accumulated \$47.1 billion in disclosed-value tech deals, nearly double (+97%) their full-year 2014 total (\$23.9 billion). The EY report even suggests there is competition brewing between the IT and automotive industries. "Among deals already mentioned, the acquisition of Nokia's mapping business is particularly notable for the intensity of competition already emerging between the technology and automotive industries — companies from both reportedly bid for the deal," the report's authors state. "High-precision maps are considered critical to the anticipated era of self-driving cars."

Telecom operator and policy-maker back calls for Big Data privacy discussions

Vodafone has backed calls from the European Data Protection Supervisor (EDPS) for an open discussion on how to harness big data while maintaining the privacy of citizens. In a public policy statement this week, the UK-based telco welcomed calls by the EDPS's Giovanni Buttarelli to address how current privacy laws should be applied to big data in order to protect "the dignity and the fundamental rights and freedoms of individuals in a more effective and innovative way." In a press release from Brussels, Buttarelli pointed out that while tracking user behavior was "an essential revenue stream" for many of successful global companies, a more ethical approach was required for handling the data they collected. Specifically, the EDPS said organizations needed to be accountable and transparent regarding the collection of consumer data, as well as providing consumers with the option to control their own data and opt-in and opt-out of data gathering in certain circumstances. In Orange's 2015 Future Digital Trust survey, 78 percent of 2,028 smartphone users surveyed said they

believed service providers held too much of their personal information. In a statement, Vodafone said: "The collection and analysis of data is fundamentally changing the way in which people interact, learn, work and do business. Big data presents economic and societal opportunities for Europe, but only if consumers and citizens can trust and have control over how their data is used and be confident that their privacy is respected. "We welcome the EDPS's call for a new and open dialogue and look forward to contributing to this important discussion."

EC starts consultation on roaming fair use rules

The European Commission has launched a public consultation to finalize the details of the new roaming regulation passed by Parliament in October. The legislation will see roaming surcharges capped from 30 April 2016 and an end to all roaming charges from 17 June 2015. From that point, all roaming in the EU will cost the same as customers pay for domestic services. The European Commission has been charged with setting the details of the fair-use policy and sustainability mechanism of the new roaming regulation. The former would allow operators to set a fair use amount of roaming in the EU, in order to avoid any abuse of the system, such as 'permanent roaming', where customers use in their home country Sims from other countries where national rates are cheaper. If a customer exceeds the fair-use amount, operators would be able to add extra charges for roaming. The regulation employs the term 'periodic travel' for a reasonable amount of roaming, beyond which roaming could be considered abusive and a fair-use policy could apply. The consultation proposes a number of options for defining periodic travel, based on factors such as average paid holidays, working days and time spent abroad by EU residents. The consultation also looks at how the fair-use roaming should apply for customers on different types of domestic plans, such as fixed monthly allowances, unlimited plans and prepaid. No specific caps on the amount of 'roam like home' services were proposed yet in the consultation. The sustainability mechanism gives operators another form of opt-out from the roaming rules, if they can

prove they are unable to cover their costs without charging more for roaming than domestic services. National regulators will have the right to evaluate whether any surcharges are justified in such a case. Any extra fees would be limited to the amount needed to cover the operator's costs. The consultation looks at a variety of ways for determining the operator's costs, revenues and margins. A third element of the public consultation will look at impact of the roaming changes on the functioning of wholesale roaming markets in the EU and whether the current price caps on wholesale roaming services need to be amended. Research by EU telecoms regulator Berec in 2014 found that in some countries, the EU's current wholesale price caps on data roaming are higher than actual retail prices, and average wholesale charges remain higher than domestic retail prices in many markets. The current roaming regulation requires the European Commission to review its impact by mid-2016, and Berec said the review will need to consider the impact on national markets of ending roaming charges and that operators in both home and visited markets can recover their costs. According to the EC, the review of the wholesale market could lead to further legislative proposals. In the consultation, it raises the option of ending the wholesale price regulation or setting different wholesale price caps for each country depending on the local market conditions. The latter could be based on a common cost-based methodology, similar to that already used for termination rates across the EU. The consultation is open for comment until 18 February 2016.

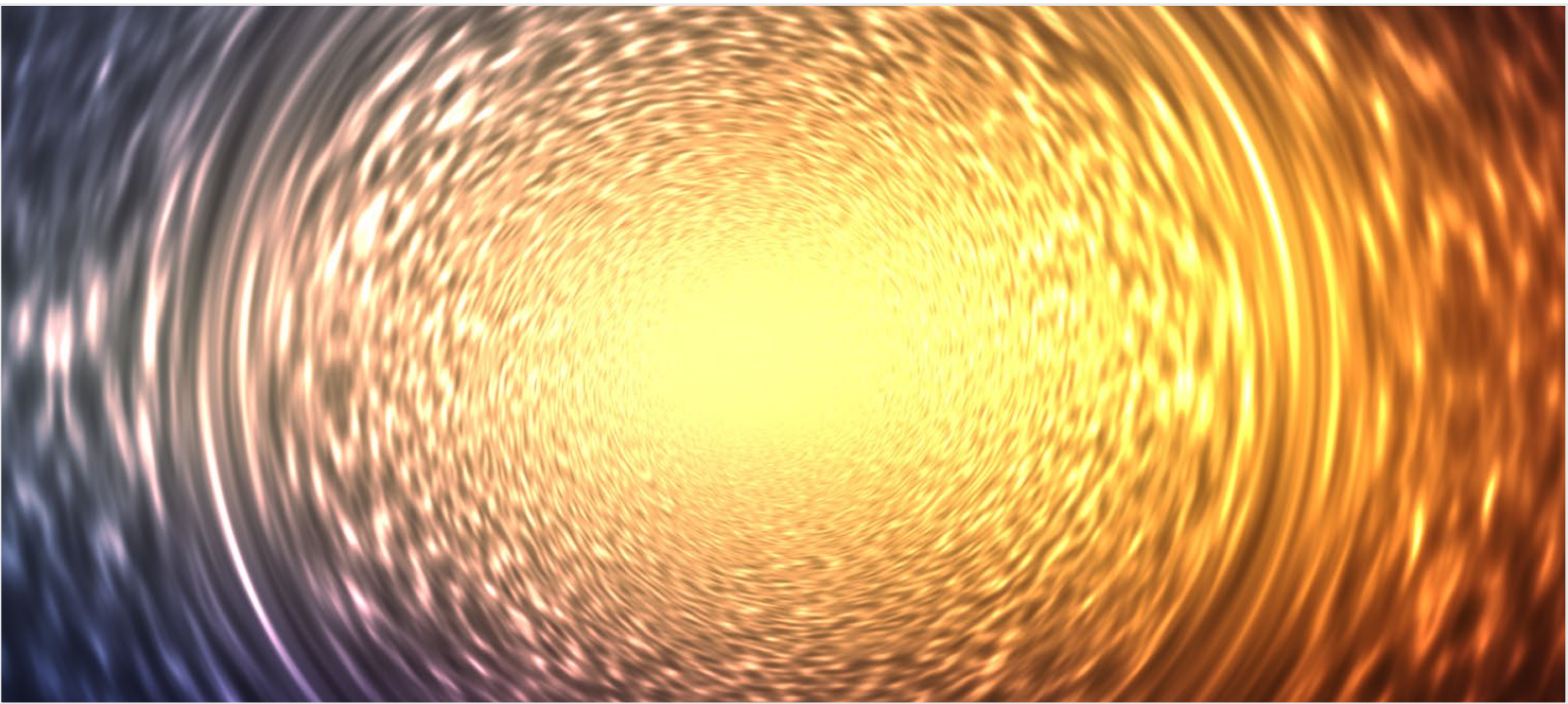
Vodafone to pay USD300m for merger license

India's Supreme Court has directed Vodafone India to deposit INR20 billion (USD301.27 million) with the Department of Telecommunications (DoT) in exchange for a merger licence, the Economic Times reports. The decision will clear the way for Vodafone to merge six of its Indian units following a protracted legal battle with the DoT. In 2012, Vodafone sought to combine its Vodafone East, Vodafone South, Vodafone Cellular and Vodafone Digilink arms with its

Vodafone Mobile division, at the same time looking to combine Vodafone West and Vodafone Spacotel with Vodafone Services. The consolidation plans were originally drawn up with a view to launching an initial public offering (IPO), but the plan was later dropped due to poor market conditions, and instead the reshuffling would focus on reducing inefficiencies in the cellco's existing structure. The regulator had sought INR69.3 billion from the company for the mergers, relating mainly to the fees surrounding the companies' spectrum holdings, including one-time spectrum fees, usage charges, and a requirement to pay the DoT a market-linked price for spectrum under India's merger and acquisition rules. Vodafone contested the DoT's request in the Telecom Disputes Settlement and Appellate Tribunal (TDSAT), which ruled in favour of the cellco. In response, however, the DoT took the matter to the Supreme Court, which has arrived at the figure of INR20 billion.

Philippines' SMC likely to keep 700-MHz spectrum

Philippines conglomerate San Miguel Corporation (SMC) is likely to be allowed to hold on to its 700-MHz spectrum, after regulator NTC indicated it is leaning towards siding with the group over a dispute over the airwaves. The head of the NTC's regulatory division Edgardo Cabarios told reporters last week that it would be difficult to recall and reassign the spectrum, as requested by incumbent operators PLDT and Globe Telecom, the Inquirer reported. He indicated that there needs to be a good reason to recall the spectrum, such as if it has not been used or the holder has not been paying the required fees. SMC's telecom operations are up to date with their payments and has acquired permits to purchase mobile network equipment, the report states. Globe and PLDT have been urging the NTC to assign a portion of the band to them to allow them to improve the market's notoriously slow internet speeds. SMC acquired the rights to nearly all of the 700-MHz band via its Wi Tribe and High Telecommunication units. The company is in talks with Australia's Telstra over a joint venture with the potential to shake up the nation's mobile market, although neither company has yet confirmed whether they plan to enter such a deal.



ITU Global Symposium for Regulators 2015: Mind the digital gap

"Attracting investment in broadband networks, regulation of OTT players, network sharing and taxing digital services are high on the regulatory agenda"

Iqbal Singh Bedi (Principal) delivered a keynote presentation on "Investment strategies for the deployment of broadband and access to the digital economy" to senior dignitaries, regulators and policy makers from around the world at the International Telecommunications Union (ITU)¹ fifteenth Global Symposium for Regulators (GSR15), held in Gabon in June 2015.² His discussion paper can be downloaded here.

The theme of this year's symposium was "Mind the digital gap", and it explored how citizens can benefit from the social and economic opportunities brought by the digital economy. In this article (the first in a series) we summarise the main topics that were discussed at GSR15 and assess their potential impact on the market.

The role of regulators in attracting investment in broadband networks and higher-layer services

Iqbal presented the findings of a discussion paper to deduce the role of regulators and governments in attracting investment in broadband networks and higher-layer services. A number of countries have used public-private partnerships (PPPs) and innovative investment methods to finance the development of broadband networks and higher-layer services. Based on 19 case studies from developing and developed markets, the paper considered whether PPPs are still a valid form of financing for state-funded broadband initiatives, and highlighted regional differences in how PPP projects differ between developed and developing markets. The paper also reviewed the suitability of alternative investors (such as Internet companies, hedge funds, technology innovators and community funds) and innovative financing approaches (such as bitcoin,



Iqbal Singh Bedi
Principal
Analysys Mason

crowd funding and pensions). Further comment and analysis on these aspects will be provided in the next article of this series.

Should OTT service providers be regulated?

An interesting theme that emerged from the panel discussions was that of regulating over-the-top (OTT) service providers. In contrast to telecoms operators, which charge customers for their services, OTT providers (such as WhatsApp, Skype, Viber, YouTube and NetFlix) offer their services to users either free of charge or at competitive prices. As a result, operators are facing increased competition from these OTT providers as they encroach on their core services. The threat of OTT players to operators is discussed in more detail in a previous article written by Analysys Mason.³

One operator suggested that “OTT players are eating the operators’ lunch” and argued that operators are being unfairly penalised, and that OTT players should be regulated in the same way as operators. Unlike OTT providers, operators are subject to regulations which can increase their cost base, which the operators argue makes them less competitive, and they are therefore seeking a level playing field. However, there may still be good policy reasons for this regulation. OTT services may also be leading to increased user subscriptions to data bundles, as well as wider societal benefits. Operators and regulators alike should consider carefully before coming to any conclusions on whether OTT players should be regulated (as per operators) or whether existing regulation should be withdrawn.

Network sharing is still high on the regulatory agenda

Another aspect discussed in detail was network sharing, which is still high on the regulatory agenda.⁴ More specifically, the forum addressed the role of network sharing in developing rural broadband infrastructure in markets where it is not commercially feasible to invest in networks. For mobile operators, network sharing can include sharing masts, spectrum and the active radio and backhaul networks. The primary benefit is that mobile operators can reduce their capital and operational costs, as discussed in a recent newsletter article.⁵ The reduction in costs can improve the commercial feasibility of building mobile networks in rural areas, supporting government policies focused on developing rural connectivity. For fixed operators, network sharing can include sharing ducts or using overhead power networks.

Regulators could consider making available infrastructure maps that show network coverage, to help operators build network infrastructure cost-effectively. This is an aspect that is discussed in Analysys Mason’s Guide to broadband investment.⁶

Despite the advantages of network sharing, operators may still be reluctant to share their network with a competitor. In these circumstances, operators can consider creating a joint-venture vehicle that owns and runs the network on their behalf. Regulators could also mandate network sharing, but this may discourage investment in other areas. Should finance ministers forego taxation on broadband services?

Should finance ministers forego taxation on broadband services?

Finally, there was some discussion of an ITU study⁷ that shows that decreasing the costs of fixed broadband services through reduced taxation can increase end-user adoption (i.e. these services are highly price-elastic), particularly in economies where there is a greater need for broadband. The dilemma for finance ministers is whether to forego immediate direct taxation income in return for longer-term growth and greater tax from operator revenues.

Iqbal regularly briefs government ministers and policy makers on policy-affecting issues in the telecoms and media sector such as digital inclusion, broadband plans, data centres and broadband investment strategies. If you would like to discuss any of the issues raised in this article you can contact him on iqbal.bedi@analysismason.com

¹ The ITU is the United Nation’s leading agency for ICT.

² Since its inception in 2000, GSR – attended by chief regulatory officers, policy makers and senior industry executives – has met annually to examine key issues affecting the regulation of telecoms and digital services. See also <http://www.itu.int/en/ITU-D/Conferences/GSR/Pages/GSR2015/default.aspx>

³ See <http://www.analysismason.com/Research/Content/Comments/whatsapp-voice-service-Mar2015-RDMV0/#26%20March%202015>

⁴ See http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2015/Discussion_papers_and_Presentations/Discussionpaper_networksharing.pdf

⁵ See <http://www.analysismason.com/About-Us/News/Newsletter/Network-sharing-synergies-Jul2014/#11%20July%202014/>

⁶ See <http://www.analysismason.com/About-Us/News/Press-releases1/Analysys-Mason-develops-broadband-investment-guide-for-local-governments/#19%20December%202011>

⁷ See link http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2015/Discussion_papers_and_Presentations/Discussionpaper_taxation.pdf



▼ A SNAPSHOT OF REGULATORY ACTIVITIES IN SAMENA REGION

Afghanistan



Dr. Mohammad Najib Azizi
[Afghanistan
Telecommunication
Regulatory Authority (ATRA)]

REGULATORY UPDATES

Abdul Razaq Vahidi Minister of Communication and Information Technology of Afghanistan spoke with The Prospect Group about the current state of the ICT sector in Afghanistan, the government's top three policy priorities, and roll out of the open access policy the government hopes will attract foreign investors.) In Afghanistan, in 2002, there was no infrastructure. We almost started from a zero base, with 20,000 fixed lines in Kabul city and some major cities. But now, we have 80% mobile penetration and 3 million people out of the 30 million population are using the Internet. For sure we have many challenges in Afghanistan. As you know, we are suffering by security issues and the poverty and lack of economic stability, but we hope that the ICT can play a good role in mitigating and causing a decline in corruption through better management system in the government, good governance initiatives, and we hope that in future, in near future, we can have a good financial management system by using mobile and

ICT equipment and infrastructure. We have conducted a survey and we have learned that almost 70% of the mobile owners are poor people. So it means that at the moment, the mobile and telecom sector is with the hands of the poor people. So it means that we can play with this data and we can have planning for poor people to, for instance for their home economy. We can make money for them; we can help them to make money and to give them opportunity to create jobs. Right now, mobile is only a cost for the people. So in the future we'll have some planning and some programs for people to be benefit of the mobile, rather than to be only cost for them. We have three main policy priorities. One of them is to provide better services and a decline in the cost of the Internet. For this we started some negotiation with neighboring countries and regional connectivity will for sure be a win-win policy for Afghanistan and neighboring countries in the region. Afghanistan can be also be part of the strategy for the region to be a hub for transit data. And with this, we can also have some revenue. The second item is the eGovernment initiatives. Through using the existing infrastructure, like almost 4,000 Kilometers of fiber optic backbone and we already have satellite, by using this

entire infrastructure, we can have a better capability for running eGovernment initiatives in Afghanistan. In this regard, we started some negotiation with stakeholders. The third one is security. Security also is one of the main issue. Adapting ICT in the security is one of the major factors and government is committed to the public to provide for them the security for sure. Without security we'll not have an economic stability and social welfare. This is one of the good factors and one of the major items which we are considering, and we'll have some progress in this regard in future. With the lack of information and data in Afghanistan, it is hard to give you a clear picture about this. But we expect, we have some 12% of GDP contribution. One of the issues that I mention to you for good governance is adapting ICT to get better data and proper data and clean data. Fortunately, we had some good achievements in this regard though a big data management system we already installed. All this systems are adapted and in near future we'll have better planning for the government strategy and government programs. There are lot of opportunities for investors in Afghanistan especially in ICT and Internet and telecom. But we can tell you that there are lots of obstacles on the road too. We gradually overcame all these challenges and obstacles; legal framework is one of them. We have prepared and we have right now many laws and regulations, which we finalized with the government, with the parliament and in near future in a couple of months we'll have overcome most of these issues and we'll have new laws come in place. One of them is open access policy. For this open access policy, we'll open the opportunity for all investors to come and work on infrastructure like fiber optic, satellite, and other facilities in the ICT. There are lot of initiatives on the floor and we would like to have a benefit from telecoms in Afghanistan for social welfare. Also, for instance, we can have in the future smart cities to give better services to the people, to mitigate the cost for the people, and also to give them access to information for better understanding of their situation and better selection of the best way of lifestyle. (December 9, 2015) [theprospectgroup.com](#)

The ICT ministers of Iran and Afghanistan have agreed to boost cooperation in the ICT space, and are set to sign a memorandum of understanding (MoU) to that effect. Under the planned deal, Tehran and Kabul will establish five specialized committees for cooperation in the areas of e-government, research and development, infrastructure and network development, ICT regulation and post. Iran's ICT minister, Mahmoud Vaezi told members of the press that the two nations agreed to cooperate on the development of Persian-language applications and software. The agreements were reached during a visit to Iran by his Afghan counterpart Abdul Razaq Vahidi this week. During the talks, Mr. Vaezi noted that the officials had agreed that cooperation between the two countries was essential, as a large part of Iran's international traffic is related to links to Afghan nationals living in Iran. (December 8, 2015) [IRNA](#)

Consolidation will come to Afghanistan's mobile market in the next 18-36 months, predicted Karim Khoja, CEO of the country's biggest operator Roshan. Speaking to Total Telecom on the sidelines of the Total Telecom Festival in London, he explained that the withdrawal of foreign troops has resulted in a dearth of big-spending

consumer customers, causing the value of the mobile market to plunge 30%-40%. In that context, "it doesn't make sense to support five-to-six mobile operators in a harsh market" like Afghanistan, said Khoja. However, the regulatory environment is under-developed in Afghanistan, to put it mildly. Putting it less mildly, "there is no regulator of any competence," said Khoja, which makes acquiring a rival mobile operator a challenging prospect. In the meantime, for its part, Roshan is pursuing opportunities in the enterprise market in a bid to fill the void left by foreign soldiers, providing cloud and data centre services to over-the-top (OTT) players like WhatsApp and Viber who, in Khoja's words, "don't physically want to be in Afghanistan." In addition, Roshan has entered into a site-sharing agreement with an unnamed competitor in a bid to reduce costs. It also has wholesale access to state-owned incumbent Afghan Telecom's fiber backbone network. Over the longer term though, Khoja believes consolidation is inevitable. Afghanistan has six mobile operators: Roshan, MTN, Etisalat, Afghan Wireless, CDMA operator Wasel, and state-owned Salaam, which is the newest entrant, having launched services in April 2014. Khoja predicted that "Salaam will go first", but remained tight-lipped about whether Roshan is considering making a move. However, "Roshan is the biggest and we're not going to leave Afghanistan," he said. "We are probably going to be a consolidator in this market." (December 1, 2015) [totaltele.com](#)

Algeria



President: Mr. Toufik Bessai
[Regulatory Authority for Post & Telecommunication (ARPT)]

Over 30 Algerian ICT companies have formed a consortium to build a technology cluster in Sidi-Abdellah. The consortium signed an agreement with the national agency for business parks. The businesses said there is a need to open a cluster to help develop the country's digital economy, according to the president of the ICT industry association, adding that by joining forces the companies can increase their scope. Around half of the 32 partners planning to open a presence at the Sidi-Abdellah Cyberpark 30 km southwest of Algiers, are state-owned companies such as Algerie Telecom and Mobilis, as well as private groups and internet start-ups, software developers, electronics manufacturing and satellite navigation. The ICT cluster follows on earlier initiatives for drinks, dates, precision mechanics and plastics. (December 1, 2015) [telecompaper.com](#)

A Memorandum of Understanding (MoU) has been signed between Algeria and Oman's regulatory bodies. The MoU is expected to boost exchange of information and expertise in the field of telecommunications and postal sector in future. It will also strengthen cooperation in research and consultancy studies and exchange of information in relation to the approved technical standards. Possibilities of exchanging expertise in frequency spectrum management, allocation of bands, mechanisms of network evolution, interconnection and regulatory measures are also addressed by the MoU. (November 26, 2015) [muscatdaily.com](#)

Bahrain



Chairman: Dr. Mohammed Alamer
[Telecommunication Regulatory Authority (TRA)]

Bahrain's Batelco says that it has signed an agreement with India based Bharti Airtel, which appears to cover network sharing deals. In a detail-light statement from the Bahrain based company, Batelco said that the new partnership between Batelco and Airtel will allow the two organizations to access each other's networks thereby enabling them to extend their reach into newer markets. The company cited the Pan-Asian region as of particular interest. Similarly, Airtel will be able to utilize Batelco's presence across the Middle East and other regions. Beyond that, little was clear about what the deal means in practice. (December 15, 2015) cellular-news.com

The Telecommunications Regulatory Authority (TRA) has started an awareness campaign on its support services to consumers. The awareness campaign aims to educate consumers on when and how to approach TRA to resolve their telecommunications issues. TRA's Director of Consumer Affairs Sh. Abdulla bin Humood AlKhalifa said on the launch of this awareness campaign: "The TRA is required under the telecommunications law to handle consumer disputes as an escalation process if a consumer and a service provider failed to solve the complaint between them. This campaign shall educate consumers on the process of raising complaints to telecom service providers and to TRA." Sh. Abdulla also said "TRA has just launched its fully automated Customer Relationship Management System which is accessible on TRA's website. Consumers can submit their complaints enquires, and suggestions in a fast and user friendly manner. The system will also allow consumers to obtain updates on the status of their cases and will improve our efficiency in solving consumer complaints and responding to their enquiries." Consumers facing issues with their telecommunications services, are first required to contact their service provider and try to resolve the issue directly. If the service provider resolution is not satisfactory, or 60 days have passed since the submission of the complaint, the consumer should contact the TRA and we will be working closely with the service provider to resolve the issue. (December 12, 2015) tra.org.bh

Bangladesh



Chairman: Sahjahan Mahmud
[Bangladesh Telecommunication Regulatory Commission (BTRC)]

The Government has ordered the country's local mobile network operators to block the use of messaging and social media services Skype, Imo, Twitter alongside Viber, WhatsApp, Line, Tango, Hangout, Comoyo and ustream.tv. A note from the telecoms regulator, the BTRC sent to the mobile networks ordered that the restrictions come into effect immediately. Grameenphone said that the restrictions would be temporary, but was unable to say how long the ban would last. The government routinely orders the mobile networks to bar the services, although the block is often removed a few days later. It only recently unblocked access to Facebook, having barred access to the website for three weeks. The reason

for the latest ban was not clarified.

(December 14, 2015) cellular-news.com

The government lifted its ban on Facebook but has not moved to unblock Viber, WhatsApp, Line and other messaging services. At a press briefing, Minister for Posts, Telecommunications and Information Technology asked the Chairman of the Bangladesh Telecommunications Regulatory Commission (BTRC) to open access to Facebook, The Independent reported. "We were told by the authorities to remove access-restrictions on Facebook, as the terror threat has declined. We are yet to get instructions to unblock sites like Viber and WhatsApp," Minister said. The BTRC blocked access to a number of social media apps on November 18. Prime Minister told Parliament in early November that internet-based messaging and voice-call services such as WhatsApp and Viber would be blocked when needed to catch militants and prevent terrorist activities. Therefore, I will suspend operation of these apps for some days, when needed," she said. Robi Axiata, the country's third largest operator, said at the end of November that the ban reduced data consumption almost 30 per cent and would cut its revenue by around 3%.

(December 11, 2015) mobileworldlive.com

The Bangladesh Telecommunication Regulatory Commission (BTRC) has requested a third-party impact study on the proposed merger of local cellcos Robi Axiata and Airtel Bangladesh, and has approached the Department of International Business under the Faculty of Business Studies at Dhaka University and the Faculty of Engineering at American International University to submit their estimated costs for the study. BTRC Secretary told that the study was imperative as it was the first time that two Bangladeshi mobile operators had decided to consolidate. The report will focus on areas including: the impact of the merger on mobile market competition; the general socio-economic impact of the merger; strategies to deal with any envisaged negative effects; employment issues and the companies' proposed provisions for employees not willing to join the merged entity; potential impact on users' services and rights; share capital issues; and an examination of whether the consolidation will affect spectrum auctions and the government's revenue earnings. The study should be completed within eight weeks. Robi and Airtel Bangladesh's third and fourth largest cellcos by users, respectively – sought permission for the merger from the BTRC in September. (November 25, 2015) BDNews24

Iran



Chairman: Dr. Ali Asghar Amidian
[Communication Regulatory Authority (CRA)]

The ICT ministers of Iran and Afghanistan have agreed to boost cooperation in the ICT space, and are set to sign a memorandum of understanding (MoU) to that effect, IRNA reports. Under the planned deal, Tehran and Kabul will establish five specialized committees for cooperation in the areas of e-government, research and development, infrastructure and network development, ICT regulation and post. Iran's ICT minister, Mahmoud Vaezi told members of the press that the two nations

agreed to cooperate on the development of Persian-language applications and software. The agreements were reached during a visit to Iran by his Afghan counterpart Abdul Razaq Vahidi this week. During the talks, Mr Vaezi noted that the officials had agreed that cooperation between the two countries was essential, as a large part of Iran's international traffic is related to links to Afghan nationals living in Iran.

(December 8, 2015) telegeography.com

Iraq



CEO: Dr. Burhan Shawi

[Communication & Media Commission (CMC)]

An Iraqi court has rejected a request from Zain Iraq to lift a freeze on US\$187 million that the telco holds in cash in local bank accounts, media reports, citing a statement from parent company Zain Group to the Kuwaiti bourse. The bank balances were frozen as part of attempts by the Iraqi authorities to levy capital gains tax on Zain's US\$1.2 billion acquisition of Iraqna in 2007. Zain has confirmed that it will appeal the decision. The telco has also brought a separate case relating to the acquisition, claiming that capital gains tax should only apply to the seller, in this case Egypt's Orascom Telecom. The case was due to be heard earlier this week, but a decision is not expected immediately. An Iraqi court dismissed a USD4.5 billion claim against Zain Iraq – also relating to the Iraqna acquisition – in January 2015. An unnamed claimant had argued that Zain's takeover of the operator had prevented them from purchasing the company, causing them to suffer a US\$4.5 billion loss.

(December 18, 2015) reuters.com

Iraq's telecoms industry regulator the Communication and Media Commission (CMC) has decided to extend the deadline for companies to register their interest in bidding for the country's fourth mobile license, without giving a reason for the decision. In a website update, CMC confirmed that the new deadline for bidders interested in the 15-year concession has been pushed back from November 20 to December 10. Earlier this month CMC issued a request for Expressions of Interest (EoI) in a fourth license, calling for service providers to register their interest in the technology neutral permit. Under the terms of the award, existing licensees will be obliged to enter into infrastructure and facilities sharing agreements with the newcomer, 'in order to achieve rapid and cost-efficient network deployment'. A range of frequencies are available to prospective bidders, including 2x7.5MHz in the 900MHz band, 2x22.5MHz in the 1800MHz range, 2x10MHz at 1900MHz/2100MHz and 20MHz in the 2600MHz band. Iraq is home to three national mobile operators – Kuwaiti-backed Zain Iraq, Ooredoo-owned Asiacell and Korek Telecom, an affiliate of Orange Group – which between them counted more than 33.1 million subscribers at end-June 2015, down from 34.9 million at the start of the year and a high of 36.1 million in June 2014. The sector has, however, experienced serious upheaval over the course of the last decade, with an over-complicated regulatory regime contributing to the market's evolution, while the incumbents have also seen their margins and profitability squeezed through competition, rising costs and service outages caused by the so-called Islamic State's incursions in Iraq. This has led to some speculation that the fourth license is likely to be a hard sell. (November 25, 2015) telegeography.com

Kuwait



Chairman and CEO: Salim Alozainah

[Communication and Information Technology Regulatory Authority (CITRA)]

Saudi Telecom Company (STC) picked up clearance from the Kuwait Capital Markets Authority to make a bid for the shares it does not own in affiliate Viva, although its offer price did raise some eyebrows. The company is offering KWD1 (\$3.30) per share, which is below the price the stock was trading in the run-up to the latest announcement. However, it does represent a premium on the price in the period to mid-November, which was the point at which STC revealed its intention. STC already owns 26 per cent of Viva, and is making a bid for the remaining 74 per cent (499.4 million shares). This gives a maximum cost of around KWD500 million (\$1.65 billion). Other major shareholders are Public Institute for Social Security (9.73 per cent) and Kuwait Investment Authority (6 per cent). The operator is profitable, with its 9 month profit (to 30 September) of KWD33 million up 12 per cent year-on-year, on revenue up 17 per cent to KWD204 million. Viva and Ooredoo are roughly level pegging in the Kuwait mobile market, behind market leader Zain. The offer period starts on 27 December and runs until 31 January 2016, at which point STC can announce the number of shareholders accepting.

(December 14, 2015) mobileworldlive.com

Lebanon



Secretary of the Board: Mr. Amine Moukheiber

[Agence Nationale de Reglementation des Telecommunications (ANRT)]

The Lebanese government has cancelled the tender process for the management of the country's two mobile networks after the process generated insufficient interest, it emerged this week. The Ministry of Telecommunications had set a deadline of midday on Tuesday to announce the results of the tender, but the deadline passed with no resolution. On Wednesday, Lebanon's Business News reported that the fair competition prerequisite of the process was not met after only two companies – Zain and Orange – submitted bids to manage the operators. It cited an unnamed source. Lebanon is served by two government-owned mobile operators, Touch and Alfa, which are currently being run by Zain and Orascom Telecom Media and Technology (OTMT) respectively. Their management contracts expired two years ago, but have been extended a number of times. The failure of the tender means that those contracts will likely be extended once again, Business News' source predicted. In addition to Zain and eventually OTMT – the latter missed the original applications deadline earlier this year, but was later admitted to the tender process, according to local press reports – Orange, Maxis, Turkcell, Vodafone and a unit of Deutsche Telekom all submitted applications, Lebanon's Daily Star claimed. However, all but Zain and Orange fell by the wayside over the past few months. The Ministry of Telecommunications and the Council of Ministers will now rule on the next steps, Business News' source said. Zain and OTMT's concessions will likely be extended for at least three months, he said.

(December 10, 2015) totaltele.com

Morocco



Director General: M. Azdine El MoutassirBillah

[Agence Nationale de Reglementation des Telecommunications (ANRT)]

Moroccan telecom regulator ANRT has designated operators with significant market power in the consumer telecom market. Maroc Telecom was designated as such for fixed call termination, voice mobile termination, leased lines, wholesale access to physical infrastructure for the fixed local loop and sub-loop, and the wholesale market for access to conduits. Maroc Telecom, Medi Telecom and Wana were designated as having significant market power for the SMS termination market. The regulator's analysis is based on customer base, traffic, revenue, and indices related to market experience, investment capacity and control over access to end-users and the absence of potential competition. The regulator has set out the operators' obligations, including a requirement to publish technical and pricing reference offers.

(December 14, 2015) telecompaper.com

Nepal



Chairman: Mr. Digambar Jha

[Nepal Telecommunication Authority (NTR)]

Malaysia's Axiata Group has signed a conditional sale and purchase agreement with TeliaSonera to acquire the Swedish firm's 80% interest in Nepal's largest mobile operator by subscribers, Ncell. Axiata is to pay USD1.365 billion for the interest via its wholly owned subsidiary Axiata Investments (UK) Ltd. TeliaSonera announced in September this year that it was looking to exit all seven countries in its 'Eurasia' mobile network operating division – Kazakhstan, Uzbekistan, Azerbaijan, Tajikistan, Nepal, Georgia and Moldova – to sharpen its focus on its operations in Sweden and Europe. Axiata Group's chairman, Tan Sri Azman Hj. Mokhtar, commented: 'Axiata has over the years established a good track record in its M&As, delivering and implementing value-enhancing deals. The board has reviewed this transaction in some detail and believes it to be a rare opportunity to own and control a sizeable enough asset that is a value-accretive transaction with attractive cash yields. The board is confident that Ncell will bring significant positive financial impact to the Group.' The deal is subject to Axiata shareholder approval. According to TeleGeography's GlobalComms Database, Ncell is Nepal's largest mobile operator, with 13.01 million customers as of mid-September, ahead of government-backed Nepal Telecom with 12.45 million and limited mobility operator Smart Telecom with 1.34 million.

(December 21, 2015) telegeography.com

Oman



Executive President: Dr. Hamed Al-Rawahi

[Telecommunication Regulatory Authority (TRA)]

The Telecommunications Regulatory Authority (TRA) has approved Abu Ghazaleh Intellectual Property as its fifth registrar licensed to issue domain names for .om (in both English and Arabic). Dot Oman is pronounced 'nuqta Oman' in Arabic. The Arabic version

does not include the 'www' prefix for websites. Abu Ghazaleh joins OmanTel, Ooredoo, Gulf CyberTech and Oman Data Park as licensed registrars who can register website names on behalf of TRA. "This is another step for dot Oman and nuqta Oman," said Suleiman al Rawahi, manager of TRA's domain name department. "We hope people will know about .om, enhance it and use it as something Omani." There are 91 sites which use the Arabic version of .om and 3,273 sites that use the English version. All government entities use the Omani domain name. Officials said the Arabic domain name helps organizations promote themselves as Omani brands. Abu Ghazaleh has similar arrangements as a licensed registrar in UAE and Qatar and is also planning on open up in Morocco and Tunisia, according to executive director Mahmoud A Lattouf. (December 1, 2015) muscatdaily.com

A Memorandum of Understanding (MoU) has been signed between Algeria and Oman's regulatory bodies. The MoU is expected to boost exchange of information and expertise in the field of telecommunications and postal sector in future. It will also strengthen cooperation in research and consultancy studies and exchange of information in relation to the approved technical standards. Possibilities of exchanging expertise in frequency spectrum management, allocation of bands, mechanisms of network evolution, interconnection and regulatory measures are also addressed by the MoU. (November 26, 2015) muscatdaily.com

Pakistan



Chairman: Dr. Syed Ismail Shah

[Pakistan Telecommunication Authority (PTA)]

Pakistan's push to hold a 3G/4G spectrum auction will likely be delayed by at least 12 months after the consultant hired by the telecoms regulator reportedly determined the market is not ready for another auction. The consultant, InterConnect Communications, met with the country's five mobile operators and other stakeholders and submitted its report to the Pakistan Telecommunication Authority's (PTA) evaluation committee for review. PTA sources told that the consultant found mobile operators are struggling with low margins and aren't interested in investing in the spectrum within the next 12 months. The operators also complained about high taxes, low return on investments and weak economic growth. The finance ministry has pushed PTA to hold the auctions twice this year, but both times the sale has been pushed back after all five operators said they would not participate. The reason behind the push is the government budgeted the auctions to generate PKR56 billion (\$539 million) in fiscal 2014-15 and then raised its target for this fiscal year to PKR65 billion. Minister of State for Telecom and IT, Anusha Rehman, told it aims to hold the 3G/4G spectrum auction by 30 June. After the last auction in April 2014, in which blocks of 4G and 850MHz spectrum were unsold, the government assured operators it would address the industry's challenges. The investment climate, however, has deteriorated this year. The federal government doubled the sales tax on various categories of imported mobile handsets in June to PKR300-1,000 (\$3-\$10), and the government in Punjab introduced a 19.5 per cent

sales tax on internet usage in early June. In addition, not only did mobile revenue drop 1.8 per cent in the fiscal year ending 30 June, but direct foreign investment plunged 72 per cent and the sector's tax contributions fell almost 50 per cent from last year. Only China Mobile-backed Zong has a 4G license. But the attraction of a 4G auction is low, particularly after VimpelCom's Mobilink merger with Warid Telecom was announced last month. Mobilink, the country's largest operator with a 28 market share, has said it won't participate in the auction.

(December 15, 2015) propakistani.pk

According to revised Telecom Policy 2015 that has been approved by ECC Pakistan Telecommunication Authority has been mandated to revise licensing framework for telecommunication services in the country to particularly include selected OTT services into the telecom licensing regime. Once new licensing framework is finalized by PTA, certain OTT services (WhatsApp, Skype, Facebook etc.) are likely to be asked to obtain license from regulator in order to operate in Pakistan. In developing the new licensing regime inter alia the following should be taken into account: Section 20 of the Telecom Act, and in particular, which over-the-top services should be licensed under a "general authorization" in which a service provider is deemed to hold a license by virtue of the services that it provides and is then subject to the terms of that general authorization, which may include national security requirements; The regulator, PTA, will determine licensing terms for certain OTT services — based on criteria that is yet unknown — and will make it mandatory for such selected OTT services to get a license before operating in Pakistan. Moreover, some OTT services will be licensed only after they agree to terms (outlined by PTA), which may include national security requirements or lawful interception. It is still unclear that which OTT services would be asked to get the license. (December 14, 2015) propakistani.pk

The Pakistan Telecommunication Authority (PTA) and China Mobile Pakistan (CMPak) – which operates under the Zong brand name – have reached an agreement regarding the cellco's 3G spectrum allocation; ProPakistani cites unnamed sources as saying. Zong sent a legal notice to the regulator in October this year complaining that it had been allotted 'corrupted' spectrum, known to be affected by interference from illegal DECT 6.0 cordless phones, and demanding that the PTA issue it with different spectrum, along with US\$40 million compensation for the lost revenue, market share and optimization costs. According to the unnamed sources, the PTA has agreed to change Zong's spectrum allocation, and expects to complete the change by the end of December 2015. As a result of the deal, the cellco is expected to withdraw its compensation claims; a PTA official was quoted as saying, adding that: 'There wouldn't be any cost involved in changing spectrum.'

(December 10, 2015) propakistani.pk

As per the directions of Pakistan Telecommunication Authority (PTA), Wireless Local Loop (WLL) operators have launched Biometric Verification System (BVS) for issuance of WLL connections at their Customer Service Centers (CSC) with effect from 1st December 2015. During the first phase of the project required WLL

operators to deploy BVS at their CSCs by 30 November 2015. The set deadline has been successfully met by WLL operators after which WLL connections like Vfone, EVO, Wingle, wireless dongles, etc., used for providing broadband service, are being issued after biometric verification of the subscriber. Four WLL operators, dealing in individual WLL connections, namely PTCL, Wi-tribe, Qubee and Wateen, have deployed the new system at their CSCs. In order to check the compliance level of WLL operators, PTA teams are strictly monitoring the sale channels across the country and deviations are being continuously shared with WLL operators for rectification of the same. It is pertinent to mention here that during second phase of the project, deployment of BVS shall be completed at Franchisees and Retailers of WLL operators by 31st December 2015 whereas re-verification of existing WLL connections, issued prior to launch of BVS, shall be completed by 29 February 2016 during third and the final phase. It may be mentioned here that, after launch of BVS for issuance of mobile phone SIMs in 2014 and subsequent re-verification of SIMs in 2015, deployment of BVS for WLL connections is another step of PTA for ensuring authentic subscribers' credentials for a safer Pakistan. (December 9, 2015) propakistani.pk

The Ministry of Information Technology has formally started consultative process on IT Policy framework in order to get inputs from all stakeholders. In this regard consultative meeting was held between Ministry and Academia herein Islamabad in the chair with State Minister for Information Technology and Telecommunication Anusha Rahman. Speaking this correspondent, Tahir Mushtaq, Spokesperson of the IT Ministry, said that consultative process has been started with all stakeholders for giving final touches to the IT Policy Framework. He said consultations with industry have already been concluded in this regard and in the second phase, the ministry wants to take input from academia. Mushtaq said that contrary to the Telecom policy, the ministry would not hire international services of consultation as it has all the resources required to finalize IT Policy. He further said with the passage of time, the technological requirements are increasing and the ministry wants to meet all those challenges. Mushtaq did not give any final deadline for the finalization of the IT policy framework, however resolved that it would be finalized at the earliest. Earlier Minister Anusha Rehman informed the committee that a comprehensive telecom policy has already been finalized with consultation of all stakeholders and is with ECC for approval. IT Policy Framework has been floated for stakeholder consultations, she added. She said that Academicians are repositories of knowledge and their input will not only help us in preparation of a comprehensive policy framework but also help in improving linkages between Academia and Industry. While discussing salient features of the IT Policy Framework, she said that our IT Policy draft includes human resource development, promotion of young entrepreneurs, infrastructure development, measures to enhance the volume of software export and a legal & regulatory framework to achieve that. Anusha Rahman said that it is the dire need of the time to revisit our IT Curriculum being taught in our Academic institutions currently and should redesign it by keeping in view the current market demands to enhance the volume of employability of young graduates. She said that for practical training of the young entrepreneurs,

we have already announced "Tech-City Project" and potential venture capitalist would be partnering in this flag-ship program. The Minister further stated that our new IT Policy draft will have a special focus on provision of basic e-services i.e. e-health, e-education, and e-agriculture viz-a-viz women empowerment through ICT by teaching young girls, coding, cloud computing and other technological skills. She said that it's a just a beginning of the discussion, we will surely have a series of consultations with all stakeholders and their valuable inputs will be embedded in final policy draft. The meeting was attended by Federal Secretary IT, Azmat Ali Ranjha, Member (Telecom) Mudassar Hussain, Member (IT/HR) Tahir Mushtaq and Member (Legal) Aameena Sohail. The Academia side was represented by the senior faculty of NUST, COMSATS, Air University, IIU, HEC, QAU, Agriculture University, FAST, ZABIST and other IT Heads of renowned Educational Institutions from public and private sector. (December 9, 2015) propakistani.pk

Palestine



Minister of Communications & Information Technology: Dr. Allam Moussa

[Ministry of Communications and Information Technology (MCIT)]

An Israeli-Palestinian agreement has been reached on the assignment of radio frequencies for the exclusive use by Palestinian cellular operators as well as on a shared basis by Palestinian and Israeli operators. "The Israeli-Palestinian Agreement to facilitate cellular phone operations is a major landmark in improving relations between the parties and will no doubt lead to the establishment of a modern and reliable telecommunication network for the Palestinian people," said ITU Secretary-General Houlin Zhao. "The spirit of cooperation and compromise demonstrated by those involved in reaching this agreement is highly appreciated by ITU. We commend their efforts in achieving this significant outcome. This signature will certainly facilitate the work of the World Radiocommunication Conference, currently in session in Geneva, to enhance global communications." "ITU will continue to develop telecommunications networks and cellular services in Palestine and elsewhere in the region," said François Rancy, Director of the ITU Radiocommunication Bureau. Palestinian operators will be able to construct broadband cellular networks completely independent and separate from Israeli networks. Moreover, the operations of the Palestinian and Israeli broadband cellular networks will be regulated respectively by the Palestinian and Israeli authorities. Following the Israeli-Palestinian agreement, the ITU World Radiocommunication Conference (WRC-15), currently in session in Geneva from November 2 to 27, welcomed the bilateral Israeli-Palestinian agreement on the assignment of frequencies in the 2100 MHz band for Palestinian cellular operators signed November 19. Furthermore, WRC-15 adopted a revised version of Resolution 12 of the Conference on Assistance and Support to Palestine, which resolves to continue assistance to Palestine in order to enable Palestine to obtain and manage the required spectrum in order to operate telecommunications networks and wireless services. The Resolution calls for ITU to take additional measures for enhancing and developing wireless

telecommunication infrastructures as well as new technologies and services and to provide specialized assistance and support, particularly in the field of spectrum management and frequency assignment. "I give my assurance that ITU will continue to work with the Palestinian and Israeli authorities to ensure better communications for ordinary citizens," said ITU Secretary-General Houlin Zhao.

(November 25, 2015) cellular-news.com

Qatar



President: Mr. Mohammed bin Ali Al Mannai
[Communications Regulatory Authority (CRA)]

The Communications Regulatory Authority (CRA) of Qatar yesterday announced it had issued an order approving the Reference Infrastructure Access Offer (RIO) of incumbent PTO Ooredoo, which will enable all existing and future licensed service providers to gain fair and non-discriminatory access to Ooredoo's telecommunication ducts, with the objectives of enhancing availability of additional networks for users while aligning Qatar with international best practices. The order requires Ooredoo to publish the approved RIO on its official website within 14 days. Qualified service providers may then initiate access requests with Ooredoo and negotiate agreements based on conditions stated in the RIO. (December 3, 2015) telegeography.com

Saudi Arabia



Acting Governor: Eng. Habeeb K. Alshankiti
[Communication & Information Technology Commission (CITC)]

On receipt of requests received from number stakeholders to extend the deadline for the submission of applications for an MVNO license in the Kingdom Hosted with MTC "Zain", the CITC announces that the deadline will be extended to January 11, 2016. The Commission invites all interested parties to visit CITC website (www.citc.gov.sa) for news, updates, and to submit their applications for MVNO licenses in accordance with the specified requirements set by CITC. (December 9, 2015) citc.gov.sa

Sri Lanka



Director General: Mr. P.B. Abeykoon
[Telecommunication Regulatory Commission (TRC)]

Dialog Axiata, Sri Lanka's largest mobile operator by subscribers, is in negotiations to buy fifth-placed player Bharti Airtel Lanka for US\$100 million. A source with knowledge of the talks told the newspaper: 'The transaction will be a mix of cash and an equity stake in Dialog at current market prices, where the total value would be US\$100 million'. In addition, the sources have revealed that Dialog Axiata is planning to transfer its cell tower operations to a separate company. Acquisition target Airtel is believed to preside over a 2,500-strong tower network in Sri Lanka, placing it on a par with Dialog. The Sri Lankan mobile sector is ripe for consolidation.

In February 2014 Sri Lanka Telecom – owner of second largest cellco Mobitel – reportedly finalized an agreement to acquire fourth-placed Hutchison Telecommunications Lanka, although the US\$130 million deal has yet to be completed. Elsewhere, Etisalat of the UAE was said to be considering offloading its Sri Lankan unit in October 2014, with a number of international telecoms operators said to be interested in the asset. (December 2, 2015) Ceylon Today

Director General, ADSIC. Osman Sultan, Chief Executive Officer, du, said: We are committed to continuously innovating and pioneering the best in breed products and services that are aligned with the proliferation of information and communication technologies. Ensuring that we remain abreast of technologies and at the forefront of innovation is a key driver for our vision to be a partner of choice. We are thrilled to be working with ADSIC on a number of exciting projects.

(December 10, 2015) ameinfo.com

Turkey



Acting Chairman: Dr. Omer Fatih Sayan
[Information & Communication Technologies
Authority (BTK)]

Turkey's largest mobile service provider by subscribers, Turkcell, is looking to make a non-binding offer to acquire TeliaSonera's 58.55% stake in Fintur, in a move which will give the Turkish operator full control of the subsidiary. According to Bloomberg citing people with knowledge on the matter, Turkcell has signed agreements to hire Citigroup and HSBC Holdings to advise on the acquisition, while earlier this month the company's CEO Kaan Terzioglu said Turkcell intends to fully acquire Fintur in 2016 'if all negotiations go well'. The operator has not provided financial details regarding the value of TeliaSonera's stake. In September this year Turkcell declared that it was looking to appoint a strategic and financial advisor to explore the possibility of full acquisition of Fintur (inclusive of mobile operations in Kazakhstan, Azerbaijan, Georgia and Moldova). The news was pursuant to TeliaSonera's announcement that it had initiated a process to reduce, and over time fully exit, its presence in CIS and Asian markets. TeliaSonera is one of Turkcell's major shareholders as well as its partner in Fintur. The jointly-owned cellular operators under consideration are K'cell (Kazakhstan), Azercell (Azerbaijan), Geocell (Georgia) and Moldcell (Moldova).

(November 26, 2015) telegeography.com

United Arab Emirates



Director General: Hamad Obaid Al Mansoori
[Telecommunication Regulatory Authority
(TRA)]

Du has signed a cooperation agreement with the Abu Dhabi Systems and Information Centre (ADSIC) on smart city and smart apps. The announcement comes in line with both parties continued efforts and enthusiasm to contribute in providing best services and solutions in each of these fields. In the field of smart city and smart services, du and ADSIC are currently in discussions regarding the various areas they will cooperate in. Additionally, ADSIC and du will align on the roll out of the WiFi UAE network, which give users two options to choose from, WiFi and Premium WiFi, and can be accessed from any WiFi-enabled device and a UAE mobile number. This includes smartphones, laptops, tablets, gaming devices and more. Furthermore, the two companies will join hands on strengthening the infrastructure for government and public sectors in Abu Dhabi. We have selected du based on the company regional leadership in smart city technologies with a sound infrastructure capable of handling the traffic that nascent technologies will bring about. We look forward to a long and secure partnership with du, said Rashed Lahej Al Mansoori,



REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

REGULATORY UPDATES

Australia



Proposals put forward by the Australian Communications and Media Authority (ACMA) is expected to make access to spectrum easier for the companies operating machine-to-machine (M2M) wireless communications links. In a press release the regulator revealed that planned changes to existing regulations will remove a technical barrier to the operation of narrowband low powered wireless networks in the Radiocommunications (Low Interference Potential Devices) Class Licence 2015 in the 900MHz, 2.4GHz band and 5.8GHz bands. Such frequencies, the ACMA noted, support a variety applications across a number of industries, including data telemetry, machine data and monitoring, sensor networks, smart metering, security systems and industrial control. Submissions on the proposed changes are being accepted until February 26, 2016. 'The changes should encourage innovations in the M2M and [Internet of Things] IoT spaces,' ACMA chairman Chris Chapman said of the plans, adding: 'The proposals are a part of our work in looking at Australia's state of readiness for IoT and identifying areas where the ACMA can further assist IoT developments.'

(December 22, 2015) telegeography.com

Data downloads on mobile phones in Australia jumped 85 per cent to 71.6 pedabytes in Q2 from a year ago, while the average download per user rose 79 per cent to 3.4GB. According to a new report from the Australian Communications and Media Authority (ACMA), the total volume of downloads (mobile and fixed-line) in Q2 increased 41 per cent to 1.46 exabytes. Smartphone adoption in the country expanded 11 per cent to 13.4 million in June from the previous year, lifting penetration to 74 per cent. The number of mobile connections increased 2.5 per cent to 31.77 million. The percentage of adults using mobile phones remained at 94 per cent for the past three years, the ACMA said. But mobile internet users edged up 2 per cent to 21 million. The country's three major mobile players expanded their 4G coverage, with Telstra reaching 94 per cent of the population, Optus covering almost 90 per cent and Vodafone Hutchison Australia (VHA) reaching 95 per cent of the metropolitan population. Telsta's 4G user base increased 48 per cent to 7.7 million over the past year to 30 June, while Optus' surged 58 per cent to 3.8 million. ACMA didn't release figures for VHA. The competitive landscape remained fairly stable over the past year, with Telstra taking a 54 per cent share of mobile connections (up 1 point from the previous year), and Optus and VHA steady at 29.5 per cent and 16.5 per cent respectively. The number of mobile

phone users without a fixed-line telephone increased 9.5 per cent to 5.37 million year-on-year. The number of complaints filed with the Telecommunications Industry Ombudsman during 2014-15 fell 10.4 per cent from 2013-14, with complaints about mobile services down 29 per cent from the previous year and less than half the level recorded in 2011-12. Complaints about billing and payment issues fell 14 per cent, while those concerning customer service dropped 22 per cent.

(December 4, 2015) mobileworldlive.com

An applicant information paper (AIP) has been published by the Australian Communication and Media Authority (ACMA) related to release of 1800MHz spectrum in remote areas of the country. This paper outlines the application documents that must be completed and forwarded to the ACMA, as well as details of the regulatory and legislative process the ACMA will employ to issue licenses. In announcing the AIP's release, the ACMA noted that it has revised existing regulatory measures for the band and developed access arrangements for remote regions utilizing public telecommunications service (PTS) licenses. It claims such revisions will support the deployment of mobile services in remote areas, while to assist with an orderly release of licenses in the band, the ACMA has defined a list of 'priority assignments' for access to the band. Under this approach, applicants will only be permitted to apply for licenses in the specific channels assigned to them. With the release of the AIP marking the commencement of the notification period, Australia's three mobile network operators – Telstra, Optus and Vodafone Australia – are now able to make applications for those frequencies in the defined priority assignment relevant for each carrier. Meanwhile, potential licensees in the 'Other' segment of the band must wait until the application window opens on January 12, 2016; this window will subsequently close on January 19, 2016. (December 2, 2015) telegeography.com

Brazil



A decision paper detailing the Australian Communications Telecoms regulator ANATEL raised BRL762.7 million (\$192 million) in the bidding for lots A and B in the auction of leftover frequencies in the 1.8 GHz, 1.9 GHz and 2.5 GHz bands. "In one of the lots, the premium over the minimum price set by the regulator reached 1,272.53 percent," it said in a statement. Telefonía Brasil announced it was the winner of seven lots in the 2.5GHz frequency including the Sao Paulo and Rio de Janeiro regions for BRL185 million. "The company will increase its service delivery capacity with 4G in key regions of the country, with extra band of 10 + 10 MHz in addition to the band of 20 + 20 MHz acquired in 2012's bid," the operator said. "With today's acquisition, the company achieves its goal of ensuring the necessary spectrum for the expansion of 4G service, thus meeting the growing demand for high-speed internet," it added. It was also reported that Claro won several licenses for Sao Paulo, Rio de Janeiro, Espirito Santo and Rio Grande do Sul, while TIM won licenses in Parana and Pernambuco. The other companies that had shown interest in the auction were Clivo Participacoes, Lig Telecomunicacoes, Nextel, Sercomtel, Sky and TPA Telecomunicacoes for the A and B lots. The date for a new bidding session for lot C will be announced soon. Last year, Brazil's auction of 4G spectrum in the 700MHz band generated less revenue than expected after just three of the four nationwide operators bid for licenses.

ANATEL revealed that it has received applications from nine companies to take part in the multi-band spectrum auction due to get underway later this month. The Brazilian regulator shared the list of applicants, which includes three of the big four operators in the country; locally-owned Oi is missing. America Movil's Claro, Vivo parent Telefonía, and TIM Brasil will take part in the contest for 1800-MHz, 1900-MHz, and 2.5-GHz frequencies that is scheduled to start on Thursday. Nextel, Brazil's fifth largest mobile operator, albeit with a market share of just 0.86% as of September, is also on the list. The remaining five are Clivo Participações, Lig Telecomunicações, Sercomtel, Sky, and TPA Telecomunicações. The regulator has divided up the available frequencies into three batches. The aforementioned companies have effectively registered to compete for A and B lot spectrum. The third, lot C, does not require registration; it has been split into municipal-level blocks with the hope of attracting small and medium companies. Reserve prices are mostly below 10,000 reais (€2,372). The regulator is also offering flexible payment terms, allowing winning companies to pay in installments with low interest rates and grace periods of up to 36 months. (December 14, 2015) totaltele.com

Cameroon



Cameroon's Telecommunications Regulatory Board (ART) is set to launch a new national drive to register the nation's mobile telephony subscribers, reports Business in Cameroon. The campaign, which will begin on 21 December, is aimed at preventing criminal and terrorist activities. The regulator has called on the country's operators – MTN, Orange, Viettel (Nexttel) and CamTel – to update their subscriber databases, following which any unidentified or incompletely registered subscriber lines will be deactivated. TeleGeography's GlobalComms Database notes that a new decree was introduced in September 2015 to reinforce and clarify the procedures related to the identification of mobile subscribers in the country. The new rules prohibit the sale of SIM cards by street dealers, meaning that mobile operators must set up authorized retail outlets or sign official partnership deals with retailers to sell SIMs. In addition, the decree limits subscriber SIM ownership to three cards per operator. (December 15, 2015) telegeography.com

Costa Rica



Deputy Minister of Telecommunications Emilio Arias has set the ball rolling for the auction of 70MHz of mobile spectrum that went unsold back in January 2011, El Financiero reports. The minister has signed an order instructing the Superintendency of Telecommunications (Superintendencia de Telecomunicaciones, Sutel) to commence the auction process, which will see 40MHz of 1800MHz spectrum and 30MHz in the 1900MHz/2100MHz band go under the hammer. The wireless market's two smaller network operators, Telefonía-owned Movistar and America Movil's local unit Claro, are expected to compete in the auction, while market leader Kolbi (Grupo ICE) previously declared that it does not intend to participate.

(December 22, 2015) telegeography.com

Cote d'Ivoire



Bruno Nabagne Kone, head of the Regulatory Authority for Telecommunications in Cote d'Ivoire (Autorite de Regulation des Telecommunications de CI, ARTCI), has told reporters that the watchdog is set to authorize the formal use of 4G LTE technology from the first quarter of 2016. Speaking at a media event to mark the launch of the latest segment of the government's fiber-optic backbone, the minister said: 'The success that has accompanied the introduction of 3G has encouraged the government to consider the launch of fourth-generation mobile services before the end of the first quarter of 2016'. ARTCI has raised the mobile license renewal fees due to be paid by the country's operators in 2016 to XOF100 billion (US\$162.5 million), with the regulator also opting to cut the duration of the concessions, from 20 years to 15. While it has not been stated explicitly, it seems likely that the renewed concessions will permit 4G functionality. Running in parallel, the ARTCI is evaluating applications for a new 'global' telecoms license holder, which it hopes will be able to compete with Orange, MTN and Moov. To that end the regulator has promised an 'optimal redistribution of spectrum resources' to help even the playing field. (December 3, 2015) [telegeography.com](#)

Dominican Republic



The telecoms regulator Indotel has said it is working on an update of the country's main telecoms legislation, General Telecommunications Law No. 153-98, which was enacted in May 1998. A report from *Telesemana* says that the regulator wants the law adapted to reflect the latest developments in the ICT sector. The executive director of Indotel, Leonardo Alberty Canela, also said that the body will be working with operators to lower the cost of internet access in the country, while promoting the extension of telecoms infrastructure to more rural areas and the construction of a national fiber backbone. (December 14, 2015) [telegeography.com](#)

European Union



The European Commission, Parliament and Council reached a deal paving the way for a uniform set of data protection rules to be rolled out across the EU. Originally proposed in 2012, the legislation is designed to give consumers greater control over how their personal information is used, and to give businesses clarity about how they should treat customer information. The rules apply to companies in the EU and those based further afield but which offer services within the EU. "We should not see privacy and data protection as holding back economic activities. They are, in fact, an essential competitive advantage. Today's agreement builds a strong basis to help Europe develop innovative digital services," said Andrus Ansip, EU vice president for the Digital Single Market, in a statement. One of the powers given to consumers will be the right to be forgotten, which will enable consumers to request that their personal information is deleted in cases where there are no legitimate grounds for retaining it. It will also be easier to transfer personal data from one service provider to another. Companies must also obtain explicit consent before processing customer data. And if a company is hacked, they are required to notify the authorities and affected customers as soon as possible, or face penalties including fines of up to 4% of their annual turnover.

"Citizens and businesses will profit from clear rules that are fit for the digital age, that give strong protection and at the same time create opportunities and encourage innovation," said Vera Jourová, EU commissioner for justice, consumers and gender equality. In addition, the new legislation is designed to help law enforcement authorities in member states exchange information to aid investigations and improve cooperation in a bid to counter terrorism and serious crime. However, one analyst warned that some aspects of the EU's new rules may already be outdated. "Unambiguous consent... might be incredibly difficult to obtain in a few years' time, when IoT applications will have become more widespread and will originate an almost uncontrolled flow of personal data," warned Luca Schiavoni, senior analyst, regulation at Ovum, in a research note on Wednesday. He also pointed out that individual markets will still be responsible for enforcing the minimum age under which parental consent will be required for the use of services like Facebook, for example. "This is likely to be disruptive for both online companies and young users," he said. The final text of the EU's data protection rules are due to be adopted at the beginning of 2016 and will become applicable in 2018.

(December 16, 2015) [totaltele.com](#)

The European Commission's (EC) investigation into CK Hutchison's proposed acquisition of Telefonica O2 in the UK centers on four key areas. A questionnaire sent to companies in the mobile industry covers four main areas; retail competition, sales channels, infrastructure and wholesale services provision. The commission announced at the end of October it will be running an in-depth inquiry into the takeover which would create the UK's largest mobile operator. The EC has become more skeptical about deals which reduce the number of operators in a market from four to three under competition chief Margrethe Vestager. A large part of the questionnaire contains questions on the impact of the merger on wholesale access to rival providers. The commission asked respondents to judge what effect a 5 per cent rise in wholesale costs would have, as well as the impact on average retail prices if costs per subscriber fell by 10 per cent. The questionnaire also asks whether there will remain a sufficient number of providers of passive network infrastructure following any deal. The commission is also interested about the impact on high street retailers, such as Carphone Warehouse, which act as third-party resellers of mobile services. Following any takeover, there is a risk that 3 and O2 brands could be withdrawn from stores, weakening independent retailers. The EC is expected to use the responses it receives to the questionnaire to create a so-called statement of objections in January, which it will present to Hutchison and Telefonica. It has a deadline of April 18, 2016 to reach a final decision. (December 9, 2015) [The Financial Times](#)

The European Commission (EC) has declined a request from Britain's Competition and Markets Authority (CMA) to review CK Hutchison's planned acquisition of Telefonica Europe, owner of O2 UK, by pointing out that it is 'better placed' to ensure consistency in the application of merger control rules in the EU telecoms market, given its extensive experience in assessing cases in the sector. The EC, which opened an in-depth investigation of the deal in October this year, has until March 16, 2016 to make a final decision on the matter. Hong Kong-based Hutchison entered into an agreement with Spain's Telefonica to buy its subsidiary O2 UK for GBP9.25 billion (US\$14 billion) in March 2015 and filed

an application seeking approval of its bid to the EC in October. Shortly after, the CMA requested to review the case, claiming that the transaction 'threatens to affect significantly competition in the UK retail mobile and wholesale mobile markets'. The watchdog highlighted that it would be appropriate for the tie-up to be referred to it for investigation because any impact on competition resulting from the merger will likely be limited to UK consumers. (December 7, 2015) telegeography.com

The European Commission has launched a public consultation to finalize the details of the new roaming regulation passed by Parliament in October. The legislation will see roaming surcharges capped from April 30, 2016 and an end to all roaming charges from June 17, 2015. From that point, all roaming in the EU will cost the same as customers pay for domestic services. The European Commission has been charged with setting the details of the fair-use policy and sustainability mechanism of the new roaming regulation. The former would allow operators to set a fair use amount of roaming in the EU, in order to avoid any abuse of the system, such as 'permanent roaming', where customers use in their home country Sims from other countries where national rates are cheaper. If a customer exceeds the fair-use amount, operators would be able to add extra charges for roaming. (November 26, 2015) telecompaper.com

France



Orange was slapped with a €350 million antitrust fine for anticompetitive practices at Orange Business Services. The penalty was levied by France's Autorité de la Concurrence on the grounds that the incumbent artificially defended its position by withholding from rivals vital information about its copper local loop network. Orange was also ruled to have harmed competition through aggressive loyalty programs that meant customers were not necessarily retained based on the merits of the services on offer. Some of Orange's anticompetitive practices were implemented as long ago as 2002 and subsequently discontinued, while others were rolled out more recently and are still in effect today. "The fact that Orange has implemented these practices simultaneously for nearly 10 years is an aggravating factor," the watchdog said, noting that the telco has been sanctioned seven times over the last 15 years "for similar predatory practices and discrimination." According to the competition authority, Orange has agreed to cooperate with its proposed remedies. The telco will establish within 18 months a scheme that guarantees equivalent access to information about its copper local loop network, and amend or abolish its loyalty schemes. It will also pay a fine of €350 million, the largest ever imposed on an individual company by the Autorité de la Concurrence. "The victims of these practices are not only competing operators...but above all French companies, whatever their size," the watchdog said.

(December 17, 2015) totaltele.com

Ghana



MTN is working on the launch of 4G services in Ghana, having won a license in the country's 800-MHz auction earlier this month, it revealed on Thursday. The mobile operator said it has agreed to pay US\$67.5 million (€62.5 million) for its license and 2 x 10 MHz of 800-MHz spectrum, which it will receive from Ghana's

National Communications Authority (NCA) once it has transferred the money. The NCA announced a fortnight ago that MTN, via its Scancom unit, was the only winner in the 800-MHz contest, but it did not disclose the price of the licenses. There were two licenses up for grabs and four bidders in the auction, but the other three were unsuccessful, the NCA said, without providing further details. The regulator said it will make a decision "in due course" about the remaining unallocated spectrum block. "The award of this license will enable MTN Ghana to launch 4G/LTE services to support the increasing demand of data services and improve customers' data usage experience," the telco said this week. As it stands, it is able to provide 2G and 3G voice and data services to customers using 900-MHz, 1800-MHz and 2.1-GHz spectrum, but the terms of those spectrum licenses mean they cannot be extended to cover LTE services. Ghana's 4G regulations require licensees to have a minimum 35% Ghanaian ownership within 13 months of the license date. MTN said it is "exploring various options" to comply with that rule.

(December 18, 2015) totaltele.com

The National Communications Authority (NCA) has revealed MTN Ghana as the winner of one lot of 2x10MHz spectrum in the 4G LTE-suitable 800MHz mobile band, pending fulfillment of requirements. The regulator notes that the auction process, which began in May this year, has been managed by independent auctioneer KPMG, with a total of four companies applying for the two lots of 2x10MHz frequencies on offer. The NCA will make a decision on the other unallocated block 'in due course'. MTN Ghana, Surfline Communications, Goldkey Telecom and Migson Communications each submitted applications for the frequencies by the 9 November 2015 deadline. The regulator set a minimum reserve price of US\$67.5 million, with the license to be valid for 15 years, and noted that applying entities must be registered under the laws of Ghana and duly certified to operate in Ghana, while entities with foreign ownership – companies, joint ventures or consortia – must have a minimum of 35% Ghanaian ownership. Applicants failing to meet the criteria were requested to submit a letter of commitment to have the minimum 35% Ghanaian ownership in place within 13 months from the license's validity date, or otherwise face reduction of two years in their license duration, plus an additional year for each year in which the threshold is violated.

(December 3, 2015) telegeography.com

India



Only 93 million mobile users have 3G connections in India, which is home to a whopping 981 million subscribers, implying a low 3G penetration of 9%, said brokerage CLSA in a note. Although "300 million use mobile data, only 93 million of these have broadband (3G) connections," said CLSA, citing latest data collated by Regulator TRAI. "3G penetration varies significantly across circles in India, with the top-five circles having twice as much 3G penetration as the remaining 17 markets, and also having 40% higher ARPU versus the industry average," said the brokerage in a note to clients Thursday. A case in point is that 3G penetration in Mumbai is a strong 21%, while in UP (East), it is as low as 4%. So much so, India's top five data-centric markets - Mumbai, Delhi, Kerala, Karnataka and Tamil Nadu - have average revenue per user (ARPU) of Rs 225, which is 40% higher than the industry average of Rs 161. Market

leader Bharti Airtel and No 2 carrier Vodafone India lead in these top-five data markets and have gained higher share here, the brokerage said. "Bharti and Vodafone lead these markets with 58% revenue market share (RMS), which is higher than their overall market share of ~55%, the brokerage said. However, analysts at CLSA cautioned that since "high-ARPU subscribers are likely to be early adopters of 4G, Bharti Airtel and Vodafone could be impacted once newcomer Reliance Jio's launches its awaited 4G services.

(December 17, 2015) telecom.economicstimes.indiatimes.com

The telecom department (DoT), following a nudge from the finance ministry, is speeding up harmonization of airwaves in the 1800 MHz band, to free up an extra 10 MHz of pan-India 4G spectrum before the next auction likely in early-2016. Harmonization will make airwaves contiguous or 'continuous', which is absolutely critical for 4G services. The 1800 MHz band is the most popular one globally for 4G-LTE deployments but if such airwaves are non-contiguous the quality of 4G services will suffer. Long term evolution or 'LTE' is the technology standard for delivering high-speed broadband services, popularly known as 4G. The 4G spectrum harmonization roadmap was discussed last week with all industry stakeholders at an internal DoT meeting chaired by the wireless advisor, two people who participated in the discussions told ET. The DoT meeting virtually coincided with telecom regulator's recently unveiled consultation paper that seeks to establish the reserve price of airwaves across multiple bands (800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz) to be auctioned in early 2016. At present a total 75 MHz of airwaves in the 1800 MHz are distributed between the telecom industry (55 MHz) and the armed forces (20 MHz). However, these spectrum holdings are fragmented and scattered across the band, and hence not conducive for 4G. Distribution of airwaves in the 1800 MHz band was formalized when the DoT and defense ministry entered a pact more than four years ago. However, harmonizing 1800 MHz spectrum is a complex issue since telecom companies are holding frequencies within the 20 MHz block meant for the defense ministry, which in turn, is holding spectrum within the 55 MHz block allocated for commercial telephony. The DoT meeting explored ways to reconfigure these airwaves to ensure both telcos and the armed forces have contiguous blocks of spectrum within their designated quota. The telcos, it is learnt, have already submitted inputs sought by DoT for re-configuration of the 1800 MHz band. The stakes are big since reorganization of these airwaves will generate an additional 10 MHz of contiguous 4G spectrum in all circles. So much so, such airwaves are likely to command a significantly higher valuation and potentially generate more revenue for the government once auctioned next year. "Harmonization of 1800 MHz spectrum has been hanging fire for months, but DoT is keen to speed up matters and maximize the quantum of spectrum that can be put to auction as the finance ministry is also keen to conclude the airwaves sale this fiscal," said one of the persons cited above. "The good news is that defense ministry is very keen to coordinate matters with DoT since it will also gain access to contiguous airwaves," said the second person cited. But with the 1800 MHz band lately emerging as a core GSM band behind the premium 900 MHz, the demand for 1800 MHz spectrum as increased amid an ever expanding GSM subscriber base coupled with the fact that such spectrum is also ideally suited for 4G mobile broadband services, further helped by a fast maturing devices ecosystem.

(December 1, 2015) telecom.economicstimes.indiatimes.com

Telecom industry will witness consolidation and Idea-Videocon spectrum trade is first of a series of such deals possible in the sector driven by the recent guidelines on spectrum trading, India Ratings and Research (Ind-Ra) said. The rating agency added that trading deals will lead to the rise in debt levels of the acquiring entities. Idea Cellular has announced purchase of the 4G airwaves in the Uttar Pradesh (West) and Gujarat circle from Videocon Telecommunications for Rs 3,310 crore last week, a deal which indicates that Videocon may be looking at exiting the telecom business. The availability of spectrum to launch 4G services in a fast growing 4G ecosystem will enable Idea to participate in the anticipated spurt in demand for data. "Similarly, other telecom operators would need to strengthen their spectrum capabilities in order to meet the growth in 4G services and competition from Reliance Jio Limited (R-Jio). Therefore, it is possible that Bharti Airtel and Vodafone India may show interest in purchasing spectrum in the circles remaining with Videocon," Ind-Ra said. It added in Bihar and UP (East), Airtel may be a potential buyer of Videocon's spectrum as Airtel's current spectrum is in a block of less than 5 MHz and in Haryana, Vodafone may look to buy spectrum for the same reasons. Videocon has 5 MHz block of spectrum in the 1800 MHz band in four other circles of Bihar, Haryana, Madhya Pradesh and UP (East) post the Idea deal. The Idea deal will also set a benchmark for pricing the spectrum, as other operators may also look for opportunities to cash out their spectrum holding and retire debt. Ind-Ra notes that Idea's purchase of the spectrum is at a significant premium to the last auction discovered price of similar spectrum. The Rs 3,310 crore price paid by Idea is 98 per cent higher than the spectrum prices discovered in March 2015 auction. Idea has gross debt of Rs 23,540 crore as of September 2015. "The current deal can potentially increase the total debt of the company by over 10 per cent," it added. In case the other telecom players also tend to acquire spectrum at a substantial premium, the debt levels in such companies could increase further, it added. It further said heightened competitive intensity will also restrict any meaningful pricing improvement for the telecom sector in the near to medium term. "At the same time, cash accruals from such investments will be back ended as 4G revenue will gain significance over the next three to five years and therefore could be credit negative in the short term," it added. Ind-Ra said the telecom sector, which is witnessing increasing competition in the data space is likely to take on additional capex to sustain growth. The ratings agency said acquisition of spectrum is strategic for Idea, enhancing its 4G capability on the 1800MHz band. "With the acquisition of this spectrum, Idea will increase its 4G footprint from 10 to 12 circles, which currently contribute around 80 per cent of the total revenues," it said. Gujarat and UP (West) are important markets for Idea as they together account for more than 11 per cent of its total Indian subscriber base and contributes 15.5 per cent of the company's revenues. Also, for the quarter ended September 30, 2015, Idea's revenue market share in Gujarat and UP (West) was 25.2 per cent and 35.1 per cent respectively, while the subscriber share was at 13.5 per cent and 14 per cent respectively, it added. Ind-Ra said Idea faces a credible threat in these circles from Reliance Communications which had acquired spectrum in the 800 MHz band in both these circles in the March 2015 auctions. "The 800MHz band provides RCom a chance of becoming 4G capable on a superior band and thus potentially providing a better 4G experience than the incumbents thereby challenging their existing market position," Ind-Ra said. (November 30, 2015) telecom.economicstimes.indiatimes.com

The Telecom Regulatory Authority of India (TRAI) has published a consultation paper on the valuation and reserve price for spectrum in the 700MHz, 800MHz, 900MHz, 1800MHz, 2100MHz, 2300MHz and 2500MHz bands, in which it has proposed substantial changes to the current rules on spectrum caps. The TRAI's paper suggested that the spectrum caps should no longer be band-specific, with telcos limited to a proportion of the total spectrum an operator can acquire all together. As an exception to this, the sub-1GHz bands (700MHz, 800MHz and 900MHz ranges) would be grouped together, with a separate cap. 'As all [of] these bands are lower frequency bands, all of them have better propagation characteristics and, hence, can be treated alike,' the paper notes. The TRAI did not propose specific levels for the caps, but to illustrate its point suggested that telcos could hold 25% of spectrum assigned in all bands, but 50% of all assigned airwaves in the sub-1GHz ranges. The TRAI drew attention to the need to review the rules on spectrum holdings, noting that under the current guidelines none of the existing cellcos with spectrum in the 2300MHz or 2500MHz bands would be eligible to purchase new spectrum as they would be crossing the 50% threshold, adding that there are unlikely to be any new entrants in those bands as 'the ecosystem ... is still not fully developed'. Further, the upcoming auction of the 700MHz range cast further doubt on the suitability of the current system. Provided the spectrum is sold off in blocks of at least 2x5MHz, the TRAI pointed out that a minimum of three providers could purchase spectrum, with each limited to a cap of 2x15MHz (of a potential 2x35MHz per circle). The TRAI claimed a change to the spectrum cap rules would be necessary to ensure that at least four service providers could gain access to this 'premium' spectrum band, adding that it would prefer to avoid implementing new restrictions solely for the 700MHz band. The measures would help ease the process of consolidation in the sector, and allow the nation's larger cellcos to scoop up much-needed extra spectrum without falling foul of caps. The TRAI invited stakeholders to submit their comments by December 21, 2015. (November 27, 2015) telegeography.com

Indonesia

 The Ministry of Communication and Information Technology (MCIT) in Indonesia is preparing to implement new rules requiring consumers to confirm their identity when purchasing a new pre-paid SIM card, some ten years after it adopted a ministerial decree on the measure. The Jakarta Post writes that from December 22, 2015 anyone buying a pay-as-you-go SIM will be required to present personal identification papers, as the government finally moves to prevent identity fraud and the possible misuse of telecoms services/devices for nefarious means. It is understood that the main mobile network operators are broadly in support of the personal identification scheme, with Indosat Ooredoo chief sales and distribution officer Joy Wahyudi quoted as saying that the firm was technically and administratively ready to implement the regulation. 'Indosat Ooredoo has readied our new system to accommodate the customer database details. The new SIM cards have been distributed and our retailers have been informed. We can say that we are ready,' he said. Echoing Indosat Ooredoo, Telkomsel sales director Mas'ud Kamid added that the company was also ready to implement the decree's requirements, noting that any potential problems with its implementation would be handled 'collaboratively between retailers and operators'. (December 17, 2015) telegeography.com

The Minister of Communications and Information Technology (MCIT) Rudiantara has revealed his dissatisfaction with the recalculation of interconnection charges, a process that began in the middle of this year. Having seen the results of the recalculation the minister said: 'I am not satisfied; I ... am seeing no significant reduction in termination charges' applied for cross-network calls. Rudiantara is keen to update a system that has not been revised for a number of years; interconnection charges on fixed telephony and cellular services are currently implemented under measures introduced in 2006 and 2008, respectively. The MCIT supremo is keen for more to be done, saying that trimming rates still further will have a beneficial impact on the wider community. 'We want to see a balancing between on-net calls and inter-operator networks. I will not be a [signatory on the new measure] if the decrease is not significant. As it stands, the termination charges are too high – by a factor of six to seven times,' he said. The process of recalculating interconnection costs is currently being carried out by the telecoms operators and the Indonesian Telecommunications Regulatory Body (BRTI). Rudiantara has hinted that the reductions arrived at will need to be much more significant if he is to sign it into law in Q1 2016. (December 11, 2015) IndoTelko

ITU



Organizations from the mobile and broadcast sectors talked up their successes at the ITU's World Radiocommunication Conference 2015, which identified new spectrum for mobile services as well as providing some stability for media companies. In a statement, John Giusti, chief regulatory officer of the GSMA, said that the global harmonization of three new spectrum bands for mobile services represents "a major step forward in meeting the growing demand from citizens worldwide for mobile broadband". Newly harmonized bands for mobile include C-band (3.4GHz-3.6GHz), which is suited for delivering capacity in urban areas; L-band (1427MHz-1518MHz), which is said to offer "an ideal blend of coverage and capacity capabilities"; and an extension of the 700MHz band (694MHz-790MHz) from Americas and APAC to global availability. With regard to the 700MHz range, Giusti said: "By now making this spectrum available in Europe, the Middle East and Africa, governments have taken an important step in improving the reach of critical mobile broadband services." The European Broadcasting Union (EBU) welcomed the fact that UHF spectrum (470MHz-690MHz) will remain exclusively allocated to terrestrial TV services in the ITU's Region 1 (including Europe, Africa, Russia, and parts of the Middle East) "well into the next decade". With calls to make the spectrum available for mobile services, the EBU said that the stability will "enable many countries in ITU Region 1 to continue with their digital switchover programs without the risk of an impending change in use of the spectrum". The Asia-Pacific Broadcasting Union said that the same frequencies will "remain broadly allocated to terrestrial TV services in ITU Region 3 (APAC) well into the future", with no region-wide mobile identification in the band. The sub-700MHz band is available for mobile in markets in the Americas and several major markets within the Indian subcontinent announced an intention to use part of this band for mobile broadband. GSMA regulatory head Giusti also noted the intention for the next WRC in 2019 to identify high frequency bands – above 24GHz – for 5G mobile services. "This is a critical first stage in the journey towards a new wave of mobile innovation, considerably faster than existing technologies and driving a hyper connected society in which mobile will

play an ever more important role in people's lives," he said. (November 27, 2015) mobileworldlive.com

Kenya



The Communications Authority of Kenya (CA) has asked the country's largest mobile operator by subscribers, Safaricom, to hand back part the 800MHz spectrum it was awarded last year, so that the 4G LTE-suitable frequencies can be reallocated to two smaller players, Airtel and Telkom Kenya. According to local newspaper The Star, the regulator has requested that Safaricom return 5MHz of the 15MHz it was awarded, which will then be handed to the celco's smaller rivals, along with an additional 15MHz, giving each of the three operators an equal 10MHz allocation of 800MHz spectrum. 'After discussions, we all agreed that the 800MHz [spectrum] be channelized at two by 10MHz, which means the 30MHz that has been released, we can be able to get three slots. For fairness and parity, we need to equally distribute them to the three players,' CA director general Francis Wangusi was quoted as saying. In November 2014 Safaricom signed a KES14.9 billion (US\$143 million) national security communication contract with the government, giving it access to additional frequencies in the 800MHz band, which the celco use to switch on commercial LTE services in Nairobi and Mombasa one month later. (December 17, 2015) telegeography.com

National Treasury Cabinet Secretary Henry Rotich has said that the government plans to buy back twelve million shares in Telkom Kenya, equivalent to a 10% stake, in a move that would raise its total shareholding to 40%. Last month France's Orange Group announced the signing of an agreement with African private equity firm Helios Investment Partners for the sale of its entire 70% stake in Telkom. The Nation newspaper cites Rotich as saying that a new shareholding agreement between the government and Helios Investment Partners will be ready by the end of the year, paving the way for Orange Group to exit Telkom Kenya. He added that the deal will usher in a new board that will restructure the telco's top management: 'We need top managers with a clear strategy for the company. As Telkom Kenya's ownership changes by January, we should expect fresh leadership.' The government's shareholding in Telkom dropped from 49% to 30% on a permanent basis in June 2013 (thereby raising Orange Group's ownership to 70%), following a decision by the National Treasury not to allocate any funds to the financially stricken firm. The Treasury's stake in Telkom had initially dropped to 30% in December 2012 after the government only paid up KES2.5 billion (US\$24.1 million) of the KES4.9 billion it was expected to inject into the firm to preserve its shareholding. (December 10, 2015) telegeography.com

Telecoms operators will be required to pay a fine equivalent to 0.2% of their annual gross revenue if they fail to meet quality of service (QoS) standards, under new measures introduced by the Communications Authority of Kenya (CA). Addressing stakeholders from the East African region at a meeting in Nairobi centered on QoS, the regulator's Director General revealed that the CA is in the process of outsourcing QoS surveillance services, in a move that will see more frequent assessments and reports regarding Kenyan telcos' adherence to the set targets across the country. This will ensure that corrective measures are undertaken within the shortest time possible, he added. The new regulations will apply from

the start of next year, with the QoS reports published on a quarterly basis, although penalties will only be applied once a year. (November 25, 2015) The Nation

Kyrgyzstan



The Ministry of Transport and Communications (MoTC) is proposing to postpone the introduction of mobile number portability (MNP) from January 1, 2016 to January 1, 2018. According to an announcement from the government, efforts to implement MNP in the beginning of 2016 may have a negative impact on the government's priorities, causing 'substantial damage to the reputation of the State'. Once launched, MNP services will allow subscribers to retain their mobile number when moving between providers operating in the country, which includes Megacom, Sky Mobile (Beeline) and Nur Telecom (OI). (November 26, 2015) Tazabek

Mexico



The telecoms market will develop in much the same way as the U.S., AT&T chief executive Randall Stephenson predicted this week. The U.S. operator's operations in Mexico are performing well and will constitute a major part of its growth over the next couple of years, but an aggressive reaction from its major competitor could be on the cards, Stephenson said on a Webcast interview during a UBS event this week. A key strategy for AT&T in 2016 will be to "keep pushing the footprint," with particular reference to Mexico, Stephenson said. "We're convinced that the U.S. is going to replicate itself in Mexico." AT&T landed in the Mexican mobile market thanks to the acquisitions of Iusacell and Nextel earlier this year. It has launched some cross-border offers and is rolling out an LTE network that will reach 40 million people by the end of this year and 100 million in three years. "It is proving to be everything we had hoped and more," Stephenson said. He explained that AT&T is introducing its own brand in Mexico on a market-by-market basis, at the same time as it launches LTE services. "The demand for the AT&T brand is really high," said Stephenson. "The AT&T brand in Mexico is an aspirational brand." The U.S. telco's Mexican business is recording good growth in terms of both postpaid and prepaid subscriptions. "I think we're going to surprise a lot of people with our Mexico results in the fourth quarter," Stephenson said. "It tells you the appetite there is for a competitive alternative in Mexico." That said, the operator faces formidable competition from Carlos Slim's America Movil, and the market leader is doubtless keen to protect its position. "I do not expect Carlos is just going to lay down and allow us to take share," Stephenson said. "I know this guy. He's going to be very aggressive." When it comes to investment in Mexico, Stephenson was keen to emphasize that he views the country as an extension of his core U.S. business, rather than as a new market; effectively AT&T is extending its LTE network into Mexico, not rolling out a new network there. "Think of Mexico as another state of the United States," he said. The pricing and the look and feel of mobile offers will look similar across the two markets, and over the next year AT&T will roll out more shared value plans. "[Mexico] is going to be a major part of our growth for the next couple of years," Stephenson said. (December 9, 2015) totaltele.com

The Federal Telecommunications Institute (IFETEL) has confirmed that the freeing up of 700MHz 'digital dividend' spectrum is on schedule, and the analogue switch-off will take place in an initial six states at midnight on December 17. The first states to transition to digital broadcasting have been identified as Sonora, Hidalgo, Tlaxcala, Puebla, the State of Mexico and Distrito Federal. Running in parallel, fellow Mexican regulator the Secretary of Communications and Transport (SCT) issued an invitation for interested parties to participate in the tender for the so-called 'Shared Network' project. The tender, which will see the SCT supported by financial advisor Bank of America Merrill Lynch alongside local firm Transparencia Mexicana, is due to commence on January 29, 2016. The Shared Network, which will have exclusive use of a 90MHz block of spectrum in the 700MHz band, was written into Mexico's constitution in 2013 as part of a sector overhaul designed to curb the dominance of America Movil (AM)-backed Telcel. The plan calls for groups of private companies to bid for the right to build and run the network, which would rent capacity to mobile providers. Current government assumptions price the overall project at around US\$7 billion, down from an original US\$10 billion ten-year projection, with the number of cell towers likely to be closer to 12,000 than 20,000. (November 25, 2015) [telegeography.com](#)

Moldova



Orange Moldova has announced that it has been awarded a pair of licenses in the 800MHz and 900MHz bands by the National Regulatory Agency for

Electronic Communications and Information Technology (ANRCETI). The watchdog issued the concessions on November 24, following the conclusion of the two-month tender; Orange was the only company to participate in the auction. The 800Mz license comprises 2x10MHz blocks of Frequency Division Duplex (FDD) spectrum, while the 900MHz permit encompasses 2x5MHz blocks of FDD spectrum. The concessions will expire on November 5, 2029 and the combined license fee has been set at EUR11.905 million (US\$12.637 million). A total of 16 spectrum licenses went under the hammer on September 25, including one license for frequencies in the 800MHz band, two for 900MHz frequencies, two in the 2100MHz range, three in the 2600MHz band, and eight licenses in the 3400MHz-3800MHz range.

(November 26, 2015) [telegeography.com](#)

Mozambique



Mobile operators in Mozambique are working to complete the registration of all SIM card users in the country by this weekend and are threatening to limit the

services of customers who do not register their details. The government first ordered operators to carry out SIM card registration around five years ago, in response to a series of riots in Maputo which authorities said had been coordinated by mobile phone. The scheme was designed to avoid the use of cell phones for illegal activities. A number of deadlines for the process came and went, but in August this year the government passed a decree giving the phone companies 90 days to complete the registration of their clients. The final date for registration is tomorrow (November 28, 2015), with the operators facing fines of up to MZN6 million (US\$15,000) if they fail to respond. Nigerian operator MTN was recently handed a fine of NGN1.04 trillion (US\$5.2 billion) for failing to disconnect around 5.1 million unregistered subscribers. Mozambique's three cellcos – mCel, Vodacom and

Movitel – say they will be limiting the services of users who do not register their details in time, and eventually cutting services completely. By last month only around two-thirds of Mozambique's 16 million mobile lines had been registered, though this was up from 43% back in February. The Minister of Transport and Communications had previously labeled the task as 'hopeless'.

(November 27, 2015) [AllAfrica](#)

Myanmar



The government is seeking expressions of interest from international operators looking to join the consortium that will become the market's fourth mobile

operator. Operators will have until Friday to submit an expression of interest to the government, the Myanmar Times reported. The winning applicant will join a group of 11 local technology and other companies that have successfully applied to take part in the consortium. The consortium will then be awarded a 15-year telecom license with an option to extend this for at least 10 additional years. These are the same terms granted to Telenor and Ooredoo during their successful bid to launch mobile operations in the market. Roland Berger, the consultancy firm that helped choose Telenor and Ooredoo as the winners of the tender to grant two mobile licenses, will also help select the international applicant to take part in the new consortium. Operators will need to be able to bring the necessary expertise and financing to ensure a successful mobile rollout. The license will be granted next year after the joint venture has been formed. (December 14, 2015) [telecomasia.net](#)

Netherland



Vodafone Netherlands has announced that it is suing the country's incumbent PTO KPN for EUR115 million (US\$130 million) in damages as a result of 'anti-

competitive behavior'. Mobile operator Vodafone claims that KPN hampered its attempts to enter the fixed telephony, internet and pay-TV markets by restricting access to its networks between 2011 and 2014, which meant that Vodafone was not able to compete effectively with KPN and other multi-play providers such as the cableco UPC. Vodafone says that during the three-year period KPN 'repeatedly failed' to provide access to its copper and fiber infrastructure at a time when the cellco claims 100,000 households per quarter were signing up for 'all-in-one' offers. The operator launched its 'Vodafone Home' bundle of wireline services in August 2011, but had attracted just 73,000 fixed broadband subscribers by end-September 2015, while KPN claimed over three million retail internet customers at the same date. (December 10, 2015) [telegeography.com](#)

Nigeria



MTN announced that it is taking legal action to challenge the hefty fine imposed on it in Nigeria. The African telecoms group said that it has taken legal advice

on the matter which has led it to believe that Nigeria's telecoms regulator does not have the necessary authority to levy such a penalty. The Nigerian Communications Commission (NCC) hit MTN's local unit with a fine worth US\$5.2 billion (€4.7 billion) almost two months ago for its failure to disconnect millions of unregistered SIM cards in accordance with the regulator's timetable. The NCC has since reduced the fine to US\$3.9 billion on the grounds that MTN admitted it was in the wrong and

taking into account its sizeable investments in Nigeria's telecom sector. MTN is still not satisfied though. "The manner of the imposition of the fine and the quantum thereof is not in accordance with the NCC's powers under the Nigerian Communications Act and therefore there are valid grounds upon which to challenge the fine," MTN said in a statement on Thursday. As such, MTN has instructed lawyers to proceed with an action in the Federal High Court in Lagos, it said. Nonetheless, the telco said it will still continue to engage with the Nigerian authorities with a view to resolving the matter out of court. The fine has caused some significant upheaval for MTN and its management in recent weeks. The telco's group chief executive Sifiso Dabengwa resigned in early November, having tried and failed to resolve the situation. The company is being steered by executive chairman Phuthuma Nhleko for the next six months. And earlier this month MTN Nigeria CEO Michael Ikpoki and head of regulatory and corporate affairs Akinwale Goodluck also resigned. The company initiated a management restructuring in a bid to improve operational oversight. (December 18, 2015) totaltele.com

Telecom regulator has explained its decision to reduce the multi-billion dollar fine imposed on MTN Nigeria for failing to disconnect unregistered SIM cards. In a report by Vanguard on Tuesday, the Nigerian Communications Commission (NCC) said it took into consideration several factors, including the operator's admission of guilt and the contribution the operator has made to the sector. "We are aware and conscious of the level of investment MTN has made in this market; they have the largest number of subscribers. It is also important to know that Nigeria remains their biggest market," said Tony Ojobo, the NCC's director of public affairs, in the report. Indeed, MTN is by far the largest mobile operator in Nigeria, serving 62.5 million customers at the end of September, according to the NCC's most recent figures. Second-placed Glo Mobile has 31.3 million customers. MTN Nigeria was fined in late October after failing to disconnect 5.1 million unregistered SIM cards in accordance with the NCC's timeline. The telco was fined 200,000 naira (approximately US\$1,000) per subscriber, leaving it with a total bill of \$5.2 billion. Last week, the fine was reduced to \$3.4 billion but then it was almost immediately increased again to \$3.9 billion after the NCC put the wrong figure in its first letter to MTN Nigeria. "There was a mistake in [the] figure of the first letter which immediately prompted the second one," said Ojobo in Tuesday's Vanguard report. For its part, MTN said it is carefully considering both letters, and that executive chairman Phuthuma Nhleko will "urgently re-engage" with Nigeria's authorities.

(December 10, 2015) totaltele.com

The Nigerian Communications Commission (NCC) reduced the \$5.2 billion fine facing South Africa's MTN by about one third to \$3.4 billion, while the management fallout continues at the group with two more executive departures and a revamped reporting structure. Talks between the NCC and the company have been going on for several weeks and this is the outcome, which was delivered in a letter dated. MTN's reaction to the reduction was cautious, saying the company is "carefully considering" the NCC's reply. Executive chairman Phutuma Nhkelo will "immediately and urgently re-engage" with the Nigerian authorities "before making a formal response", said a statement. The statement continued: "Furthermore, as it is essential for the company to follow due process to ensure the

best outcome for the company, its stakeholders and the Nigerian authorities and accordingly all factors having a bearing on the situation will be thoroughly and carefully considered before the company arrives at a final decision." And a source told Reuters that MTN more negotiations are on the cards: "The fine is still big enough to cripple MTN's ability to invest in its network and that's what further talks with the NCC are about." MTN is facing the fine after failing to cut off 5.1 million unregistered SIM cards from its network, with NCC stepping up efforts to verify the identity of subscribers amid concerns about terrorism. Nhkelo was appointed executive chairman following the resignation of group president and CEO Sifiso Dabengwa last month. Now the affair has claimed the resignations of MTN Nigeria CEO Michael Ikpoki and the head of regulatory and corporate affairs, Akinwale Goodluck. (December 3, 2015) mobileworldlive.com

The Government has committed to reach 100% penetration of digital terrestrial television (DTT) by 2016 to facilitate a 'vibrant TV and media economy'. Speaking at the 35th anniversary of media and entertainment company Silverbird, President Muhammadu Buhari said the analogue switch-off provides an opportunity to diversify the country's provision of TV channels and content. Sub-Saharan Africa is expected to have 46.46 million primary digital DTT homes by 2020, he added, with 37.6 million receiving free-to-air (FTA) content and 8.86 million pay-TV subscribers, according to World Stage. "Nigeria will be the largest DTT nation in Africa in 2020, both for free-to-air, that is 9.07 million, and for pay, that is 3.59 million ... The target markets for free-to-air are the 26 million-plus TV households, and the growth of DTT in Nigeria is accelerating much faster than the growth in the pay-TV market," said President Muhammadu Buhari. He also called on stronger cooperation between Nigeria's media and entertainment industry and the government administration to fight terrorism and increase the jobs available for young people. (November 25, 2015) rapidtvnews.com

Norway



Communications regulator NKOM said the auction of three blocks in the 1800 MHz band, left over from the December 2013 4G auction would begin on November 25.

Block one will pair the frequencies 1710-1715 MHz and 1805-1810 MHz, block two will include the ranges 1715-1720 MHz and 1810-1815 MHz, and block three will offer the bands 1720-1725 MHz and 1815-1820 MHz. NKOM said a single operator might obtain all the blocks, or the blocks might be allocated to more than one player. The watchdog said it would not publish any more information while the auction was under way, but would do so once it was complete. (November 25, 2015) telecompaper.com

Paraguay



National Telecommunications Council (Consejo Nacional de Telecomunicaciones, Conatel) has confirmed that Tigo and Claro have been formally awarded

1700MHz/2100MHz 4G licenses. Earlier this month the watchdog revealed that the incumbent duo were the only Paraguayan operators to register applications ahead of the auction, with Telecom Personal (Nucleo) – the country's second largest cellco by subscribers – opting not to participate in the process. The two licenses generated a total of USD90 million, CONATEL noted in its press release, suggesting that Tigo and Claro both secured their maximum spectrum allowance. As per the

bidding conditions, twelve paired 2x5MHz AWS sub-bands went under the hammer, with minimum bids set at USD15 million per paired spectrum block. The maximum spectrum allowance each carrier could be assigned was set at 30MHz. Going forward, CONATEL anticipates that the frequency holders will be in a position to launch commercial services by August 2016. State-backed mobile operator Hola Paraguay (Vox) was also conspicuous by its absence from the process; the cellco activated its own 4G network back in December 2012, utilizing unused 3G spectrum secured back in August 2008. (December 16, 2015) [telegeography.com](#)

The National Telecommunications Council (CONATEL) has confirmed that Tigo and Claro have registered applications for the watchdog's imminent 2100MHz/1700MHz AWS spectrum auction, while noting that Telecom Personal (Nucleo) – the country's second largest cellco by subscribers – has opted not to participate in the process. CONATEL has now clarified that it intends to distribute the spectrum between December 17 and 21, and anticipates that the frequency holders will be in a position to launch commercial services by August 2016. Twelve paired 2x5MHz AWS sub-bands have been made available for auction by the government, while the maximum spectrum allowance each carrier can be assigned has been set at 30MHz. The minimum bidding price for a sub-band has been set at US\$15 million. Interested parties were given until December 3 to file applications for the tender. State-backed mobile operator Hola Paraguay (Vox) was also conspicuous by its absence; the cellco activated its own 4G network back in December 2012, utilizing unused 3G spectrum secured back in August 2008.

(December 7, 2015) [telegeography.com](#)

Philippine



Telecom regulator, the National Telecommunications Commission (NTC), is proposing new legislation to set up a universal access fund (UAF) for broadband services in the country. The regulator's initiative would call on all telecoms operators to contribute 0.25% of gross revenue automatically into the UAF under the draft bill titled 'An Act Institutionalizing A Universal Access Fund', to be used to boost the development of broadband infrastructure in underserved areas. Public telecoms entities generated revenue of PHP264 billion (US\$5.58 billion) in 2014 – translating into nearly US\$14 million had it been converted into the UAF. Further, the new law would require the NTC to transfer 90% of the annual spectrum fees it collects from operators into the fund – which currently runs to around PHP500 million per annum. Earlier this month Senator Juan Edgardo Angara, chairman of the Senate committee on ways and means, urged the government of President Benigno Aquino to do more to prioritize e-commerce and help micro, small, and medium enterprises (MSMEs) bolster their global web presence, pointing to the Philippines' poor showing in a 2015 study by internet performance data provider Ookla, which found that it has the second slowest download speeds among 22 Asian countries profiles, next to Afghanistan. Ookla's findings suggest that, in the Philippines, average download internet speeds are around 3.64Mbps – significantly below the average broadband speed of 23.30Mbps – leaving the nation languishing at 176th place out of 202 countries across the world. Earlier this year the NTC introduced new rules governing broadband internet connection

speeds. It stipulated that broadband be classified as a data connection speed of at least 256kbps, but some say that this figure should be much higher. For example, interactive media specialist Carlos Nazareno of the group Philippine Flash Actionscribers has argued that, in today's market, 256kbps is little more than dial-up and as such is inadequate when dealing with the current size of Web pages (e.g. 2MB/3MB). This position has been supported by other key groups in the tech sector, including the Philippine Web Designers Organization, Game Developer's Association of the Philippines, Philippine Game Development Community, and the Philippine Internet Freedom Alliance.

(December 21, 2015) [The Standard newspaper](#)

Telecom regulator the National Telecommunications Commission (NTC), has approached the Commission on Audit (COA) as it seeks to determine the appropriate value of the 3G license it is seeking to auction off. The frequencies in question relate to the 3G concession relinquished by Philippine Long Distance Telephone Company (PLDT) three years ago – at the time they were assigned to its Connectivity Unlimited Resources Enterprise (CURE) unit and being used by sister company Smart Communications – as a precondition of the telco's acquisition of Sun Cellular from the Gokongwei Group. According to TeleGeography's GlobalComms Database, CURE originally secured one of four 3G licenses in January 2006. However, in 2008 the PLDT Group acquired CURE from a consortium helmed by former trade minister Roberto Ongpin for PHP419.54 million (USD9.1 million). In October 2011 the NTC ordered PLDT to relinquish CURE's surplus 3G frequencies as part of its approval for PLDT's takeover of Digitel and its Sun Cellular arm. PLDT has previously stated that it hopes to recoup as much as PHP1 billion of its CURE investment, but the process has dragged on interminably. In July 2014 the regulator began the process of drawing up the bidding criteria for the auction of the surplus license, confirming at the time that the watchdog and PLDT would each nominate a representative to assume a position on the bidding committee, with a third nominee selected between them to act as an auditor. The committee was to be tasked with deciding on the compensation owed to PLDT for its PHP2.125 billion investment in CURE, which briefly operated under the Red Mobile brand. In the latest twist, however, NTC commissioner Gamaliel Cordoba has confirmed that the watchdog has approached the COA seeking its help to determine an accurate cost recovery amount (CRA) for the license, that can be used as a basis for the auction's asking price. The NTC hopes to have an answer by January 2016 which, as Cordoba points out, will be used as the compensation value to PLDT for its investment in CURE. The NTC is adamant that the 3G license can still be auctioned off before the end of President Aquino's term of office (May 2016).

(December 15, 2015) [telegeography.com](#)

Senator Juan Edgardo Angara, chairman of the Senate committee on ways and means, has again urged the government of President Benigno Aquino to do more to improve the poor state of the country's internet services. Angara says more must be done to prioritise e-commerce and help micro, small, and medium enterprises (MSMEs) bolster their global web presence, pointing to the Philippines' poor showing in a 2015 study by internet performance data provider Ookla, which found that it has the second slowest download speeds among 22 Asian countries profiles, next to Afghanistan.

Ookla's findings suggest that in the Philippines average download internet speeds are around 3.64Mbps – significantly below the average broadband speed of 23.30Mbps – leaving the nation languishing at 176th place out of 202 countries across the world. Despite the senator's assertion that Filipinos are 'known to be big users of social media and given the amount of time we spend on the web ... will no doubt embrace online shopping,' access costs are also proving a barrier to entry. Average internet costs of US\$18.19 per 1Mbps are, he notes, far above the global average of US\$5.21. Earlier this year the telecoms industry watchdog, the National Telecommunications Commission (NTC), introduced new rules governing broadband internet connection speeds. It stipulated that broadband be classified as a data connection speed of at least 256kbps, but some argue that this figure should be much higher. For example, interactive media specialist Carlos Nazareno of the group Philippine Flash Actionscribers has argued that, in today's market, 256kbps is little more than dial-up and as such is inadequate when dealing with the current size of Web pages (e.g. 2MB/3MB). This position has been supported by other key groups in the tech sector, including the Philippine Web Designers Organization, Game Developer's Association of the Philippines, Philippine Game Development Community, and the Philippine Internet Freedom Alliance.

(December 7, 2015) The Manila Bulletin

The Ayala-led Filipino operator Globe Telecom is ramping up pressure on the regulator, the National Telecommunications Commission (NTC), to reallocate highly valuable spectrum frequency (VSF) in the 700MHz band, currently held by a number of telcos owned by the conglomerate San Miguel Corp (SMC). In another plea this week, Globe said it is 'imperative for the NTC to ensure that the 700[MHz] band is made open to other telco players', in order to address concerns over the state of internet services in the Philippines amid rising demand for data connectivity. SMC owns rights to a total block of 90MHz of spectrum in the 700MHz band, split between Wi-Tribe (80MHz) and High Telecommunications (10MHz), while another player, New Century Telecommunications, holds a further 10MHz. Despite this, Edgardo Cabarios, the head of regulatory affairs at the NTC, has said it would be 'difficult' to recall and reallocate the 700MHz frequencies owned by SMC, despite strident calls from incumbents Globe and PLDT for it to do so. The conglomerate also holds spectrum under the 800MHz, 900MHz and 1800MHz bands, and its president Ramon Ang has already dismissed the incumbents' various appeals, pointing out that: 'Between the two of them [PLDT and Globe], they have almost 300MHz of LTE frequencies. Why do they need more? ... They have all the frequencies, all the technology. All they have to do is fine-tune what they have.' In response, however, Globe General Counsel Froilan Castelo argues that there is an urgent need to ensure more 'equitable' distribution of the VSF spectrum, noting: 'The whole range of 700[MHz] band simply cannot be given to only one entity.' (December 3, 2015) telegeography.com

Edgardo Cabarios, the head of regulatory affairs at the National Telecommunications Commission (NTC) in the Philippines, says that it would be 'difficult' to recall and reallocate the 700MHz frequencies owned by locally-owned conglomerate San Miguel Corp (SMC), despite strident calls from incumbents for it to do so. Amid growing speculation that SMC intends to use the 'very powerful' band to roll out mobile broadband service in

partnership with Australia's Telstra Corp, both Philippine Long Distance Telephone Co (PLDT) and Globe Telecom have suggested that a fairer redistribution would enable them to provide users with improved mobile internet services. In answer to a question on the topic at an event in Metro Manila this week, though, Cabarios said: 'How can you reassign when it has presently been assigned?' He went on to point out that any move to reassign the spectrum must have a good legal basis to do so – such as the owner failing to pay its fees or non-use of spectrum, adding that SMC's various telecoms units are currently up to date in this respect and the firm is pursuing the 'ongoing build-up of its network'. In the NTC official's view, any move to force SMC to give up the spectrum for reallocation would have to involve a 'quasi-judicial' process that could take 'a long time' to resolve. In a bid to grab a slice of the valuable 700MHz frequencies owned by SMC, PLDT and Globe Telecom asked the NTC for access to the bandwidth, saying that the conglomerate currently had an unfair allocation of spectrum by dint of its acquisitions in the Philippines? The telcos' request came just after Telstra made some less than complimentary remarks on the quality of internet services in the country. SMC owns rights to use the band through its telecoms units Wi-Tribe (Liberty Telecoms Holdings) and High Telecommunication – its so-called 'ace in the hole' – as it contemplates launching the mobile joint venture with Telstra. SMC also owns the Filipino telcos Exelcom, Eastern Telecommunications Philippines (formerly ETPI) and Bell Telecommunications (BellTel), helping to ramp up its presence ahead of the 2016 launch. SMC owns rights to a total block of 90MHz of spectrum in the 700MHz band, split between Wi-Tribe (80MHz) and High Telecommunications (10MHz), while another player, New Century Telecommunications, holds the remaining 10MHz. SMC's President Ramon Ang has already dismissed the incumbents' appeal, however, pointing out that no deal with Telstra is in place yet, and whatever the outcome it intends to use the 700MHz band to deliver high speed mobile internet services. 'Between the two of them [PLDT and Globe], they have almost 300MHz of LTE frequencies. Why do they need more,' Ang said. 'They have all the frequencies, all the technology. All they have to do is fine-tune what they have.' (November 27, 2015) telegeography.com

Poland



The new Minister of Administration and Digitization, Anna Strezynska, has said that the government's auction of 800MHz and 2600MHz frequencies will not be repeated, despite complaints from some participants over the way the sale was handled. The Minister has revealed that she has received objections from unnamed operators because of the state's decision to force an early end to the auction process in mid-October. Five companies submitted bids totaling PLN9.23 billion (US\$2.5 billion), which was more than five times the initial reserve price of PLN1.6 billion. The government stepped in to end the bidding because of fears that the high price of spectrum would see operators pass the costs on to customers in the form of tariff hikes for 4G services. Separately, it has been reported that Orange Polska and T-Mobile Poland are testing 4G services using 2100MHz spectrum. While the firms say they have no immediate plans to utilize the band for LTE technology – assuming the 800MHz and 2600MHz auction results do stand – they will ultimately look to use 2100MHz frequencies once 4G is more established. The two telcos have signed a network sharing agreement in Poland which sees them collaborate on the rollout of infrastructure, whilst all

major operators in the country already offer commercial LTE services largely using the 1800MHz band.

(December 2, 2015) telegeography.com

Russia



Ministry of Telecom & Mass Communications (Minsvyaz) has confirmed that a decision came into force on December 12, 2015 which permits all telecoms operators to deploy nationwide IP Multimedia Subsystem (IMS) packet networks for public use, freeing mobile operators to implement commercial voice-over-LTE (VoLTE) on a national basis. The decision removing IMS restrictions will also enable the unrestricted launches of a range of other services, such as SIP-protocol-based voice/messaging/presence status, Wi-Fi Calling (VoIP calls via existing Internet channels), and various network virtualization applications whereby operators move certain hardware/software functions to cloud servers.

(December 15, 2015) Telecom Daily

Telecom regulator this week announced that it will open applications for participating in its upcoming 2.6-GHz spectrum auction on December 1 and outlined its timetable for the multi-stage sale process. Interested parties will have until December 29 to lodge their applications for the contest, Roskomnadzor said. The auction, which covers frequencies from 2570 MHz to 2620 MHz, will begin in February 9. The regulator has split the available airwaves into 82 lots. The first lot will be auctioned on February. Lots two to 41 will be sold on February 11, followed by lots 42-82 on February 17. Lot one covers all of Russia, with the exception of Moscow and Sevastopol, in the Crimea. It includes 25 MHz of spectrum and carries a reserve price of 2.94 billion roubles (€42 million). The other lots are all regional and also come with 25 MHz of spectrum. Starting prices vary from RUB1.1 million for spectrum in Nenets (lot 33) to RUB134.3 million in St Petersburg (lot 12). Roskomnadzor pointed out that in its recently-completed auction of spectrum in the 1800-MHz band, the final sum raised was six times higher than the aggregate reserve prices of the spectrum lots. Indeed, the contest, which drew to a close in early October, raised RUB6.28 billion (€90 million), compared with a reserve price of RUB1.03 billion. All four of the country's main mobile operators took part and each won in excess of RUB1 billion worth of spectrum. Vimpelcom was the biggest spender, racking up a bill of RUB2.03 billion, closely followed by MTS, which spent RUB1.91 billion to secure five spectrum lots. MegaFon and Tele2 committed RUB1.26 billion and RUB1.08 billion respectively. (November 26, 2015) totaltele.com

Senegal



Regulatory Authority for Telecommunications and Post (L'Autorite de Regulation des Telecoms et des Postes, ARTP) has reported that a total of 2,870 subscribers have changed their network service provider in the first three months since mobile number portability (MNP) was launched in the country on September 1, 2015. According to the Director General of the ARTP, Abdou Karim Sall, Tigo Senegal – a subsidiary of Millicom International Cellular (MIC) – has been the biggest beneficiary of MNP to date, with a net gain of 702 (with 239 leaving its network), followed by Orange with a gain of 372 (despite losing 813 subscribers), while Expresso Telecom booked a net loss of 361. At the end

of last year the ARTP said it had pushed back plans to launch MNP to 2015, despite previous assurances that it would go live in October 2014. Tests relating to the introduction of the MNP system began on July 22, ahead of a full-blown launch in September. The transfer of a mobile number to a different operator is free of charge for consumers. (December 22, 2015) telegeography.com

A group of Senegalese MPs has asked the government not to renew the license of mobile operator Orange Senegal until it makes a commitment to provide assurances that it will improve its quality of service (QoS). The cellco, which is part of the Sonatel Group, has been accused by the parliamentary members of failing to address defects on its networks – despite being the largest player in the market – resulting in poor service, poor network coverage, high internet access costs and numerous network failures. With Orange hoping to renew the concession when it expires in 2016, MPs are asking that the Ministry of Posts and Telecommunications (MINPOSTEL) and the Regulation Authority of Post and Telecoms (ARTP) ensure it agrees to do more to address the defects before getting its request authorized. That said, the MPs involved are not restricting their criticism to Orange alone, noting that the two other incumbent cellcos, Tigo and Expresso, need to redouble their efforts to expand their network across all administrative counties in Senegal. (November 30, 2015) Agence Ecofin

Serbia



Government is agonizing over the sale of Telekom Srbija, with a final decision on the future of the company reportedly due later today (December 11). Six companies placed binding offers for the 58 per cent majority stake in the operator in November, which included a joint offer by Slovenia's Telekom Slovenije and US private equity fund Apollo, as well as a bid from the Abu Dhabi investment authority. The biggest offer on the table so far has reportedly been from the US Apollo fund at €1.2 billion, which falls just short of a €1.4 billion government valuation. Serbia's Prime Minister Aleksandar Vucic is set to consult with financial adviser Lazard one more time before making a final decision. "I'm doing this because opinions are divided among ministers, it's not easy to take such a decision," he's quoted as saying. Vucic has said in the past the government will not sell the stake unless its valuation is met, and it remains unclear whether ministers are divided about whether to sell at all, or who to sell to. Telekom Austria, which had a failed bid for the company in 2011, and Deutsche Telekom both emerged as interested parties when the sale process began, but have since pulled out of the running. Telekom Srbija owns a majority stake in Bosnia's Telekom Srpske and also controls Montenegro's M: Tel. According to GSMA Intelligence, the company has 4.8 million mobile connections, almost half of all overall connections in the country. (December 11, 2015) mobileworldlive.com

Spain



Spain plans to auction 2.6-GHz and 3.5-GHz spectrum in January 2016 with a view to completing the process by March, it emerged this week. According to a report by Expansion on Tuesday, Spain's Ministry of Industry is tendering 2.6-GHz frequencies that were left unsold following the digital dividend auction carried out in mid-2011. It will also offer for sale 10

MHz of 2.6-GHz spectrum returned to the government by Vodafone, which exceeded its spectrum cap when it acquired Ono. The airwaves carry a reserve price of €5 million, and cover Aragon, Cantabria, Castile and Leon, Catalonia, Ceuta, Extremadura, La Rioja, Navarra, Madrid, Melilla, Murcia and Valencia. Together these areas have a combined population of 27 million, about 58% of the total population of Spain. Furthermore, Spain also plans to auction 20 MHz of nationwide unpaired 3.5-GHz spectrum. Currently used for fixed wireless broadband, the government is reallocating it for use by mobile operators. According to the report, Spain's smaller players, Yoigo and MasMovil, are the most likely candidates for the spectrum given that the country's big guns – Telefonica, Vodafone and Orange – are ineligible due to the fact they would breach the upper limits of their spectrum caps. (December 14, 2015) totaltele.com

Spanish authorities are set to launch a sale of spectrum in the 2.6GHz and 3.5GHz bands in January 2016, with winning bidders expected to be named in March. Amongst the frequencies to be auctioned is a 2x10MHz block in the 2.6GHz band which was previously owned by ONO – the cableco's now owner Vodafone Spain had been required to give up the frequencies to ensure it remained within the legal limit for spectrum ownership. The report notes that frequencies offered in the 2.6GHz band will also include those which went unsold in previous auctions. With the starting price for the spectrum having been set at EUR5 million (US\$5.5 million), it is said to cover around 27 million people, or approximately 58% of the population, with locations including: Aragon, Cantabria, Castilla y Leon, Cataluna, Ceuta, Extremadura, La Rioja, Navarra, Madrid, Melilla, Murcia and Valencia. Meanwhile, a 20MHz block of spectrum will be offered in the 3.5GHz band – currently being used to provide fixed-wireless broadband services – offering nationwide coverage. According to the report, Yoigo and MasMovil are among the likely bidders for the spectrum when it is offered, while Movistar, Vodafone Spain and Orange Espana will all be unable to bid due to having reached spectrum holding caps.

(December 11, 2015) Daily Expansion

South Africa



Following a complaint lodged by South African wireless operator Cell C, the Advertising Standard Authority of South Africa (ASASA) has ordered Vodacom SA to stop marketing its LTE network as '4G' as it does not conform to ASA's definition of a 4G network. Cell C argued that a previous case, which was brought by Vodacom in 2010, had considered the definition of a 4G network and that Vodacom's LTE network did not conform to it. In its defense Vodacom said it uses the term '4G' in order to demonstrate its LTE network's technical capabilities and to match what the press, handset vendors and consumers call it. The ASASA however rejected the claim by stating that 'to argue that network providers should use the term "4G" simply because that is what some consumers believe an LTE network to be is arguably disingenuous, and may well add to confusion, rather than clarify it'. The authority said that Vodacom has to withdraw the 4G logo with immediate effect and may not use it again in future, unless adequate substantiation has been submitted and a new ruling issued.

(December 21, 2015) TechCentral

South Africa is now gearing to initiate the country's

long belated analogue switch-off project on February 1, 2016, TechCentral reports. Minister in the Presidency Jeff Radebe said: 'Cabinet was briefed on [the] progress made on the digital migration program. It approved the commencement of the dual illumination period for the digital broadcasting signal on February 1, 2016.' The official added that the migration from analogue to digital broadcasting services will release 'the much-needed frequency spectrum' – suitable for the provision of 4G LTE mobile broadband services – and will increase the competitiveness of the South African economy. The migration process deadline, which was originally scheduled for completion in November 2011 in line with a Cabinet decision taken in 2007, has since been pushed back to December 1, 2013, and subsequently June 17, 2015 (the International Telecommunication Union's [ITU's] deadline for analogue switch-off). The country however failed to meet the international deadline.

(December 14, 2015) telegeography.com

South Korea



South Korea's mobile operators expect their combined revenues to drop this year as mobile broadband penetration in the hyper-connected country nears saturation point. Total revenue (fixed and mobile) from the three major operators — SK Telecom (SKT), KT and LG Uplus – is forecast to decline 5 per cent this year to KRW49.5 trillion (\$42 billion), the Korea Herald reported. The country's mobile broadband penetration rate is now 99 per cent and the SIM penetration rate is 112 per cent, according to GSMA Intelligence. Subscriber growth in the country has slowed over the past few years. And regulations introduced a year ago to curb what the regulator called "excessive subsidies" have further contributed to the slowdown. The country's second largest operator KT predicts its total revenue will drop 8.7 per cent this year to KRW21.8 trillion, while market leader SK Telecom expects revenue to fall 4 per cent to KRW17.1 trillion. Number 3 LG Uplus is forecasting almost a 3 per cent revenue fall to KRW10.6 trillion (\$9 billion). SKT last month reported a 2.4 per cent drop in its Q3 revenue to KRW4.26 trillion. Mobile revenue fell 2.8 per cent to KRW2.74 trillion, due to more subscribers choosing mobile fee discounts based on their contracts, the company said. LG Uplus' revenue peaked at \$10.4 billion in 2013, then fell to \$10 billion last year. Looking for new growth areas, the operator is focused on strengthening its network and preparing for Internet of Things (IoT) applications, such as IoT @Home, which it launched earlier this year for \$6 a month. 4G penetration has climbed from just under 50 per cent two years ago to nearly 70 per cent. 4G users represented 67 per cent of SKT's total customers in Q3, 71 per cent of KT's and 86 per cent of LG Uplus', according to GSMA Intelligence.

(December 14, 2015) mobileworldlive.com

Swaziland



The Minister of Information and Communication Technology Dumisani Ndlangamandla has presented 13 draft telecommunication legislations to the Council of Ministers, which will be discussed in parliament in February 2016 before being enacted into laws, Agence Ecofin reports. The updated telecoms regulations will reportedly provide for the opening of the mobile sector to competition and ending MTN Swaziland's monopoly in the market. Under the new regulations, the government is planning to grant a 10-year non-exclusive concession to any telecoms operator

who wants to offer mobile services in Swaziland. Selected companies will also pay the government 5% of their net operating profit as royalties. In November 2014 it emerged that work on developing the regulatory framework for a new mobile license in Swaziland was underway, with Viettel-backed start-up Swavitel said to have submitted an application for the concession. Stan Motsa, acting chief executive officer of the Swaziland Communications Commission (SCC), said at the time: 'We are drafting the legislation with help from experts provided by the International Telecommunication Union (ITU), as well as local stakeholders within the country's communications sector.' Further, Motsa added that, if granted permission, Swavitel would utilize the Swaziland Post and Telecommunication Corporations' (SPTC's) backbone infrastructure. (December 16, 2015) telegeography.com

Taiwan



National Communications Commission (NCC) will seek administrative instruction from the Executive Yuan regarding what to do when 2G licenses expire in June 2017, according to the Taipei Times. Data produced by the regulator revealed that as at 25 November there were just 1.25 million 2G subscribers left in the country across all operators, with the bulk of those signed up to Chunghwa Telecom. NCC spokesperson Yu Hsiao-cheng was cited as saying that NCC is aware operators are keen to consolidate spectrum currently being used to serve 2G subscribers into the 'C6' block in the 1800MHz band, which is not being used at the moment. However, existing regulations means that there will be issues in doing so; as such, Yu noted: 'We will see if the Executive Yuan has any instructions regarding this issue.'

(December 17, 2015) telegeography.com

Taiwan's auction of spectrum in the 2.6-GHz band has drawn to a close after 142 rounds, raising 27.93 billion Taiwanese dollars (€775 million), the country's telecom regulator announced earlier this week. The final total was 93.9% higher than the reserve price, the National Communications Commission (NCC) revealed in a Chinese-language statement on its Website. Four companies picked up six lots of spectrum. The biggest spender was Chunghwa Telecom, which successfully bid NT\$9.96 billion for two blocks, while rival Far EasTone also acquired two blocks for NT\$9.13 billion. Taiwan Star and Asia-Pacific Telecom won one lot each, paying NT\$6.62 billion and NT\$2.23 billion respectively. The other participant, Taiwan Mobile, dropped out of the contest a couple of weeks ago. The NCC explained that the final total was reached after 140 rounds of bidding. In accordance with auction rules, the contest was stopped after two more rounds in which no new bids were lodged. (December 9, 2015) totaltele.com

More than ten million mobile subscribers in Taiwan have now signed up to a 4G service figures produced by local telecoms regulator the National Communications Commission (NCC). According to the watchdog, as at the end of October 2015 there were a total of 10.087 million 4G customers in the country, representing a population penetration rate of 43.8%. Overall mobile market leader Chunghwa Telecom also tops the table in terms of LTE-based accesses, with it reportedly having 3.84 million such subscribers on its books at the end of October, while it aims to increase this to 4.40 million by end-2015. At that date, Far EasTone and Taiwan Mobile were separated by a narrow margin, with 2.78 million and 2.64 million 4G subscribers, respectively, with both operators

expecting to surpass the three million milestone by the end of the year. Rounding out the market are Asia Pacific Telecom, which had around 500,000 LTE-based customers at end-October 2015, and aims to boost this to between 700,000 and 800,000 by year's end, and Taiwan Star Cellular, with around 400,000 (target of half a million by end-2015). (December 2, 2015) Digitimes

Thailand



True Corp, Thailand's third largest cellco by subscribers, and Jas Mobile Broadband (Jasmine), subsidiary of Jasmine International (the parent of Thai fixed network operator Triple T Broadband), have both secured 900MHz spectrum in Thailand's 4G auction, with bids totaling THB151.95 billion (US\$4.2 billion). Thai PBS reports that the auction was completed on December 18 when no bids were submitted at the start of the 199th round, leaving the highest bids of the 198th round to win; as such, market newcomer Jasmine will pay THB75.654 billion for 2x10MHz of spectrum in the 895MHz-905MHz/940MHz-950MHz band, while True is set to pay THB76.298 billion for 2x10MHz frequency allocation in the 905MHz-915MHz/950MHz-960MHz band. The winners beat two other participants – Advanced Info Service (AIS) and Digital Total Access Communication (DTAC). Shares in the four bidding telcos fell to a three-year low as the auction ended, amid concern at future costs and competition in the sector. Jasmine shares fell 16.3%, while True stock dropped 8.2%. AIS and DTAC shares, meanwhile, fell 10.3% and 14.5%, respectively.

(December 21, 2015) reuters.com

Telecoms regulator has been given clearance to auction off two licenses holding 900MHz radio spectrum. The auction had been in doubt due to concerns whether the regulator had the authority to carry out the auction on behalf of the military controlled government. The state owned TOT had queried the regulator's authority to carry out the auction, mainly as the spectrum being sold is currently held by that mobile network. The mobile network operator had hoped to retain the 20 MHz of spectrum, which is currently leased to AIS under a concession agreement which expired at the end of September. The government however ruled that the spectrum has to be surrendered back to the regulator for it to be sold. The NBTC expects the sales of the two licenses on the 900-MHz spectrum might reach a combined 60 billion baht. (December 16, 2015) cellular-news.com

National Broadcasting & Telecommunications Commission (NBTC) has formed a plan to reallocate spectrum for cellular services in the 1500MHz band currently used by state-run telco TOT and oil company Chevron Thailand. TOT uses 35.15MHz of the frequency for rural telephone and signal transmission services, while Chevron uses 56MHz for its operations including surveying and petroleum production divisions. TOT has informed the ICT Ministry of its plan to provide mobile phone services in the 1500MHz range. Thanapant Raichareon, Deputy NBTC Secretary General, explained that Thailand and ten other countries had supported the standardization of the 1500MHz band or telecoms services during the World Radiocommunication Conference in Geneva, Switzerland, last month. The NBTC expects that it will take four years to reform the spectrum. (December 11, 2015) The Nation

Thailand's second-largest cellco by users Digital Total Access Communication (DTAC) is now free of legal restrictions on its expansion of 2100MHz 3G W-CDMA/HSPA+ network coverage after the country's Supreme Administrative Court revoked an injunction order which had been in effect since May, the Norwegian-backed operator has confirmed. Thailand's Central Administrative Court previously issued the injunction stopping DTAC from installing or connecting any further 2100MHz equipment to base stations subject to arbitration decisions regarding their ownership – a consequence of DTAC's original build-transfer-operate (BTO) operating concession issued by state-owned CAT Telecom. CAT cannot appeal the apex court's latest order reversing the lower court's decision.

(November 30, 2015) telegeography.com

Togo



Telecoms Regulator, the Authority of Posts and Telecommunications Regulation (ART&P) has set a ten-day deadline – starting November 25 – for anyone who has yet to register their SIM card to do so, or have their service disabled. ART&P is implementing the measure under Decree No. 2011-120/PR, which establishes mandatory identification of all subscribers using mobile telecoms services in Togo. Adopted in 2011, Decree No. 2011-120/PR is intended to clamp down on handsets being used for illegal activity. Four years after it came into force, however, many users still remain unidentified – something the watchdog is looking to change. Mobile operators Togo Cellulaire (Togocel) and Atlantique Telecom (Moov) have been asked to ensure that all their customers are informed of the deadline.

(November 30, 2015) telegeography.com

United Kingdom



Telecoms regulator OFCOM has announced a delay to the auction of spectrum in the 2.3GHz and 3.4GHz bands. In October 2015 OFCOM unveiled details of its planned frequency auction, which had been due to take place early next year. A total of 190MHz of high-capacity spectrum is to be offered across the 2.3GHz and 3.4GHz bands as part of a wider government initiative to free up public sector spectrum – made available by the Ministry of Defense – for civil uses. With the frequencies 'particularly suited for high-speed mobile broadband services, because they can carry large amounts of data', OFCOM at that date set a reserve price of GBP70 million (US\$107 million), with no cap on the amount of spectrum any one company can acquire. In a statement confirming the delay to the sale process, OFCOM cited the fact that the Competition Market Authority's (CMA's) decision on the proposed merger between BT and EE is expected next month; while a ruling by the European Commission (EC) on a tie-up between O2 UK and Hutchison 3G UK (Three UK) is due by mid-May 2016. The watchdog noted that last month it received letters from both O2 UK and Three UK stating their respective intentions to bring judicial review proceedings against OFCOM's decision to commence the auction process before the EC makes a decision on the O2/Three merger. In light of this, and after 'careful consideration', OFCOM said that 'given these specific circumstances, we have decided for reasons of good public administration to

delay commencing the auction process'. The regulator has not yet rescheduled a date for the spectrum auction.

(December 4, 2015) telegeography.com

OFCOM put a halt on a planned spectrum auction until an EC decision on Hutchison 3 UK's proposed merger with Telefonica's O2 UK, following complaints from the two companies. In a statement, the regulator said it had received letters from both objecting to the planned auction of 2.3GHz and 3.4GHz spectrum next year, a process due to commence this month. OFCOM said both Telefonica UK and Hutchison stated "their intention to bring judicial review proceedings against OFCOM's decision to commence the auction process before the outcome of the EC's consideration of the processed merger between those two companies". The regulator said it will now not commence the auction process "until the EC has taken its decision" regarding the processed merger, which is "expected no later than mid-May 2016". It said it will also wait until a decision is made regarding BT's proposed £12.5 billion deal to acquire EE, currently being scrutinized by the UK's competition and markets authority (CMA), although this process is expected to be completed early next year. OFCOM said it took the initial decision to launch the process before the end of the year because it "recognized the demand for this spectrum and took the view that spectrum efficiency is best achieved by bringing available frequencies into use as soon as possible". Objections from both O2 UK and 3 UK are seemingly a representation of a lack of knowledge as to their spectrum requirements going forward, whether or not the deal goes through. The planned auction, which will see some 190MHz made available in the two bands, is being freed up by the Ministry of Defense, as part of a wider plan to free up public sector spectrum.

(December 3, 2015) mobileworldlive.com

The government has set aside £550 million to compensate the current occupiers of the 700 MHz band, including Digital Terrestrial Television (DTT) broadcasters, as it opens up more spectrum for mobile broadband. The figure was revealed in the government's Autumn Statement delivered by George Osborne, the Chancellor of the Exchequer, and will be spent over the period of the next parliament, which runs until 2020. In November 2014, telecoms regulator OFCOM published a consultative document in which it estimated the economic cost of emptying the 700 MHz band. Its figure was similar to the government's (between £550 million and £660 million). The OFCOM document specified three main costs. Firstly, there will be extensive modification of DTT transmission infrastructure for broadcasters. In addition, there will be a cost for consumers, as a proportion of UK households (about 100,000) will need to replace their DTT aerials. An even smaller proportion might need to fit a filter to their TVs to prevent mobile phone signals from interfering with TV reception. Finally, many audio program makers and special events (PMSE) users, who specialize in live coverage including concerts, will need to change wireless microphones as they shift to new radio frequencies, as well as train or recruit more engineers. The government will compensate the various users who are impacted by the freeing up of 700 MHz. However, the OFCOM document also sounded a brighter note. It estimated that additional mobile broadband frequencies will bring benefits to the UK of £900 million to £1.3 billion because they enable operators to meet increasing demand at a lower cost than would otherwise have been the case. (November 26, 2015) mobileworldlive.com

United States



The Federal Communications Commission wrote to AT&T and T-Mobile US asking for more information about their packages that offer free data to users, also known as zero rating. In addition to the two mobile operators, the regulator also wrote to cable operator Comcast about its live streaming service delivered over a fixed network. FCC chairman Tom Wheeler said the letters asked the three operators "to come in and have a discussion with us about some of the innovative things that they are doing." However, Wheeler emphasized the FCC is not conducting an investigation but more of a fact-finding mission. He recently gave the all clear on net neutrality grounds to T-Mobile's Binge On service, which waives data charges for certain video streaming services, although with the caveat he would keep his eye on it. Binge On was only launched recently but AT&T has offered sponsored data for longer. Its packages allow content providers to subsidize users' wireless data. This means users can stream specific content from sponsors without it coming out of their data allowance. AT&T is thought to have signed up at least six partners for its sponsored data service. The letter to AT&T has the air of the FCC looking for more information rather than a formal inquiry. "As you may be aware, concerns have been expressed about these programs, for example, some have argued that sponsored data unfairly advantages incumbent content providers," the letter to AT&T said, quoted by Reuters. "We want to ensure that we have all the facts to understand how these services relate to the commission's goal of maintaining a free and open Internet while incentivizing innovation and investment from all sources," it adds. The operators have until January 15 to respond. (December 18, 2015) [mobileworldlive.com](#)

Ill-fated US wireless start-up LightSquared has announced that the Federal Communications Commission (FCC) has approved its 'Change of Control' application, paving the way for the company's emergence from Chapter 11 bankruptcy protection. LightSquared says that the FCC grant represents a 'significant milestone' for the company, as it will now provide notice to the US Bankruptcy Court for the Southern District of New York, signaling the effective date of its confirmed Plan of Reorganisation, enabling it to successfully exit restructuring. The company originally filed for bankruptcy protection in May 2012 and its reorganization plan was confirmed by Judge Shelley C. Chapman on 26 March 2015. CEO Doug Smith commented: 'We are very appreciative for today's FCC action, which will allow LightSquared to begin anew and recommit to work with all stakeholders to resolve important technical matters, identify necessary solutions, and remove regulatory uncertainty that the company has faced over the past three-and-a-half years'. In February 2012 the FCC declared that LightSquared's use of non-traditional frequencies in the 1.4GHz and 1.6GHz bands interfered with GPS satellite navigation devices and aircraft flight safety equipment. Subsequent months saw the stricken company beset with myriad financial and legal problems, before being forced into bankruptcy in May 2012. Prior to its regulatory woes, LightSquared sought to build out a nationwide hybrid-LTE network using terrestrial and satellite spectrum capacity.

(December 8, 2015) [telegeography.com](#)

Uzbekistan



Uzbekistan plans to carry out nine large investment projects focused on internet expansion by 2020. The projects have been included in the special program on ICT development for 2015-2019 signed by the Uzbekistan President. The investment in the projects totals US\$ 883.7 million. The list includes the expansion of HSPA+ and LTE networks, fixed and wireless networks, the development of backbone and multi-service data transmission networks, the deployment of fiber-optic lines, the introduction of new multimedia-based services and creating conditions for content development. The amount of broadband ports is planned to increase by 120 percent, and the data transmission speed to grow 20-fold. (December 1, 2015) [gazeta.uz](#)

Venezuelan



Thousands of Venezuelans have taken to the streets of the capital Caracas and several other cities to display support for the workers of state-owned telecommunications company CANTV after it was threatened with re-privatization by opposition politicians, who, following recent elections, will hold a two-thirds majority of the National Assembly by January 5, 2016. Telesurtv.net reports that in a rally attended by CANTV President and Minister for Science & Technology Manuel Fernandez, workers and supporters of the full-service telco/broadcaster gathered at CANTV's headquarters and released a statement rejecting the 'destabilizing' plans of the opposition. CANTV was nationalized in May 2007, since when it has ramped up efforts to provide affordable fixed line, broadband, mobile and TV services to rural, disadvantaged and underserved sections of the population under socialist policies.

(December 16, 2015) [telegeography.com](#)

Zimbabwe



ICT, Postal & Courier Services Minister Supa Mandiwanzira has defended the Zimbabwean government's move to take control of struggling mobile network operator Telecel, saying the state is looking to turn the business around and make it profitable. State-run ISP Zarnet has paid US\$40 million to acquire a 60% stake in Telecel from Global Telecom Holding, which is itself 51.9% owned by Vimpelcom. Mandiwanzira has confirmed that Zarnet is now looking to buy the remaining 40% of Telecel which is held by Empowerment Corporation, a group of domestic investors. The minister told local newspaper The Standard that there are no plans to combine Telecel with the country's other state-run mobile operator, NetOne, saying that they should remain competitive in order to challenge the market leader, privately owned Econet Wireless. The operator lost second position in the wireless market to state-owned NetOne in 2014, and claimed around 1.94 million subscribers by the end of June 2015, behind NetOne's 3.38 million and Econet's 6.63 million. (December 1, 2015) [telegeography.com](#)

Javaid Akhtar Malik
Regulatory Affairs
SAMENA Telecommunications Council

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▼ WHOLESALE NEWS

WHOLESALE UPDATES

KPN ordered to offer wholesale services for three more years

KPN must continue to provide rivals wholesale access to its fixed networks for the next three years, the Dutch competition regulator ruled this week. The Netherlands currently has two major network operators – incumbent KPN and cableco Ziggo – which is not enough to ensure healthy competition, the Netherlands Authority for Consumers and Market (ACM) said on Thursday. The watchdog said technical challenges make it difficult to open Ziggo's network to rival service providers, which leaves KPN as the only viable option. "Furthermore, KPN is stronger than Ziggo because of its position in the business market. One explanation for this is that many business parks only have a KPN network. Customers in such business parks are unable to choose Ziggo," said ACM board member Henk Don, in a statement. "Access to KPN's network is sufficient for making competition possible," he insisted. "This will result in increased competition in the Dutch telecom sector, and in better prices." The new regulatory regime is due to come into force on January 1, 2016. KPN already provides wholesale access to its network, of course; however, some customers are not happy with some of the services they receive. Last week,

Vodafone sued KPN for €115 million, claiming that the incumbent was slow to provide the technology it needed to launch a DSL-based triple-play service, resulting in a three-year delay that caused Vodafone to miss out on market growth.

Wholesale serves up Ethernet over HFC product for carrier customers

Wholesale may be an advocate of fiber-based services, but being a traditional cable operator it is now tapping into its HFC (hybrid fiber-coax) network to deliver an Ethernet over HFC service to customers in its network area. A particular target for this service will be service provider customers that need to fulfill connections for multisite off-net business customers. It can also be used to fulfill branch, remote offices and even small to medium sized businesses within a metro area. As an MPLS-based service, the EoHFC product offers carrier customers a range of symmetrical speeds of 3, 5 and 10 Mbps, and supports traditional Ethernet topologies such as Ethernet Line (E-Line) and Ethernet LAN (ELAN). It also provides interoperability with fiber-based Ethernet access. Has priced the EoHFC service as an nxT1 option, with service installation in 30 days or less upon order. Wholesale may be an advocate of fiber-

based services, but being a traditional cable operator it is now tapping into its HFC (hybrid fiber-coax) network to deliver an Ethernet over HFC service to customers in its network area. A particular target for this service will be service provider customers that need to fulfill connections for multisite off-net business customers. It can also be used to fulfill branch, remote offices and even small to medium sized businesses within a metro area. As an MPLS-based service, the EoHFC product offers carrier customers a range of symmetrical speeds of 3, 5 and 10 Mbps, and supports traditional Ethernet topologies such as Ethernet Line (E-Line) and Ethernet LAN (ELAN). It also provides interoperability with fiber-based Ethernet access. Has priced the EoHFC service as an nxT1 option, with service installation in 30 days or less upon order.

Chorus welcomes NZ wholesale pricing move, Spark complains

New Zealand's Commerce Commission on Tuesday published its final decision on wholesale broadband prices, the figure coming in higher than the one proposed in the summer, news that was welcomed by network operator Chorus but lamented by incumbent operator Spark. Effective Chorus can charge NZ\$41.19 per month for wholesale copper broadband, made up of NZ\$29.75 for unbundled copper local loop (UCLL) and NZ\$11.44 for unbundled bitstream access (UBA). The new prices are on a glide path and will increase slightly over the next five years to reach NZ\$42.35 (see chart). The new figures are several dollars higher than the NZ\$38.43 per month the Commission proposed in July and some way above the current price of NZ\$34.44. However, they remain below the NZ\$44.98 Chorus was able to charge prior to December 2014. "Significant changes, such as the need to increase the amount of trenching required to physically lay the network and adjusting the make-up of fiber and fixed wireless connections, led to the final price rising," telecoms commissioner Stephen Gale said. "This has been partially offset by other changes, including a decrease in the allowed rate of return for Chorus due to the fall in interest rates since July, and the removal of vacant properties from the model," he added. Chorus

increased its EBITDA guidance for the 2016 financial year to NZ\$580 million-NZ\$600 million, up from NZ\$546 million, as a result of the decision. "We have consistently said that the previous draft prices significantly underestimated the true value of Chorus' network, so it is pleasing that the Commission has taken on board the industry's repeated requests and used some of the real world costs of building a network," said Chorus CEO Mark Ratcliffe. However, he noted that Chorus is disappointed that the Commission elected not to backdate the price hike. Its disappointment is likely less than that felt by retail provider Spark, which described the new price limit as "the worst possible Christmas present for New Zealand consumers and businesses." The telco insisted that the move will affect the prices paid for services by end-users. "We are now also forced to increase our retail voice and broadband pricing to take into account the significantly increased costs now faced from higher regulated Chorus line charges," said Spark New Zealand managing director, Simon Moutter. Spark claims that the new prices mean New Zealanders will pay almost double the median regulated line charges in other comparable countries, warning that regulated charges for the Chorus copper network now exceed those for entry-level plans on fiber. "The massive swings in successive Commerce Commission decisions within a matter of months makes it extremely hard for any business to invest, plan and price its services effectively," Moutter said. "We have now had two years of market disarray, with significant fluctuations at every stage of the process. The losers out of this are New Zealand consumers and businesses."

Liquid Telecom named Best African Wholesale Carrier for third year running

Liquid Telecom was named Best African Wholesale Carrier for the third year running, beating stiff competition from Bharti Airtel, Internet Solutions and WIOCC. The company also took home the award for Best African Project for its work in building the East Africa Fiber Ring, after being shortlisted alongside projects from AMS-IX, Infinera, Ooredoo and World Telecom

Labs. The East Africa Data Centre, which is part of The Liquid Telecom Group, was also shortlisted in the global category of Best Data Centre. Nic Rudnick, Liquid Telecom's CEO, was also one of five executives recognized for their contribution to the telecoms industry and described as a leader in driving connectivity to inland Africa. He was also recently named as the most powerful and influential person in the African telecoms industry by Global Telecoms Business magazine. Nic Rudnick said "We are an ambitious and innovative organization determined to continue investing in and improving telecoms in Africa because we believe that every individual has the right to be connected. Recognition by our peers is always appreciated by me and the entire Liquid Telecom team." The Global Carrier Awards have become the biggest and most prestigious awards event of the wholesale telecoms industry. They focus on the contribution of individuals, companies and technology partners that have excelled in the use, development and deployment of carrier services in the past 12 months. The awards are independently judged by a panel of telecoms analysts, industry experts and the senior editorial team of Capacity magazine.

3 Denmark signs national roaming deal with Telia

3 Denmark has signed a new wholesale roaming agreement with Telia, replacing its previous deal with TDC. The agreement gives 3 access to 3G data roaming, which was not part of the TDC deal, as well as 2G and 3G voice. Telia and 3 said they expect the national service to be implemented by the end of February 2016. Roaming will be available to 3's customers anywhere its own network does not cover, and they will be switched automatically to the Telia 2G or 3G network when needed. 3 is in the process of completing its own network expansion. Its 4G network is expected to reach 88 percent of the population by year-end, while the 3G network is getting more sites, particularly in the 900 MHz band, to boost indoor coverage. Telium claims 99 percent outdoor coverage for 3G, helped by its network-sharing agreement with Telenor.

Telstra backtracks on proposed data roaming hike

Australia's largest operator backtracked on a plan to triple excess data roaming fees and its recent introduction of a flat-rate charge for paper bills. Telstra CEO Andy Penn (pictured) said in a blog post: "Good leadership means recognizing when it is right to change decisions because it is the right thing for our customers." The operator said it is scrapping a controversial proposal to increase the excess data fees on its Travel Pass roaming packages from AUD0.03 to AUD0.10 per MB (\$0.072) or about AUD100 per GB. Penn said price increases are often necessary and understands why his teams made the changes, "but they didn't sit well with me; customers clearly told us the same, so it's my responsibility to act on behalf of our customers". The operator also backed down from a move to charge a flat rate of AUD3.20 on paper bills received by mail or paid over the counter. It will now charge AUD2.20 to receive a paper bill and AUD1.00 for an over-the-counter payment. It will give customers charged the AUD3.20 fee a rebate where applicable.

Japanese ministry pushes for lower tariffs, more choice

Japan's government plans to put pressure on the country's three major mobile operators to reduce mobile tariffs and give customers a wider variety of data plans, the Yomiuri Shimbun reported. The Internal Affairs and Communications Ministry is looking to prohibit handset subsidies and ask operators to use the money they save to reduce charges. Under the new plan, the ministry aims to establish guidelines, based on the Telecommunications Business Law, by February and urge operators to start reducing tariffs in the spring. Average data usage is 1.9GB a month, yet the data plans offered by all three operators – NTT Docomo, KDDI and SoftBank – start at 2GB, which doesn't cater to low-data users. Minister Sanae Takaichi said it would be appropriate for users to have the choice of 1GB of data, Japan News reported. Tokyo had the fourth highest mobile data rates out of seven major cities around the world in 2014, according to research by the ministry. In July the ministry asked

the operators to review the terms of their two-year contracts, which automatically are renewed with high termination fees. And in May operators were required to unlock SIM cards on handsets that customers keep for more than six months. The operators have insisted that they are meeting consumer needs by introducing affordable new plans, Japan News said.

Arcep proposes increase in wholesale access in 2016/17

French telecoms watchdog, the Regulatory Authority for Electronic Communications and Posts (Autorite de Regulation des Communications Electroniques et des Postes, Arcep), has launched a public consultation on a proposed increase in the tariffs for access to Orange France's fully unbundled lines over the next two years, in a bid to bolster market liquidity and investments in next generation fixed access networks. Under the draft proposal, the incumbent telco will start charging EUR9.10 (USD9.63) a month per fully unbundled access line from 2016 (up from the EUR9.05 currently charged), with the monthly tariff set to increase to EUR9.45 in 2017. Meanwhile, the regulator proposed that the price for wholesale line rental (WLR) must not exceed its current level (EUR12.32) in 2016 and 2017. Arcep has invited all interested parties to submit their comments by 4 January 2016. Arcep also said that the price cap marks a first step towards 'more substantial changes' to the country's regulatory framework. The next round of analysis for broadband and superfast broadband markets, scheduled to be carried out in 2017-2020, will include the planned phase-out of the switched network and accelerated transition to superfast access. To that end, Arcep is planning on opening a broader consultation in 2016, with a view to establishing a second set of price caps for the period from 2018 to 2020.

Bayanat signs wholesale agreements to develop Yanbu as the first Smart City in KSA

Etihad Etisalat's data subsidiary, Bayanat has signed wholesale agreements with three different Retail Service Providers to serve the community in Yanbu

through Open Access Network. FTTH Mobily, Sahara Net and Shabakah Net are going to provide smart city services for the residential and industrial areas at Yanbu industrial city. The signing ceremony for these agreements was held in the presence of the Chief Executive Officer of Royal Commission for Jubail & Yanbu Dr. Alaa Bin Abdullah Nassif; also in attendance were Dr. Akil Al Akil the General Manager of Bayanat company and Omar Al Rasheed the Executive General Manager for the Mega projects in Mobily. Dr. Nassif said that the agreement will help provide the internet services for 1,500 housing units in Yanbu industrial city; it will also provide modern digital environment conducive to creativity, learning and provision of improved health services ensuring sustainable environment for the residents of the industrial city. He added that the Royal Commission in Yanbu is seeking to convert the industrial city of Yanbu to Smart City by upgrading the basic infrastructure of the city; this is being accomplished by building a 3000 km long fiber network utilizing state of the art international equipment, with capacity to accommodate future expansion of the residential area, heavy and light industries area and various businesses. In addition to this, two fully equipped data centers are being established equipped with latest hardware and software to provide secure host services to businesses in the vicinity at competitive rates. Dr. Akil, expressed satisfaction on the ability of Bayanat to complete and deliver the project and maintaining optimal quality standards. He termed Bayanat a strategic partner to the Kingdom in general and Royal Commission of Yanbu in particular for development and implementation of Smart Cities, which will lead to significant socioeconomic development in the Kingdom. Bayanat team has already completed and announced the roll-out and implementation of the network infrastructure based on the Strategic Partnership Agreement with the Royal Commission, based on build-operate-transfer (BOT) model. The purpose is to enable other Retail Service Providers to utilize the robust platform developed by Bayanat team for provision of necessary services to the customers in Yanbu area. This marks first implementation of such fair and just model for all Retail and Internet Service Providers through Open Access Network in the Kingdom.



TECHNOLOGY NEWS

NEC and Intel Collaborate in Mobile Base Station Virtualization

NEC says that it is to collaborate with Intel to jointly develop a "Cloud Radio Access Network (Cloud RAN) solution" for virtualizing the functions of mobile base stations. Both companies will start a joint proof of concept trial from early 2016 to verify the capabilities of the Cloud-RAN solution. Mobile base stations are comprised of a Digital Unit (DU) that handles data processing and a Radio Unit (RU) that sends and receives radio waves. The Cloud-RAN solution separates the DU functions from mobile base stations, and enables the functions to be run on general-purpose servers equipped with Intel's multi-core processors. This makes it possible to centralize the DU functions, allowing for multiple units of the RU to be centrally controlled from one general-purpose server. The solution improves the communication performance of mobile base stations through more precise control of radio interference between the RUs, while cutting down on power and space consumption by consolidating the DU hardware. This in turn contributes to a reduction in the Total Cost of Ownership (TCO) of base station equipment. "We have been working with Intel on the virtualization of mobile core networks and customer premises equipment (CPE) and are very

pleased to extend our collaboration in Network Functions Virtualization (NFV) to mobile base stations," said Nozomu Watanabe, General Manager, Mobile Radio Access Network Division, NEC Corporation. "Looking forward, NEC will further strengthen its relationship with Intel for the advancement of NFV, which is the core technology supporting 5G and other forms of next generation wireless communication."

NetCom and Huawei demonstrate 'LTE-Advanced Pro' technology

NetCom, the Norwegian arm of TeliaSonera, has partnered with Chinese vendor Huawei on the demonstration of what the latter has claimed is 'the world's first trial of LTE-Advanced Pro' technology – also referred to as '4.5G' – over a live commercial network. With the technology pilot having been conducted in Oslo, a vendor's press release said it was an 'important milestone towards next year's expected commercial availability of 4.5G'. To achieve the downlink speeds of around 1Gbps shown in the demonstration, four frequency bands (800MHz, 1800MHz, 2100MHz and 2600MHz) were used simultaneously. On the back of the trial Huawei has said it expects that the commercial deployment of 4.5G among

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operators will start from 2016. Commenting on the demonstration, NetCom CEO Abraham Foss was cited as saying: 'This is the future mobile network for the new generation telecommunications companies. TeliaSonera is an innovative company that will always strive to be in front of the development, and we are proud to cooperate with Huawei in Norway to develop and test this new technology. Our vision is to bring the world closer on the customer's terms, and we will drive the digitalization and create value for both our customers and society.'

15% of World's Broadband Deemed '4K-Ready'

Global broadband speeds experienced some ups and downs in Q3 as average connection speeds rose versus the previous period along with a small decline in average peak speeds, according to Akamai's latest State of the Internet Report. Akamai also found that 15% of the world is "4K ready," the classification Akamai assigns to broadband connections that pump out at least 15 Mbps. That 4K-readiness figure, which is becoming more important as Netflix, Amazon and MVPDs look to expand their 4K streaming libraries, is up from 5.3% in Q3 2014, according to Akamai. In Q3, global average connection speeds rose 14% year-over-year, to 5.1 Mbps, but only rose 0.2% versus the previous quarter. South Korea (20.5 Mbps) was tops in that category, though down 19% year-on-year. Rounding out the global top 10 for average connections speeds were: Sweden (17.4Mbps); Norway (16.4 Mbps); Switzerland (16.2 Mbps); Hong Kong (15.8 Mbps); Netherlands (15.6 Mbps); Japan (15 Mbps); Finland (14.8 Mbps); Latvia (14.5 Mbps) and Czech Republic (14.5 Mbps). The United States, which placed 16th globally, produced a 12.6 Mbps average, up 9.4% from the year-ago quarter, and up 7.3% versus Q2 2015. With respect to average peak connection speeds, the world averaged 32.2 Mbps in Q3 2015s, down 0.9% versus Q2 2015, but rose 30% year-over-year. Singapore, with a peak average of 135.4 Mbps, led the way, followed by Hong Kong (101.1 Mbps); South Korea (86.6 Mbps); Japan (78.4 Mbps); Taiwan (77.9 Mbps); Qatar (75.2 Mbps);

Macao (73.7 Mbps); Romania (72.9 Mbps); Israel (70 Mbps); and Sweden (69 Mbps). The U.S. was 21st globally, with a peak average in Q3 2015 of 57.3 Mbps, up 18% year-over-year, and up 14% quarter over quarter. Akamai also tracks adoption by speed levels, including 25 Mbps, the FCC's current downstream benchmark for what's considered "broadband." Globally, 5.2% of unique IP addresses connected to Akamai at average connection speeds of at least 25 Mbps, up 6.3% versus the previous quarter, led by South Korea (24%), Sweden (19%) and Norway (16%). The U.S. was not in the top 10 in the 25 Mbps category, but Washington, D.C., was tops in the nation, with 22% of connections providing average speeds of at least 25 Mbps in Q3 2015, followed by Delaware (17%), Utah (14%) and Massachusetts (13%.) Akamai also continued to track adoption of IPv6, a more massive IP addressing scheme that enters play as the pool of IPv4 addresses runs dry and amid the growth of the so-called Internet of Things.

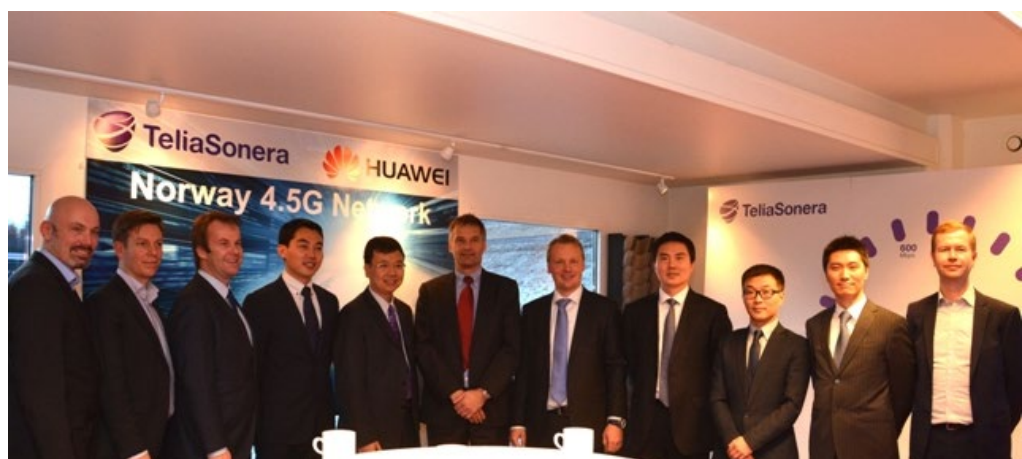
Huawei Opens ICT Training Centre in Cambodia

China's Huawei and Cambodia's National Institute of Posts, Telecommunications and Information Communication Technology (NIPTICT) have opened a Huawei Authorized Information and Network Academy (HAINA) in the country. "The opening of the HAINA is a new achievement for NIPTICT," Cambodian Post and Telecommunication Minister Prak Sokhonn said, adding "It will facilitate students in the study, research, and development of telecom and ICT in Cambodia." According to Huawei, the

two partners will promote training in Cambodia and support the city's development as a hub for ICT in the country. Furthermore, HAINA programs will also help ICT university students to fill the gap between theory and practice and master required skills. Under the partnership, Huawei also set up an ICT laboratory to provide students with opportunities for hands-on exploration of the latest cloud computing and networking technologies. Wang Xiaofeng, president of Learning Service Department Huawei Global, said Huawei is honoured to collaborate with NIPTICT to equip students with up-to-date ICT knowledge and skills that will nurture the next generation of ICT leaders in Cambodia. Huawei has now extended its HAINA program to more than 130 universities worldwide. mobileworldlive.com

TeliaSonera claims "world record" with 4.5G pilot

TeliaSonera said Netcom, its Norwegian unit and a 4G pioneer, reached "world record" download speeds of up to 1Gb/s in Oslo, using technology dubbed as 4.5G and officially known as LTE Advanced Pro. 4.5G has been heavily promoted by Huawei and the Chinese vendor provided the infrastructure for TeliaSonera's outdoor pilot. The technology has been claimed to bridge the gap between 4G and 5G and standards body 3GPP officially approved it in October, giving it the moniker LTE Advanced Pro (read more on the move here). Huawei has already announced 4.5G trials with China Mobile, Japan's SoftBank and Hong Kong's HKT. It claims 4.5G will reduce latency from the current level of about



40ms to 10ms and provide the peak speeds of 1Gb/s as touted in today's TeliaSonera announcement. "This is an important milestone towards next year's expected commercial availability of 4.5G," noted Huawei in a joint statement with TeliaSonera. "With the introduction of 4.5G technology, operators will be able to improve the user experience and support the increase of machine-to-machine (M2M) communications and the Internet of Things (IoT), as well as new mobile Internet applications, such as VR glasses and drone technology." A TeliaSonera statement added: "NetCom is the first operator in the world to take the LTE Advanced Pro technology out of the test laboratory and build a pilot outdoors under real life conditions. To achieve the high speed, NetCom transmitted data over four frequency bands simultaneously, and what makes today's test special is that NetCom only used frequency resources that are already available for mobile today: 800MHz, 1800MHz, 2100MHz and 2600MHz." Netcom's 4G and 4G+ currently offer speeds of up to 80 Mb/s and 300 Mb/s, respectively. It was the world's first operator to introduce 4G six years ago today. TeliaSonera Norway's CTO, Jon Christian Hillestad, said: "We do not know exactly which speeds the future will require, but the future will require bandwidth, high speed and no delay in transfers. We are preparing for that reality with LTE Advanced Pro," he added. The statement from the operator called the deployment "an important step towards 5G."

Orange, Huawei eye energy efficient networks

Companies research new components, software, power sources in bid to reduce CO2 emissions per customer by 50%. Orange and Huawei this week reaffirmed their commitment to improving the energy efficiency of networks. The two companies have been working together to reduce power consumption and CO2 emissions since 2013, and have developed energy-saving features for fixed and mobile networks, some of which Orange has begun to roll out. The announcement, made on Wednesday outlines the next steps Orange and Huawei will take to make networks greener. "This partnership will accelerate the implementation

of high energy-efficient solutions in Orange's infrastructures to achieve our 2020 objective of reducing CO2 emissions per customer-usage by 50%," said Mari-Noëlle Jégo-Laveissière, senior EVP of Orange's innovation, marketing and technologies division, in a statement. Among the areas covered by the agreement is research into new components and signal processing algorithms that will improve the performance of mobile network power amplifiers. Orange and Huawei will also look to network functions virtualization (NFV) to optimize network performance. In addition, the companies plan to make greater use of liquid cooling – which is more efficient than air cooling – and conduct tests of solar and wind-based renewable energy technology. "This innovative approach in research and development of ecosystems will assist society in energy and environmental transition," said Jégo-Laveissière.

5G: Verizon targets 2017 for first commercial service

Lowell McAdam, Verizon's chief executive officer, has confirmed that the carrier aims to begin commercial test services of its ultra-high speed 5G wireless services in 2017. It is understood the pilot network will be installed in Verizon's Basking Ridge, New Jersey headquarters in January 2016 and will involve 'a limited number of users'. Verizon – the

largest mobile provider in the US by subscribers – expects to realise peak data throughput of up to 1Gbps, with McAdam quoted as saying: 'I showed my board the service in November', adding that 'you don't ever go to a board with something that's not real'. The CEO went on to say that the company's 5G deployment will see trials being run in San Francisco, New York and Boston next year, although for 'most' Verizon users, it will be 2017 before they can experience 5G – with 'official commercial mass rollout' expected to take place during the course of that year. 5G smartphones, however, are not likely to become widely available until 2018 at the earliest. 'What 5G is, is much more designed for video, we call it more use-case defined. It will be more point-to-point solutions. And you will be able to do up to one gigabit of service over that technology,' he said, noting that the deployment will reduce the need for Verizon to roll out fibre broadband in a number of locations.

The Transformative Growth of the Enterprise Cloud

Originally embraced as a more efficient means of managing organizations' workloads, the cloud increasingly is transforming business models, according to a recent Verizon report (link is external). Companies are leveraging the cloud to create new customer experiences and to adapt processes that could potentially optimize operations and spur growth. Verizon's "State of the Market Enterprise Cloud Report 2016" (link is external) underscores key trends underway in enterprise cloud adoption and deployment that hold promise for businesses and consumers alike, including: 84 percent say their use of the cloud increased over

2015. 83 percent say their company views IT advances as "an opportunity to differentiate/disrupt and gain market share." Top-ranking reasons for moving mission-critical workloads to the cloud include: 88 percent cited enhanced responsiveness

to business needs; 65 percent said it would improve operations; and 41 percent said it would help save money. 69 percent of organizations surveyed say they have used the cloud to change business processes. 77 percent say the cloud gives their business a competitive advantage, up from 74 percent in 2014. More than



largest mobile provider in the US by subscribers – expects to realise peak data throughput of up to 1Gbps, with McAdam quoted as saying: 'I showed my board the service in November', adding that 'you don't ever go to a board with something that's not real'. The CEO went on to say that the company's 5G deployment will see

one-third of organizations said they have already used the cloud to change their business model, such as adapting usage-based pricing or creating new consumer experiences. An additional 19 percent say they are working to leverage the cloud in these types of transformative ways, and 25 percent say they see future potential for this in their organizations. This recent AT&T blog also highlights how the cloud is helping enhance the consumer experience, tailoring offerings based on individual preferences. For example, cloud-based software can track customer engagement and catalog a customer's purchase history so that companies can offer highly targeted promotions aligned with individual consumer preferences. By catering to customers in this tailored way, businesses expect greater customer engagement that ultimately yields higher sales. "Last year, the news was that cloud was being used for mission-critical workloads, now enterprises are using it to transform how they achieve that mission," said (link is external) Ryan Shuttleworth, cloud chief technology officer for Verizon Enterprise Solutions.

Study Forecasts That \$48 Billion Will Be Spent to Upgrade LTE in Preparation for 5G

The demand for high quality mobile data services has increased dramatically with the advent of robust smartphones and tablets being used on 4G LTE networks. As mobile consumers' demand continues to grow, the question some in the industry are asking is, "What is next after 4G LTE?" The answer is 5G. But what exactly is 5G, how much will it cost to build, and when will U.S. mobile operators deliver it? The first 5G networks are likely to include some or all of the following: a virtualized mobile core over which a preponderance of traffic flows, some type of "evolved" IoT (Internet of Things) use case, and LTE-Advanced deployed along with new spectrum. In addition to analyzing the specific requirements and use cases of 5G, iGR has created a forecast for the cost of building and deploying 5G networks in the U.S. First of all, 5G networks are likely to be layered on top of existing and upgraded LTE networks, and iGR has forecasted that \$48 billion will be

spent upgrading these LTE networks between 2015 and 2019. Through its model, iGR has also forecast that a total of \$56 billion will be spent in the U.S. from 2017 to 2025 on the build of 5G. (Neither figure includes any operational costs.) Therefore, total costs for the build of the upgraded LTE network and the 5G network is \$104 billion between 2015 and 2025. "While 5G is likely to include some new air interfaces, the initial deployments will be based on future versions of the current 4G LTE networks," said Iain Gillott, president and founder of iGR. "Based on the research conducted for the new 5G cost study and prior research on LTE infrastructure costs, we forecast that a total of \$104 billion will be spent in total to upgrade LTE and build 5G between 2015 and 2025."

Evolution of mobile networks for the Internet of Things

The emergence of IoT will bring radical innovations and entirely new ways of delivering services across businesses and industries. Over the past few years, an exponential growth in smartphones led by ubiquitous mobile broadband coverage transformed telecom networks to being data centric networks. The evolution to the IoT will see mobility, broadband, and cloud as disruptive forces driving innovation in service delivery, network efficiency, and process agility to support the commercial models emerging from the Internet of things (IoT). Unlike mobile broadband where the prime use case was smartphones, the evolution to IoT will necessitate a wide variety of use cases with varying degree of complexity to support varying demands of industries. To address these challenges, networks need to bring efficiency, agility, and automation to a level where they can offer viable commercial models addressing a wide spectrum of use cases encompassing many industries with their unique requirements and cost points. IoT is a rapid-growing segment and forecasts point towards 30 Billion connected devices by 2020. Gartner predicts the IoT will provide a value add of USD 1.9 Trillion across all industries; making it one of the largest industries in 2020. An ecosystem of this magnitude means plenty of opportunities to explore new business models and revenue

opportunities; however it is imperative for service providers to define their role today in this growing eco-system. A fundamental question service providers need to answer is what role they would like to play in this new connected world. Their strategic choice will depend on their relevant strength and position in the market place as well as operating framework. At an abstract level, carriers can focus on one, or a combination of the following three key strategies:

Network developers: Primary focus will be on core connectivity such as enterprise access, mobile broadband and device connectivity. Efficiency and ability to maintain service levels and use case driven commercial models will be key drivers and differentiators

Service Enablers: Will focus on creating platforms and systems over which services can be created and to which adds value. Examples include operators offering multi-paly packages, IPTV or M2M platforms.

Service Creators: Will control the entire value chain, controlling the connectivity, service delivery platforms as well as the applications, services and content.

A strategic vision needs to be augmented with a robust execution strategy where besides other factors; network will be at the center of this vision.

Current state of networks represent a fragmented approach where services are delivered over distributed platforms – each adding to the overall complexity of management, innovation, time to market, scalability and capability enhancement. Despite these inefficiencies, the telecom industry found a viable business case as there were few use cases to address. The proliferation of OTT applications along with a rapid evolution of consumer demands is driving services providers in an inherent disadvantage when competing with the innovative business models offered by these new players. In addition, the evolution of networks will see a massive growth in the volume of traffic over a finite spectrum over multiple layers of technology, an unprecedented growth of devices spanning across multiple industries requiring a unique set of capabilities, and innovation and speed in building new services models at a much lower of cost points from today's

networks. The wide variety of IoT use cases also means that the degree at which these capabilities are needed will vary from industry-to-industry.

When we look at the needs of many of these IoT use cases, we see that cellular has a unique combination of characteristics which makes it an attractive choice for IoT. In contrast with other LPWAN technologies – mostly working in unlicensed spectrum – cellular in licensed spectrum meets a wide range of connectivity needs from both technology and business perspective. Service providers can leverage the unmatched global reach of the cellular access infrastructure deployed over many years. Cellular also benefits from its mature ecosystem of chipset vendors, device makers, network suppliers, and service providers developed over a number of years. Moreover, the reliability, quality of service, security, and scalability aspects of cellular technologies makes it suitable to address the IoT market. That said, there are still gaps that need to be addressed to accelerate the uptake of the IoT. There are more than 230 million existing cellular machine-to-machine (M2M) subscriptions for IoT devices, but certain challenges have limited the potential for large-scale adoption across a variety of use cases, namely: the cost of IoT devices, battery life, and cellular coverage in both remote areas and deep inside buildings. Since cellular technology was mainly focused around human-to-machine consumption, the key innovations were around high throughput, spectral efficiency, and reduced latency. IoT use cases will drive new performance needs from cost, coverage, capacity, latency, battery life, and security .etc Some of the gaps in GSM and LTE are now being addressed in 3GPP- REL 13 with extended coverage GSM (EC-GSM) and LTE-M being approved as study items in 3GPP Rel-13. EC-GSM will support use cases where deep indoor coverage, long battery life, and device cost are key drivers. This is especially interesting for applications where massive amounts of low cost sensors are needed. Typical examples of industries with such requirements include agriculture sector, smart meters, smart buildings, and other similar requirements where a small of data needs to be sent to the network. LTE-M could further support use cases where relatively higher data throughputs are desired with relatively low latency. Device cost

will be a key driver for the new ecosystem, where market will also open up for new chipset players which will become more relevant in IoT space. The devices need to be simplified in HW to a degree that it can achieve much lower cost levels to make it feasible for industrial requirements. LTE- Cat-0 chipset as an example will bring substantial cost reduction when compared with a Cat-4. There are also discussions on Cat-M and Lite in standards which could further drive down costs. This is not to discount the requirement of 5G, as there will be an even broader spectrum of use cases – especially with critical MTC where the need of 5G will be inevitable either due of requirement of ultra-low latency or high reliability, and in some cases, better spectral efficiency from what can be achieved from today.

5G is expected to start rolling-out in operator networks by 2020. Some of the key use cases of 5G will be related to IoT and machine-type communication, and currently a wide-array of technologies are being positioned as contributors to the eventual standardization. 5G networks will be multi-purpose and will support different virtual networks with different characteristics through network slicing – a dedicated slice for remote water metering for instance. Using a common infrastructure will stimulate many new business models by removing the need for separate infrastructure investment for different verticals. IoT applications will be a big part of 5G but the future starts today. Operators need to establish their role in IoT using today's networks to secure that they can leverage the full potential of IoT when 5G arrives. The first steps in this direction will be to evolve current technologies to support various terminal devices with very different characteristics.

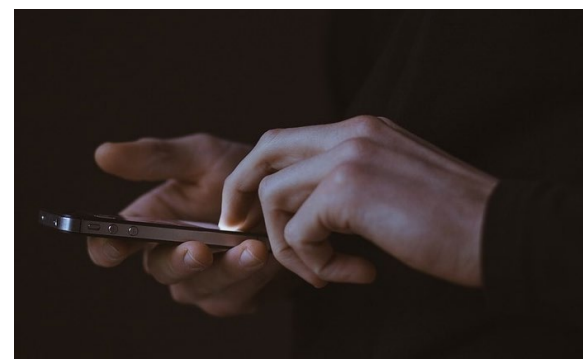
Service Provider SDN and NFV investments to surpass \$20 Billion by 2020

4G-Reports's latest report indicates that service providers are expected to invest over \$20 Billion in (SDN Software Defined Networking) and NFV (Network Functions Virtualization) solutions by 2020. While the advantages of SDN and network virtualization are well known in the enterprise IT and data center world,

both technologies also bring a host of benefits to the telecommunications service provider community. Not only can these technologies help address the explosive capacity demand of mobile traffic, but they can also reduce the CapEx and OpEx burden faced by service providers to handle this demand by diminishing reliance on expensive proprietary hardware platforms. The recognition of these benefits has led to the emergence of the NFV concept that seeks to virtualize and effectively consolidate many service provider network elements onto multi-tenant industry-standard servers, switches and storage. The "SDN, NFV & Network Virtualization Ecosystem: 2015 – 2030 – Opportunities, Challenges, Strategies & Forecasts" report presents an in-depth assessment of the SDN, NFV and network virtualization ecosystem including enabling technologies, key trends, market drivers, challenges, use cases, deployment case studies, regulatory landscape, standardization, opportunities, future roadmap, value chain, ecosystem player profiles and strategies. The report also presents market size forecasts from 2015 till 2030. The forecasts are segmented for 10 submarkets, 2 user base categories, 9 use cases, 6 regions and 34 countries.

Mobile operators struggle against online messaging

Online messaging apps are eating away into revenues from short messaging services (SMS), causing mobile operators to find new ways to compete and stay profitable. In fact, online chat applications are even challenging the voice business of mobile operators. Telecom consultancy firm Ovum reported a 20-30% annual decline in SMS usage. Meanwhile, WhatsApp, Facebook Messenger, Skype, Viber and other applications or over-the-top



(OTT) services are seeing huge boosts in user bases. WhatsApp alone is delivering around 30 billion messages every day, and WeChat in China has doubled its user base and reached 200 million in six months. KakaoTalk is used every day by 90% of South Korea's mobile phone subscriber base. As for SMS, India in particular has seen an 18.35 decline in usage in June 2014, according to the Telecom Regulatory Authority of India (TRAI). This is largely due to the increase in OTT messaging traffic. WhatsApp, and other popular services, have put significant pressure on mobile operators' SMS revenue – with over \$1.5 billion in revenues lost in 2014. With voice services on Viber, WhatsApp, and other OTT applications growing in popularity, mobile operators are seeing growing pressure on their main revenue channel – voice revenue. While OTTs have not taken over the voice market, it is growing steadily. Accenture estimates that voice revenue will drop by 2% annually in 2012-2017. Customers are shifting towards OTT apps as VoIP calls increase in quality. Analysys Mason has reported that 20% smartphone users now actively use VoIP services are beginning to use VoIP apps for primary voice services. The numbers are nascent for now, but reflect the potential of OTTs to take over mobile operators as the primarily voice service provider. The OTT voice market remains relatively small in less-developed nations where network quality and internet penetration is low. Mobile operators are also competing with extremely low voice tariffs. Mobile industry experts believe the growth of OTT services will not create competition, but will open new opportunities for operators to create new revenue channels. Operators need to change how they charge consumers – with OTT consumers currently paying for internet bandwidth – but not on a per-message or call basis. 3D projections, immersive video conferencing, and augmented and mixed reality displays and interfaces. Recognizing that a connected society in the years beyond 2020 will need to accommodate a similar user experience for end-users regardless of whether they are on the move or stationary, the new 5G standards aim at maintaining high quality service at high mobility, enabling the successful deployment of applications on a moving platform, such as in cars or high-speed trains.

Ericsson and Orange Trial Internet of Things (IoT) over GSM and LTE

Ericsson and Orange have announced a trial of optimized, low cost, low complexity devices and enhanced network capabilities for Cellular IoT over GSM and LTE. IoT is a rapidly growing segment and, according to the Ericsson Mobility Report, there will be 28 billion connected devices by 2021. Cellular network and device capability enhancements are being driven through the standardization process at 3GPP to meet emerging requirements of ubiquitous coverage, long battery life and low-cost devices, enabled through software upgrades of existing networks. Improved indoor coverage: The world-first EC-GSM (Extended Coverage) trial will be conducted in France using the 900 MHz band, with the aim to enhance device reachability by up to 20dB or a seven-fold improvement in the range of low-rate applications. This further extends the dominant global coverage of GSM in Europe and Africa to reach challenging locations such as deep indoor basements, where many smart meters are installed, or remote areas in which sensors are deployed for agriculture or infrastructure monitoring use cases. In addition, EC-GSM will reduce device complexity and thus lower costs, enabling large-scale IoT deployments. Another advantage of this technology is enablement by software upgrades of existing cellular networks, providing nationwide IoT coverage without additional hardware investments. Reduced IoT device cost: In parallel, the world's first LTE IoT trial in partnership with Sequans will take place using low-cost, low-complexity devices with one receive antenna (instead of two), and half-duplex FDD. This simplifies the device hardware

architecture and reduces expensive duplex filters, allowing for 60 percent cost reduction in comparison with existing LTE Cat 4. Extended battery life: In partnership with Sequans, Ericsson will also demonstrate energy efficiency over GSM and LTE networks with Power Saving Mode (PSM) technology. The PSM feature is applicable to both GSM and LTE, and supported by Evolved Packet Core (EPC). It enables extended battery life of communication modules such as sensors by up to 10 years thanks to optimized, power-efficient operations. Thomas Noren, Vice President and Head of Radio Product Management, Ericsson says, "IoT is an emerging market and presents great business potential for mobile operators. Ericsson is providing the software-upgrade-only solution to accelerate cellular network for IoT, allowing operators to leverage their infrastructure investments in order to quickly capture new business opportunities now and in the future with 5G." Sequans Communications is the first chipset manufacturer to develop MTC LTE devices able to fit with connected form factors. Among possible solutions, there will be sensors, smart metering, assets tracking, and wearables. Cellular networks optimized for IoT will be operational in 2017.

2016's key industry trends: IoT hype and big data disillusionment

The past year has seen an increasing need for operators to adopt new methods, learn from their customers in the market, and provide an excellent customer experience globally. With demand from operators to provide customer-centric care continuing to



rise, 2016 will see communications service providers (CSPs) face several fresh challenges? Here is how CSPs can seek to remain competitive and profitable in the midst of new technological and commercial developments: After a lot of hype over the past five years, and despite serious investment by many CSPs, the advertised benefits of big data have by and large failed to materialize, leading to disappointment for everyone. This may be partly due to the fact that the data held by CSPs is not that great after all, and partly because the success of 'traditional' big data approaches (by Google et al) assume some level of serendipitous discovery. The CSPs, on the other hand, are looking more for answers to more specific questions, where a different approach may be called for. In 2016, this will lead to many CSPs returning to more grounded approaches to analytics and we will see much more talk about "small data" or "smart data". In practice, this means analyzing the behavior of individual customers using almost-real-time event data and using generalizations to moderate the findings against trends, as opposed to trying to predict (or influence) individual behaviors from generalizations of the entire population. At a time when the IoT (or IoE) hype in general still keeps rising, the relative lack of concrete success stories in the CSP environment will also require a re-adjustment of approach. While industrial players are concentrating on making their respective end-to-end ecosystems viable, especially from the point of view of smooth deployments, CSPs with a few exceptions have been relegated to the role of providing access to a marginal segment of the market. In 2016, global CSP players will continue to form partnerships and joint ventures with the major industrial players, while the smaller CSPs will be looking to adopt a more focused approach in locally relevant areas such as the connected home. The few significant independent service aggregators will either end up forming close partnerships with the big boys or will end up being acquired, possibly by the global software giants, some of whom still lack an offering in this space. While the industrial side of IoT (driven by vertically integrated ecosystems across sectors including transportation and logistics) marches on in terms of transformation, it is the connected home that is receiving the most focus in the consumer IoT ecosystem.

Given that all of the biggest "internet companies" are deep in the game, the connected home sector is receiving lots of focus and is expected to be a hot talking point at MWC 2016. With the recent introduction of Amazon's Echo & Buttons, Google's Nest and Apple's Homekit each taking a slightly different, experimental approach to leading the way and whipping up hype around the connected home, many smaller players will be rushing to the market to follow in the footsteps of these giant players. With all CSPs looking to solidify a position in this crowded area as well, we can expect a wealth of M&A activity in the connected home sector during 2016. In the western world, 2015 has seen a massive increase in interest around the area of payments from traditional financial institutions, Internet players and CSPs alike. Unlike mobile money in emerging markets and previous attempts at "e-cash" in the west, the focus this time round has shifted from a banking/government perspective, and will not look to replace, but rather will seek to amend existing mechanisms. With a number of players pushing their own mechanisms, 2016 will see banks, credit card companies, internet companies, CSPs and a host of other specialized players flock to this space, either alone or in various, sometimes not so obvious, partnership arrangements. Due to the rather small overlap between systems, we may also start to see the emergence of a single, mainstream crypto currency, between now and 2020, as a potential successor to Bitcoin. With lots of activity in this space, the initial result may see major confusion in the minds of consumers that are trying to make sense of all the alternative mechanisms to use. New partnerships and acquisitions should clear the field towards the end of 2016, hopefully allowing each market to converge towards a limited number of feasible models, both technically and commercially.

Ericsson Joins Forces with KDDI in 5G Research and Development

Ericsson has announced a 5G research and development collaboration with KDDI, a telecommunications operator based in Tokyo, Japan. Representatives from KDDI and Ericsson have signed a Memorandum

of Understanding (MoU) with the intention to advance technology evolution towards 5G. Under the agreement, the two companies will develop a joint understanding of 5G use cases, requirements and deployment scenarios, as well as evaluate performance and applicability of potential 5G key technology components. The areas of interest for the companies include radio and core technologies. Yoshiaki Uchida, Managing Executive Officer, Technology Sector, Member of the Board, KDDI, says: "We are committed to providing high-quality network performance and user experience to address the needs and expectation of our customers. Through our joint efforts with Ericsson we will study 5G technologies and take an important step toward bringing 5G capabilities to the market." Chris Houghton, Head of Region North East Asia, Ericsson, says: "This MoU is another important milestone in Ericsson's partnership with KDDI and an opportunity for both companies to strengthen the technology foundation for the evolution toward 5G. The combination of Ericsson and KDDI's technology leadership will generate valuable synergies that strengthen our research and development."

Alcatel-Lucent Technology to Shatter Capacity Limits of Optical Networks

Bell Labs, owned by Alcatel Lucent has shown off an optical networking technology that could potentially help operators address the expansion of internet traffic a real time space division multiplexed optical multiple input multiple output (MIMO SDM) system. This world's first demonstration of the Bell Labs' pioneered MIMO-SDM technique has the potential to increase today's 10 to 20 Terabit-per-second fiber capacities to Petabit-per-second capacity - the equivalent of 1,000 Terabits/s. The successful 6x6 MIMO-SDM real-time experiment using six transmitters and six receivers in combination with real-time digital signal processing was conducted over a 60-km-long coupled-mode fiber in Bell Labs' global headquarters in New Jersey. Using the MIMO-SDM technique, Bell Labs aims to overcome the capacity limitations imposed by the non-linear

'Shannon limit' on current optical fiber. This sets a fundamental threshold for the maximum information transfer rate on a single optical fiber used in today's metro and long-haul transport networks. Commenting on this breakthrough, Marcus Weldon, CTO of Alcatel-Lucent and President of Bell Labs said: "This experiment represents a major breakthrough in the development of future optical transport. We are at the crossroads of a huge change in communications networks, with the advent of 5G Wireless and cloud networking underway. Operators and enterprises alike will see their networks challenged by massive increases in traffic. At Bell Labs we are continuously innovating to shape the future of communications networks to meet those demands."

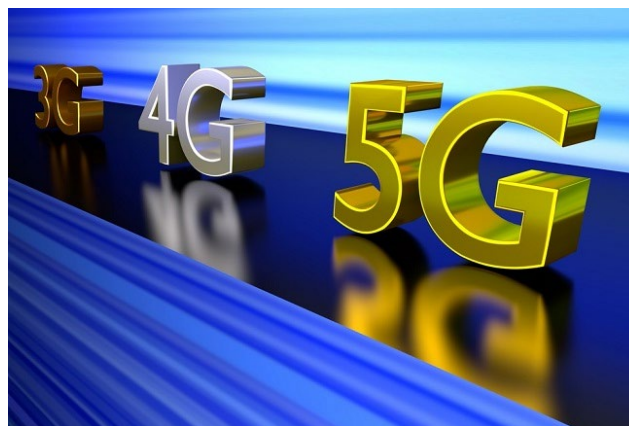
Ericsson and Telstra Test LTE-A Via 5-carrier Aggregation over a Live Network

Ericsson and Australia's Telstra have announced the world's first demonstration of 1 Gbps capability with five carrier LTE A Carrier Aggregation integrated on a live end to end mobile network. Downlink speeds in excess of 950 Mbps were achieved with a UDP speed test application by aggregating 100 MHz of spectrum across Telstra's spectrum holdings. Just as importantly, they were also able to hit download speeds of over 843 Mbps end to end over the Internet to the speedtest.net site. Reaching speeds of 1 Gbps was an original goal of the LTE standard, making this demonstration a key milestone in the evolution of LTE-Advanced. In the test, downlink speeds were achieved by aggregating 100 MHz of spectrum across the 700 MHz, 1800 MHz, 2100 MHz and 2600 MHz (2 x 20 MHz) bands and delivered to a Cobham Aeroflex TM500 mobile device. Mike Wright, Telstra Group Managing Director, Networks, says: "Demand for a superior user experience is ever increasing as customers are 'always-on' and have access to new and advanced technologies. We are thrilled to be able to demonstrate this capability in our network thanks to our ongoing partnership with Ericsson. The demonstration of 1 Gbps end to end capability shows the advanced state of these standards and our ability to rapidly bring them into

commercial service in order to deliver increased capacity in our network to meet growing demand. In addition to Telstra consumer customers, we are preparing our networks for growth in business use, as well as emerging technologies, which rely on our ability to deliver high capacity and low-latency solutions." The aggregation of 100 MHz of spectrum using five carriers across four separate bands, as achieved in this test, lays the groundwork for the aggregation of higher frequency bands on the road to 5G.

Ericsson announces 5G development initiatives with KDDI and NTT DOCOMO

The Swedish equipment manufacturer Ericsson has announced separate 5G research and development projects with Japanese cellcos KDDI and NTT DOCOMO to develop a better understanding of radio and core technologies in deployment scenarios, and to support the latter's requirements for field trials as early



as 2016. In the first agreement, Ericsson and KDDI have signed a Memorandum of Understanding (MoU) with the goal of advancing technology evolution towards 5G, as well as evaluating 'performance and applicability of potential 5G key technology components'. The areas of interest for the companies include radio and core technologies. Both parties note that 5G is expected to drive what they term 'an evolution of the entire future communications ecosystem, from devices to mobile access, IP core and the cloud'. It is understood that Ericsson's 5G test network initiatives have been

structured to assess interactions between mobile devices and radio access networks (RANs) in both indoor and outdoor scenarios, as well as the new capabilities and characteristics of core networks based on Network Functions Virtualization (NFV) and software-defined networking (SDN) technologies. Further, as an adjunct to the ramping up of development of 5G in the Asia-Pacific region, South Korea's Samsung Electronics has also announced the signing of an MoU with KDDI for 'joint development of common views on next generation 5G technologies', continuing the companies' more than decade long history of collaboration. In another Japan-related 5G announcement, Ericsson says that it is supporting NTT DOCOMO's requirements for field trials that are likely to begin as early as 2016 with the introduction of 5G radio prototypes, including multi-user MIMO (MU-MIMO) technology and so-called 'beamforming' (i.e. a signal processing technique used to control the directionality of the reception or transmission of a signal on a transducer array), that can be deployed in 'live outdoor and indoor network environments and across multiple sites'. Ericsson says that radio access prototypes integrate with cloud-based network slicing to 'enable agility and differentiated services for consumers, enterprise and a wide array of industrial Internet of Things (IoT) applications'. Commenting on the MoU, Seizo Onoe, EVP and CTO, NTT DOCOMO, said: 'We are pleased to take the next step toward testing in a realistic network environment. Tokyo Olympics and Paralympics will be a great opportunity to propose many different use cases of 5G, which will be launched in 2020. We expect that this would lead to even further opportunities. Ericsson's 5G radio prototypes will help us to gain insights into the potential for 5G in our network environment and market, to open up new possibility to enable new services for our customers and partners.'



Incentivize the telecom industry towards achieving more national economical growth.



Marc Biosca
Partner, A.T. Kearney
**Lead Partner CMT Practice
Middle East**

Overtaxing communications can harm the telecommunications industry, a sector essential to economic development and countries' competitiveness. A balance is needed between short-term requirements to secure governments' funding and long-term strategies to drive competitiveness and economic growth.

According with several studies performed along the years, telecommunications industry drives economic progress and is a major contributor to the world economy. The 2013 GSMA-A.T. Kearney Mobile Economy study predicts revenues of mobile operators will reach US\$1.085 trillion by end of 2015, equivalent to 1.5% of world's GDP. When considering the whole mobile ecosystem, these figures increase to US\$1.858 trillion, or 2.4% of global GDP. 10 million people are estimated to be in the mobile ecosystem, with ~250.000 new jobs to be created in the next two years. The total value generated by the mobile ecosystem in MENA amounted to \$115 billion in 2014, equivalent to 4% GDP and it created and supported around 1.3 million jobs¹

Moreover, well-developed physical and digital infrastructures have a direct impact on productivity by connecting economic agents, reducing transaction costs, easing the flow of information and enabling integration of markets. Additionally, there is a growing empirical literature on how ICTs (Smart cities, E-government, E-health, etc) facilitate innovation and impact firms and countries productivity by giving decision makers more complete information.

The telecommunications industry is also an important contributor to government funding, through a wide range of tools like licenses and other regulatory fees, corporate tax and consumption taxes (including to telecommunication services as well as hardware devices), among others. In 2014, the mobile ecosystem made a total \$13 billion contribution to MENA public finances through its tax contribution (spectrum fees excluded)¹. As regional economies face increasing challenges due to lower oil revenues, some governments



Isabel Neiva
Principal, A.T. Kearney
CMT Middle East Practice

may turn to the telecommunications sector to ease their funding requirements. Sector-specific or usage-driven taxes are a swift way to increase government income. However, questions remain about the impact of increased tax burden in the telecommunications industry and how this can negatively affect economic development and competitiveness.

Some have defended a clear relation between the taxation of mobile telecommunications services and the rate of growth of the mobile industry in a given country, arguing that excessive taxation is counterproductive. In fact, a report by the GSMA in Latin America² showed that in several countries (e.g. Mexico and Panama) where taxation had increased, mobile usage and penetration had either stagnated or contracted, while in countries where taxes had been eliminated (e.g. Ecuador and Uruguay) both these metrics had increased – for example, in Ecuador monthly Minutes of Use doubled between 2008 and 2011, after a usage tax was eliminated in 2008.

In 2013 the Jordanian government increased telecom sector taxes to address its increasing funding needs by doubling tax rates on both mobile phones (from 8% to 16%), and mobile subscriptions (from 12% to 24%), on top of the direct taxation in place (ie income tax and a revenue sharing levy). Such measure seems to have had a direct impact on the telecom sector revenues, which fell by 7.3% year-on-year in 2013 (Figure 1)



Figure 1: Change (%) in total mobile revenues (year-on-year), Jordan
Source: GSMA Intelligence

To better understand the impact of government taxes and fees on the telecommunications industry, A.T. Kearney has conducted a study on the average price per minute (APM) and the volume of taxes and fees incurred by mobile operators across 30 European countries³. Across these economies, total tax burden usually accounted for around ¼ of the APM (from as low as 12% in Switzerland to as high as 40% in Hungary) and for most European countries, telecom specific-taxes had a negligible effect on average price per minute

The study has found evidence that telecommunications development and tax burden are correlated (Figure 2) and ultimately, economic development. In fact, 3G penetration supports GDP growth across Western and Eastern Europe but when taxes increase, 3G penetration growth rate decrease, along with GDP.

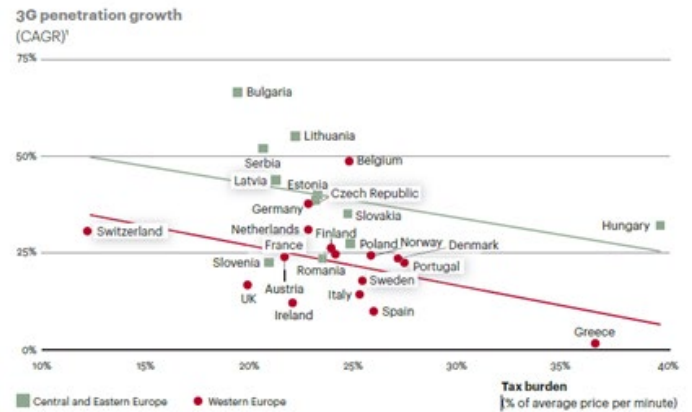
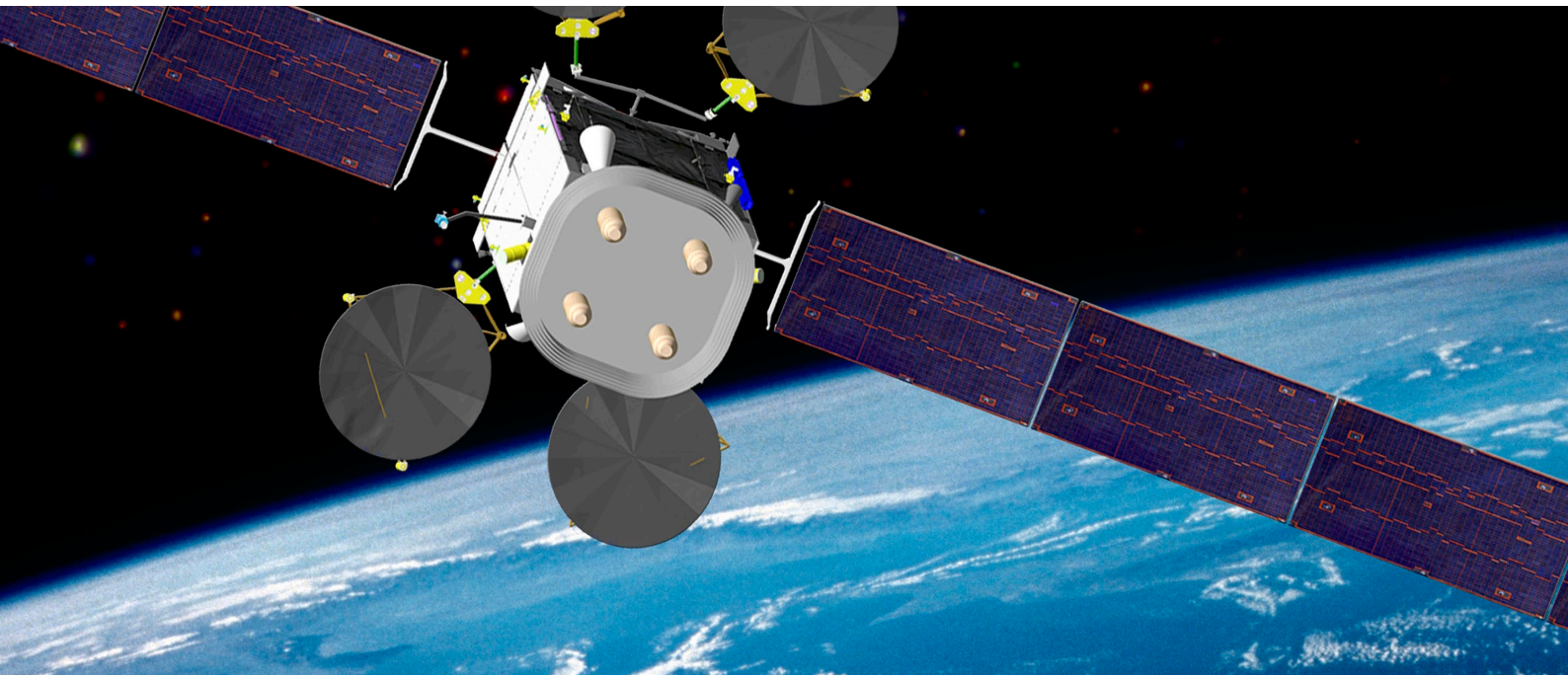


Figure 2: 3G penetration vs. GDP Growth
Source: Eurostat 2013, Wireless Intelligence 2013, A.T. Kearney analysis

More generally, falling to secure telecom investment (in 4G, FTTX, etc) will affect ICT development by limiting the existence of the required telecommunications infrastructure and by potentially leading to higher costs of using ICT. Without a sustainable development of ICTs, MENA countries will face increasing difficulties to leapfrog their economic development and competitiveness and grasp the new digital opportunities.

Addressing government funding requirements with sector-specific taxes can negatively impact the telecommunications industry. Countries that increase taxes and regulatory fees on the telecommunications industry decrease the use of these services and restrict telecom investment and ICT industry development, impacting growth in GDP, productivity and jobs-creation in the long run. Revenue growth in the industry is already challenging enough, with telecom operators still to find ways to successfully monetize their investments in FTTX and 4G. Increasing telecom-specific taxes hinders operators' growth opportunities as well as ICT and economic development in the region.

¹ The mobile Economy, Arab States 2015, GSMA
² Mobile Telephony and Taxation in Latin America 2012, GSMA
³ Taxing Telecom, The Case for Reform; A.T. Kearney (2013)



▼ SATELLITE NEWS

SATELLITE UPDATES

Televisa Signs C-band Deal with SES

Mexican multimedia company Televisa has contracted capacity on SES's AMC 9 satellite to broadcast content to millions of households across Mexico. The multiyear agreement secures three C-band transponders for the premium channels Canal 2, Canal 5 and Canal 9. Televisa is also renewing a separate transponder to support a video contribution and bidirectional data networks in Mexico. Latin America has grown in importance for SES in recent years. Over the last three years SES's technical reach in Latin America has grown to 24 million households, while the number of TV channels broadcast over the operator's satellites to this region has doubled. The company is launching a new satellite, SES 10, aboard a SpaceX Falcon 9 in the second half of next year. The spacecraft will have 55 transponders on board, of which 27 are incremental transponders at the 67 degrees west orbital slot. AMC 9 is located at 83 degrees west.

Arianespace Reaches Record Launch Cadence with Latest Galileo Mission

Arianespace completed its 12th launch of 2015 on Dec. 17, delivering Galileo

satellites 11 and 12 into Medium Earth Orbit (MEO) at approximately 23,500km using a Soyuz rocket from French Guiana. The mission is the launch company's last for the year, having conducted six Ariane 5 launches, three Vega launches and now three Soyuz, representing the most launches the company has conducted in a year. Arianespace also logged its highest order intake in one year of nearly 2.4 billion euros, and launched more than 53 metric tons into Geostationary Transfer Orbit (GTO), the largest total payload mass injected into that orbit in a year. "With today's launch, Europe has doubled the number of its Galileo satellites in orbit in just nine months," said Jan Woerner, director general of the European Space Agency (ESA). "Along with the ground stations put in place around the globe, this brings Galileo's completion within reach. Initial Galileo services are scheduled to begin within next year, which proves the importance of this wise investment." The European Commission is funding and executing Galileo's Full Operational Capability (FOC) phase, with ESA designated as the system's development and sourcing agent. Prime contractor OHB System in Bremen, Germany produced the satellites, and U.K.-based Surrey Satellite Technology Limited (SSTL) provided the onboard payloads.

Peru's Fitel Awards Gilat \$108 Million for Remote Connectivity Project

Gilat Satellite Networks has received an award by Peru's telecommunications investment fund Fondo de Inversion en Telecomunicaciones (Fitel) to supply regional telecommunications infrastructure for \$108 million. The new project, to take place in the region of Cusco in Southern Peru, is in addition to the previously projects Fitel awarded to Gilat in the regions of Huancavelica, Ayacucho and Apurimac, which are currently underway. Fitel's regional initiative represents the complementary phase of the Peruvian National Fiber Backbone project, aimed to connect rural villages to broadband services. The fiber-optic transport networks will be built and immediately transferred to the Ministry of Telecommunications, while the access networks based on wireless technologies will be built and operated for 10 years before transfer to the Ministry. In the frame of the access network operation obligations, Gilat will connect about 615 public institutions and 371 remote villages to broadband services. "Today we start covering new villages with high speed broadband. I'm pleased because strategic alliances between public and private sectors are strengthening with those projects," said Jose Gallardo Ku, Minister of Transport and Communications in Peru. "On top of the bid, Gilat expects additional revenues to be generated by enabling cellular carriers to acquire network capacity to address the growing needs for voice, data, and Internet in these regions," added Dov Baharav, chairman and interim CEO of Gilat.

Morelos 3 Satellite Operations Handed Over to Mexican Government

Boeing has transferred on-orbit control of the Morelos 3 satellite, launched Oct. 2 aboard an Atlas 5 rocket, to the Mexican government. Based on the Boeing 702 High Power (HP) platform, the satellite is designed to serve Mexico's national security, civil and humanitarian programs. Boeing is responsible for the design and delivery of the integrated Mexsat system. The ground segment is comprised of two ground network and satellite control stations in Mexico, associated

network operations and prototype user terminals. The space segment was originally to be comprised of three spacecraft, but the second was lost due to an International Launch Services (ILS) Proton anomaly in May this year, reducing the constellation to two. Boeing and the Mexican government will conduct field testing in the coming months and have already reported initial success with the addition of Morelos 3. The system is expected to be fully operational by mid-2016 and managed by Telecomunicaciones de Mexico on behalf of the Ministry of Communications and Transportation.

Singapore's First Commercial Satellite Launched on India's PSLV

TeLEOS 1, the first Singapore-produced commercial satellite, launched Dec. 16 aboard a Polar Satellite Launch Vehicle (PSLV) from the Indian Space Research Organization (ISRO) into a 550 km Near Equatorial Orbit (NEqO). Produced by Singapore Technologies Electronics Limited (ST Electronics), the electronics arm of Singapore Technologies Engineering (ST Engineering), the 400 kg satellite launched along with five additional small satellite secondary payloads. TeLEOS 1 has a mean revisit



time of 12 to 16 hours and its coverage of the equatorial belt includes many major shipping routes as well as disaster prone and forest fire regions. ST Electronics expects the satellite will contribute to high-response applications in maritime security and safety, humanitarian aid, disaster relief and environmental activity verification with its optical payload. "The successful launch of the TeLEOS 1 satellite represents a major step forward for the Singapore space industry," said Lee Fook Sun, deputy CEO and president of the defense business at ST Engineering and president of ST Electronics. "It marks the completion of a very intensive and challenging phase in which we have not only designed

and built this highly advanced satellite but successfully developed and built up a comprehensive set of indigenous facilities and infrastructure and raised a team of highly dedicated engineers who will now have every confidence to go forward and build even more advanced satellites."

Telstar 12 Vantage Satellite Begins Commercial Operations

Telesat's recently launched Telstar 12 Vantage satellite has initiated full commercial operations at its 15 degrees west orbital location. The satellite entered orbit three weeks ago via a Mitsubishi Heavy Industries (MHI) H2A rocket from the Tanegashima Space Center in Japan, and provides coverage from the Americas to Europe and the Middle East. Airbus Defence and Space built the Telstar 12 Vantage satellite, which combines broad regional beams and high throughput spot beams to support broadcast and enterprise networks on the ground, in the air and at sea. The satellite uses Ku band for all customer services and is backwards compatible with existing Ku-band terminal equipment.

Japan Confident New Space Policy is Restoring Industry

Japan is enthusiastic that changes being implemented through its most recent "Basic Plan on Space Policy" are showing the first fruits of revitalizing and stabilizing the country's space industry. Speaking Dec. 10 at a Maureen and Mike Mansfield Foundation event in Washington, D.C., Yoshinori Komiya, director general of Japan's Office of National Space Policy, said that in the two years since the plan was introduced, it is already having a modernizing impact on the nation. Komiya said one of the biggest changes reflected in the new plan was the need for a clear long-term public investment plan. This in the past grew to be such a problem that it stunted the growth of the island nation's domestic space sector. "The lack of foreseeability has weakened the Japanese industry," he said, adding that the "the Japanese space industry has decreased for this decade." Komiya described two primary parts of Japan's "Space Basic Plan," with the

first being maintenance, and the other being implementation. This includes amending the plan once a year, which he said happened just recently ahead of his U.S. trip. Japan's Office of National Space Policy has also achieved greater long term planning into the schedule for launching satellites, despite some political resistance, giving industry more motivation to invest. "I received various comments from our Japanese space industry that they can easily foresee and they can invest the technology and the human resources on the space mission. So I believe the outer space basic plan already starts to make sense to revive the Japanese space industry," he said. The U.S. plays an influential part in Japanese space policy. Chirag Parikh, director of space policy at the U.S. National Security Council said Japan has been one of the most collaborative nations with the U.S. in space, with delegations from both countries meeting nearly every month. Of particular importance, he said, is the ability to collaborate in commercial, civil and, more recently, in defense space programs. "Because of the change in the basic space law, it allowed for [the Japan Aerospace Exploration Agency] JAXA to be able to work with the Ministry of Defense, and with the Department of Defense to look at Space Situational Awareness (SSA) data and see how it will be able to support national security purposes, [and] civil space traffic management purposes," said Parikh. SSA, along with maritime situational awareness, are two areas where Parikh said otherwise disparate space programs can work together, and are top areas where Japan and the U.S. can support each other.

ViaSat Embarks on Global Triple Satellite Network

ViaSat is ramping up its coverage with a plan for global High Throughput Satellite (HTS) connectivity with a fleet of three new satellites. Mark Dankberg, CEO of ViaSat, described the triple satellite system during the company's most recent earnings call. In an interview with Via Satellite, he laid out more details for the upcoming system. ViaSat is eager to get started on the new satellites, collectively known as ViaSat 3, in the very near future. The vision behind the new spacecraft is to build on the knowledge acquired

through ViaSat 1 and the upcoming ViaSat 2 for even higher throughput on a worldwide level. "We feel like we have made enough progress both in terms of payloads and the spacecraft integration ... and then apply a lot of the ground segment technology that we have been developing toward the ViaSat 2 space system to achieve that global effect with dramatically improved bandwidth economics as well," Dankberg said. "We are really confident that we have a system



that we are going to be able to get under contract and get started soon." Dankberg expects the future satellites to provide a massive boost in throughput compared to what the company is already offering today. ViaSat 1, launched in late 2011, supports 140 Gbps of capacity, and ViaSat 2, once launched, will offer between 250 and 300 Gbps as well as seven times the coverage. Dankberg said this upward trend would continue. "What that means is we are probably in the thousand gigabit — meaning terabit — range, taking into account what we will learn from ViaSat 2 on ViaSat 3," he explained. "It's a little bit early to make predictions, but we think a thousand gigabits is a reasonable prediction. There is some chance it will go down but I think there is more of a chance it will go up." The first market ViaSat 3 will address is the Americas, building on the presence of ViaSat 1 and 2 while plunging significantly further into areas like Latin America. The second ViaSat 3 satellite is to focus on Europe, the Middle East and Africa (EMEA), and the third on the Asia Pacific. ViaSat intends to begin launching these satellites by the end of the decade.

Inmarsat, EM Solutions Partner on Combined Milsatcom-Global Xpress Terminals

Inmarsat and EM Solutions of Australia have teamed up to develop a maritime satcom terminal capable of linking with both Milsatcom and Global Xpress (GX) systems. The new terminal is scheduled to receive full Inmarsat accreditation during the second quarter of 2016, and will be submitted for Wideband Global Satcom (WGS) certification. Inmarsat and EM Solutions are creating the terminals for an Australian government customer, which will support features such as tracking via monopulse technology and easy switching between GX and Milsatcom systems. The new terminals will use EM Solution's Diamond Series Ka Multiband Block UpConverters (BUCs), which use Gallium

Nitride (GaN) technology and cover both commercial and military Ka frequency bands in a single package. Based on its land mobile terminal for the Ka-band, EM Solutions is also contracted to deliver a simultaneous X-band/Ka-band maritime terminal for another customer, which provided the baseline reference for the new program in conjunction with Inmarsat. The Inmarsat-EM Solutions family of maritime terminals is known as the Cobra series and will be further developed for other capabilities in the near future.

Inmarsat and Turksat Enter Collaborative Partnership

Inmarsat and Turkish state-owned satellite operator Turksat have signed a Memorandum of Understanding (MoU) to explore opportunities through the formation of a strategic partnership, initially focused on the defense and aviation sectors. Under the MoU, Inmarsat would be Turksat's preferred mobile satellite communications provider. Inmarsat expects Turksat's strong links across the Caucasus and Central Asia will

enable the operator to increase its penetration in this region of the world. "We hope that with this MOU, Turksat and Inmarsat's partnership program will develop a long-term fruitful cooperation. The main objective of this partnership is to broaden product and service portfolio of both companies," said Ensar GÜL, CEO, Turksat.

Ooredoo, Es'hailSat Team up for New VSAT Services

Qatari companies Ooredoo and Es'hailSat have signed a large development and collaboration agreement to work together on a portfolio of VSAT and other satellite services for customers in the country. The two telecommunications companies will collaborate on designs and specifications for developing VSAT projects for leading domestic enterprises. "Satellite-supported communications are opening new frontiers for businesses in Qatar and across the region. By combining Ooredoo's industry expertise and Es'hailSat's growing fleet of satellites, we can position Qatar as a true leader in this growing field," said Waleed Al-Sayed, chief executive officer at Ooredoo Qatar.

Arqiva Books Transponder from Eutelsat for HD Content

U.K.-based Arqiva has entered a multi-year commitment with Eutelsat Communications for a 15th transponder at the 28 degrees east video neighborhood to serve the country's Direct-to-Home (DTH) broadcasting market. The additional transponder will support the significant



growth in HD channels operating on the Sky and Freesat platforms in the

U.K. So far three channels, including Record TV HD and Daystar Television, have signed up for a new all-HD platform.

DOD's STPSat 5 Satellite from SNC Passes Critical Design Review

Sierra Nevada Corporation (SNC) has successfully completed the Critical Design Review (CDR) of its STPSat 5 satellite for the U.S. Department of Defense's (DOD) Space Test Program (STP), confirming that the satellite will meet mission requirements and is sufficiently mature to begin fabrication. Administered by NASA's Ames Research Center for the DOD STP office, STPSat 5 carries payloads provided by the Space and Naval Warfare Systems Command, the U.S. Air Force Academy, the Naval Research Laboratory and Office of Naval Research, and the Air Force Research Laboratory. SNC is the prime contractor on STPSat 5, a science and technology demonstration satellite carrying five space experiments for the DOD. STPSat 5 is the first satellite to use SNC's SN-50 microsatellite bus, which features a modular design and a green propulsion system. SNC has already secured more than 75 percent of the hardware needed to manufacture the satellite and has recently begun integration of several key engineering models, including the spacecraft avionics. "Completion of CDR for STPSat 5 supports the Space Test Program's charter to rapidly mature spaceflight opportunities for space experiments that provide high value to the Department of Defense," said Colonel Jason Cothorn, Air Force Space and Missile Systems Center, Advanced Systems and Development Directorate. "We look forward to moving into integration and test of this spacecraft in preparation for a 2017 launch."

South Africa Signs on for Aireon ADS-B

Aireon has signed a data services agreement with Air Traffic and Navigation Services (ATNS), South Africa's Air Navigation Service Provider (ANSP). Through the agreement, ATNS will have 100 percent air traffic surveillance of the Johannesburg Flight Information Region (FIR) and the Cape Town FIR, which cover approximately

10 percent of the world's airspace. This will be done through Aireon's satellite-based Automatic Dependent Surveillance-Broadcast (ADS-B) service, scheduled to be operational in 2018. ATNS has decided to implement space-based ADS-B to enable real-time visibility throughout their airspace. Increased visibility, coupled with real-time air traffic surveillance, improves both the safety and efficiency of air travel and gives air traffic control the ability to optimize airspace with more accurate, predictable data, according to Aireon. "Much of Africa is currently without any air traffic surveillance. Aireon's service will give us visibility into many regions, allowing us to facilitate seamless transitions between air traffic control providers. This will be achieved without any additional ground infrastructure and utilizing currently-mandated on-board avionics," said Thabani Mthiyane, CEO at ATNS. ATNS signs their data services agreement on the heels of the International Telecommunication Union (ITU) adopting a resolution for primary spectrum allocation of the 1090 MHz frequency band for use by satellite-based ADS-B.

5 Points to Keep in Mind Ahead of the 2Ku Commercial Launch

Gogo CEO Michael Small is bullish about what the company's new satellite-based connectivity offering will bring to the In-Flight Connectivity (IFC) market, including loosening bandwidth constraints and aftermarket domination. Hot on the heels of the FAA's certification of the 2Ku technology and ahead of the offering's rapidly approaching commercial launch set for the end of this year, Small spoke at the UBS Global Media and Communications Conference in New York on December 8, about how the company expects the new offering to upset the IFC playing field — and what may stay the same. "We have been so capacity constrained we have been doing everything we can think of, practically, to prevent sales mainly raising price," said Small. To date, five airlines are signed up to deploy 2Ku on aircraft in their fleet: launch customer Delta, Virgin Atlantic, GOL, AeroMexico, United, Japan Transocean, and Air Canada. As aircraft on these fleets transition to 2Ku, capacity will free up in Air-to-Ground network and enable more bandwidth

in all areas of the Gogo network — such as Delta who has committed to transitioning 250 aircraft from ATG to the satellite solution by 2018. “There is zero problems for a long, long time in selling more if we have more bandwidth available,” he adds. “I no longer feel our back is against the wall on capacity.”

Eutelsat Awarded Capacity Deal for New Mexican Pay-TV Venture

Eutelsat Americas has received a multiyear contract from StarTV, the commercial platform of Stargroup, for capacity on Eutelsat 117 West A and Eutelsat 117 West B. Stargroup



purchased the capacity to support the launch of its new Direct-to-Home (DTH) pay-TV service in Mexico. The new platform will start later this month in the Mexican state of Zacatecas and other parts of the country, replacing the TVZac platform that has been available regionally through microwave distribution. StarTV plans to bring new pay-TV packages to the Mexican market featuring national and international channels, and partnering with local distributors. The new platform will begin to operate with 50 channels. Eutelsat 117 West B is scheduled to launch in 2016, after which it will join Eutelsat 117 West A at 116.8 degrees west, providing coverage over Latin America.

Inmarsat and NSSLGlobal Expand Global Xpress VAR Status

Inmarsat has signed an agreement with NSSLGlobal, appointing the company as a Global Xpress (GX) Value Added Reseller (VAR) for enterprise

customers. Already appointed as a GX VAR for the maritime and government markets, NSSLGlobal will now also be offering GX services to its customers in media, mining, oil and gas and multinationals. Inmarsat has three GX satellites in orbit and initiated global service for government customers at the beginning of this month. Global service for other verticals is scheduled for introduction by the end of the year.

Eutelsat powers StarTV DTH launch across Mexico

StarTV is to launch a direct-to-home (DTH) pay-TV service in Mexico empowered by Eutelsat Americas. Stargroup’s new platform will start later this month in the Mexican state of Zacatecas and other parts of the country, replacing the TVZac platform. To support its expansion into DTH, StarTV has signed a multi-year agreement with Eutelsat Americas for capacity on the Eutelsat 117° West A and Eutelsat 117° West B satellites. “Thanks to the telecommunications reform carried out by the Mexican Government and the drive of the IFT to promote competition, there is an opportunity to provide an alternative satellite TV service,” explained Julio Di-Bella, CEO of Stargroup. “Eutelsat has been a key ally and has the coverage and capacity that we need to guarantee the best service to our customers both today and in the future.” “The development of DTH services in the Americas is a strategic objective for Eutelsat. We are delighted to win the trust of StarTV as a new player in Mexico and to leverage our prime video neighbourhood to broaden the pay-TV offer in Mexico and beyond,” added Patricio Northland, CEO of Eutelsat Americas. The new platform will kick off with a 50-channel offering, and will gradually increase its portfolio with both Mexican and international networks.

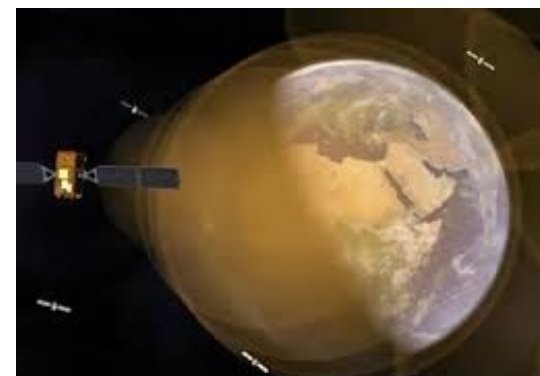
Avanti Communications Awarded UK Universal Broadband Contract

BT has signed a new contract with Avanti Communications to include the operator’s satellite communications as part of BT’s supply of wholesale consumer broadband services. These

services will be sold to consumers in the U.K. through a network of satellite resellers under the auspices of the British Government’s Universal Service Commitment. Under this plan directed by Broadband Delivery U.K. (BDUK), up to 300,000 homes that cannot access greater than 2Mbps from terrestrial networks will be eligible to receive a contribution from government to fund the installation of satellite broadband services, with the consumer then paying monthly service charges. The program is expected to go live during December. “Our rollout of superfast broadband has already reached an additional 3.5 million homes and businesses who would otherwise have missed out. We are making tremendous progress, but it’s a massive engineering project and won’t happen overnight. This scheme offers immediate assistance to those homes and businesses in the most remote areas with the slowest speeds and is all part of our transformation of the U.K.’s digital landscape,” said Ed Vaizey MP, digital economy minister in the U.K.

Third and Fourth Galileo FOC Satellites Enter Service

The Galileo Full Operational Capability (FOC) satellites 3 and 4, assembled by OHB System AG of Germany, are now in service. The satellites are broadcasting navigation signals and have since Dec. 1 been relaying Search and Rescue (SAR) messages as part of the international Cospas-Sarsat System. Known as Adam and Anastasia, Galileo FOCs 3 and 4 launched March 27 and



underwent a lengthy test campaign. The first pair of full satellites was placed in improper orbits in 2014 by a malfunction of their Soyuz launcher’s upper stage, but the elongated orbits have since been modified so that the

navigation payloads can perform as planned. The European Commission is set to make a decision on whether they will be employed as part of the Galileo constellation. Galileo FOCs 3 and 4 were inserted into the correct orbits. The third pair of FOC satellites launched in September 2015 and is undergoing payload testing. OHB expects this pair will enter service early next year. The latest Galileo FOC twins, named Antoniana and Andriana, have arrived in French Guiana, aiming for a Soyuz launch on December 17. The intention is to have those satellites, Galileo FOC 7 and 8, ready to enter the operational constellation by next spring.

Virgin Galactic Switches LauncherOne Carrier from WhiteKnightTwo to Boeing 747

To accommodate an increase in the payload capability of LauncherOne, Virgin Galactic has swapped the carrier aircraft WhiteKnightTwo for a Boeing 747-400. The larger aircraft, previously operated by Virgin Atlantic under the nickname Cosmic Girl, will provide a dedicated launch platform for the LauncherOne orbital vehicle. Virgin Galactic doubled LauncherOne's performance to 200kg for standard Sun-Synchronous Orbit (SSO) missions in September, with the option to purchase further increases in performance to the same orbit and for launches that reach other altitudes or inclinations. The launch system is capable of launching over 400kg of payload to other orbits. Boeing 747s have supported a variety of special missions, including the Space Shuttle Enterprise test flight program, NASA's Shuttle Carrier Aircraft program, the Pratt and Whitney flying testbed, and flight test of the X-45 Phantom Ray. The LauncherOne rocket will be mounted to the carrier aircraft under the left wing, adjacent to the position that has been used by other 747s to ferry a fifth engine. Cosmic Girl has completed initial inspections and tests. Prior to the start of the wing modification, VT San Antonio Aerospace, a Maintenance, Repair and Operations (MRO) organization, will conduct a regularly scheduled maintenance check. "Selecting the 747 airframe provides a dedicated platform that gives us the capacity to substantially increase our

payload to orbit without increasing our prices," said George Whitesides, CEO of Virgin Galactic. LauncherOne offers 200 Kg SSO missions for a price below \$10 million. Virgin Galactic's WhiteKnightTwo carrier aircraft will remain the mothership for the company's SpaceShipTwo suborbital spaceflight vehicle.

New Zealand, Australia Step to Forefront of New Satellite Search and Rescue System

Plans to boost the satellite Search and Rescue (SAR) system in New Zealand and Australia are well underway as a New Zealand-based, \$7.2 million satellite ground station reached completion in November. As

satellites to calculate the location of distress beacons by measuring the Doppler effect on the received beacon signals. To remedy gaps and delays in beacon activation and alert message generation that occur as a result of satellite orbit patterns, the LEOSAR satellites are being phased out over the next four years in favor of the MEOSAR system. This will also help to augment the sometimes-spotty coverage experienced by New Zealand and Australia due to the limited number of satellites in the system that monitor the Southern Pacific. "Because of New Zealand's distance from the equator, the GEO satellites are low on the horizon, which can limit their line-of-sight visibility, particularly in mountainous terrains," Mike Hill, manager of Rescue Coordination Center New Zealand (RCCNZ) and safety services for Maritime New



part of a joint initiative by Maritime New Zealand and the Australian Maritime Safety Authority, the McMurdo Group completed installation of a six-antenna next-generation Medium-Earth Orbit Search and Rescue (MEOSAR) satellite ground station system built near Tuapo in New Zealand. The new system aims to replace the aging Cospas-Sarsat Low-altitude Earth Orbit (LEO) international satellite distress alerting system. The U.S., France, Canada and former USSR established the original system—known as the LEOSAR system in conjunction with the associated ground receiving stations — in 1979, according to the National Oceanic and Atmospheric Association (NOAA). It operates at 406 MHz and makes use of LEOSAR and Geostationary (GEO)

Zealand, told Via Satellite. "That makes LEO satellites important, but these are limited in number and not always over New Zealand, so there can be delays between a beacon activation and its detection by a LEO satellite." As with the current LEOSAR system, when a beacon is activated, the signal will be detected by all MEOSAR satellites in line-of-sight. The more satellites that detect the beacon, the greater the accuracy of positioning information. According to Hill, the chances of a satellite being in line of sight of beacons will greatly increase as the number of MEOSAR satellites orbiting the Earth continues to rise. There are currently at least 18 MEOSAR satellites operating, compared to five LEOSAR satellites, a number that will jump to

over 50 MEOSAR satellites in orbit over the next 10 years. "As with the LEOSAR system, beacon signals will pass through the MEOSAR satellites to the two ground stations, be processed through the Canberra mission control center, and relayed to the Rescue Coordination Center New Zealand, thus triggering SAR operations," Hill said, noting that the RCCNZ responds to an estimated 550 beacon alerts each year. "Tests from the new site have already shown detection times will decrease, with test activations picked up every two or three minutes." The new ground station, along with a similar receiving station in Western Australia that began construction in 2014 and will be commissioned for use in next year, according to the Australian Maritime Safety Authority, are essential to allow data to be collected from the MEOSAR satellites orbiting over the New Zealand SAR region. "Without this site, and the site in Western Australia, there would be a significant gap in global SAR satellite coverage in the Southern Hemisphere," Hill noted. Maritime New Zealand will now enter a period of testing for the site, after which Cospas-Sarsat will consider data from the ground station to ensure it meets appropriate standards and approve it as part of the global network. While Cospas-Sarsat will not introduce the MEOSAR system for global search and rescue until 2017, the New Zealand site is likely to be providing information for use in search and rescue operations in the New Zealand and Australia regions beginning in mid-2016.

Third Global Xpress Satellite Enters Service

Inmarsat's third Global Xpress satellite, Inmarsat 5 F3, successfully completed all in-orbit testing and reached Full Operational Capability (FOC) on December 1, 2015 for government customers. The satellite, launched in August 2015, is at its final orbital position, enabling worldwide coverage with the Ka-band High Throughput Satellite (HTS) system. Inmarsat has said repeatedly that Global Xpress will reach its full revenue potential once the three-satellite constellation reached completion. The operator expects Global Xpress revenues will achieve a minimum of \$500 million within five years of activating global

services. Inmarsat has a fourth Global Xpress satellite ordered from Boeing that the operator could launch in 2016.

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Europe to Study Semi-Reusable Launcher for Small Satellites

The French Office National d'Etudes et Recherches Aerospatiales (ONERA) is leading a study with partners in six European nations on the feasibility of a low cost system for launching small satellites. The three-year research program, known as the Air Launch space Transportation using an Automated aircraft and an Innovative Rocket (ALTAIR) project is under the European Union H2020 research and innovation program, and has the goal of demonstrating the industrial practicality of a launcher for 50 to 150 kg satellites into Low Earth Orbit (LEO) altitudes between 400 and 1,000 kilometers. ALTAIR will use a semi-reusable "air launch" system, whose carrier will be a reusable automated aircraft, releasing an expendable launch vehicle at high altitude. The launch system is expected to use environmentally friendly hybrid propulsion, advanced lightweight composite structures, avionics and an upper stage providing missAt the conclusion of the study, ONERA and partners are to produce a detailed definition of the complete system — carrier, launcher and ground

segment — along with a business plan, a development road map and an industrial organization proposal. The ONERA-developed Eole demonstrator is to perform flight tests in order to validate key technologies, including the launcher avionics and its release sequence. ONERA's partners for the ALTAIR project include the French Space Agency (CNES) and French company Bertin Technologies, along with Italy's Piaggio Aerospace, GTD Sistemas de Informacion of Spain, the Swiss Federal Institute of Technology Zurich, NAMMO Raufoss in Norway, and SpaceTec Partners of Belgium.

Lockheed Martin and EOS to Open Space Debris Tracking Site in Australia

Lockheed Martin and Electro Optic Systems (EOS) have broken ground on a new space object tracking facility in Australia that aims to provide commercial and government customers an enhanced view of orbital space debris fields. The new space object tracking site will give satellite operators a clearer picture of the debris that could damage their networks, and how they can avoid potential collisions. The network developed by EOS and Lockheed Martin, called Optical Space Services (OSS), was formed in August 2014. Electro optical systems like OSS serve as a complement to radar-based systems like the U.S. Air Force's Space Fence, which will sweep the sky tracking 200,000 objects. Sensors, lasers and optic systems will be fused together by software enabling OSS to hone-in on, characterize, and track human-made objects orbiting the depths of space. That data will then be quickly and accurately delivered to customers allowing them to maneuver satellites and prevent collisions. The system can also predict the paths of debris, giving operators advance warning of potential collisions, according to Lockheed Martin. "This new tracking capacity will provide unique data which is exclusively available to EOS and Lockheed Martin, enabling each organization to offer both data and services to meet global market needs. Based on current contracts and active negotiations, EOS expects to commence the delivery of data and services by late 2016," said Ben Greene, EOS chief executive officer.

Satellite Industry Fares Better Than Expected at WRC-15

Outcomes from the International Telecommunications Union's (ITU) 2015 World Radiocommunications Conference (WRC-15) turned out to be more favorable than many feared leading up to the event, which took place in Geneva, Switzerland from November 2 to November 27. The four-week conference, attended by roughly 3,300 participants and 162 of the ITU's 193 member states, made critical decisions regarding the use of spectrum around the world. In the balance hung the fate of C-band, which stretches from 3.4 to 4.2 GHz, as it was being disputed between the satellite industry and the International Mobile Telecommunications (IMT) industry. In a November 27 press conference and accompanying press release, the ITU stated that the lower portion of C-band from 3.4 to 3.6 will be identified for mobile broadband communications, with the rest of the band preserved for satellite. A same-day release jointly issued by the Asia Pacific Satellite Communications Council (APSCC), Cable and Satellite Broadcasting Association of Asia (CASBAA), EMEA Satellite Operators' Association (ESOA), Global VSAT Forum (GVF), Interference Reduction Group (IRG), Society of Satellite Professionals International (SSPI), World Teleport Association (WTA), and others said that the decisions reached affirmed the importance of satellite, which was increasingly concerned that large quantities of spectrum would be ceded to IMT. Based on conclusions from WRC-15, regulators identified 3.4 to 3.6 GHz to IMT for ITU Region 1, which comprises Europe, Africa, the Middle East and Russia; Region 2, which consists of the Americas; and a handful of countries in Region 3 — the Asia Pacific — which will sign a footnote allowing potential IMT use of these 200 MHz. With the exception of Region 2, a "No Change" position was adopted for the majority of C-band ranging from 3.6 to 4.2, with only a few countries in Region 2 identifying the 3600 to 3700 MHz band for IMT. "During the proceedings of the conference there were tough times, but we were able to surmount all those difficulties," Festus Daudu, chairman of WRC-15, said during the press conference. "And so, on a general note,

I believe every sector or every service is leaving here happy with the fact that the resources have been distributed equally, and I have not seen a situation whereby a particular service has been marginalized." Daudu added that WRC-15 also serves as a litmus test for the ITU's ability to respond to emergency situations, chiefly evidenced by the ability to produce a decision on allocating spectrum for global flight tracking. "We have been able to protect both the current investments and the future investment for satellites and for the broadcasting industry," added Francois Rancy, director of the ITU Radiocommunication Bureau. "These two industries were extremely concerned during these four years preparation by the possibility of a decision by this conference which would create uncertainty about their future. If we had started to open new bands in addition to the ones which have already been opened at the 2007 conference, this would have led to a lot of instability for these two industries. So the result is very much balanced and very positive for everybody." Rancy said the conference was on the verge of allocating another 200 MHz of C-band from 3.6 to 3.8 GHz for mobile broadband in many countries using footnotes, but ultimately decided not to pursue this method. "We don't want that because we want to preserve harmonization and also simplicity of the regulations," he explained. Beyond C-band, the IMT industry gained spectrum in L-band from 1427 to 1518 MHz, and in the 700 MHz band from 694 to 790MHz. The 700 MHz band expanded from a regionally harmonized band in the Americas and Asia Pacific to a global one, and is prioritized for critical emergency services in Public Protection and Disaster Relief (PPDR). L-band mobile-satellite service operations occur in the adjacent 1518 to 1559 MHz band. The satellite industry made some gains at WRC-15 as well. In Ku-band, the industry gained a downlink allocation in the 13.4 to 13.65 GHz band in Region 1 and country-specific allocations in the 14.5 to 14.8 GHz in several nations. Regarding Earth Stations in Motion (ESIMs), the conference adopted new regulations in part of the Ka-band satellite spectrum ranging from 19.7 to 20.2 GHz and 29.5 to 30 GHz. The new regulations are to facilitate the global roaming of such terminals, which are used for satellite broadband connectivity to mobile terminals, while

preventing interference with other services and applications. WRC-15 also adopted several agenda items for future conferences regarding additional spectrum for satellite, and regarding frequency bands for 5G. The conference rejected proposals to consider globally harmonized 5G spectrum in C-, Ku- or Ka-band at WRC-19, instead agreeing to evaluate high-frequency bands above 24 GHz for 5G mobile services. WRC-19 will also include studies on IMT spectrum above 6 GHz.

Ooredoo offers high speed VSAT services for remote businesses with Eutelsat

Eutelsat Broadband has inked a deal with Ooredoo Qatar to deliver an enhanced high speed VSAT service for Ooredoo's business customers under the 'VSAT Internet' banner, based on the KA-SAT satellite dedicated to broadband services. Connection speeds are promised at up to 22Mbps (download) and 6Mbps (upload), with the aim of delivering communications support for a wide range of applications such as point-of-sale transactions, data processing and reservation systems alongside high speed internet access, particularly aimed at businesses in remote locations such as desert areas and coastal waters. The press release adds that tailored VSAT-based communications are expected to benefit sectors such as construction, hospitality, manufacturing, tourism and agriculture as well as government agencies and news agencies. VSAT Internet is available from QAR3,000 (USD814.70) per month with one fixed IP address per link, while add-on data packs are also available if reaching the 200GB monthly data quota.

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#304, Alfa Building, Knowledge Village, PO. Box: 502544, Dubai, UAE.
Tel: +971-4-364-2700 | Fax: +971-4-4369-7513

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