



Volume 07, September, 2016

# SAMENA TRENDS

EXCLUSIVELY FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS  
BUILDING DIGITAL ECONOMIES

A SAMENA Telecommunications Council Newsletter

## Articles

Improving Customer Support with Service Management

Page 47

Strategic Role of Contact Centers in Customer Experience Management

Page 54

LTE and IoT Growth Presents Rising Challenges in MENA

Page 56

Satellite Broadband will Help Emerging...

Page 58



**ITU Telecom World: a Platform for Cross-sectoral Collaboration in the ICT Ecosystem**

**Mr. Brahim Sanou, BDT Director, ITU**

Page 05

**Customer Experience Management as an Imperative**

# THERE'S NEVER BEEN A BETTER TIME

*to worry less and innovate more*

"Are we secure? Are we innovating?" Good questions. At Cisco we know that the more effective and simple your security solutions are, the more you can push the boundaries of what is possible. See why there's never been a better time to use security to spark your next great idea at [cisco.com/neverbetter](http://cisco.com/neverbetter)



# SAMENA TRENDS

The SAMENA TRENDS newsletter is wholly owned and operated by The SAMENA Telecommunications Council (SAMENA Council). Information in the newsletter is not intended as professional services advice, and SAMENA Council disclaims any liability for use of specific information or results thereof. Articles and information contained in this publication are the copyright of SAMENA Telecommunications Council, (unless otherwise noted, described or stated) and cannot be reproduced, copied or printed in any form without the express written permission of the publisher.

The SAMENA Council does not necessarily endorse, support, sanction, encourage, verify or agree with the content, comments, opinions or statements made in The SAMENA TRENDS by any entity or entities. Information, products and services offered, sold or placed in the newsletter by other than The SAMENA Council belong to the respective entity or entities and are not representative of The SAMENA Council. The SAMENA Council hereby expressly disclaims any and all warranties, expressed and implied, including but not limited to any warranties of accuracy, reliability, merchantability or fitness for a particular purpose by any entity or entities offering information, products and services in this newsletter. The user agrees that The SAMENA Council is not responsible, and shall have no liability to such user, with respect to any information, product or service offered by any entity or entities in this newsletter. The SAMENA Council's only liability in the event of errors shall be the correction or removal of the erroneous information after verification.

**Editor-in-Chief**  
Bocar A. BA

**Contributing Editors**  
Izhar Ahmad  
Javaid Akhtar Malik

**Contributing Members**  
du  
Orange Business Services  
Syniverse  
Yahsat

**Publisher**  
SAMENA Telecommunications Council

**Subscriptions**  
[subscriptions@samenacouncil.org](mailto:subscriptions@samenacouncil.org)

**Advertising**  
[ads@samenacouncil.org](mailto:ads@samenacouncil.org)

**Legal Issues or Concerns**  
[legal@samenacouncil.org](mailto:legal@samenacouncil.org)

**SAMENA TRENDS**  
[trends@samenacouncil.org](mailto:trends@samenacouncil.org)  
Tel: +971.4.364.2700

# CONTENTS

VOLUME 07, SEPTEMBER, 2016



## EDITORIAL

**04.** Customer Experience Management as an Imperative



**09.**

The Importance of the 20th Session of the Council of Arab Ministers of Communication & Information



## REGIONAL & MEMBERS UPDATES

**11.** Members News

**18.** Regional News

## REGULATORY & POLICY UPDATES

**22.** Regulatory News

**29.** A Snapshot of Regulatory Activities in SAMENA Region

**35.** Regulatory Activities Beyond the SAMENA Region

## WHOLESALE UPDATES

**42.** Wholesale News

## TECHNOLOGY UPDATES

**47.** Improving Customer Support with Service Management Integration

**49.** Technology News

**54.** Strategic Role of Contact Centers in Customer Experience Management

**56.** LTE and IoT Growth Presents Rising Challenges in MENA

## SATELLITE UPDATES

**58.** Satellite Broadband will Help Emerging Markets Achieve...

**60.** Satellite News

**05.**

## EXCLUSIVE INTERVIEW

**ITU Telecom World: a Platform for Cross-sectoral Collaboration in the ICT Ecosystem**

**Mr. Brahim Sanou**  
BDT Director  
ITU

# Customer Experience Management as an Imperative



The telecoms/ICT industry, given its size, its role in driving other industries, the complexities that it encompasses, and the speed of change innate to it, has had to deal with more customer experience related issues and, at times, slower rectification of those issues, than most industries. The higher incidences of customer service issues and resulting churn have a lot to do with the expectations that telecom operators successfully raise among their users through their investments in access technologies and consistently improving transmission speeds. It is as if the customer have learned to expect to have their issues resolved at the same, if not higher, speeds at which they are given access to new possibilities and experiences by telecom operators.

The need for strong Customer Experience Management (CEM) is now a priority in the communications business, having taken a special place in the minds of corporate strategists and customer care professionals. Much is being discussed in monthly revenue meetings on ways to elevate customer support delivery and to personalize customer experience; much more so than even network upgrades.

At the core of the customer experience issue lies one main factor: when network resources become overburdened, as can be observed from prevailing network data traffic trends or infrastructure issues due to municipal factors or even due to lack of proper spectrum, the consequence is compromise -- compromise on the quality of service and on the speed at which incidences of faults are processed. In the emerging world of IoT and as the concept of convergence embeds itself in every-day life of end-users, ensuring availability of network resources and thus guaranteeing improved customer experience is critical to the success and sustainability of the telco business. Ranging from service-level agreement monitoring, service monitoring, line fault management, service quality management, performance management, to network availability and planning, for telecom operators, customer experience management is nothing short of being a great challenge. But it is also nothing short of being a tremendous opportunity to revamp existing relationships. However, converting it from a challenge to an opportunity requires that heaps of data available on a telecom networks across multiple layers and sub-systems be technically handled and processed with active internal collaboration of CTOs, CMOs, and CIOs.

Given that there would never be a dearth of technologies and tools that could help manage and leverage "big data" available on networks for network operators' intelligent use, it is the fostering of an organization-wide customer-centric culture that would render any customer-experience strategies effective and supportive of telcos' revenue needs. Such a culture would enable business service-level customer engagement in new light.

All the proclamations made by telecom operators in the current year to prioritize customer experience management are indicative of the role that operators envision themselves playing toward digital development, which has taken a central position on the sustainability agenda agreed to by nations across the world. Such a role demands that telecom operators do the maximum to build customer confidence and trust, optimize their network assets, intelligently process the data that is among their greatest network assets, and, lastly, make themselves more open to collectively voicing their needs and presenting alternative options to policy makers.

Policy-making circles, especially the likes of public-sector consortia including the Council of Arab Ministers of Communication & Information and the Arab Spectrum Management Group have recently sent clear signals that they wish to seek telecom operators' collaboration and involvement in being able to meet regional communication needs and to fulfill digital agenda goals. Such developments are reflective of the willingness and the needs of stakeholders to work closely together to address resource requirements and to create a sense of alignment between national-level priorities (of enabling end-user access to new digital experiences) and business-level aspirations (of creating better shareholder value through improved service delivery and customer experience).

SAMENA Council sees good customer experience as a core driver of telecom operators' success as networks prepare for their entry into the world of fifth-generation of telecommunications services and smarter connectivity.

Yours truly,



**Bocar A. BA**  
Chief Executive Officer  
**SAMENA Telecommunications Council**



## ITU Telecom World: a Platform for Cross-sectoral Collaboration in the ICT Ecosystem

### **Mr. Brahim Sanou**

BDT Director  
ITU



Taking place in Bangkok, Thailand, from 14 – 17 November 2016, ITU Telecom World is the leading platform for governments, corporates and small and medium businesses (SMEs) in the ICT sector. It is an annual event organized by ITU Telecom as part of ITU, the UN specialized agency for information and communication technologies. It combines an international exhibition of digital innovations, a world-class Forum of debates on key industry topics, a networking hub for countries, businesses and individuals, and an Awards programme recognizing creative ICT solutions with real social impact.

**Q:** What will be the highlights of the ITU's Telecommunication Development Bureau's participation this year?

**A:** The ITU's Telecommunication Development Bureau (BDT) is very much involved in a number of sessions in the Forum and indeed throughout the event, which provides a unique opportunity for leaders of industry and government from developing, emerging and developed markets around the world to come together, meet, discuss and work towards solutions for the growth of the ICT industry and the benefit of us all.

On 13 November, one day before the opening of ITU Telecom World, BDT will organize the first meetings of the second cycle of the m-Powering Development Initiative and the Smart Sustainable Development Model (SSDM) Advisory Boards. On the same day, the 7th Private Sector Chief Regulatory Officers' (CRO) meeting will take place.

**Q:** The theme for this year's ITU Telecom World is "Collaborating in the Digital Ecosystem." What does this mean for the ITU's Development Sector?

**A:** The ICT industry is the midst of an ongoing, dramatic transformation. The pace of technological development and societal change is unprecedented. New technologies, new business models and new customer behaviors are changing the way we live and work.

We are in a golden age of connectivity, where the potential for economic growth and social development is enormous. The digital economy is driving change as never before in human history. But to make sure that all the citizens of the world benefit from this – we need to work together.

Today different stakeholders are involved in the digital economy. Governments remain central players, as policy-makers and regulators. Major ICT companies are increasingly facing competition from new players and from innovative SMEs. New geographical markets are opening up across the developed and emerging worlds alike in the borderless world of ICTs. And new partners are coming on board to make technology work in sectors such as education, health, agriculture, governance, banking or transport, just to name a few

So we urgently need new approaches to cross-sector partnerships. We need to collaborate across public and private organizations, between existing industries and new market players. Without working together, we won't be able to realize the full potential of the new digital economy.

**Q:** In the new ICT ecosystem, what is the role of an event like ITU Telecom World?

**A:** Events such as ITU Telecom World are very important, bringing together a huge range of different players from across the digital ecosystem and around the world. Sharing perspectives, ideas and good practice, meeting and debating face-to-face, are vital to understand the realities and move forward together.

**Q:** Why is it so important to work together across sectors?

**A:** Without collaboration, there can be no real progress. E-education, for example, can only be successful when the professional expertise and experience of teachers is meshed with technological capability and know-how. Bringing both sides together to discuss what is technologically possible, what the desired outcomes are, and establishing a road map is the first stage.

**// ITU Telecom World provides a unique opportunity for leaders of industry and government from developing, emerging and developed markets around the world to come together, meet, discuss and work towards solutions for the growth of the ICT industry and the benefit of us all. //**

Implementation, testing, launching, roll out and development take much longer. The rich collaboration between two sets of professionals can be complicated by lack of knowledge and interest or by feeling of insecurity on both sides, which is why it is so important to talk to one another. Earlier this year, we organized, in cooperation with UNESCO, organized a Policy Forum that, for the first time, brought together ministers of education and ministers of telecommunication/ICT to examine the role that policies and cross-sectoral collaboration can play in fostering innovation and the use of mobile technology to improve the quality, equity and accessibility of education.

In the health sector, for example, in close collaboration with WHO, we achieved a historic milestone in May of this year by bringing together ministers of telecommunication/ICT and ministers of health for the first time at an inter-ministerial round table to discuss the use of ICTs to improve universal health coverage, potential strategic opportunities for the adoption of digital technology in the health sector and the importance of continuous cross-sectoral collaboration.

The same balance between opportunity and challenge, between collaboration and competition and between multiple, often new, stakeholders applies to digital financial services, one of the areas in which we at BDT are particularly active. In a world where around 2 billion adults have no access to basic financial services, digital technology has an absolutely unprecedented potential to offer secure, cheap and reliable transactions for the unbanked or underbanked, hence financial and social inclusion.



Financial inclusion is a critical step to socio-economic development. Leapfrogging traditional banking to deliver financial services can have a profound impact on the underprivileged throughout the world. As Director of the ITU's Telecommunication Development Bureau, I have championed the Global Dialogue on Digital Financial

**Q:** What about the UN's sustainable development goals (SDGs) – how do they relate to the digital economy?

**A:** Meaningful, affordable ICT services is key to accelerate socio-economic development and meeting the Sustainable Development Goals (SDGs). ICTs are cross-cutting enabler of development, behind all aspects of the SDGs as the essential underlying infrastructure of global growth. The SDG framework also explicitly refers to ICTs in several places, in particular in terms of building resilient networks to "promote inclusive and sustainable industrialization and foster innovations."

So it is critical to make sure we can reach the billions of unconnected most in need. This involves a cocktail of measures from government and private sector, investing in networks but also creating demand, using new technologies creatively and forging new partnerships. This is precisely what one of BDT's Forum sessions at ITU Telecom World will be exploring in detail.

Establishing universal access means overcoming the triple barrier of availability – actually having broadband networks, whether fixed or mobile, over fibre, satellite or any other form of technology, within reach of users; of affordability – providing services and hardware that can be afforded by

## *// Meaningful, affordable ICT services are key to accelerating socio-economic development and meeting the Sustainable Development Goals (SDGs). //*

Inclusion (GDDFI) held last May before Global Symposium for Regulators (GSR), to foster and strengthen collaboration between ICT regulators and the financial sector. Success relies on the creation of a new ecosystem of government, business and individuals – centred around a sound working relationship between financial and ICT sectors.

the most economically vulnerable of the world's citizens; and of relevance – making sure that content and services are meaningful to the local context and available in local languages, driving uptake.

Increasing connectivity and access to ICT services involve many other issues, too, which will also be discussed in various sessions at the ITU Telecom World 2016 Forum. Education and capacity-building are important, as are fair and open competition, up-to-date and relevant regulation,

One of the key activities for SMEs are the B2B and B2G Dialogues. Individuals, businesses, organizations and governments alike need to adapt traditional thinking and policies to focus on multi-stakeholder partnerships and grassroots, community-based approaches. Bringing governments and SMEs around the table together enables an open and constructive exchange of information, identifying and reducing barriers to success, developing supporting frameworks and policies and working towards efficient, dynamic ICT innovation ecosystems at national or regional levels. This direct personal exchange between the SMEs, who can clarify the challenges they are facing, and the government representatives responsible for policy decisions, is directly favourable to both parties in building national innovation and driving growth.

This mutual benefit is also at the heart of the B2B dialogue between SMEs and large, established market players. Sharing experiences of collaboration between private sector companies and start-ups can shed light on how success can be built, scaled and replicated, on the potential pitfalls, and on applying business models across different markets. Here again, collaboration is at the heart of it all. Building successful relationships between SMEs – who often have the local market knowledge and end user relationships corporates lack – and big companies offering funding, project management skills and mentorship, is an essential element in successful innovation and growth across the digital economy.

## *// Individuals, businesses, organizations and governments alike need to adapt traditional thinking and policies to focus on multi-stakeholder partnerships and grass-roots level approaches. //*

security, and financial incentives for investment. No one can do this alone. We need to involve governments with national ICT strategies, taxation policies and regulatory environments favorable to rolling out access. We need to involve the private sector in terms of operators, vendors, manufacturers, service providers, application and solutions developers. We need to involve non-governmental organizations, international agencies, financial bodies, consultants, development experts. We need to be all inclusive in our working relationship.

This, again, is why a platform such ITU Telecom World is so critical, and why we at BDT are so closely engaged with the event. The event brings together so many different players to discuss, negotiate, partner and move forward on the critical issues shaping the ICT industry. It features ministers and regulators from developed and emerging markets alike, meeting face-to-face with a whole range of private sector and third sector players in the forum debates, in networking events and, of course, on the exhibition floor.

**Q:** What is the role of small and medium enterprises (SMEs) in the event?

**A:** Supporting and fostering SMEs in the ICT sector is vital to stimulating economic and social growth, accelerating innovation and digital inclusion. ITU Telecom World effectively relaunched as a platform for SMEs to come together with governments and large corporates at ITU Telecom World 2015 in Budapest, Hungary, last year. By offering international services, global visibility, networking, knowledge-sharing and partnership and business opportunities, the event aims to provide SMEs from around the world with a unique launch pad to take ideas to scale.

**Q:** So collaboration is key?

**A:** Across all fields of ICT activity, in the macro digital economy and in the detail of each potential future market, it's all about working together. Finding new partners, exploring new opportunities, considering new stakeholders and new markets. Using new services, segments, solutions and devices to drive revenue and increase socio-economic development.

These are the questions that the Forum debates at ITU Telecom World 2016 will discuss, with expert speakers, international perspectives and a unique audience of public and private sector leaders, from SMEs fresh to the market to established major corporate players. The event itself works on the principle of collaboration, of coming together face-to-face, of meeting, exchanging knowledge, ideas and experiences, debating, working together – the very principle of collaboration on which the future success of the industry, our societies, economies and world may be built.



## The Importance of the 20th Session of the Council of Arab Ministers of Communication & Information



**Izhar Ahmad**  
Director, Industry Affairs,  
**SAMENA Telecommunications  
Council**

True progress in the development of digital economies fundamentally rests on stakeholder inclusion. This is SAMENA Council's stance on regional digital economic development, and has been corroborated earlier this year during SAMENA Council's executive leadership summit. Lately, we have been seeing displays of noticeable willingness and readiness among our government and business leaders not only to embrace new insights and mutually rewarding ways to rethink, but also to define their successes with each other's direct involvement. Moreover, we are continually observing that government leaders are becoming relatively more open toward understanding the pressing issues that the private sector is facing.

The recently held 20th Session of the Council of Arab Ministers of Communication & Information is a prime example of readiness among policy-makers and regional stakeholders to seek means and ways to achieve collaboration, with the purposes of recognizing ICT resources that can be transformed as development generators and moving forward with sustainable development agenda.

As an operators' industry association and a sector development partner to private and public sectors, SAMENA Council takes note of the fact that the Session reiterated the importance of encouraging the ministries and related departments in regional

countries to seek telecom operators' full collaboration in order to implement regional connectivity projects.

The stakeholders also emphasized on the need for regional economies to open new services and study the feasibility for new bandwidths and spectral resources to keep pace with growth in the ICT world. It was recommended that Arab countries support the participation of international organizations and companies in conferences related to the Arab Spectrum Management Group.

As Arab countries have been invited to actively participate and provide technical contributions in the meeting of the study committees for radio communications in the ITU, the stakeholders participating in the Session called for the Arab countries to involve radio communication device producers and telecom operators to become part of the delegation that could review technical notes and opinions, suggestions and recommendations.

The 20th Session, as the industry has come to know, proceeded successfully and SAMENA Council congratulates the Excellencies for addressing some key areas of importance to the industry and to the digital development of regional economies.

### **Summary of the Key Issues Discussed**

The 20th Council meeting discussed the new structure of the Council's Executive Office, and delved into issues of common interest for the Arab countries such as the Arab Regional Roadmap for Internet Governance, regional linkage for Arab Internet networks, the post and the 2nd Regional Forum for "Digital Arabic Content." Other key topics included cyber

security, cybercrimes and Arabic domain names project.

H.E. Yaser al-Kadi, Egyptian Telecommunications Minister, reminisced on his role as chairman of the 19th session and concluded his address with a handover of the chairmanship to UAE Minister of State H.E. Rashid Bin Fahad, who is the chairman of the current Council meeting.

The meeting issued a set of decisions and recommendations raised by the Council's executive committee, which met on the first day. The decisions included acknowledging the UAE's proposal to establish the 'Arab Telecommunications Union,' which aims to unify the efforts of Arab countries in the sector. The plan will go through a summarization process and review.

The meeting proceeded with reports on the current developments concerning the UAE registration of the .Arab domain name in collaboration with the Arab League. The ministerial Council has also noted the importance of following the respective domains of various Arab countries and ensure that the .Arab domain name would not be utilized negatively. It urged the need for vigilance and constant communication with the responsible entities such as ICANN to avoid providing any name that negatively affect Arab nations.

The Council meeting also approved for the UAE to head the Arab committee responsible for the preparations for the World Telecommunication Development Conference 2017, which will take place in Argentina. The UAE's initiative to also issue the Unified Arab Stamp was commended, urging other Arab countries to continue coordinating the issuance of the stamp. It also acknowledged the Tunisian Post's

expression of interest to host a philatelic exhibition in Sfax City, considering its role as the Arab World's culture capital for 2016. It also addressed the issue of the Palestinians and have agreed to invite Palestine to consider submitting its application to the Universal Postal Union (UPU) to amend the country's status in UPU to participate in the next UPU conference. The meeting also expressed its support to Palestine's demands in the Union.

The meeting also addressed the Regional Development Plan for the Arab World 2013-2016 and has invited various Arab Post Departments to submit their development projects to secure relevant resources.





## ▽ MEMBERS NEWS

### MEMBERS UPDATES



#### Batelco enriches its cloud services portfolio with new web hosting platform

Batelco, the Kingdom's leading digital solutions provider, in line with its commitment to support businesses in Bahrain through the delivery of the most up-to-date solutions, has upgraded its Webhosting Platform. Business customers currently using Batelco's webhosting facilities will be automatically migrated to the new platform to benefit from new features and enhanced user experience. Batelco offers webhosting services for the purpose of hosting websites, portals or webpages for business customers within the Kingdom of Bahrain. The service is under the umbrella of its Cloud Services portfolio designed to empower businesses to digitise their processes and improve their operational efficiencies. The enhanced webhosting platform follows the rollout of other key cloud services from Batelco which included Microsoft 365, Productivity Solutions and Security Solutions. Batelco's Office 365 on the Cloud is a Web based version of Microsoft's Office suite of enterprise-grade productivity applications, with the services available on all devices, whenever and wherever they are needed. Batelco's Cloud Productivity Solution is a feature rich solution that encompasses all

business productivity and efficiency tools in one suite, accessible virtually on Batelco's secure cloud. The featured applications are Sales, Accounts, Inventory management, e-Marketing, HR management, Support & Productivity Tools. An organization's network security and information privacy is of high priority. Batelco's Cloud Security solutions conveniently combine all security policies and applications in one manageable platform; having reliable security protocols is a huge benefit of cloud based security solutions and eliminates substantial investments in security procedures. Batelco Bahrain CEO Eng. Muna Al Hashemi said that Batelco was very pleased to announce the new upgraded webhosting platform for its enterprise customers. "In keeping with our aim to lead the local market by providing the most reliable and stable services for business operations, we are very pleased to present this upgrade to improve and elevate productivity and efficiency for businesses." "Digitization is one of the key pillars of our strategy and as a result of our efforts and investment our varied basket of offerings now provides the most advanced digital platform for businesses in Bahrain. Furthermore, our solutions are flexible and scalable enabling business customers to better manage their operational costs," Mrs. Al Hashemi added. Batelco's cloud solutions serve businesses of all sizes across all industries and continue to grow in popularity due to their cost effectiveness, accessibility and reliability.



## STC Solutions ranks 1st in IT services provision market

STC Solutions ranked first as the largest IT services provider of 2015, according to results from a recent report published by IDC, the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. The report titled 'Competitive Profiles and Analysis of Leading IT Service Players in Saudi Arabia', based on a study of the performance of the top local and international 96 IT services providers in the Kingdom, covers performance across 13 key IT service provision categories. At the end of 2015, the IT service provision market was worth over SAR 11 billion of which STC Solutions commanded close to 13%, ranking the company 1st place. Feeding into that ranking are double digit growth over the past few years, driven by the expansion of the STC Solutions information communication technology (ICT) capabilities portfolio. "Our market share position is a direct result of our unwavering commitment to customer satisfaction, the dedication and hard work of our talents and our continued efforts in acquiring and building local in-house capabilities in areas such as systems integration, advanced systems and networking, virtualization and managed services," said Dr. Sultan Binsaeed, CEO of STC Solutions. "Our aim, which is to continue growing our offering and drive our competitiveness with a focus on the latest state-of-the-art ICT solutions and services such as IoT/M2M technologies, Big Data and Cloud solutions, is very much aligned with the vision of the senior leadership of our parent company STC," he added. STC Solutions is a subsidiary of the national operator STC and is focused on developing and managing state-of-the-art information communication technology (ICT) services, as well as providing bleeding edge ICT solutions to the government, and clients in the defense, utilities, healthcare and private sectors. STC Solutions has developed strategic alliances and partnerships with leading global technology players and is considered a formidable player in the fields of IT system integration, network consulting and integration, and managed services.



## Ooredoo gives new Shahry customers double data boost

Ooredoo is doubling the data allowance on all of its Shahry plans to all new Shahry customers who sign up within the next three months. Ending on 5 December 2016, Ooredoo's Shahry promotion also includes a smartphone discount of up to 150 OMR allowing customers to consume the extra data allowance on a brand new smartphone. Feras Al Shaikh, Ooredoo Director of Consumer Sales, said, "We want to surprise our customers with value added incentives and this offer will help customers get the most out of their smartphone and internet use. Our Shahry Plans are packed full of value and as they are postpaid, it means customers don't have to worry about recharging; we'll bill you one time at the end of each month. Time spent on our favourite apps, streaming films and YouTube uses lots of our monthly data, so this is a cost-effective way for customers to enjoy high-speed internet without interruption and save on their handset of choice, all at no additional charge." As part of the promotion, Shahry 500MB now offers 1GB of data, Shahry 2GB provides 4GB, Shahry 5GB delivers 10GB, and Shahry 10GB grants a massive 20GB of data per month. Plus, handset discounts worth 20 OMR, 40 OMR, 100 OMR, and 150 OMR will be provided with each respective bundle.



## Turk Telekom secures \$50 million for cable system

The European Bank for Reconstruction and Development (EBRD) has issued a \$50 million loan to Turk Telekom Group, the bank announced in a statement on Tuesday. The loan will be used for a new fiber-optic submarine communications cable system, capable of carrying data between 17 countries, from Singapore to France and Italy, the statement said.

"The financing will be used to lay cables under the sea and build a branching unit in Marmaris on the Mediterranean coast, in Mugla Province, southwestern Turkey. Branching units are used in submarine cable systems to provide traffic and power routing between the trunk and branch cables," the statement added. Turk Telekom Group, Turkey's largest telecommunications company, is building the new submarine cable system, which has a capacity of 24 terabits per second on three fiber pairs, in a consortium with 17 other telecommunications operators. The \$700 million network, dubbed the SEA-ME-WE 5 (short for South-East Asia-Middle East-Western Europe 5), will be approximately 20,000 kilometers (12427.4 miles) long and is expected to become operational in late 2016. The line will connect South-East Asia, the Indian subcontinent, the Middle East and Europe, the statement said. "Once completed, its advanced 100 Gbps<sup>1</sup> technology is expected to meet the rapid growth in demand for fast internet traffic between Europe and Asia," it said. "The system will also bolster Turkey's internet infrastructure as the country's growing economy needs greater connectivity and ever-stronger commercial ties with Europe, the United States of America and Asia." Turkey has experienced a steep increase in internet use over the last couple of years thanks to investments by telecommunications operators and an enhanced competition in the market. Demand in the country is also growing due to the popularity of video streaming, with high definition replacing lower picture qualities. "The increased capacity for data traffic will result in higher quality for internet connections in Turkey and the neighboring countries," the bank said. "Investing in higher-quality internet connectivity is part of the EBRD's efforts to foster innovation in the Turkish economy," it said. "This mega internet infrastructure project will serve as a brand new platform for future telecommunications business," Jean-Patrick Marquet, EBRD director for Turkey, said. "It can help build a strong digital industry in the country and attract high-tech companies, content providers and major players in the digital economy," he added. Cem Velipasaoglu, chief financial officer at Turk Telekom International, said: "We are proud to receive the EBRD loan to finance Turkey's SEA-ME-WE 5 consortium membership. "The EBRD is recognizing the enormous economic potential created for our customers by this essential international project."



## du to address cyber security threats in a connected world

UAE telecom operator du has announced its third Cyber Security Conference, to address cyber security threats as an incumbent urgency in emerging markets. The event will bring together national, regional and international experts and businesses, but with the primary aim of supporting the UAE government in its transformation to a smart government by highlighting information security challenges in smart cities and other national initiatives. The event will also host its annual hackathon, with the aim of encouraging youth participation in a safe learning yet competitive environment to test their skills and with the opportunity to win AED20,000 cash prize. Osman Sultan, chief executive officer, du, said: "At du, we have always seen security as a top priority, and we invest heavily in our security operations and people to ensure that we offer our customers superlative capability. Our commitment to this cause is underscored by our partnerships with leading security vendors to develop our own managed security services, in order to enable organisations achieve their business objectives confidently. As a trusted partner, we ensure that our customer experience is delivered securely with the assurance that their personal and protected information remain confidential. "Our government's transformative agenda brings with it much excitement; however, the technology proliferation and the rate at which it is going brings about many challenges when it comes to meeting cyber security requirements. As a telecom, we see it as our responsibility to build a coalition with government and non-government partners and educate as many entities as we can about cyber security threats and how to mitigate them." During the conference, key security issues such as cognitive security, security for 5G, Internet of Things, cloud security, and security in the digital economy will be addressed. The partner sponsors include, Huawei and presenting sponsors will include Cisco, HP, IBM, Nokia and Oracle.



## Turkcell ready for young Turks' thirst for data

With a median age of 30, Turkey has the youngest population of anywhere in Europe. "More than half the population has grown up in this world – of the internet and social media. They want to use these technologies and services around the clock," says Terzioğlu. Such behaviour has helped Turkcell to record two decent quarters on the spin to post its highest sales growth for three years, finishing the period 8.6 percent up at TRY6.6 billion (€1.96 billion). Revenue guidance was steady at 8-10 percent, while EBITDA jumped in line. Young Turks thirst for its heady brew of "data, services and solutions", says İlter Terzioğlu, the company's Chief Strategy Officer. "Those three things are the growth engine," he says. Indeed, data and services contributed 46 percent of total revenues at last count, and grew by 39 percent in the second quarter. Despite its Turkish stronghold, which contributes over 90 percent of group revenue, Turkcell also works in eight other markets, and has fast-expanding horizons. Turkcell's Ukrainian operation, working under the life:) brand, posted a seven percent jump in revenue in local currency during the second quarter. Terzioğlu expects the same upside at its life:) subsidiary in Belarus, buoyed again by latent demand and timely supply of smart services. "We will have a big impact towards the end of this year," he predicts. Its strategy is to increase its international footprint through selective mergers and acquisitions, as well as "globally relevant" products and services. "Our vision is to take 40 percent of our total revenue from international markets. At present, that figure is almost 10 percent, so our strategy goes on," says Terzioğlu. Its 2015 deal for Astelit in the Ukraine – which saw it purchase SCM Holding's 45 percent stake, take total ownership, and rebrand it in line with its wider group nomenclature – was the first step on its new international roads. Turkcell has also submitted a binding offer for Telia's 59 percent share of the pair's FINTUR joint venture in the CIS region, covering Kazakhstan, Georgia, Azerbaijan and Moldova. Negotiations are ongoing, and rather overshadowed by al-

legations of corruption around Telia's business operations in Uzbekistan. But Turkcell is not about to stop there. Terzioğlu says it is actively evaluating new market opportunities according to three essential criteria, established with its consolidation in the Ukraine: their cultural and geographic fit, their balance of fixed and mobile access, and their straight profitability.



## Microsoft partners with DT on German cloud

Microsoft announced it's opening its first cloud data centers in Germany, in partnership with Deutsche Telekom, to comply with local data sovereignty laws. Microsoft's partner is T-Systems International, an independent German company and subsidiary of Deutsche Telekom AG (NYSE: DT). T-Systems acts as a "data trustee" for Microsoft Cloud services, providing additional controls for customer data, which can only be accessed with permission of customers or T-Systems, according to a blog post by Takeshi Numoto, corporate vice president for Microsoft Cloud + Enterprise. The two new data centers and German service broaden Microsoft's existing European cloud offerings, and will be available to customers operating in Germany, the European Union and European Free Trade Association, Numoto says. In addition to the German European presence, Microsoft claims to be the first foreign company to provide onshore public cloud services in China, through 21Vianet. Microsoft says its German offering is a first for Europe. The German cloud service initially supports Azure, with previews later this year for Office 365 and Dynamics 365, and general availability for Office 365 in the first quarter and Dynamics 365 in the first half of 2017. Data sovereignty laws -- such as the regulations Microsoft is complying with in Germany -- require data owned by a particular nation's businesses and individuals to physically reside within that nation's borders. They're designed to prevent foreign law enforcement from legally snooping on that data, and enable local law enforcement to require disclosure. The German data centers are located in

Magdeburg and Frankfurt, according to a Microsoft Azure blog post by Tom Keane, general manager.

## Microsoft offers wide range of cloud services from UK datacenters

Microsoft Corp is introducing a complete set of cloud services from data centers in Britain, its second biggest market for cloud-based software after the United States, as demand for data localization spreads across Europe and around the world. The new offering will allow a range of British customers from the legal, banking, public and utility sectors to run operations over the Internet, something they had been reluctant to do for regulatory and data security reasons. "We want to make sure that as many customers as possible have access to the cloud," said Nicola Hodson, general manager of marketing and operations for Microsoft UK. Local storage of data has grown more desirable as U.S. technology companies have become dominant and after former U.S. National Security Administration contractor Edward Snowden disclosed mass government surveillance, stoking public concern over data privacy, security and national sovereignty. More recently, Britain's vote to leave the European Union has raised questions about the status of data stored and processed in the UK. Previously, Microsoft customers using cloud software relied on European data centers based in Dublin, Amsterdam or other locations. It operates more than 100 data centers globally. The UK Ministry of Defence, which has around 250,000 users and spends more than \$3 billion per year on technical infrastructure, will be an early customer of Microsoft's cloud office apps and infrastructure, citing cost savings and data security, the company said. Other initial UK cloud customers include automaker Aston Martin, and South London and Maudsley NHS Foundation Trust, the country's largest mental health agency, and Capita Plc, Britain's largest business process outsourcing, which serves a mix of clients in central and local government and the private sector. Microsoft is the world's No. 2 cloud software supplier after Amazon.com , which pioneered cloud services a decade ago. Both companies also compete with Google , IBM , Oracle and many others. The UK-based cloud will host Office 365, a suite of cloud applications that replaces Microsoft's classic Office software, and Azure, its cloud-based software infrastructure platform. Microsoft plans to add its Dynamics CRM Online suite of

cloud sales and marketing applications in the first half of 2017. Forrester Research estimates global spending on public cloud platforms, business services and applications will reach \$236 billion by 2020, a compound annual growth rate of 22 percent between 2015 and the end of the decade. Microsoft already counts thousands of UK cloud customers ranging from retailer Marks and Spencer Group Plc to Virgin Atlantic airlines. Customers have the option of hosting data locally or elsewhere on the Microsoft networks.



## Orange tests AT&T's ECOMP SDN platform

Orange plans to test AT&T's\* platform for creating and managing a software-defined network. AT&T built this platform, called ECOMP, with a focus on making it accessible to other operators and cloud developers. AT&T has committed to releasing ECOMP as open source software in conjunction with the Linux Foundation. "ECOMP is a stake in the ground. It's a declaration that networks of the future will be software-centric, that they'll be faster, more responsive to customer needs, and more efficient," said Chris Rice, Senior Vice President - Domain 2.0 Architecture and Design, AT&T. "Orange's decision, as one of the leading international carriers in the world, is a great endorsement of that approach." "The analysis we conducted of ECOMP currently shows it to be highly agile and comprehensive, a testament to the commitment that AT&T has shown to address the key challenges that global service providers all face," said Alain Maloberti, Senior Vice President Orange Labs Network at Orange. "We jointly believe that a platform like ECOMP needs a strong and dynamic open source community to drive industry adoption, and we will work with AT&T to create a community to develop a reference software platform for automated network orchestration and management. We plan to start experiments with ECOMP firstly in a lab environment, to be followed by a field trial as part of our On-Demand Networks program." This supplements AT&T and Orange's recent announcement that they will collaborate on open source and standardization initiatives to ac-

celerate the standardization of software-defined networking (SDN) and network function virtualization (NFV) technologies. Orange is the first telecom company to join AT&T's ECOMP effort. This helps to validate the software-centric vision AT&T adopted several years ago as a response to skyrocketing demand for network capacity. Data traffic on AT&T's wireless network grew more than 150,000% between 2007 and 2015. Businesses and consumers expect more out of their networks than ever before. And those demands are only going to increase over the next several years, as new applications like 4K video, virtual reality and augmented reality, and the Internet of Things take off. When AT&T first started talking about a "software-centric network" back in 2014, many people were confused by the concept. But while the technology is complex, the concept is familiar. For years, many of us carried individual gadgets for individual needs: a camera, a portable music player, a video camera, a video game machine. Many of us have replaced those specialized devices with software apps running on a smartphone. It's faster, more efficient, more upgradeable, and less expensive. AT&T is doing the same thing with all the specialized hardware appliances in our central offices. We're virtualizing them. Those routers and switches and firewalls are becoming virtual network functions running on standard servers. And we're giving our customers online, software-based control of their own network services. That's a software-centric network. ECOMP, which stands for Enhanced Control, Orchestration, Management and Policy, is the software platform AT&T created to power its new network. ECOMP lets service providers quickly add features and drive down operations costs. It gives service providers and businesses anywhere more control of their network services, and enables developers to create new services. Ultimately, consumers benefit because the network better adapts, scales and predicts how to make their connected experiences seamless. That means that all the cool network-enabled technologies coming in the next few years – from virtual reality to self-driving cars to 4K video – will run more smoothly. Building ECOMP took years. We at AT&T believe that we have a significant head start in preparing for this software-centric world of 2020. But we know innovation happens faster in an open, collaborative world. This is why we are

releasing ECOMP into open source; so, others can use and build on what we've created so far. We're thrilled Orange is joining us in this movement to embrace software-centric networking. We hope for and expect more companies to test and adopt ECOMP. It's one of the most powerful and sophisticated software platforms we've ever built at AT&T. It will be a vital tool to meet the demands of the data-hungry applications that are coming online. And it will be crucial to fulfilling the potential of the next-generation 5G wireless networks that we're researching and testing now as we prepare for that world of 2020.

## Orange Business Services and splitsecnd innovate emergency response on the road, no cell phone required

Splitsecnd is the first portable emergency response device that plugs into the 12V outlet of any vehicle, no matter the make, model or year. Once plugged in, drivers have instant access to automatic crash detection, 24/7 emergency assistance, pinpoint roadside assistance and real-time GPS vehicle monitoring. Working with Orange Business Services, splitsecnd will ensure that drivers, no matter where they are located, have access to emergency assistance the instant they need it. Orange SIM cards embedded within the splitsecnd devices provide dedicated, limitless wireless connectivity anywhere in the world. Within seconds, drivers can establish two-way communication with a trained operator at splitsecnd's emergency response center. Their GPS location, vehicle information and medical history are immediately shared with responders to ensure that drivers receive the most effective and efficient assistance possible. All this driving data is automatically synced to the splitsecnd Dashboard so that friends, family, and loved ones can view the location of any vehicle, review past trips and encourage good driving habits. By simply logging into the splitsecnd Dashboard on any desktop or mobile device, it gives access to invaluable real-time location and driving data that provide instant peace-of-mind. "splitsecnd focuses on two things: safety and simplicity," said Mel Taylor, President & CEO of splitsecnd. "Together with Orange Business Services, we are able to ensure that driv-

ers stay safe and connected while on the road, 24/7, at the push of a button. We are ecstatic to announce this collaboration and expand our mission around the globe." splitsecnd will be available in North America, Europe and South Africa in the fourth quarter of this year. The splitsecnd service will be available for purchase through an affordable monthly subscription plan via third-party vendors. The Orange extensive global network eliminates costly roaming charges. "Orange Business Services' expertise in the Internet of Things, along with our global reach, will help splitsecnd realize safety innovations for all drivers," said Mark Kenealy, senior vice president, Americas, Orange Business Services. "We look forward to serving as a trusted partner to splitsecnd and working side-by-side with them to make smart and portable emergency assistance a reality for the general public."



## PCCW launches OTT music app in Vietnam

PCCW's entertainment division PCCW Media has launched its OTT music platform MOOV in Vietnam as part of efforts to expand its regional OTT presence. PCCW has entered a partnership with Vietnamobile to provide 3G subscribers with unmetered access to the platform. The MOOV user interface has been localized for Vietnamese users, and has a strong focus on local content, via licensing deal with over 150 local content providers. Research conducted by MOOV indicates that 92% of the platform's target audience primarily listens to local songs. But the OTT app will also include international content including K-pop from Korea and music and video content from the US, UK and elsewhere. The app is available for both iOS and Android. To help establish a foothold in the market, MOOV plans to arrange around 40 exclusive concerts at universities in Vietnam. "MOOV's debut in Vietnam is a further step in PCCW Media's strategy in expanding its digital media services in the regional entertainment industry," PCCW Media Group managing director Janice Lee said. "With a compelling music offering of local relevance at an affordable subscription fee, and a superior user-experience, MOOV is well-poised to

succeed with our distinctive value proposition to deliver quality, authorized content."



## Huawei unveils uX2 solution for mobile network management

Huawei recently launched the uX2 solution to help operators provide improved cell edge user experience and release network potential. The innovative uX2 solution has already found success in large-scale commercial use in Thailand and through pilot stage deployment in live networks in Hong Kong, Lithuania, and the United Arab Emirates. With the fast development of mobile broadband, users have higher demands for better experience, driving operators to improve cell edge user experience. The X2 interface in the LTE networks plays a crucial role in solving these issues. Based on the concept of 'Utilizing 4G Technologies in 3G', Huawei introduces the uX2 interface in the 'UMTS+' solution to allow for fast information exchange among NodeBs and reshape the radio access architecture. This eliminates the need for the Radio Network Controller (RNC) to forward information. Based on the uX2 interface, Huawei has launched a series of innovative solutions to achieve coordinated scheduling for the high-speed services among NodeBs, improving the peak rate for cell edge users and helping more users to enjoy high definition videos and other mobile data services in the UMTS networks anytime, anywhere. The uX2 solution improves cell edge user experience and provides larger capacity in cell edge areas, further enhancing the cell edge throughput. Commercial data for networks in Thailand demonstrates a 15% increase in uplink cell edge throughput, which will be reinforced with future growth in cell traffic.

## Huawei obtains 100% license to invest in Saudi Arabia

The Chinese multinational networking and telecommunications equipment and services company Huawei, has officially been licensed to carryout busi-

ness in Saudi Arabia, making it the first Chinese company to obtain a 100 percent commercial license to invest in the kingdom and establish a center for innovation. It is also the first to be issued to a Chinese company during the visit by Prince Mohammad Bin Salman Bin Abdul Aziz, Deputy Crown Prince of Saudi Arabia and Chairman of the Council of Economic and Development Affairs to China. The announcement was made during the Deputy Crown Prince's visit to China, and within the Aramco organized forum for showcasing the Kingdom's vision "2030" in Beijing. The new license would allow the company to sell its products directly in the Saudi market. Minister of Trade and Investment Dr. Majed Bin Abdullah Al Qasabi had handed over the license during the forum. Huawei, represented by Pang Jimin, Director of Huawei Global Government Affairs, received the license to start the company's business in the Kingdom with a 100 percent ownership privilege. The new license would allow the company to sell its products directly in the Saudi market. According to a statement released by the company, this is the first commercial license in the field of ICT in the Kingdom. Huawei, represented by Pang Jimin, Director of Huawei Global Government Affairs, received the license to start the company's business in the Kingdom with a 100 percent ownership privilege. The new license would allow the company to sell its products directly in the Saudi market. Ramadan Ding, CEO of Huawei Tech Investment Company in Saudi Arabia said that his company has been operating in Saudi Arabia since 1999. "We have launched the latest technological innovations, in addition to our support to young talents by investing to improve their skills through establishing a technology center. We look forward to future achievements and transforming ideas into reality using our latest innovations and the confidence of our customers in order to support the Kingdom's vision 2030", he said. Ding said that an action plan has been approved, which stipulates that Huawei will establish an exhibition showcasing innovations, organize an annual and quarterly competition in Saudi Arabia to encourage young talents to innovate. This, Ding said, will provide a platform for innovation, foster small and medium companies and establish a center for ICT competencies to train thousands of professionals over the next three years.

## Huawei CEO sets out enterprise cloud plan

More than 85% of enterprise applications will be cloud-based by 2025, and all enterprise IT solutions will be cloudified, says the current CEO of Huawei. Speaking to 20,000 industry leaders in Shanghai at the vendor's first cloud conference, Ken Hu – one of three people who take it in turns to be CEO of Huawei – said that the company wants to become a preferred partner that enables digital and cloud transformation, while actively contributing to the cloud ecosystem through openness, collaboration, and shared success. "Over the next five to ten years," said Hu, "we will see all kinds of smart devices that automatically adapt to various use scenarios. All people and all things will have the ability to sense their surroundings, and devices will serve as entry points to the intelligent world. Optical and wireless networks will provide ubiquitous, ultra-broadband connections." Hu spoke of "a digital brain [that] will evolve in real time, and it will never age, providing intelligence that can be called upon at any time by people and machines via high-speed connections and devices." He said enterprises should start treating ICT as a production system instead of a support system, and proactively use technology to redesign their production processes. Second, enterprises should rethink talent, and equip their employees with basic ICT knowledge, particularly as it applies to cloud technology. Third, enterprises should think big and act small, making headway with tactical, gradual improvements that build lasting confidence in new technology and the success it brings. "Cloud is changing everything," said Hu. "We view change as a process of rebirth. For any business in the Cloud 2.0 era, change brings hope. And through action, we can create the future."

"all your containers" where running on Bare Metal or VM, Linux or Windows, private or public cloud. The company describes its product as the world's first multi-tenant container-as-a-service (CaaS) platform for both Linux and Windows. ContainerX also provides APIs for enterprises wanting to integrate the platform's capabilities into their custom management portals. The company was founded in 2015 by a seasoned team of entrepreneurs, PhDs and engineers from VMware, Microsoft and Citrix.



## Global Switch becomes enabled site for DE-CIX services

DE-CIX - a pioneer and leading global operator of Internet Exchanges (IX) – is expanding its activities in the home market of Germany. DE-CIX has therefore partnered with Global Switch, one of the leading large-scale, carrier neutral, multi-tenanted data center providers across Europe and the Asia-Pacific. From now on, Global Switch in Frankfurt will become a so-called "DE-CIX Enabled Site". The aim of the cooperation is to give more customers access to DE-CIX services – such as GlobePEER, MetroVLAN and GlobePEER Remote - and thus drive the expansion in the key market of Germany. "With Global Switch we are pleased to have found such an experienced and competent partner. At DE-CIX, security, and modern, efficient data centers are the key factors in selecting new partnerships. With Global Switch we see these factors absolutely guaranteed. Our customers will unquestionably benefit from our combined expertise," says Harald A. Summa, CEO at DE-CIX. "DE-CIX is a world-class leader in peering and interconnection. As one of the largest data centre operators in Europe and the Asia-Pacific, Global Switch recognizes the importance of robust and far reaching connectivity to our customers. DE-CIX Frankfurt is the world's leading Internet exchange (IX). Spread over a total of 20 data centers of different operators in the city of Frankfurt, the IX experiences more than 5.5 terabits per second (Tbps) of peak traffic. Its technical infrastructure has a total capacity of 48 terabits. More than 700 national and international customers in 60 countries rely on the benefits and services of DE-CIX in Frankfurt."



## Cisco acquires ContainerX for management console

Cisco has acquired ContainerX, a start-up offering a console for managing Docker containers. ContainerX, which is based in San Jose, California, promises "a single pane of glass for



**WORLD SPACE  
RISK FORUM**

# **UNLOCKING BUSINESS IN SPACE**

**Biennial Event • Dubai • November 2 - 4, 2016**

The World Space Risk Forum (WSRF) is the largest specialist gathering of its kind, bringing together satellite operators, manufacturers, space agencies, risk managers, brokers, underwriters, lawyers and capital providers to network and learn more about the threats we face as an industry. For this year's conference, to be held in Dubai from 2nd to 4th November, the theme is "Unlocking Business in Space".

The WSRF provides a forum to understand risk implications from new technology and innovations and ways to mitigate these risks. We expect more than 400 attendees worldwide for far-ranging discussions on topics including manufacturing and design innovations, regulatory and legal trends and implications, cyber and space debris risks, access to capital and impact of technology and new applications.

Join us for the world's leading space risks conference at The Fairmont The Palm, Dubai. More information and registration: [www.worldspaceriskforum.com](http://www.worldspaceriskforum.com)

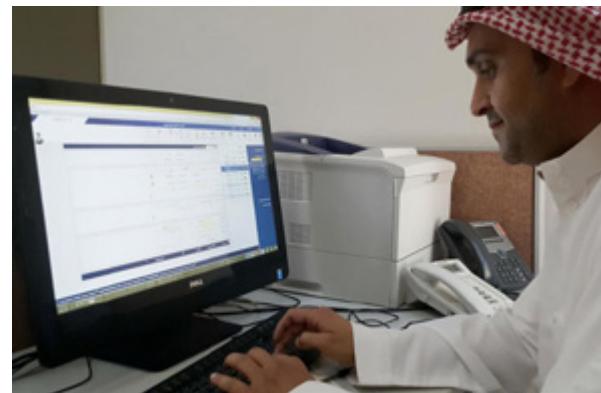


## ▼ REGIONAL NEWS

### REGIONAL UPDATES

#### 95% internet penetration in Saudi homes

Ninety-five percent of homes in Saudi Arabia are connected to the Internet, following Singapore (98.8 percent) and Qatar (96 percent). This has been revealed by a report of the United Nations Broadband Commission. Iceland retained the highest percentage of Internet users at 98.2 percent, followed by Luxembourg (97.3 percent) and Norway and Denmark (97 percent.). The report indicated that China is the largest Internet market in the world with 721 million users, followed by India, which beat the United States for second place, with 333 million users. Globally, it is estimated that 3.9 billion people do not use the Internet, and China, India, Indonesia, Pakistan, Bangladesh and Nigeria contain 66 percent of the world population connected to the Internet. The report added that 20 countries, including the United States, represent three quarters of Internet users on the planet, and the results indicate that targeted efforts in a few key markets can greatly help to reduce the digital divide between the digital haves and have-nots. The report on the state of broadband in 2016, which was issued ahead of the fourteenth meeting of the UN committee in New York on Sept. 18, is looking forward with optimism to the potentials of broadband with the deployment of the high-speed mobile networks' fourth-generation, "4G." Monaco took first place in terms of the spread of



fixed broadband services exceeding the rate of 47 subscriptions per 100 people, compared to Switzerland's 45 percent. The report also noted the prevalence of fixed broadband services to 40 percent in seven countries which include Monaco, Switzerland, Liechtenstein, Denmark, the Netherlands, France, and South Korea. Before that, there were only six countries whose prevailing fixed-broadband services exceeded the rate of 47 subscriptions per 100 people in 2014, and only one state, Switzerland, in 2012. Finland experienced the highest percentage of active subscriptions to mobile broadband services around the world, where the number of subscription reached 144 per 100 people, followed by Singapore (142 subscriptions) and Kuwait (139 subscriptions). The Asia-Pacific region represents about half of the total number of active subscriptions for mobile broadband at 48 percent.

## Ooredoo scotches sale rumors over Indonesian mobile business

Qatar-based Ooredoo Group has moved quickly to dispel rumors it is considering the sale of all or part of its stake in Indonesian subsidiary Indosat Ooredoo, issuing a statement confirming that Indonesia is its 'biggest international market and is strategically important to Ooredoo's corporate strategy given its long-term growth prospects'. Ooredoo's announcement follows media speculation that it was considering a sale of its 65% holding to focus on more profitable Middle Eastern markets, leaving the way clear for another company willing to expand in the region.

## STC considering divesting indirect stake in Maxis

Saudi Telecom Company (STC) is said to be examining options for its indirect stake in Malaysia's Maxis, Bloomberg reports citing sources familiar with the matter. It is understood that STC, which currently owns a 25% stake in Maxis' controlling shareholder Binariang GSM, is gauging interest in this holding, with it suggested that it could consider selling it to a Malaysian pension fund or another financial investor. With the stake in Maxis giving the Riyadh-based outfit an effective 16.2% interest in Maxis, valued at approximately USD1.8 billion, it has however been noted that STC has not yet started a formal auction process for the stake, and could yet decide to retain it.

## Lebanese incumbent launches LoRaWAN tender

Lebanon's state-owned national telco Ogero has launched a tender for the procurement and installation of Long Range Wide Area Network (LoRaWAN) infrastructure for Internet of Things (IoT) services, reports the country's BusinessNews website. Ogero has invited applications from companies with proven expertise regarding the low-power LoRaWAN system, with a deadline for submitting technical and administrative bids set for 6 October. Bidders should be partners or authorized agents of firms that are members of the LoRaWAN Alliance, an international association largely consisting of players in the IoT sector, and

Ogero is seeking a commitment of at least five years including maintenance of LoRaWAN equipment and training of the telco's staff on installation and operation of the system.

## Industrialization process in Saudi Arabia to move on with smart-city technologies

Huawei Tech Investment Saudi Arabia Company has signed a memorandum of understanding (MoU) with the Royal Commission for Jubail and Yanbu for long-term cooperation in the field of 'Smart City' technologies and supports the kingdom's industrialization process. This agreement aims to sup-

port in the several cities. This is done through initiatives like a joint strategy and masterplan design, smart city competency centre, technology innovation and building a smart city reference site together through collaboration, innovation and technology. The parties promise to interconnect every "component" of the city, drive innovation through human and machine, becoming more efficient at managing energy use, resources, mobility, intelligent living with comfort and security, and sustainable development to overcome the limitations of traditional urban development. Representing the Royal Commission for Jubail and Yanbu was Dr. Alaa Nassif, chief executive officer and Huawei Tech Investment Saudi Arabia Company was represented by Ramadan Ding, chief



port the Saudi Vision 2030 roadmap of transforming the kingdom to be a pioneering and successful global model of excellence on all fronts, a statement said. The agreement was signed on the sidelines of Saudi Deputy Crown Prince Mohammad Bin Salman's visit to China recently. Aimed at supporting the industrialization process of Saudi Arabia, both parties will collaborate to support the development of the local ICT industry, and the employment of qualified Saudi resources in strategic areas, it said. Huawei will leverage its technologies to serve the Saudi people, in an effort to resolve the challenges associated with the continuing urbanization of the kingdom and sense of happiness and safety, while increasing the country's competitiveness, it added. The agreement includes the implementation of 'Smart City' technologies, with an aim to interconnect every compo-

executive officer. Huawei, as a global leading information technology and telecommunication leader, has created a specialized centre of excellence around Smart City practice with capabilities that are spanning over a wide range of services, products and partners. The company recently received the first commercial license in the field of ICT in the kingdom, and will be running its business in the kingdom with a 100 per cent ownership privilege. Huawei has a mandate to build effective partnerships with local distributors and enhancing local content, focusing on future achievements and transforming ideas into reality using the latest innovations and the confidence of customers to support the kingdom's Vision 2030, the statement said.

## Orange likely to buy stake in Iran's MCI

Orange confirms report that it is conducting feasibility studies into an investment into MCI of Iran. The French company has confirmed the reports in a statement to the Wall Street Journal, saying that it is conducting feasibility studies into buying a stake in MCI, which is owned by Telecommunication Company of Iran (TCI). "We are conducting feasibility studies to understand and assess what's possible in this complex environment, particularly with regards to certain economic sanctions that apply to Iran," a spokesman for Orange told the newspaper. MCI is the largest mobile operator in Iran, with 50 million contract customers and 17 million on prepay. According to the industry's trade association, the GSMA, the company runs only 2G services. Irancell, which is controlled by South Africa's MTN, has 3G services. Orange is looking at the political implications of investing in Iran, the company told the Wall Street Journal, given the fact that the country is still emerging from sanctions following the Joint Comprehensive Plan of Action (JCPOA), an international agreement that has started to relax trade rules. "Like many other international operators, Orange has been considering opportunities in the Iranian market subsequent to the implementation of the JCPOA," the company told the newspaper. Orange told Reuters: "We anticipate that these discussions will be concluded within a few months."

## Omantel gets non-binding offer for WorldCall stake

Oman Telecommunications (Omantel) said it had received another non-bind-

further studies. Last month, Omantel said it had ended discussions with a Pakistan investor about purchasing its 56.8 percent stake in the diversified telecommunications operator after a period of due diligence did not yield a favorable deal.

## Middle East telecom sector offers lucrative business opportunities for innovation

The telecommunication sector in the Middle East offers lucrative business opportunities, and many companies are vying to gain a substantial market share by introducing innovative technologies. The latest example of this trend is the entry of India's leading mobile technology service provider, mCarbon, to the Middle East market by establishing its headquarters in Dubai. mCarbon is the largest supplier of airtime advance and credit in the world and has established itself as a clear leader in the space. With this service, a subscriber can request a talk-time or data or a value-added service advance from the operator when they are needed, thus generating incremental minutes of usage in the network. The system runs advanced analytics in the background to check in real-time things like eligibility and credit score which gets a dynamic rating with paybacks. "The company has chosen Dubai as its Middle Eastern headquarters owing to a sound mobile infrastructure network base which can serve the predominant regional telecom business," Rajesh Razdan, founder and CEO of mCarbon, told the Gulf News Journal. "This is aimed to meet the communication needs of the prospective subscribers and conveying value-added services to propel the network base." mCarbon, with 8 million transactions a day, touches almost 400 million subscriptions every month. The launch of Airtime Advance and credit service and its deployment at leading telecom companies in India and the South Asian region has resulted in almost a 10 percent increase in average revenue per user. Offered as various business models like an emergency need-based or just as an overdraft kind of facility, a user may request an emergency top-up via phone, SMS or mobile app, and the system will offer the corresponding amount instantly. If accepted, the advance will be made available immediately with

the validity period as defined by the telcom. Basically, the product is a pay-as-you-go model, and users will be charged only as per the usage. "Our new launch comes in response to the ongoing demand from the telecom operators in the Middle East and African region to help support them in launching innovative offerings," Razdan said. "The solution developed by mCarbon is highly scalable and provides enhanced customer analytics and usage information that enhances the effectiveness of the service and drive revenues from increased usage." Razdan added that the business need for the "instant credit" service was to create new revenue opportunities from operator's existing low average-revenue-per-user subscriber base with an innovative service. It will enhance the end-user experience, help to recoup potentially lost revenues from the insufficient balance in pre-paid accounts and boost customer loyalty. Established in 2008, mCarbon has been successful in monetizing the telecom realm while serving India and South Asia. "mCarbon provides robust telecom services that enhance usage, revenue and create superior customer engagement," Razdan said. "Our microloan for talk time and data and dynamic end of call notification as part of the broader revenue management portfolio enables service providers to simplify and personalize the customer experience."

## Telecom Egypt pays EG-P7bn for 4G license

Telecom Egypt (TE) this week became a fully-fledged mobile operator after agreeing to pay 7.08 billion Egyptian pounds (€713.14 million) for a 4G license. The license grants the fixed-line incumbent permission to use 2x5 MHz of 1800-MHz spectrum and 2x10 MHz of 700-MHz spectrum for the next 15 years. EGP5.2 billion of the license fee is due up front with the remainder payable in installments over the next four years. The license is renewable for a further five years at a cost of EGP2 billion. Until recently, TE offered mobile services as a virtual player on Vodafone Egypt's network. "Becoming a total telecom operator has been a central commitment of TE's customer-focused strategy. With this award, TE's objective of moving from being a fixed-line operator to a mobile operator becomes a reality," said TE chief executive Tamer Gadalla, in a statement. The announcement comes



ing offer for its shares in Pakistan's WorldCall Telecom Ltd . It gave no details of the identity of the potential acquirer but said in a filing to Oman's bourse that the offer was subject to

two weeks after reports emerged that Egypt's National Telecom Regulatory Authority (NTRA) planned to send out revised 4G license terms to the country's operators. By accepting the amended offer, TE becomes the first of the country's operators to secure a 4G license. Egypt's other players, Vodafone, Orange and Etisalat have until September 22 to respond to the NTRA's offer, according to local press reports. "We are grateful to the NTRA for expediting and finalizing these license negotiations. This is a critical step forward to making Egypt a more connected society, allowing Egyptians to harness the superior data speeds high-quality 4G networks can deliver at home and at work," Gadalla said.

## Iran, South Korea to develop ICT cooperation

Iran and South Korea have signed a memorandum of understanding to develop cooperation on information technology and communication. The MoU was signed by South Korean Minister of Science, ICT and Future Planning Choi Yang-hee and Iranian Minister of Communication and Information Technology Mahmoud Vaezi on Wednesday. The two countries signed such MoU in year 1990 for the first time. However, following lifting the sanctions and implementation of the nuclear deal (JCPOA), the two sides called for long-term partnership and economic cooperation. Iran and South Korea formed joint science and technology committee in 2004, but, its activities were not satisfactory. South Korea voiced interest in activating the committee. South Korean has called for implementation of the MoUs already signed during visit of President Park Geun-hye to Tehran last April.

## Orange in talks with MCI of Iran

French telecoms group Orange has reportedly entered preliminary talks to acquire a stake in Iran's largest cellular operator by subscribers, Mobile Communication Company of Iran (MCI). A report from The Wall Street Journal cites 'people familiar with the matter' who say that Orange is discussing a commercial and technical agreement, as well as a share purchase. The French telco does have competition, however, as several other unnamed European firms are also thought to be interested in taking a



stake in MCI. Vahid Sadoughi, CEO of MCI, confirmed the development, saying: 'Our negotiations haven't been completed yet. I think the talks will be completed within the next three, four months.' Meanwhile, an Orange spokesperson said: 'We are conducting feasibility studies to understand and assess what's possible in this complex environment, particularly with regards to certain economic sanctions that apply to Iran.' If it went ahead, the deal would be the first purchase of an interest in a major Iranian firm since the lifting of international economic sanctions in January this year following Iran's agreement to curb its nuclear programme. MCI controlled around 57% of Iran's 114 million mobile subscribers at the end of March 2016, according to TeleGeography's GlobalComms Database. It is a 90% subsidiary of Telecommunication Company of Iran (TCI), whose majority shareholder Etemad-e-Mobin has links to Iran's Revolutionary Guard.

## Operators in Pakistan to adopt NFC payment methods

JazzCash has announced the launch of Near Field Communication (NFC) payments for its mobile account users. Adding more variety in the digital payment eco-system, NFC payments enable users to pay for their purchases via their mobile phone. All one requires is a JazzCash mobile account linked to their NFC sticker, which can be pasted on phone, wallet or a keychain. "NFC is the most advanced and swift payment method adapted at large in developed and emerging markets. We believe it is time our users benefit from the service, which offers absolute convenience and security," said Aniqa Afzal Sandhu, VP Digital & Mobile Financial Services – Mobilink. "The NFC stickers ensure that JazzCash users not owning NFC capable phones will also be able to

enjoy the benefits this service has to offer. And apart from increasing on the current payment options available to consumers, NFC payments will also assist merchants in experiencing a new financial instrument, which shall assist in cutting down on payment processing time and fraud," she further added.

JazzCash users can get their NFC stickers from designated Customer Experience Centers and Franchises in Islamabad, where the sticker will be instantly linked to the users' mobile accounts. In the near future same will be done by Jazz Customer Experience Centers, Franchises and Retailers nationwide. The mobile financial services (MFS) provider has also made this facility available to other mobile network users through its mobile account app available on Google Play Store. Android users can download the app and link their NFC stickers instantly to their JazzCash account by visiting the designated Jazz Customer Experience Center or Franchise. After successful linking of JazzCash NFC sticker with mobile account, users can shop from any retailer that has NFC payments facility by tapping the NFC sticker to the retailer's device and entering the MPIN code to the USSD confirmation pop-up to confirm the payment. For now, JazzCash has made the service available in Islamabad and Rawalpindi in partnership with more than 50 merchants. The MFS provider is aggressively pursuing partnerships with more merchants nationwide.





## ▼ REGULATORY NEWS

### REGULATORY UPDATES

#### Regulators concerned about privacy impact of IoT devices

Nearly six in ten (59%) Internet of Things (IoT) fail to adequately explain to customers how their personal information is collected, used and disclosed, according to an international study by 25 data protection regulators around the world. The report was coordinated by the Global Privacy Enforcement Network and looked at devices such as smart electricity meters, internet-connected thermostats and watches that monitor health, considering how well companies communicate privacy matters to their customers. Other findings included the fact that 68 percent of devices failed to properly explain how information was stored and a further 72 percent failed to tell customers they could delete their information off the device. In addition, some 38 percent of the more than 300 devices studied didn't include easily identifiable contact details if customers had privacy concerns. Concerns were also raised around medical devices that sent reports back to GPs via unencrypted email. The action is being led by the Information Commissioner's Office (ICO) in the UK, which said authorities will now work with the industry to improve data protection in IoT devices. The regulator it would even consider action against any devices or services thought to have been breaking data protection laws.

#### European Commission introduces new roaming mechanism to appease telcos

The European Commission's troubled roaming regulation was given another tweak today in a bid to get approval from operators. Brussels has redrafted key parts of its proposals to introduce a measure that allows operators to check how consumers roam and charge them accordingly. Following complaints from the telecoms industry, the Commission was forced to drop proposals that allowed people to roam without charge for at least 90 days per year earlier this month. Commission President Jean-Claude Juncker said last week the proposals were not technically wrong but had been written by "a well-meaning official". The new mechanism allows operators to check usage patterns if a "non-exhaustive list of criteria" is abused. The criteria include "insignificant" domestic traffic, when measured against roaming traffic, long inactivity of a SIM card used primarily for roaming, plus the subscription and sequential use of multiple SIM cards by the same customer while roaming. Should such "abuses" take place, operators will be able to charge customers a fee. The Commission has proposed a maximum of €0.04/min per call, €0.01/SMS and €0.0085/MB. Such proposals call into question the Commission's claim that roaming will be free from next July. Operators must put in place complaints

procedures that enable customers to contest any fees that are levied. If the dispute persists customers will have to complain to the national regulatory authority that will settle the case, the Commission said. Brussels has also implemented safeguards should price increases or "other negative effects" affect customers in a specific market. In such a case, operators in that market will be allowed to apply the same small surcharges that affect roaming abusers on a temporary basis. Günther H Oettinger, Commissioner for the Digital Economy and Society, said: "Today's draft rules ensure we can end roaming charges as of 15 June 2017 for all people who travel periodically in the EU, while ensuring that operators have the tools to guard against abuse of the rules."

## Pricing of 700 MHz spectrum band expensive in India

Days ahead of start of the country's largest ever spectrum auction, Bharti Airtel Chairman Sunil Bharti Mittal today said the pricing of 700 MHz frequency band is "very expensive". "All I can say, is that it is very expensive," Mittal said when asked about his views on the pricing of the spectrum in the premium band. He, however, declined to comment on whether or not his company will place bids for the 700 MHz band, which is considered as the most efficient among telecom frequencies as the estimated cost of providing service through it is about one-third of 3G under the 2100 MHz band. Bharti Airtel has submitted an Earnest Money Deposit or EMD of Rs 1,980 crore with Telecom Department ahead of the upcoming auction of airwaves. This is the first time that government will auction the 700 MHz band. Last week, seven telecom operators deposited Rs 14,653 crore as earnest money for the auction, with Reliance Jio alone submitting Rs 6,500 crore. As per the information released by the Department of Telecom, with Rs 6,500 crore EMD, the Mukesh Ambani-led firm is eligible for placing bids in any of the 22 telecom circles in the country and in any spectrum band. Vodafone India has submitted EMD of Rs 2,740 crore and Idea Cellular Rs 2,000 crore. These two companies as well as Bharti Airtel are eligible for bidding in any circle. Tata Teleservices has submitted EMD of Rs 1,000 crore, Reliance Communications Rs 313

crore and Aircel Rs 120 crore. Earnest Money Deposit or EMD is indicative of a company's strategy to bid in specific circles and spectrum bands. It gives them eligibility points with regard to those circles. As per DoT information, Reliance Jio is only company which has potential to buy spectrum in premium 700 MHz at floor price in most of the circles, as a pan-India bidder for 700 MHz spectrum needs to have EMD of Rs 5,610 crore. A firm opting to buy spectrum in 700 MHz band will need to shell out a minimum of Rs 57,425 crore. Total spectrum worth Rs 4,01,975 crore in 700 MHz band is being put up for auction. Mobile frequencies in all bands — 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz and 2300 MHz — will be put on the block in the upcoming auction. All the radiowaves being put up for auction can be used for providing high-speed 4G services.

## Telecom operators warn against over regulating cloud

In response to the telecom regulator's consultation on cloud computing, the industry has almost unanimously warned against over-regulating the growing space, even as divergent views emerged over the question of putting up data centers for hosting cloud-based services locally. "Given the relatively early stage of cloud computing development we strong-



ly caution against taking an overtly regulated approach to structuring the cloud computing industry in India," said Amazon Web Services, one of the largest cloud service providers in the world. "At this stage of the sector's development in India, we believe that a heavy-handed regulatory approach will likely inhibit growth," it said in response to a consultation paper issued by sector regulator Telecom Regulatory Authority of India. As many as

37 stakeholders responded to the TRAI paper and recommended a host of initiatives, including letting market forces decide migration between clouds of different companies, letting companies voluntarily adopt cyber security standards in line with evolving online threats, and developing more robust privacy and data protection rules. "In a competitive operating environment, market forces should be allowed to address interoperability, data portability, migration, etc.," said software services industry body National Association for Software and Services Companies (Nasscom). The consultation paper, which TRAI put out on June 10, covers a broad spectrum of issues, including defining policies for cloud computing, systems and processes for information governance framework in cloud from the perspectives of lawful interception, more so if it is hosted in a different country, and also whether cloud service providers should be licensed.

There is no need to bring laws to govern cloud service providers as various laws like Information Technology Act and Companies Act 1956 are applicable to cloud service providers and also customers of cloud service, which require various disclosures, filing and record keeping obligations to be fulfilled," IAMAI said on the question of roles and responsibilities for security of end users and cloud service providers (CSPs). On the question of data localisation —making it mandatory for multinationals to set up local servers in India — some divergent views emerged in the submissions made public by Trai. Reliance Jio, the new pure-play 4G telecom service provider, said, "Given the prominence to the national security, Reliance Jio strongly advocates setting up of data centres within the country and it becomes relevant while hosting government data." However, most submissions — including those from the US India Business Council, BSA the Software Alliance, AT&T and Vodafone — opposed 'data localization'. "Requirement for data localization can impede effective service delivery as well as increasing costs and altering investment incentives. The economic consequences of this can be significant," the UK-based Vodafone said. Addressing TRAI's question on cross-border lawful interception in a cloud environment, Software Freedom Law Centre said that while lawful intercep-

tion provisions exist in the IT Act, "mutual legal assistance treaties (MLATs) with specific provisions on the procurement of lawfully intercepted data from overseas cloud service providers could be a more sustainable solution" for companies based outside India.

## ITU works to improve m-payment interoperability

The ITU is working to ensure the interoperability of mobile and digital payment services, particularly in emerging markets, and has published the first reports produced from these efforts. The UN body's Focus Group on Digital Financial Services has published two reports to help address interoperability challenges. With the reports, the first outputs produced by the group's Working Group on Interoperability, the ITU aims to address the fact that very few mobile payment schemes in some of the world's poorest countries are fully interoperable. The first report analyzes access to payment infrastructure issues around the world, and how these can adversely impact interoperability. It notes that while non-banks are playing an increasingly important role in payments - particularly for the world's roughly 2 billion un-banked or under-banked inhabitants - many of these non-bank companies are not accepted as direct participants of key payment infrastructure. "Payment system regulators and policy makers, in particular Central Banks who typically act as the lead payment system overseer in each country, can better support the poorest and most vulnerable segments of the population by promoting a competitive and dynamic payment services industry which includes non-traditional providers," commented Focus Group chairman Sacha Polverini. The second report analyzes the role key public and private sector stakeholders can play in the development of national payment systems, particularly for retail payments.

## Unstable forex, over-regulation, multiple taxes cost telecoms billions in Nigeria

The Nigerian Communications Commission (NCC), the regulatory body for the Nigerian telecommunications industry, has said it is having talks and discussions with various levels

of government to roll out measures that will yield the growth, development and increase in gross domestic product (GDP) that is necessary for Nigeria to take her place among ICT savvy nations. Disclosing this recently, NCC executive vice chairman, Professor Umar Danbatta, said the commission was also working on other strategies, which include revised/updated Nigerian Telecom Policy; national and regional infrastructure development (fibre cabling, power, road network, security, etc); repositioning of Internet Exchange Point (IXP), and spectrum availability and other national resources, among others. Danbatta said the aim is to create business/investment opportunities in Nigeria in areas such as human capital development, partnership with notable companies in Nigeria, equipment manufacture, vendor, sales and installation of telecom, value added service (trenching and fiber laying), and fiber manufacture and installation, among others. Danbatta noted that the Nigerian broadband market has the potential to explode in this decade just as the voice market did in the last decade. He said: "The solid metro and backbone ICT infrastructure required to carry and sustain the huge amount of data to be generated is already being planned to be put in place. This will yield the growth, development and increase in gross domestic product (GDP) that is necessary for Nigeria to take her place among ICT-savvy nations. We are really living in interesting times." Meanwhile, industry experts have decried the scarcity of foreign exchange, vandalization of telecom equipment, poor electricity, harsh operating environment caused by excruciating taxes and levies from three tiers of government which, they said, are impacting negatively on telecommunications companies and, by extension, on the growth of infrastructure as telecom companies have lost no less than N660 billion since the beginning of the year. Investigations by LEADERSHIP showed that the speed at which telecom companies were rolling out their network infrastructure across cities, towns and under-served areas has reduced as forex scarcity, which has affected every business in the country, has also hit the telecom industry, with operators and other original equipment manufacturers (OEMs) unable to meet their forex needs to import telecom equipment. It was also gathered that operators are now doing subdued rollouts to few targets as against widespread

infrastructure build-outs as arbitrary pricing of transmission cable infrastructure has stunted the growth of broadband bandwidth across the country. LEADERSHIP findings also showed that the war unleashed by Boko Haram in the North East and sporadic bombings in some key cities, including the Federal Capital Territory, Abuja, in the past few years, also contributed to the slow growth of Nigeria's telecom industry as mobile operators decided to redirect their resources to states not affected by the war. Telecommunications analysts said these multifarious issues have become drawbacks on the desire of the federal government to surpass the 30 per cent target set in the National Broadband Plan by the year 2018. They called for the protection of telecom investments by way of the creation of enabling environment for all the players in the industry. The president, Association of Telecoms Companies of Nigeria (ATCON), Engr. Olu-sola Teniola, lamented the situation. He said, "The free fall of naira against dollar has constituted a serious source of worry to our sector and, as a matter of fact, our member companies have tried to make sure that Nigerians have access to qualitative communications service, but the continuous depreciation of the naira is not encouraging, from a capital expenditure (capex) roll out perspective."

## US Congress members look to block ICANN handover

A group of US Congressmen has made a last attempt to halt the planned transition of ICANN to an independent organization, outside US government control. The handover is expected to take effect from 01 October, but four Congressional chairmen have asked the Commerce Secretary Penny Pritzker and Attorney General Loretta Lynch to stop the process. They are concerned that the new ICANN organization lacks accountability and will not be subject to anti-trust controls, and claim the government should have sought Congress' approval before handing over the contract to manage the internet naming system. In response, leading tech companies including Amazon, Google, Facebook and Twitter sent their own letter to Congressional leaders, The Register reports. They want the transition to proceed and called on Congress not

to intervene. The opposition to the planned independence of ICANN is led by Senator Ted Cruz, who claims the US risks leaving the internet in the hands of authoritarian regimes if it allows ICANN to adopt its new international governance structure. Cruz called a Senate hearing for 14 September on the matter. Senator John Thune said lawmakers are also planning to introduce a budget bill that would block funding to the government if it goes ahead with the handover, Reuters reports. By September 15, the US is contractually obliged to notify ICANN formally whether it will go ahead with the transition. According to opinions from the US Government Accountability Office, President Barack Obama may take the final decision to sign off on handing over ICANN's management.

## EC lays out 5G goal, promises less regulation

By 2025, all cities and transport links in the EU should have uninterrupted 5G coverage, according to EC President Jean-Claude Juncker's State of the Union speech for 2016. In addition, Juncker unveiled the European Electronic Communications Code, including "forward-looking and simplified" rules intended to make it more attractive for firms to invest in infrastructure, both locally and across national markets. Ahead of the 2025 target, each EU member state must offer commercial 5G in at least one major city by 2020. The EC's connectivity targets are likely to require €500 billion of investment over the coming decade, largely coming from private firms. However, under current estimates, there is likely to be a shortfall of €155 billion. To make up the shortfall, the Commission is proposing to modernize current telecoms regulation. The new code involves "substantially" reducing regulation where rival operators jointly invest in high-speed networks, so easing the way for smaller players to be part of larger projects. Also, the intention is to make it more attractive for first movers to invest in less profitable areas, for instance in rural locations. And the code proposes long duration spectrum licenses, allied with stricter requirement to use frequencies efficiently. There are also stronger consumer protection measures, and the extension of rules on security to newer internet players, which have previously only applied to traditional operators. Inclusion of the

latter provision has been mooted in recent days.

### Free WiFi

Juncker also referenced WiFi4EU, an initiative aiming at helping more EU communities offer free Wi-Fi access points. The EC would like to see every local authority offering Wi-Fi in and around public buildings, health centers, parks and squares. The public voucher scheme has an initial budget of €120 million. In addition to the 2015 target for 5G, Juncker mentioned two other connectivity targets: All schools, universities, research centers, transport hubs, as well as providers of public services, should have access to speeds of 1 Gb/s, download and upload, by 2025. And all European households, both urban and rural, should have access to download speeds of at least 100 Mb/s by the same date.

### GSMA response

The EC's proposal was commended by the GSMA with Mats Granryd, director general, commenting: "The Commission has recognized the need to incentivize a step change in infrastructure investment in order to fulfill the potential of the Digital Single Market." "Its spectrum policy reform proposals, for example, will help provide the consistency needed to underpin investor confidence." "The Commission has also taken steps to reduce some aspects of sector-specific service regulation that are no longer relevant or appropriate in today's dynamic and converging communications service market," he added.

## EU overhauls telco rules in bid to stimulate Gigabit broadband rollouts

The European Commission on Wednesday proposed easing network access rules as part of a sweeping reform package designed to stimulate massive investments in ultra-fast broadband infrastructure. The so-called Electronic Communications Code (ECC) aims to implement a pragmatic approach to mandated network access, encouraging regulatory intervention only in cases where competition and choice are lacking. Access obligations will be less stringent for wholesale-only players and operators co-investing in new high-speed networks. The aim is to give companies large and small the con-

fidence to make hefty, long-term investments in new infrastructure. Operators deemed to have significant market power (SMP) will continue to be subject to access rules, such as letting rivals install their own fiber on ducts and poles. Furthermore, to keep telcos in check, regulators will be allowed to sanction those that renege on promised network deployments without good cause. "Challengers want to continue to be part of and often lead the fiber adventure. They are ready to invest and stand behind effective and sustainable competition as the driver of efficient investments," said Gijs Phoelich, chairman of alt.net lobby group, the European Competitive Telecommunications Association (ECTA). "ECTA members support the emphasis given to co-investment in the proposal, and in particular the possibility for all operators to invest according to their ability, but it should be based on fair and reasonable conditions, and put in actual practice," he said. On the mobile side, the ECC proposes longer-lasting spectrum licenses and more stringent rules requiring effective and efficient use of airwaves. It also aims to encourage EU-wide coordination when it comes to assigning frequencies with the goal of improving mobile coverage across the bloc. The reforms also aim to make it easier for consumers to switch provider, even if they are signed up to a service bundle, and to ensure that vulnerable groups, such as the elderly, disabled and low-income households have access to affordable Internet services. "We need to be connected. Our economy needs it. People need it. And we have to invest in that connectivity now," said EU president Jean-Claude Juncker, in his 2016 state of the union speech. It is hoped that the proposed reform package and the investment it hopes to foster will help the EU hit three new targets it has set for 2025:

1. Every school, university, research centre, transport hub, hospital, administrative building, and digitally-focused enterprise should have access to symmetric Gigabit connectivity.
2. All European households, rural or urban, should be able to get at least 100 Mbps broadband, which can be upgraded to at least 1 Gbps.
3. Urban areas, and major roads and railways must have uninterrupted 5G coverage. As an interim step, 5G should be commercially available in at least one major city in every EU member state by 2020.

To help with the funding of new networks, the Commission plans to launch by the end of 2016 a European Broadband Fund, which will combine public and private investments to support network deployments throughout the EU. "Connectivity is a key prerequisite for Europe's digital future: The Internet of Things, digitization of industry, cloud, big data – all this demands secure and ubiquitous connectivity, with the best speed and quality," said digital economy and society commissioner Günther Oettinger, in a statement. Vodafone welcomed the EU's proposals on the whole, but said some of its objectives are not ambitious enough. "We would welcome...a revision upwards of the 100-Mbps connectivity target for European households by 2025; if Europe is to embrace fully its Gigabit Society vision and all the economic benefits that will bring, we should set an ambition now for 1 Gigabit speeds for everyone," said a joint statement from Markus Reinisch, public policy director, and Grégoire Verdeaux, international policy director, at Vodafone. They also called on the Commission to roll out indefinite spectrum licenses and, in a not-so-subtle dig at U.K. incumbent BT, strengthen rules regarding structural separation of incumbents' retail and wholesale operations. Meanwhile, the EU's reforms could also make OTT communication service providers like WhatsApp, Skype and Facebook subject to tighter regulations. Under the proposals, OTT comms providers must ensure that their networks and servers are secure. OTT voice services in particular could also be forced to enable their users to call the emergency services. The European Commission also has big plans for WiFi. Under its new 'WiFi4EU' initiative, Brussels has earmarked an initial budget of €120 million to facilitate the deployment of free WiFi hotspots in and around public buildings, and in public spaces such as parks or squares. "It is time to move to a gigabit society and make sure all Europeans, whether in the countryside or in cities, can get access to a quality internet connection," Oettinger said.

## Reliance Jio could squeeze Indian telco sector

The entry of Reliance Jio Infocomm into the Indian telecoms sector is likely to have a destructive impact on incumbent operators and hasten industry consolidation, Fitch Ratings

has predicted. Reliance Jio finally launched 4G services on Monday, six years after the 2010 auction that led to the company securing the required spectrum. The operator has come out swinging with an offer for free voice calls and data services for a promotional period, as well as plans to offer free voice calls and only charge for data after this period ends. Fitch Ratings said the company estimates that Jio's planned blended tariff rates will be at least 20-25% cheaper than those offered by incumbent telcos, which are likely to reduce their own rates to avoid losing customers. As a result, the credit ratings agency expects the industry blended tariff to fall by 10-15% in the next year, reversing the recent rise in data ARPU and further squeezing voice ARPU. "Jio's tariff plans may gradually push the market toward 'data-only plans', under which customers are charged only for data, not for voice and text messages," Fitch said in a research note. "Such a shift could be particularly disruptive, given that most incumbents still derive the bulk of their revenue and profit from voice and text messages." The pressure is expected to impact the entire industry, but smaller operators are expected to be the hardest-hit. Some operators including Reliance Communications face a ratings downgrade as a result. Fitch has a negative outlook for the overall Indian telecoms industry, due to strict competition, large capex requirements and the prospect of debt-funded M&A activity. The company expects the industry to consolidate down to five or six players, with unprofitable telcos such as Telenor India and Tata Communications potentially exiting the market.

## EU telecom regulators adopt strict position on net neutrality rules

In a ruling EU regulators have seemingly adopted a firm position on how they intend to interpret rules limiting the ways telecom service providers priorities certain types of internet traffic, in a move they hope will enshrine the principle that all web traffic be considered equal. Reuters notes that the EU's new guidelines have been broadly welcomed by lobbyists keen to ensure that the internet remains a fair and level playing field and that market heavyweights are prevented from creating a two-tier system in which big companies with deep pockets can pay for the fastest speeds,

leaving everyone else on a slower service. Commenting on the ruling, Luca Nicotra, a senior campaigner for citizens' group Avaaz, said: 'Because of this law, telecom companies won't be able to sell a first-class internet to the mega-rich while the rest of us travel coach.' A new law on net neutrality was formally adopted in June 2015 when the European Commission (EC) announced it had passed a law to 'enshrine the principle of net neutrality into EU law,' with 'no blocking or throttling of online content, applications and services'. The EC claims that the common EU-wide internet rules will 'contribute to a single market and reverse current fragmentation', while declaring that every European must be able to have access to the open internet and all content and service providers must be able to provide their services via a high-quality open internet, while all traffic will be treated equally. This week's announcement is designed to help local regulators enforce those rules.

## Telecom firms look to OFCOM for guidance on mobile ad blocking

The Body of European Regulators for Electronic Communications (BEREC) published guidelines to clarify rules preventing internet service providers throttling download speeds. Part of the guidelines – which are now left to be interpreted by national regulators – outline telecoms companies "should not block, slow down, alter, restrict, interfere with, degrade or discriminate advertising when providing an IAS (internet access service)". This means ad blocking may not be allowed. It's understood Ofcom will act reactively to the regulation from Brussels and only investigate instances where it feels the rules might have been breached. An Ofcom spokesperson said: Ofcom will monitor compliance with the new rules, and look into any complaints received. We will consider any potential breaches as they arise in accordance with our interpretation of the regulation, and drawing upon the Berec guidelines to inform our approach. Mobile network Three has been working to bring in network wide mobile ad blocking, which is expected to launch in six to 12 months. It's thought Three will continue to develop the software along with Israeli firm Shine Technologies. The regulation allows for consumer consent over

their ability to access services and the ad blocking services would require users to opt in. Shine – understood to be working with Three, amongst others – has been developing mobile ad blocking software that can be used on a network wide basis.

## EU Commission's tax bill worth Euro 13 billion imposed on technology multinational

The European Commission has ordered Ireland to recover EUR 13 billion in taxes from Apple, after concluding that the country gave the company an unfair tax advantage over other businesses. The advance tax rulings granted by the Irish government for Apple's European headquarters in the country helped Apple lower its tax rate on European profits to as little as 0.005 percent in 2014. The Commission's investigation, started in June 2014, covers the period going back to 1991. The selective tax treatment of Apple in Ireland was found to be illegal under EU state aid rules. As a result, Ireland must now recover the unpaid taxes from Apple for the years 2003-2014 of up to EUR 13 billion, plus interest. The period covered is limited by EU rules capping recovery at 10 years and Apple changing its headquarters structure in 2015. The advance tax rulings granted to Apple in Ireland, first in 1991 and renewed in 2007, allowed most profits from Apple's European operations to be allocated to a 'head office' not based in any country and without any employees or premises. Its activities consisted solely of occasional board meetings. As a result only a fraction of the profits were allocated to its Irish branch and subject to tax in Ireland. The remainder went to the 'head office', which was not subject to tax due to no physical domicile. The Commission said the artificial structure laid down in the tax rulings had "no factual or economic justification", and the profits of Apple's two Irish subsidiaries, Apple Sales International and Apple Operations Europe, should have been subject to Irish income tax. Apple set up its sales operations in Europe in such a way that customers were contractually buying products from Apple Sales International in Ireland rather than from the shops that physically sold the products to customers. In this way Apple recorded all sales, and the profits stemming from these sales, di-

rectly in Ireland. Apple has consistently denied avoiding tax, with CEO Tim Cook saying in late 2015 that it was "total political crap" the idea, and his company was paying "every tax dollar we owe". In a statement reported by the BBC, Apple said it would appeal the Commission's decision, adding "Apple follows the law and pays all of the taxes we owe wherever we operate". It accused the European Commission of trying "to rewrite Apple's history in Europe, ignore Ireland's tax laws and upset the international tax system in the process" and predicted the decision would have negative consequences for investment and jobs in Europe. The EU tax bill is worth around a quarter of the company's net profit of USD 53.4 billion reported for its last fiscal year to September 2015. The Commission noted that the amount of tax recovered by Ireland could be reduced if other countries in the EU or Apple's home country the US decided to try and tax more of Apple's profits locally. Apple noted that the the Commission's case is "not about how much Apple pays in taxes, it's about which government collects the money". The Irish finance minister said in a statement that the government "profoundly disagrees" with the Commission's decision. He noted that the decision does not call into question Ireland's general tax system or its corporate tax rate, nor was the country fined for the offence. The country's position is "that the full amount of tax was paid in this case and no State aid was provided. Ireland did not give favorable tax treatment to Apple." The Irish government also plans to appeal the EC decision; it has two months and ten days to file the appeal. It said the decision was contradictory as the EC acknowledged that some of the profits could be recoverable under other jurisdictions than Ireland. Furthermore, the possibility of Apple's ghost 'head office' was not down to only Irish tax law, but a mismatch with other countries' tax law, such as the US, it said. The Irish government also accused the EU of overstepping its authority in tax matters and disrupting the international consensus on tax issues, which are largely negotiated through the OECD. The US has taken a similar stance, threatening the European Union of possible repercussions if it attempts to claim back billions in tax from major US multinationals such as Apple. The Commission has already taken similar decisions over tax rulings for Starbucks in the Netherlands and Fiat Chrysler in Luxembourg.

## PTA Issues SOPs for Cross-Border Communication Links

Pakistan Telecommunication Authority (PTA) has issued Standard Operating Procedures (SOP) for establishing Cross Border Bilateral/Transit Communication Links with neighboring countries. According to the SoP, PTA will grant final/formal approval to operations after

- Obtaining satisfactory report from the concerned agencies regarding provision of national security,
- Clearance report from Finance, Commercial Affairs, Licensing and Technical Services Divisions regarding clearance of all outstanding dues
- Satisfactory inspection report from Enforcement Division, PTA regarding fulfillment of other conditions as contained in PiP
- Fulfillment of requirements of any new policy for the time being enforced.

Telecom Policy 2015 has mandated Pakistan Telecommunication Authority (PTA) to facilitate the process for approval/issuance of NOC for establishment of cross border links under Telecom Policy 2015



# 7<sup>th</sup> Private Sector

Chief Regulatory Officers (CRO)  
Meeting

13 November 2016  
Bangkok, Thailand

**Objective:** The CRO meeting brings together senior industry executives to share experiences and exchange ideas on how to strengthen the private sector's involvement and engagement in global, regional and national initiatives and to identify mechanisms to better foster an enabling environment for future development of the sector. This year's meeting follows-up on the outcomes of the 6th CRO meeting held in Sharm el-Sheikh, Egypt, on 11 May 2016.



**Registration Online**  
<http://www.itu.int/go/regitud>

**Contact**  
[BDTMeetingsRegistration@itu.int](mailto:BDTMeetingsRegistration@itu.int)



## ▼ A SNAPSHOT OF REGULATORY ACTIVITIES IN SAMENA REGION

### REGULATORY UPDATES

#### Algeria



**President: Mr. Mohamed Ahmed Nacer**  
[Regulatory Authority for Post & Telecommunication (ARPT)]

ICT Minister Imane Houda Feraoun has revealed that the executive decrees authorizing the deployment of 4G LTE networks in the country have been signed by the Prime Minister, with the final concessions to be awarded to the three mobile operators in the forthcoming two weeks. Both Algerie Telecom Mobile (Mobilis) and Optimum Telecom Algerie (OTA, trading as Djezzy) are expected to launch commercial 4G services as soon as they receive the authorizations; OTA revealed in July that it had already upgraded its infrastructure to deploy the technology, while Mobilis tested the 4G service in Tlemcen that month. In early January the regulator invited all interested parties to apply for participation in the country's 4G license auction, with a deadline of April 11 for submitting bids. In the event, the Regulatory Authority for Post and Telecommunications (ARPT) accepted the three bids submitted by Mobilis, OTA and Ooredoo Algeria by stating that the applications were 'admissible'. Following the evalua-

tion of the three technical offers, the provisional 4G concessions were awarded to all applicants in May 2016.

(September 12, 2016) Agence Ecofin

#### Bahrain



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

The Telecommunications Regulatory Authority (TRA) reported a US\$ 53 million boost in telecom revenues between 2014 and 2015. The twelve-month period saw a rise from US\$ 1.14 billion to US\$ 1.193 billion. The TRA's latest market indicators report revealed a 4.7% growth in the sector and a Compound Annual Growth Rate (CAGR) of 4.6% between 2010 and 2015. During that six-year period, telecom operators invested a total of US\$ 1.254 billion towards developing innovative mobile, data and broadband services to cater to the increasing demands of the Gulf's most tech-enabled nation. Their investment paid off as subscription rates skyrocketed. By the end of Q2 2016, the broadband penetration rate reached 145% as nearly 2 million broadband subscriptions were registered. Better yet, the mobile penetration rate reached 201%

as approximately 2.8 million mobile subscriptions were recorded. And there's sure to be a demand for more. With a CAGR of 10.3% and a projected value of US\$ 2.7 billion by 2020, Bahrain is on course to have the fastest growing Information and Communication Technology (ICT) in the Gulf Cooperation Council. (September 20, 2016) [bahrainedb.com](http://bahrainedb.com)

The Telecommunications Regulatory Authority (TRA) continues to support and improve number portability in the Kingdom of Bahrain; having introduced number portability regulation and deployed a subsequent system in collaboration with telecoms operators as of July 2011. Since then, residents and businesses in the kingdom have enjoyed the flexibility of transferring their mobile and fixed lines seamlessly between telecoms service providers. During the second quarter of 2016, the number portability platform recorded 12,923 successful mobile line number portability requests, compared to 21,444 in 2nd quarter of 2015; a variance due to aggressive offers stimulating consumers to change service providers during 2015. Meanwhile, the successful transfer of fixed line numbers reached 152 compared to 305 in 2nd quarter of 2015. The average time is 27.5 minutes for mobile lines transfer and 4 hours for the fixed lines. Mrs. Taiba Al Binali, Acting Director of Consumer Affairs and Media, stated that, "During TRA's follow-up of the performance indicators regarding the number portability system, it was found that there are a significant amount of number portability requests which are rejected by the donor operator. As such, the major reasons some number portability requests were rejected is due to consumers providing wrong CPR or Commercial Registration numbers. If they don't match with the registered subscriber's fixed or mobile lines, or if the line is out of service, or if the subscriber has a record of bad debt with their current service providers, then the request will be rejected." The TRA would like to advise consumers that are willing to port their numbers to submit their requests during official working hours (Sun-Thursday, 8:00 AM to 4:00 PM) for ease of processing and to get their telephone number ported at the same day. Also, consumers are advised to be aware of their bill issuing date (or Billing Cycle) with their current service provider, to submit the number portability request at least two days prior to the end of this period, in order to avoid double billing from both operators. (September 20, 2016) [tra.org.bh](http://tra.org.bh)

The Telecommunications Regulatory Authority (TRA) has released some tips to consumers on how to avoid excessive roaming charges while travelling. TRA strongly believes in the importance of educating citizens and raising awareness among them, in particular during holiday and travel seasons. This falls as part of TRA's liability towards the citizens abroad and its keenness to avoid shocking bills at the end of the month. (September 8, 2016) [tra.org.bh](http://tra.org.bh)

## Bangladesh



**Chairman: Sahajan Mahmud**

[Bangladesh Telecommunication Regulatory Commission (BTRC)]

The Bangladesh Telecommunication Regulatory Commission (BTRC) has suspended its auction for providers bidding to implement the country's mobile number portability (MNP) system, which was scheduled to be held on 28 September. A BTRC spokesperson said that 'some procedures are yet to be completed which is unavoidable,' adding that the regulator will fix a new date for the auction 'within a short time'. (September 23, 2016) [The Daily Star](http://www.thedailystar.net)

Bangladesh's High Court overruled the Bangladesh Telecommunication Regulatory Commission (BTRC) which had issued two notices on July 31 and August 17 advising users of indebted CDMA operator CityCell to switch to other mobile providers, following a petition from CityCell. CityCell's counsel said the court issued a rule over the notices and sought explanations: 'According to the Telecommunications Act, the BTRC has no jurisdiction to issue such public notices.' CityCell faces imminent closure for non-payment of government dues. (September 9, 2016) [BDNews24](http://BDNews24.com)

Axiata has announced that the High Court Division of the Supreme Court of Bangladesh has approved the 'Scheme of Amalgamation' relating to the merger of its Robi unit with local rival Airtel Bangladesh. The approval was rubber-stamped on August 31, 2016, with the High Court judges setting a merger fee equivalent to approximately US\$12.8 million, which is payable to the Bangladesh Telecommunications Regulatory Commission (BTRC). Any spectrum assigned to Robi and to Airtel, respectively, prior to the merger, will continue to be used by the new entity, Merge-Co, for the time period stipulated in the original license. Meanwhile, the difference between the price paid by Robi for spectrum in 2011 and the price paid by Airtel for spectrum in 2005 – equivalent to approximately US\$65.0 million – shall be payable to the BTRC. In the event that Robi decides to return any spectrum to the BTRC, the value of the returned spectrum has been fixed at US\$1.3 million per MHz per year. Following the completion of the merger Axiata will take a 68.7% controlling stake in the combined entity, while Bharti Airtel will hold 25.0%, and the remaining 6.3% will be held by Robi's existing minority shareholder NTT DOCOMO of Japan. Currently, Axiata holds a 91.59% stake in Robi and NTT DOCOMO owns the remaining 8.41% interest.

(September 2, 2016) [telegeography.com](http://telegeography.com)

## Egypt



**Acting Executive President: Eng. Mustafa Abdul Wahid**

[National Telecommunication Regulatory Authority (NTRA)]

Egypt may offer 4G mobile-phone licenses to international telecommunications companies, National Telecommunication Regulatory Authority (NTRA) head Mustafa Abdul Wahid said after the three local operators rejected the government's terms. Abdul Wahid said the NTRA will present its board options for offering the new licenses on October 10, confirming that all three local operators had rejected the licenses. Arabiya TV also cited Telecommunications Minister Yasser El Kady as saying the new licenses would be offered under terms different from those presented to domestic operators. El Kady said 4G service will go ahead as planned, and will be offered by Telecom Egypt, according to the report. The rejection marked the second time a deadline for the offer had passed with Vodafone Egypt, Orange Egypt and Etisalat Misr declining to secure the next-generation license. Only Telecom Egypt, the state-run fixed-line monopoly, has a 4G license, which it acquired for EGP 7.08 billion. Orange's main objection was the quantity of spectrum offered by the government, which "would not allow us to offer 4G service up to international" or the company's standards, Ayman Es-sam, the operator's senior director for legal and corporate affairs, said by phone. The license terms didn't offer enough spectrum for efficient operation, or allow consumers to experience significant increase in speed, Vodafone Egypt said

in an e-mailed statement. The company would be interested in a license if the terms were revised, it said. Abdul Wahid rejected the companies' claims about insufficient spectrum being made available, saying "of course it will not be enough for the 90 million users, but it's sufficient" as a starting point. The same terms "are void" and won't be offered again, the telecom authority said in an e-mailed statement.

(September 26, 2016) telecompaper.com

Egyptian authorities are expected to consider offering 4G licenses to international companies via auction, after all three of the nation's existing cellcos opted not to take up the concessions. Vodafone Egypt, Orange Egypt and Etisalat Misr opted not to take up the proposed authorizations on the grounds that the terms were not viable. For its part, Vodafone Egypt issued a statement in which it said: 'Vodafone confirms that it would be ready to acquire a 4G license if the terms and conditions can be revised.' Meanwhile, Orange Egypt was cited as saying: 'Orange Egypt ... has decided not to apply for the license to offer 4G in light of the current terms and conditions.' On the back of the rejections, the Ministry of Communications and Information Technology (MCIT) confirmed that the National Telecommunications Regulatory Authority (NTRA) had informed the cellcos that, as none of them had applied for a license, the pre-agreed conditions and prices for them had been cancelled. The NTRA's Board of Directors (BoD) meanwhile held a meeting, headed by the Minister of Communications and Information Yasser ElKady, in which it was decided to consider a number of alternative means, including an international tender for the 4G concessions. These alternatives will reportedly be presented to the BoD at its next meeting, due to take place early next month. (September 23, 2016) reuters.com

Orange Egypt said it has decided not to apply for a 4G service license due to terms and conditions of the proposed license. In a statement, Orange confirmed its interest in investing in Egypt and in the 4G technology but said the quantity of spectrum currently availed does not allow it to launch a 4G service with the required level of quality according to international standards. Orange said it has invested EGP 32 billion in Egypt and is willing to continue to invest in country. The operator has launched 4G services in 16 countries. It thanked the National Telecommunications Regulatory Authority for the great effort they have made to provide the regulatory framework for the 4G license. Unfortunately, it said, it considers that the quantity of spectrum offered is not enough to offer the Egyptian customers the quality of 4G services that they deserve. The operator says it remains available to discuss the 4G license further in case a new framework is offered. The deadline for the Egyptian operators to apply for the license was September 22. The NTRA set the prices for the 4G frequencies at EGP 3.5 billion for Vodafone and Orange, EGP 4.5 billion for Etisalat Misr, and EGP 5.5 billion for Telecom Egypt (TE). The authority decided that 50 percent of the value should be paid in US dollars. Although Egypt gave domestic mobile operators the priority, the government said that it will launch an international tender in case they declined. Telecom Egypt has already accepted the conditions to the license in order to enter the mobile market for the first time. Vodafone and Etisalat are thought to be also considering rejecting the terms.

(September 23, 2016) telecompaper.com

The National Telecommunications Regulatory Authority (NTRA) will decide on the fate of the three 4G licenses provided to mobile companies operating in Egypt. The dead-

line for Vodafone, Orange, and Etisalat to apply for the license was set to 22 September. According to an official in the NTRA, the mobile companies have requested to extend the deadline and to pay the license value in installments, given that 50% needs to be paid in US dollars. However, the Minister of Communications and Information Technology rejected both requests. NTRA has set the prices for the 4G frequencies at EGP 3.5bn for Vodafone and Orange, EGP 4.5bn for Etisalat Misr, and EGP 5.5bn for Telecom Egypt (TE). The authority decided that 50% of the value should be paid in US dollars. There is an additional cost to be paid for offering the 4G services, which will be paid independently from the license's value. The source added that the deadline for receiving the three companies' requests to obtain the 4G licenses is 12.00pm on 22 September. In case none of the three companies applied for the licenses, they would be offered in a bid for regional and global companies who showed interest in investing in the Egyptian market. TE signed the 4G licenses in August for EGP 7.08bn. It paid EGP 5.2bn for frequencies, whereas the rest of the amount will be paid in installments over four years. (September 21, 2016) dailynewsegyp.com

With Egypt's mobile network operators (MNOs) required to confirm whether they will take up the offer of a 4G license by today, the National Telecommunications Regulatory Authority (NTRA) has confirmed it will not extend the deadline. According to Daily News Egypt, citing an unnamed official at the NTRA, requests from the nation's cellcos for both a longer period to consider the concession offer, as well as for the ability to pay the license fee in installments, have fallen on deaf ears. As it stands, Vodafone Egypt, Orange Egypt and Etisalat Misr have September 22 to make a final decision as to whether they will say yes to the 4G licenses offered to them, with the prices having been set at EGP3.5 billion (US\$394 million) for both Vodafone and Orange and EGP4.5 billion for Etisalat Misr. Should none of the three aforementioned operators apply for a concession, it has been suggested that the Egyptian authorities could offer them to other companies that have expressed an interest in entering the local wireless market. Fixed line incumbent Telecom Egypt became the first company to formally acquire a concession allowing it to offer 4G technology earlier this month. It agreed to pay EGP7.08 billion for its 4G concession in total, paying EGP5.2 billion of that upfront, with the remainder to be paid in installments over a four-year period. (September 22, 2016) telegeography.com

Telecom Egypt (TE) has become the first operator in the country to acquire a concession allowing it to offer 4G technology. With the fixed line incumbent having agreed to pay EGP7.08 billion (US\$806 million) for its 4G concession, it is understood that it has paid EGP5.2 billion of that upfront, with the remainder to be paid in installments over a four-year period. TE will have the option to extend the 15-year concession for five years for a fee of EGP2 billion, once its initial terms expires. It has also been confirmed that TE will not be required to sell its 45% stake in local cellco Vodafone Egypt as part of the license terms, with the National Telecommunication Regulatory Authority (NTRA) instead saying it will 'ensure' competition and governance compliance. With TE now expected to begin trial operations of its own 4G network within six months of receiving its frequencies, it will reportedly offer 2G and 3G services via other carriers' networks, and it has been given two months to agree on interconnection rates; should an agreement not be reached the NTRA will reportedly step in to determine the charges.

Commenting on its plans, TE's CEO Tamer Gad Allah was cited as saying: 'The ability to operate our own mobile services will allow Telecom Egypt to once again focus on growth.'

(September 1, 2016) Bloomberg

## Iran



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

The Iranian government has formally launched the first phase of its National Information Network (NIN), which it says allows improved high speed access to e-government services and domestic content, though the move has been criticized by some international organizations for its potential to tighten the state's control of internet use in the country. The NIN project was meant to be fully online by last year but the completion date has now been pushed back to March 2017. Phase one of the scheme, launched at the weekend, provides access to e-government services and domestic websites, while the second phase, due in February 2017, will add domestic video content, and the third phase – expected to be implemented a month later – will introduce further services and provide support for companies involved in international trade. For several years most private users in Iran had their broadband speeds limited to a maximum 128kbps, but this restriction was lifted in September 2014. (September 1, 2016) BBC

## Lebanon



**Secretary of the Board:** Mr. Amine Moulheiber  
[Telecommunication Regulatory Authority (TRA)]

Lebanese cellular operator Alfa said it was implementing price cuts for mobile internet and 4G voice/data packages following a recent appeal by Telecommunications Minister Boutros Harb to help Lebanon's consumers, whilst fellow cellco Touch Lebanon is expected to follow suit. Alfa CEO Marwan Hayek announced the launch of two new post-paid packages offering discounts of 'up to 53%' in addition to a drop in internet bundle rates of between 10% and 20% depending on the bundle, in cooperation with the Ministry of Telecommunications (MoT) and in line with the minister's gradual rate decrease strategy. 'We will begin applying the discounted rates Monday morning,' Hayek stated. 'The Telecoms Ministry decided to cut the prices of mobile internet,' Minister Harb said in a tweet, adding that the decision was part of the ministry's policy to secure universal internet access. Harb later called on the two state-owned, private sector-managed cellcos to submit new proposed 4G rate lists, according to which a one-month, 20GB 4G subscription will cost US\$59 per month instead of US\$69. Consumers can buy 4G data packages ranging from 1.5GB to 60GB per month. (September 22, 2016) The Daily Star

## Morocco



**Director General:** M. Azdine El Mountassir Billah  
[National Telecommunications Regulatory Agency (ANRT)]

National regulator ANRT reported that Morocco reached 13.7 million mobile internet users in June, representing an

annual growth of 34 percent. In the same period, overall ADSL customers increased by nearly 12 percent to reach 1.2 million. Monthly ARPU for mobile internet users (including data-only and data & voice) increased by 13 percent year-on-year to MAD 17 (excl. VAT), while ADSL ARPU remained flat at MAD 97. (September 4, 2016) telecompaper.com

## Oman



**Executive President:** Dr. Hamed Al-Rawahi  
[Telecommunication Regulatory Authority (TRA)]

To enhance customer experience, the Telecommunications Regulatory Authority (TRA) has released a handy guide to help customers choose from the right packages. "The main objective of publishing this digest is to assist the consumers in comparing different offers and enable them to choose a tariff plan or service provider, which best suits their needs. We expect this initiative will enhance transparency of tariffs because many subscribers do not have access to the required information before subscribing to a data service as such information is usually published on the service provider's websites," Hilal Al Siyabi, Media and Events manager at TRA, said. The rates published in the guide, however, do not cover promotional tariffs. "That is simply because promotional tariffs are short-term offers, which can change quickly," he added. Talking more about the guide, Al Siyabi said it will help people choose, based on their requirements. "If you use more data, then you can avail where you can get unlimited data. Then if you want to make only phone calls you can choose from packages where no data plan exists."

(September 1, 2016) world.einnews.com

## Pakistan



**Chairman:** Dr. Syed Ismail Shah  
[Pakistan Telecommunication Authority (PTA)]

According to the latest data of Pakistan Telecommunication Authority, Pakistan ended August with 133.90 million telecom subscribers, marginally up from 133.28 million in July-16. Telecom operator Mobilink commanded the mobile market again with over 40 million mobile customers at the end of August-16, followed by Telenor (38 million), CMPak (25.8 million), Ufone (19.1 million) and Warid (10.7 million). The annual telecom subscribers increase to 133.90 Million in August-16. The number of 3G/4G mobile users reached 32.6 Million. (September 22, 2016) 3gca.org

Ministry of Information Technology (MOIT) conducts first IMC meeting to develop Implementation Rules for PECA 2016. The first meeting of the Inter-Ministerial Committee constituted by the Prime Minister of Pakistan to develop the organizational structure and rules for implementation of Prevention of Electronic Crimes Act (PECA) 2016 was held in the Committee Room of MoIT. The Committee extensively reviewed the PECA 2016 in the light of the ToRs of the IMC for PECA. MoS for IT Mrs. Anusha Rehman said that we are fully cognizant with the fact that cyber crime victims suffered a lot to get justice in the past due to non-availability of any proper cyber crime legislation to deal with such heinous crimes. But now we are fully confident that their grievances will be addressed appropriately. It was also suggested in the meeting that by keeping in view the capacity and capability

of FIA to deal with cyber crimes, the committee may suggest FIA to be nominated as "designated agency" as enshrined in section 29 of PECA 2016. Moreover, nomination of the courts for prosecution of such cases and establishment of cyber emergency response team were also discussed in detail. (September 7, 2016) phoneworld.com.pk

## **Qatar**



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

The Communications Regulatory Authority (CRA) has ordered Ooredoo Qatar to ensure it provides unhindered access to its fiber duct infrastructure to passive network operator Qatar National Broadband Network (QNBN), following a complaint filed by QNBN in late-2015 which claimed Ooredoo was not fully complying with the access agreement between the two parties. The report adds that this is the second such complaint filed by QNBN requesting regulatory intervention by the CRA (the first being in 2013). The CRA has directed Ooredoo to process and fulfill all pending access requests, and to resume processing new access requests submitted under the existing agreement. The regulator's decision also orders Ooredoo to implement an access agreement with its main rival Vodafone Qatar in compliance with the approved Reference Infrastructure Access Offer. (September 23, 2016) The Gulf Times

## **Saudi Arabia**



**Governor: Dr. Abdulaziz Bin Salem Al Ruwais**  
**[Communication & Information Technology Commission (CITC)]**

The Ministry of Commerce and Investment on Thursday announced its readiness to participate in the second stage of nationalization of the telecom sector through the inspection of outlets from Friday. An official from the ministry said that this action is in implementation of the ministerial decision that limits workers in the telecommunications and their accessories sectors to Saudi citizens only. The official said the inspection campaigns are efforts of cooperation and coordination among many government agencies such as the Ministry of Interior, the Ministry of Labor and Social Development, the Ministry of Municipal and Rural Affairs, and the Telecommunication and Information Technology Ministry. "This collaboration aims to verify the business enterprises committing to the regulations in the sector, to develop appropriate and adequate career opportunities for the national manpower." In addition to inspecting the shops, the efforts will also focus on combating commercial concealment. He stressed that there will be no tolerance in applying the sanctions on those who violate the law, which can be a prison sentence for two years and a SR1 million fine, irrespective of the nationality of the violator. Foreigners will be deported after the end of their sentence, and they will be prevented from entering the Kingdom for business in the future. In addition, there will be an announcement of the violators' names in the media, closing the shop, and preventing the trader from practicing the same business for five years. By implementing the nationalization of the telecom sector's decision, the Ministry of Commerce and Investment, repre-

sented in the SME body, is supporting entrepreneurs in this area to achieve the strategic vision in supporting the private sector. The nationalization decision aims to create more job opportunities for Saudi citizens, both men and women, who wish to work in this sector for financial returns and job stability, and also to maintain the professions of this sector for their security, social and economic importance. (September 2, 2016) arabnews.com

## **United Arab Emirates**



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

The UAE telecommunications Regulatory Authority (TRA) has begun the second stage of its Taghtia initiative, which aims to proactively assess the quality of telecoms services in the country, particularly underdeveloped areas. The TRA is conducting a series of surveys to check quality of service against a set of standards which include quality of voice services, quality of data services including coverage, call success rate and call outages. The initiative is meant to avoid the accumulation of complaints from local subscribers. The move is part of the second phase of the TRA's 'Taghtia' initiative, which was launched last year. 'Taghtia' aims to achieve customer satisfaction and happiness via protecting the interests of these subscribers; upgrading the services of the UAE's telecommunications segment and providing quick response actions to breakdowns and other network problems. Director General of the TRA said that the regulator is committed to protecting the interests of subscribers, and to establishing healthy competition among the two operators in the UAE. As part of Taghtia, the TRA has developed new tools for testing networks, including test equipment installed in cars that can then report back to a central control room. Focused heavily on the country's developing areas, the second phase of 'Taghtia' will include a wider range of internal and external field surveys designed to assess the services of communications networks in areas like shopping malls, service centers, government offices, convention centers, stadiums, etc. According to the TRA, the second phase looks towards reaching out to local subscribers even before complaints on services are made, which will be done through the conducting of periodic surveys and sending of analytical reports to service providers so that they can immediately address the weaknesses and improve the quality of the services they render. In response, the service providers will issue their proposed action plans to the TRA, covering how they will address the issues along with periodic reports on the level of the coverage for each network in these various areas. These reports will be made available to the public on the TRA website and on various media portals. (September 7, 2016) itp.net

The UAE has maintained its 12th global ranking in the Information and Communications Technology (ICT) index, one of the key indicators included in the 2016 Global Innovation Index (GII) revealed earlier this week. The country topped the Arab nations and placed 41st worldwide in overall performance. The Telecommunications Regulatory Authority (TRA) undertakes the responsibility to provide the best technologies for the ICT sector in the country and carries out the role to develop the sector's infrastructure, with the aim of serving and supporting all projects implemented by other sectors. (September 1, 2016) itp.net

ITU  
TELECOM  
WORLD

'16

Bangkok 14-17 November

# BETTER SOONER

Accelerating ICT innovation  
to improve lives faster

ITU Telecom World 2016 is the global platform to accelerate ICT innovations for social and economic development. It's where policy makers and regulators meet industry experts, investors, SMEs, entrepreneurs and innovators to exhibit solutions, share knowledge and speed change. Our aim is to help ideas go further, faster to make the world better, sooner.

Visit [telecomworld.itu.int](http://telecomworld.itu.int) to register your interest.



#ituworld  
[telecomworld.itu.int](http://telecomworld.itu.int)





## ▼ REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

### REGULATORY UPDATES

#### Australia



A report on potential competition issues raised by commercial agreements between Telstra and nbn, the company overseeing the National Broadband Network (NBN) project, has been published by the Australian Competition and Consumer Commission (ACCC). The ACCC has outlined concerns that the agreements between the two companies could give Telstra a 'head start' in connecting customers to HFC-based NBN services, while also seeing the fixed line incumbent benefit from preferential service activation and/or repair of NBN services for its own customers. To mitigate the potential risks to competition, the ACCC has confirmed that both nbn and Telstra have agreed to a number of measures, which the regulator will continue to monitor. These include: making NBN HFC connections available to all service providers simultaneously; nbn setting priorities on activation and repair work that it allocates to Telstra, requiring Telstra to follow those priorities and de-identifying work orders from other RSPs; and Telstra providing 'white label' activation and repair services to nbn and requiring its field workforce follow non-discrimination rules when attending end-user premises.

(September 2, 2016) [telegeography.com](http://telegeography.com)

#### Belarus



The government has enacted new regulation on VoIP telephony in the country, which it says is targeted at counteracting violations of IP traffic transmissions on domestic telecommunications networks. Enacted on September 18, 2016, the new rules will reportedly strengthen control of both IP voice and video calling services, although details are unclear as to how this will affect over-the-top (OTT) platforms such as Skype or Viber. In March 2016 President Lukashenko signed the Decree 'On Improvement of Transmission Procedure of Telecommunication Messages', which specifies that users of telecoms services (including the internet) are prohibited from using 'hardware and software tools, which together are used to transform data exchange protocol used for voice and other messages from a subscriber who makes a call and deliver such messages to another subscriber using numbers that do not belong to the subscriber who owns the number'. Under the Covmina Decree from September 18, 2016 local operators now have the right to block IP telephony traffic, including traffic from sources relating to outstanding cases of alleged violations. The resolution makes additions and changes to the 'Rules of Rendering Telecommunication services. In particular, the Covmina

Decree reportedly corrects the rights, duties and responsibilities of the Belarusian carriers, so as to: 'concretize the right of telecommunication operators to suspend or terminate the provision of telecommunications services, block IP telephony traffic, including in cases of violation of the order of traffic transmission on telecommunications networks'.

(September 20, 2016) [telegeography.com](#)

## Chile



Chile's Department of Telecommunications (SUBTEL) announced the full introduction of intermodal number portability on September 5, enabling the transfer of telephone numbers between fixed and mobile networks. In a press release, Minister of Transport and Telecommunications Andres Gomez-Lobo commented: 'Today we completed a gradual process that began five years ago and that seeks to promote competition among telecommunications companies, encouraging them to offer lower rates and better service to users.' The process of implementing fixed number portability began in Arica and Parinacota in December 2011, with portability between mobile numbers introduced the following month. Geographic portability was launched in November 2015 and at the start of this year Subtel unified the numbering systems for fixed and mobile networks under a nine-digit structure, in order to facilitate the introduction of intermodal portability. According to the regulator, by the end of August 2016 over 7.42 million fixed and mobile numbers had been switched to a different service provider.

(September 6, 2016) [telegeography.com](#)

## European Union



The European Commission has decided against limiting the number of days EU residents can take advantage of 'roam like home' and instead will leave it up to operators to intervene if they find customers are using free roaming excessively. European Commissioner for the Digital Single Market Andrus Ansip announced at a press conference that the Commission was abandoning its earlier proposal to cap roam like home at 90 days from June 2017, when all roaming surcharges are planned to end in the EU. EU residents will be able to roam at the same price as they pay at home, and operators can only apply surcharges for roaming if they detect excessive use. Excessive use would be defined as regularly using more traffic while roaming than the customer uses at home, using a SIM for roaming that had previously been inactive for a long time or a customer subscribing to multiple SIMs for roaming. Surcharges would be capped at the proposed wholesale roaming rates, of EUR 0.04 per minute, EUR 0.01 per SMS and EUR 0.0085 per MB. Operators would first notify customers of the excessive usage, and customers would be allowed to justify their usage before surcharges are applied. Accepted usage would be based on their home country of residence and "stable links" with the countries they are visiting, such as expats or Erasmus students returning regularly to their home country, or frequent travel for work. Customers could appeal the surcharges in a complaint with the operator and ultimately to national regulators, who would decide whether the extra charges are justified. European Commissioner Gunther Oettinger said the proposal will be sent to EU regulator BEREC for its opinion and BEREC could develop examples to guide national regulatory decisions. The aim is for the proposal to be implemented by 15 December, so the end to roaming can take effect next June as planned. The Commissioners said opera-

tors making a loss on roaming would also still have the opportunity to apply to national regulators to derogate from roam like home. As outlined earlier, this procedure would allow the operators to apply the regulated roaming surcharges, in order to prevent having to raise domestic prices to offset the roaming losses. (September 21, 2016) [telecompaper.com](#)

The EU is looking for a complete overhaul of the union's telecoms rules, to include setting a minimum requirement of 100Mbps in every household and a 5G minimum connectivity of urban centers by 2025. The intentions of the EU were made clear during the State of the Union address by President Jean-Claude Juncker. This would leave member states with the considerable challenge of overhauling their entire telecoms infrastructures. As part of his statement of intent, President Juncker set out three objectives that he proposes should be met by 2025 to bridge the connectivity divide between rural and urban areas. The first objective is to ensure a minimum standard of 100Mbps broadband speed in member states, regardless of whether a property is in a major urban area or rural village. States should also have the flexibility to upgrade to broadband capable of reaching more than 1Gbps. The second objective relates to the roll out of 5G mobile connectivity, which remains largely operational on a trial basis. A number of European mobile operators have already begun early trials of the technology. Under the proposal, all urban areas in a member state – including major roads and railways – would have access to uninterrupted 5G coverage by 2025. However, an interim target has been set that every member state should make 5G commercially available in at least one of its major cities by 2020. The final objective proposes that all of a member state's main socio-economic drivers – including universities, research centers and hospitals – should have access to a minimum of 1Gbps broadband. Such targets will require massive investment, the EU admitted, putting an estimated cost of €500bn on achieving its targets – an investment that will come largely from private sources. With a realistic expectation that there will still be an investment shortfall of €155bn, the EU has also proposed a new European Communications Code that would increase competition among telecom operators, offer stronger consumer protection and ensure a better use of radio-frequencies. Outside of these three key objectives, the EU also announced its WiFi4EU proposal, which will create a €120m fund to roll out Wi-Fi to a minimum of 6,000 local communities by 2020. As part of the proposal, citizens would have free access to Wi-Fi connectivity in public areas, such as in public buildings, or in parks and squares. During the State of the Union address, President Juncker said: "We need to be connected. Our economy needs it. People need it. And we have to invest in that connectivity now." (September 16, 2016) [siliconrepublic.com](#)

The European Commission's (EC's) competition watchdog has approved the proposed EUR21.8 billion (US\$24 billion) merger of Italian telcos Wind Telecomunicazioni, which is owned by VimpelCom, and CK Hutchison subsidiary 3 Italia. Although the deal would have reduced the Italian mobile sector from four players to three, the pair's offer to sell a package of spectrum and physical assets to French firm Iliad will enable it to set up as a new mobile network operator (MNO), thus keeping the market at four players and appeasing regulatory concerns. EC competition commissioner Margrethe Vestager said: 'Mobile services are an important part of our daily lives. Today's decision ensures that the Italian mobile sector remains competitive, so that consumers can continue to enjoy innovative mobile services at fair prices and on high quality networks. We can approve

the deal because Hutchison and VimpelCom have offered a strong remedy that enables a new mobile network operator, Iliad, to enter the Italian market.<sup>6</sup> Hutchison has obviously learned from past experiences; earlier this year Vestager blocked the merger of UK cellcos 3 and O2 on competition grounds, but in that case no remedy package was offered to ensure the market continued with four players. The combination of Wind and 3's mobile operations will create a business with around 31 million subscribers, enough to leapfrog competitors TIM and Vodafone to take top spot in the Italian wireless market. Meanwhile, although Iliad managed to shake up the French mobile sector when it launched as the fourth player several years ago, it faces a tougher prospect in Italy, where competition is already fierce and it has no fixed line business to build upon. Nevertheless, the French firm is still targeting a 10% share of Italy's mobile market.

(September 2, 2016) [telegeography.com](#)

BEREC, the EU telecom regulator, has published its final guidelines for national regulators on enforcing the EU's net neutrality legislation which took effect in April. A public consultation by BEREC earlier this year on the draft guidelines attracted nearly half a million responses as the public, governments and private companies sought to weigh in on how non-discrimination of internet traffic should be maintained. BEREC also published a summary of these responses, ahead of a presentation of the guidelines at a press conference in Brussels. The law, which took effect 30 April, sets a common standard for net neutrality throughout the EU. Internet providers are required to treat all traffic equally, with no blocking or slowing specific content, applications or services from selected senders or to selected receivers. BEREC said at its presentation that this does not include a ban on zero-rating "per se". Whether ISPs may charge less or nothing for data to use certain applications will depend on a number of factors to be evaluated by national regulators, including whether this limits end-user rights or choice and the market shares and commercial interests of the respective providers. A clear infringement of zero-rating mentioned in the guidelines is that users cannot continue to access a specific application free after using up their data cap. However, BEREC did add an exception to the above in the final guidelines allowing free access to the ISP's customer service website or app even after using up the data allowance. The main exceptions allowed to the general net neutrality principle are compliance with court orders and laws, preventing network congestion and combating cyber-attacks. If such traffic management measures are needed, they must be "transparent, non-discriminatory and proportionate" and may not last any longer than necessary. BEREC's guidelines set out how traffic management must occur independent of users and applications, in order to ensure non-discrimination. If needed, any traffic management should be conducted according to different categories of traffic, so applications with similar QoS requirements (eg, latency, bandwidth, packet loss) are treated the same. Traffic management may never be based on commercial requirements of the ISP, nor should it ever involve monitoring of the content of traffic. Operators may still offer "specialized" services, such as guaranteed speeds or quality for specific applications or customers like businesses, as long as this is necessary for the particular service (i.e. it cannot otherwise be provided over the open internet) and does not impact the overall internet quality for other users on the network. Specific examples of such services mentioned in the guidelines include VoLTE, IPTV, 5G network slicing or remote telemedicine services. BEREC said at the press conference that the final guidelines clarify that no ex ante approval will be required from regulators in or-

der to offer specialized services, nor for traffic management techniques or other commercial practices. All enforcement will be conducted ex post by regulators. In a further step towards transparency, the law also requires ISPs to provide more details about the speeds delivered for broadband services. For fixed networks, this should include an indication in customer contracts and in marketing of the minimum and maximum speeds customers can expect to receive (achievable regularly, such as at least once a day) and the normally available speed (95% of the day). Mobile providers must state the maximum expected speed, which may be detailed further according to location with maps or user technology (3G, 4G etc), and the 'advertised speed' which the provider is realistically able to deliver. National regulators may further expand these requirements. ISP information must also include details on the traffic management techniques they employ, so users can judge if this may affect their services, and any specialized services in the user's contract, such as IPTV, that could affect the internet connection. End-users must be notified about how they can complain if the speed varies significantly or regularly from the expected offer. In enforcing the rules, the national regulators will be allowed to order ISPs to stop or adapt certain practices or services that could be degrading internet access, set minimum technical or QoS requirements, and even require a change in network capacity to ensure specialized services are not impacting other users. In addition, the national regulators will be required to publish annual reports on their observations and enforcement actions, which will also be sent to BEREC and the European Commission. The first reports will be due by June 30, 2017. BEREC will use the reports for future reviews and updates of the guidelines. In the event of different interpretations of the guidelines, Berec said it will be up to the courts to decide any appeals against national regulators' decision. Furthermore, many aspects of the enforcement will depend on national laws and market conditions, said Sébastien Soriano, head of French regulator ARCEP and incoming BEREC chairman for 2017, noting that regulators will be required to take into account factors such as ISPs' market power in decisions on issues like zero rating. As a result, international groups may find that their treatment could vary from country to country, based on their local market position, he said. BEREC also said that it has no say on other net neutrality legislation passed by EU member states and it would be up to the European Commission to challenge these through infringement procedures or for other players to consider court appeals.

(September 1, 2016) [telecompaper.com](#)

## France



The French government will meet its target of covering at least half of the population with ultra-fast broadband by the end of 2016, one year ahead of schedule. Minister for Rural Development, was cited as saying: '50% of the population will be covered by a high speed broadband connection at the end of the year ... While only 27% of premises were connectable end of 2012, the figures for the second quarter 2016 show that we have reached a rate of 47.4%, double the population covered in three years.' Under the 'Tres Haut Débit (THD)' plan, introduced in November 2012, the government is aiming to cover 50% of the country with next generation access (NGA) networks – capable of delivering download speeds of at least 30Mbps – by end of 2017, with 100% of the French population set to be eligible for ultra-high speed broadband services by 2022. A total of EUR20 billion (US\$22.6 billion) of private and public in-

vestment is estimated to be needed to meet the 2022 target, with the funds set to be provided by three tranches of more than EUR6 billion each from network operators, operators/local governments, and state/local governments.

(September 8, 2016) Les Echos

## Germany



German telecoms giant Deutsche Telekom (DT) has announced plans to make an additional investment of up to EUR1 billion (US\$1.1 billion) in its networks, and offer around six million more customers download speeds of up to 100Mbps, after telecoms regulator the Federal Network Agency (FNA) last week approved plans to enable the roll-out of Vectoring technology in areas near local exchanges.

DT, which provides fixed and mobile services in its domestic market via its Telekom Deutschland subsidiary, says it is committed to connecting all households in areas near local exchanges to high speed broadband and added that its binding investment undertaking was the basis on which the FNA specified the framework conditions for deploying Vectoring technology in areas near local exchanges. Under certain conditions, other companies can also connect customers in these areas, insofar as they also make similar investment commitments. Every company must ensure access for third parties, the conditions for which are still to be specified in a separate regulatory procedure. 'I am pleased that the FNA has set out the framework conditions for rollout in areas near local exchanges. Fiber broadband rollout is important for consumers, particularly in rural areas,' commented DT board member Niek Jan van Damme. Meanwhile, DT has also revealed that its LTE customer base has exceeded the ten million milestone. The 4G network currently reaches around 91.4% of the German population.

(September 5, 2016) telegeography.com

The Federal Ministry of Transport and Digital Infrastructure (Bundesministerium für Verkehr und Digitale Infrastruktur, BMVI) has approved a further 53 grants to fund the roll-out of high speed broadband networks in Mecklenburg-Vorpommern. The second round of funding, which totals EUR457 million (US\$510 million), forms part of the government's EUR4 billion programme to promote infrastructure efforts in rural and underserved areas of the country. Federal Minister Alexander Dobrindt said the EUR457 million will help to connect around 120,000 households and 10,000 businesses in Mecklenburg-Vorpommern to super-fast broadband networks. The government approved the BMVI's plans to allocate EUR2.7 billion for the deployment of high speed broadband in so-called 'white spots' in October 2015, and went on to allocate an additional EUR1.3 billion in July to raise the total fund to EUR4 billion. The money is being allocated to local authorities, which can then subsidize telecoms operators in two ways, either by financially supporting the economically unattractive rollout of broadband networks by a telecoms operator, or by installing broadband networks themselves and then renting out their infrastructure to suppliers. (September 1, 2016) telegeography.com

## India



The Department of Telecommunications (DoT) has received applications from seven cellcos to participate in the upcoming spectrum auction, but has yet to process or approve the applications. The market's three largest operators, Bharti Airtel, Vodafone India and Idea Cellular have all

submitted applications, as have Reliance Communications (RCOM) and Aircel, the pair having announced last week plans to merge their wireless operations. Disruptive newcomer Reliance Jio Infocomm (RJIL), meanwhile, has also thrown its hat into the ring, submitting the single largest deposit. The cellco has reportedly submitted an earnest money deposit (EMD) of INR65.0 billion (US\$966.5 million), almost amounting to the combined total of the next three largest deposits, from Vodafone, Idea and Airtel, which entered EMDs of INR27.5 billion, INR20.5 billion and INR19.8 billion respectively. The final operator to register its interest in participating in the auction was Tata Teleservices (TTSL), although it is unlikely to be in a position to compete for the most sought-after spectrum bands. The operator's main stakeholders, Tata Group and Japan's DOCOMO are currently embroiled in a US\$1.6 billion legal dispute over the latter's exit from the company. Further, due to the firm's financial difficulties, the watchdog restricted the cellco to only purchasing top-up spectrum in its existing operating areas in the March 2015 auction. Neither of the state-owned firms, Bharat Sanchar Nigam Ltd (BSNL) and Mahanagar Telephone Nigam Ltd (MTNL) have entered applications, nor did Norwegian-owned Telenor India, which ruled out its participation earlier this year due to the high prices for spectrum. (September 19, 2016) The Economic Times

## Jamaica



The government is going ahead with its plan to award the island's third mobile license to Symbio Investments, which has said it will offer services under the brand name Caricel. Prime Minister Andrew Holness made a statement to parliament saying that the Ministry of Science, Energy and Technology (MSET) has concluded an investigation into Symbio and found that there is no reason that its 15-year mobile license should not be awarded. The investigation followed an earlier report from the Office of the Contractor General (OCG) published in July this year, which found links between Symbio and local businessman George Neil. Neil had 'adverse traces' linked to his name following an OCG investigation in 2009 which related to the granting of a telecoms license to a firm trading as Gotel. Gotel later merged with a company called NewGen and began trading as Symbio. The government now says that since the 'adverse traces' are from prior to 2009 and the police have confirmed that there is no ongoing investigation into Neil, then the award of the license can go ahead with a fee of USD20.83 million, as originally announced in February this year. Jamaica's mobile market is currently a duopoly for Digicel and Flow (formerly LIME). (September 15, 2016) telegeography.com

## Kenya



The Communications Authority of Kenya (CA) will allow public and private entities to launch trial networks utilizing spectrum in the 700MHz frequency band, to help meet the growing demand for high speed internet services in the East African nation. The 700MHz spectrum was freed up by the country's migration from analogue to digital television, which was completed last year. The CA's Director General was quoted as saying that the increased rollout of broadband services and the proliferation of new services require an effective and optimal use of available spectrum. 'Enhanced capacity to meet the growing demand for frequency spectrum that supports 4G and next generation 5G networks for mobile broadband services is critical for the growth of ICT,' he added. (September 20, 2016) Business Daily

## Malaysia



Malaysian telecoms group Axiata has announced that the High Court Division of the Supreme Court of Bangladesh has approved the 'Scheme of Amalgamation' relating to the merger of its Robi unit with local rival Airtel Bangladesh. The approval was rubber-stamped on August 31, 2016, with the High Court judges setting a merger fee equivalent to approximately US\$12.8 million, which is payable to the Bangladesh Telecommunications Regulatory Commission (BTRC). Any spectrum assigned to Robi and to Airtel, respectively, prior to the merger, will continue to be used by the new entity, MergeCo, for the time period stipulated in the original license. Meanwhile, the difference between the price paid by Robi for spectrum in 2011 and the price paid by Airtel for spectrum in 2005 – equivalent to approximately USD65.0 million – shall be payable to the BTRC. In the event that Robi decides to return any spectrum to the BTRC, the value of the returned spectrum has been fixed at USD1.3 million per MHz per year. Following the completion of the merger Axiata will take a 68.7% controlling stake in the combined entity, while Bharti Airtel will hold 25.0%, and the remaining 6.3% will be held by Robi's existing minority shareholder NTT DOCOMO of Japan. Currently, Axiata holds a 91.59% stake in Robi and NTT DOCOMO owns the remaining 8.41% interest. (September 2, 2016) [telegeography.com](#)

Following the announcement back in February 2016 that it was reallocating spectrum in the 900MHz and 1800MHz bands, the Malaysian Communications and Multimedia Commission (MCMC) has now confirmed the pricing for these frequencies. In a press release the regulator revealed that, having conducted a study on the matter it had determined that a 2×5MHz block in the 900MHz will cost operators MYR499.725 million (US\$123 million), while the same amount of spectrum in the 1800MHz has been priced at MYR217.770 million. Three of the four operators that were included in the spectrum reallocation process made official filings with the Bursa Malaysia after the pricing announcement, confirming both the one-off fee that they will pay for their new frequencies, as well as the annual charge that applies. As such, Maxis and Celcom, which have both been earmarked 2×10MHz in the 900MHz band and 2×20MHz in the 1800MHz band, will pay MYR816.75 million upfront on accepting the new allocations, in addition to an annual spectrum maintenance fee of MYR70.25 million. Meanwhile, DiGi Telecommunications confirmed that it will pay MYR598.54 million upfront for 2×5MHz in the 900MHz and 1800MHz bands, with an annual fee component of MYR51.48 million. Only U Mobile has not made an official announcement regarding the one-off fee and annual charge for its allocations – 2×5MHz in the 900MHz band and 2×15MHz in the 1800MHz band – though local press outlet The Star Online cites industry experts as suggesting that it will pay around MYR500 million upfront, along with a yearly fee of around MYR40 million. A deadline of November 1, 2016 has been set for operators to formally accept their new spectrum allocations. (September 1, 2016) [telegeography.com](#)

## Malta



The Malta Communications Authority (MCA) has called for expressions of interest in 60MHz of spectrum in the 800MHz 'digital dividend' band (791MHz-821MHz paired with 832MHz-862MHz). The regulator says it has received a formal request from a licensed service provider to utilize the band, and is now looking to see if there is further demand

for the spectrum, which can be used for 4G mobile broadband services. Malta's mobile market is home to three network operators – Vodafone, GO and Melita – plus a handful of resellers. Vodafone and GO have already introduced 4G LTE technology using 1800MHz and 2600MHz frequencies, while Melita has still to announce plans for a commercial 4G launch. (September 14, 2016) [telegeography.com](#)

## Nigeria



The Nigerian Communications Commission (NCC) has announced its intention to auction off the five remaining regional infrastructure company (InfraCo) licenses, which allow for the deployment of metropolitan fiber-optic infrastructure and associated transmission equipment on an open access, non-discriminatory and price-regulated basis. In January 2015 MainOne Cable and IHS secured the first two concessions – for Lagos State and the North Central Zone, respectively – and under the second phase of licensing, permits will be awarded for the five remaining zones: North East, North West, South East, South West and South South. The NCC says that the Request for Proposal (RFP) document detailing the commercial principles, key licensing conditions and technical specifications will be advertised and made available shortly. 'The Open Access Model has been examined and found to be an appropriate model for fibre-optic backbone infrastructure in Nigeria to bridge the current broadband gap and deliver fast, reliable broadband services to households and businesses,' the NCC said in a public notice on its website, adding: 'It is envisaged that this initiative will address the challenges of congested transmission network and also mitigate the challenges arising from infrastructure sharing and rights of way issues.' (September 8, 2016) [telegeography.com](#)

## Philippines



The Philippine Competition Commission (PCC) has announced, via its Mergers and Acquisition Office (MAO), that it considers the proposed PHP69.1 billion (USD1.48 billion) joint takeover of the telecoms assets of local conglomerate San Miguel Corp (SMC) by the country's two telecoms giants – PLDT Inc. and Globe Telecom – as anti-competitive, and only likely to further strengthen their duopoly. The MAO posted a 16-page preliminary statement of its concerns on the PCC website on August 25, just 24 hours before the Court of Appeals (CA) ruled to stop the PCC from reviewing the deal. In its resolution the CA adjudged: 'After a painstaking evaluation of the parties' arguments ... in order to maintain the status quo ante while the case is being judiciously studied and to preserve the rights of the parties during the pendency of the instant petition and not to render ineffectual whatever judgment that may be rendered by this court, it would be more prudent for this court to grant petitioner's prayer for a preliminary injunction.' Further, the court decision confirmed: 'We agree with PLDT that, due to the 'deemed approved' status extended to the subject acquisition by virtue of the transitory rules, at the very least, PLDT has a clear right to be protected from the pre-acquisition review and/or investigation conducted by respondent PCC,' concluding: '[Let] a writ of preliminary injunction be issued, enjoining and directing the respondent PCC ... to cease and desist from conducting further proceedings for the pre-acquisition review and/or investigation of the subject acquisition ... until further orders from this court.' The MAO, however, has called for a more detailed review of the deal, considering that it has effectively barred any

third party 'from actively competing in the industry with the limited frequencies left from the spectrum buyout'. It noted that 'given the current technical constraints, there will be no usable 2G bands available to provide basic mobile telecommunications services such as SMS and voice. Without access to 2G frequencies, it would be extremely difficult, if not impossible, for a new player to enter and challenge the incumbents. Further, the M&A office concludes that 'expanding a network with a limited frequency spectrum requires considerably more investment, as more cell sites are needed to create the same capacity. This means that a new player will need a long time to build and expand its network and will incur considerable expense.' (September 2, 2016) [telegeography.com](#)

## Senegal



The Regulation Authority of Post and Telecoms (ARTP) has assessed the impact of mobile number portability (MNP) in the country, one year after its launch on September 1, 2015. According to the regulator the biggest winner to date has been Tigo Senegal, a subsidiary of the Luxembourg telecoms group Millicom International Cellular (MIC), which accounted for 2,122 of the total of 6,337 users indicating their wish to switch in the period. Market leader Orange Senegal hosted a net 1,026 new users, and third-placed Expresso just 716. ARTP's findings suggest that Orange Senegal lost 2,249 customers to its competitors, Expresso 786 and Tigo 732. Meanwhile, 2,578 MNP applications were rejected because of the unproved identity of the applicant. While ARTP is keen to trumpet the findings, the number of people embracing MNP is disappointing in a market that stood at over 15.765 million mobile users at June 30, 2016. (September 7, 2016) [telegeography.com](#)

## Singapore



The battle for Singapore's fourth mobile license just got a lot more interesting, with newcomer airYotta expressing interest in participating in the new-entrant spectrum auction next month. Newly-formed airYotta joins Consitel, a regional wireless network provider, and ISP MyRepublic in seeking to become Singapore's fourth mobile player. The successful new entrant will battle incumbents Singtel, StarHub and M1. airYotta submitted an expression of interest in bidding for the spectrum on the final day applications were accepted. Singapore's Infocomms Development Authority (IDA) in July issued the final rules for the upcoming 4G spectrum auction and set a September 1 deadline for new entrants to submit applications. The IDA has taken a number of steps to ease the path for the entry of a fourth mobile operator to boost competition. In February it released a detailed framework for its previously announced spectrum allocation. The regulator lowered the reserve price for the 60MHz of spectrum that will be set aside for a new operator to SGD35 million (\$25 million) from SGD40 million and doubled the allocation of spectrum in the 2.3GHz band to 40MHz. A year ago it proposed setting aside 60MHz out of a total of 225MHz of new spectrum at a lower reserve price in a separate auction to be open only to new entrants. airYotta said in a statement that it is "backed by a regulated fund and fully financed by a single investor". The company is led by Michael DeNoma, who was previously head of consumer banking at Standard Chartered. Its CTO is Philip Heah, who led Singapore's next-generation nationwide broadband

network project and the development of its smart nation initiative. Heah said the mobile industry is facing a major disconnect between demand and supply of mobile data capacity, exacerbated by video-streaming, new applications and services, and the Internet of Things. "airYotta is a response to this insatiable demand for data, and will allow Singapore to realize its smart nation vision," he said. (September 1, 2016) [mobileworldlive.com](#)

## Slovenia



Slovenia's Agency for Communications Networks & Services (Agencija za komunikacijska omrežja in storitve, AKOS) has concluded an auction of spare spectrum in the 1800MHz and 2100MHz bands which was left over from a 2014 sale. Fixed and mobile operator Telemach was announced as the winner of all three available blocks of frequencies. It was the sole bidder for two paired 5MHz blocks of 1800MHz spectrum (1775MHz-1780MHz paired with 1870MHz-1875MHz, and 1780MHz-1785MHz paired with 1875MHz-1880MHz), paying the reserve price of EUR2.6 million (US\$2.95 million) per block. The sale of a 2x5MHz block in the 2100MHz band (1955MHz-1960MHz paired with 2145MHz-2150MHz) attracted two bidders, Telemach and Telekom Slovenije. Telekom Slovenije submitted an offer at the minimum price of EUR1.3 million and Telemach offered EUR1.35 million, and when Telekom opted not to increase its bid the spectrum was awarded to Telemach, with its final combined bids totaling EUR6.55 million. The tender conditions stipulate that the winning bidder must use its spectrum to reach 25% population coverage within three years and 40% within five years, though Telemach's existing 2G, 3G and 4G networks have all easily surpassed these figures already. The 1800MHz spectrum is valid until 2031 and the 2100MHz license expires in September 2021. (September 6, 2016) [telegeography.com](#)

## South Africa



South Africa's telecoms regulator the Independent Communications Authority of South Africa (ICASA) has pushed back the date of its proposed auction of LTE-suitable spectrum in the 700MHz, 800MHz and 2600MHz bands to March 2017. The authority published a notice in the Government Gazette in which it said it was also giving interested parties until November 4, 2016 to submit their applications for participation in the process; the previous deadline was 3 October. The planned auction will now take place between February 27 and March 10, 2017, with the results to be published on March 13, 2017. ICASA has also reportedly softened the 30% black ownership requirement, with news source Fin24 reporting that the minimum requirement now is 'a level-four broad-based Black Economic Empowerment (BEE) rating.' Under the terms and conditions, an applicant will qualify to bid on only one of the spectrum lots in the 700MHz, 800MHz and 2600MHz bands, which have a reserve price of ZAR3 billion (US\$210 million) each. (September 26, 2016) [telegeography.com](#)

The South African government has allocated ZAR 2.5 billion for a push to roll out broadband networks across the country over the next three years, reports Bloomberg, calling this a potential boon to telecommunications carriers such as Telkom. The first phase of the project will provide eight sites with high-speed web access, Telecommunications Minister Siyabonga Cwele said in an interview. The government

wants the entire country to have access to high-speed internet within the next four years. Cwele said there is still a shortfall in the funding, but hoped to start deploying broadband as soon as possible. State-controlled Telkom is set to lead the push, though Cwele said the government wants carriers to collaborate on the infrastructure roll-out. Telkom's competitors include MTN Group and Vodacom Group, a unit of Vodafone Group. The government prefers an open access spectrum model that includes mobile carriers sharing infrastructure, in a similar way to the manner in which the industry operates in Mexico, Cwele said.

(September 21, 2016) [telecopaper.com](http://telecopaper.com)

## Sweden



Sweden's government has allocated an additional SEK850 million (US\$100 million) for rural high speed broadband access network expansion in 2017-2020, on top of the SEK3.25 billion already committed, taking the programme's total support budget to SEK4.1 billion. In a press release, Housing and Digitization Minister Peter Eriksson said: 'Demand for support for broadband expansion in the country is large, especially in areas that are not accessible by a commercial rollout of broadband. This [Rural Development Programme funding] gives, along with the already existing broadband support, greater opportunities to live and work in rural areas.'

The release notes that the government has also previously enabled separate broadband investment of SEK1.2 billion via three northern regional fund programmes – with these regional funds mainly supporting the development of 'comprehensive interurban networks', complementing the Rural Development Programme funding which is focused on the expansion of end-user high speed broadband network access. (September 13, 2016) [telegeography.com](http://telegeography.com)

The Swedish Post and Telecom Authority (PTS) has issued a proposal to postpone the allocation of spectrum in the 3438MHz-3510MHz and 3538MHz-3600MHz ranges, originally scheduled to take place through a selection procedure from the end of 2017. In an analysis published on its website, the regulator states that international trends indicate a large potential value of a merger between the 3.5GHz and 3.7GHz bands for wireless broadband communications in terms of both high speed and high capacity, while adding that a combination of the bands would also make them 'more useful for 5G technology'. As such, the PTS says it intends to delay the new assignment of national block licenses in the 3438MHz-3510MHz and 3538MHz-3600MHz bands until the 3400MHz-3800MHz frequency range can be reassigned. Stakeholders have been invited to submit comments on the proposal by September 13.

(September 1, 2016) [telegeography.com](http://telegeography.com)

## United Kingdom



The UK government could intervene to break up BT to make sure that faster broadband is made available to millions of households. Speaking in the House of Commons, Culture Secretary Karen Bradley said that "nothing was off the table", suggesting that the government could try and force the company to sell Openreach and end its broadband monopoly. Her comments after OFCOM announced in July that it would not force BT to sell Openreach. Bradley said that the government was now carefully examining OFCOM's recommendations and that it would not stop until it had the right result. (September 15, 2016) [The Telegraph](http://The Telegraph)

## United States



Stage one of the Federal Communications Commission's (FCC's) 600MHz Broadcast Television Spectrum Incentive Auction ('Auction 1002') ended abruptly on August 30, with the watchdog racking up USD\$23.108 billion worth of bids after 27 rounds of bidding. As a result, the FCC must now reduce the amount of 600MHz spectrum it will free up for wireless purposes and resume its 'Reverse Auction' with the country's TV broadcasters, as it seeks to bring down the cost of the spectrum and spark the bidding process back to life. TeleGeography notes that stage one of the Reverse Auction saw the 'clearing cost' for 126MHz of spectrum established at USD86.423 billion, significantly exceeding analyst expectations. According to the FCC's Auction Dashboard, stage two of the Reverse Auction will commence on September 13. (September 1, 2016) [telegeography.com](http://telegeography.com)

## Zimbabwe



The Government has impounded the money earmarked to help develop and support telecommunications infrastructure in remote areas, claiming it will now be used for broadcast digitization. The impoverished Zimbabwean Government has impounded the Universal Services Fund (USF) - established to help develop and support telecommunications infrastructure in remote areas – and has declared that it will use this resource to fund the digitalization program for the state broadcaster. Finance Minister Patrick Chinamasa said: "Implementation of the Digitalization Migration Project, which started in February 2015, has been facing funding challenges," and that progress had halted. Only US\$30 million of the US\$172.9 million required has so far been disbursed. Authorities have now allocated resources from the USF to fund the broadcasting digitalization project. "The government will facilitate implementation of the project with funding drawn from the Universal Services Fund, to be reimbursed once the resources have been mobilized from the market," Chinamasa said in his 2016 midterm budget statement. Initially, the project was supposed to have been funded from the Broadcasting Fund using cash made from the migration from analogue to digital. The crisis was compounded by the Broadcasting Authority of Zimbabwe selling the spectrum for US\$200 million to Net-One (which is a state-owned telecom company) which failed to pay the asking price. As a result the government decided to dispose of the spectrum to other players, although there have been no further details on how this sale will work. Telecommunications companies contribute into the USF through a 1.5% tax. Econet has claimed that it has contributed as much as US\$59 million into the fund during the period March 2009 to November 2015. While infrastructure constructed using the fund is supposed to be shared by all operators Econet Wireless has demanded that the Posts and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) disclose how it has been utilizing funds from the USF. Chinamasa has been reported as saying said the Ministry of ICT will handle the fresh disposal of spectrum for digital broadcasting. (September 12, 2016) [capacitymedia.com](http://capacitymedia.com)

**Javaid Akhtar Malik**

Regulatory Affairs  
SAMENA Telecommunications Council

"Information contained in Member News updates, Regional News updates, Policy & Regulatory updates, Satellite News updates, Technology News updates, Regulatory News Snapshot of SAMENA Countries, Regulatory News beyond SAMENA region and Wholesale News updates have been obtained from sources, which we deem reliable. SAMENA Telecommunications Council is not liable for any misinformed decisions that the reader may reach by being solely reliant on information contained herein. Expert advice should be sought."



## ▼ WHOLESALE NEWS

### MIC considers wholesale fees cut to encourage budget carriers

Japan's Ministry of Internal Affairs and Communications (MIC) is considering cutting the wholesale fee charged by the country's three mobile network operators (MNOs) – DOCOMO, Softbank and KDDI (au) – for budget smartphone operators wishing to access their networks. According to unnamed sources cited by The Yomiuri Shimbun, the MIC is looking to drive competition in the local market by making it easier for users to switch from MNOs to budget carriers and MVNOs, and lower communication charges in the domestic market as a whole. A cut in wholesale access fees would bolster budget operators by helping them strengthen their management base and lower charges for customers. In April this year the ministry issued new guidelines requesting that the big three desist from offering what it considered to be 'excessive' discounts such as selling new handsets at virtually zero cost. The MIC notes though, that whilst the current fees are calculated using a formula based on its own ordinance, those rules still allow the MNOs to make what it considers to be too much from wholesale fees – a situation it intends to

redress. Moreover, the ministry will seek to reduce the time a carrier has to unlock a SIM card (presently six months from date of purchase), as a further measure to strengthen competition. The major carriers typically charge JPY7,000 (USD69) per month for 'unlimited' voice calls and 5GB of data, compared to no-frills rivals that can be as cheap as JPY2,000 on a data-only contract.

### EC revises plan to end roaming rates

The European Commission has revised its plan to end roaming charges within the EU, announcing a new draft of the rules designed to prevent abuses of the system. The first draft roaming fair use policy was withdrawn earlier this month within days of its announcement, due to criticism from consumer groups. Because the original policy would have introduced an at least 90 day cap on the time spent roaming on domestic prices, consumer groups complained that this would defeat the purpose of the Roam like at Home policy - ending roaming within the EU. Instead, the new draft fair use policy would provide safeguards for operators including checks to ensure customers are using roaming to travel as intended, instead of

### WHOLESALE UPDATES

taking advantage of cheaper prices in another market. These would include criteria including insignificant domestic compared to roaming traffic, inactivity of a SIM used mostly or exclusively for roaming and subscription and sequential use of multiple SIMs by the same traveler. In such cases, operators would be able to apply small surcharges – proposed at a cap of €0.04 per minute per call, €0.01 per SMS and €0.0085 per MB. Operators would also be able to temporarily apply the same surcharges if they can provide evidence that the Roam like at Home policy was putting their domestic charging model at risk or having other negative effects for domestic customers. The EC aims to introduce the Roam like at Home regime by June next year.

## TOT, AIS ink six-month 2100MHz roaming deal

Thailand's state-owned telecoms firm TOT and Advanced Wireless Network (AWN), a subsidiary of mobile market leader Advanced Info Service (AIS), have signed a six-month contract that will see AWN roam on the other firm's 2100MHz network on a trial basis. According to the Nation which cites an unnamed TOT source, AWN will pay its host a monthly roaming fee of THB325 million (USD9.4 million). If the trial proves successful, AWN will pay TOT an annual fee of THB3.9 billion and gain access to 80% of the other firm's 2100MHz network capacity. The roaming pact, which has been in the offing since March this year, was augmented in June with a parallel 900MHz 2G roaming deal. In all, it is expected to earn TOT a total of THB5.6 billion per year, of which THB2 billion is derived from the spectrum access and the remaining THB3.6 billion will come from the leasing out of the cell towers.

## Telenor praises IPX for helping it serve its most demanding wholesale customers: its own retail operators

Norwegian incumbent says IPX gives its opcos the agility and capability they need to quickly roll out new services. Telenor's head of wholesale Harald Krohg on Thursday said rolling out IPX is helping him better serve his most demanding customers: Telenor's

own retail operations. "They are part of the family. And as part of the family, they feel comfortable with being very outspoken," said Krohg, CEO of global wholesale at Telenor, during Total Telecom's IPX Summit in London. The retail arm is the most demanding customer, he said. "They want everything, they want it yesterday, and they want it for free." The Norwegian incumbent offers retail services in 13 markets, stretching from the Nordics to Eastern Europe and Asia-Pacific. "Retail operators are often very focused on their domestic competition," said Krohg. In contrast, his position gives him a bird's-eye of trends in other countries, affording him an opportunity to pitch ideas to Telenor's wholesale customers, which includes its own opcos. And IPX is serving as the underlying platform that is enabling Telenor's wholesale arm to roll out new services quickly, such as A2P messaging and LTE roaming, for example. "It helps a telco be agile when you have that underlying platform," Krohg said. The telco's machine-to-machine business, Telenor Connexion, is also benefitting. For example, it uses Telenor's IPX infrastructure to carry signaling traffic generated by the connected cars it serves, in whatever country they happen to be driven in. "We are able to get good coverage and scale quickly, thanks to IPX...It is a clear example of how we've been able to support rapid growth," Krohg said.

## UC should take centre stage for wholesalers - PGi

White label conferencing specialist says telcos can differentiate from OTTs on customer service, enabling native support on devices. Carriers would do well to roll out wholesale unified communications (UC) services, rather than sell them only through the enterprise channel, advised a panel of experts on day one of Carriers World in London. "Unified communications is something you need to be thinking about as a wholesaler," said David James, principal analyst at Ovum. He acknowledged there might be some concern about an operator's wholesale division competing with its enterprise arm, but he insisted that provided there is "a clear delineation between who is a wholesale customer and who is an enterprise customer" within the carrier, then wholesale UC services "allow you to reach new markets and go to market in new ways."

Not surprisingly, white label conferencing solutions provider PGi sees wholesale unified communications as a strategic imperative for telcos as a means of defending themselves against Web-based players. "There is growing demand for cloud-based unified communications and collaboration. Your customers are going to be buying it; the question is, from whom?" said Frank Paterno, senior director, global carriers, at PGi. Carriers have certain advantages over OTT players, he explained, such as their pedigree when it comes to providing customer support. Conversely, OTTs "will point you towards FAQs, and self-service." Paterno said that the rise of VoLTE means that carriers are also better-placed than OTTs when it comes to enabling native support for unified communications on mobile devices. "OTTs are a step removed from that," he said. "Mobile is the key to unlocking unified communications," added Ian Cooper, head of communication products at Telefonica UK. The industry is "at a genuine inflection point," he said, adding that 85% of employees still have a desk phone, but 50% of work calls are conducted over mobile. Paterno warned that if telcos don't seize the wholesale UC opportunity, others will. "Voice conferencing used to be a side business; now it has evolved into Web conferencing, collaboration, and unified communications...It has taken centre stage for carriers," Paterno said. "If you lose your conferencing business to Microsoft or Cisco, you're going to lose a whole lot more of your business later on."

## New wholesale broadband access rules imposed in Ontario, Quebec

The Canadian Radio-television and Telecommunications Commission (CRTC) has issued a follow-up decision requiring the country's largest telecoms companies to provide wholesale access to their high speed fiber/cable fixed broadband access networks including fiber-to-the-premises (FTTP). The policy was mandated last year, but implementation was delayed whilst Bell Canada led unsuccessful appeals claiming that investment in fiber networks would be harmed by the new rules forcing the large network operators to offer a greater level of access to smaller ISPs – a point the CRTC disagreed with, claiming that 'increased choice is ex-

pected to drive competition, resulting in further investment in telecommunications facilities'. The ruling requires smaller companies to either lease or

port components) would no longer be mandated and would be phased out via implementation of a disaggregated service consisting of only an access component. The implementation of disaggregated wholesale HSA includes a requirement to make these services available over FTTP access facilities. Further, Decision 2016-379 rules that incumbents must offer wholesale capacity in 50Mbps increments, in order to provide competitors with better control of capacity and costs than the existing 100Mbps capacity increment. The

CRTC added that whilst the proposed wholesale configurations from Bell Canada andCogeco met the criterion of excluding a transport component, the filings from Rogers and Videotron did not, and these two operators must resubmit proposals. The Commission also determined that the large operators are required to only provide solutions that utilize their proposed routing and switching techniques (characterized as 'Layer 3' approaches) for their configuration proposals in support of disaggregated wholesale HSA services. In response, OpenMedia's digital rights specialist Katy Anderson noted that:

- 'The decision will limit the ability of smaller ISPs to control quality of service in networks (via Layer 3 vs. Layer 2 network control). While it will bring greater choice and faster speeds to more Canadians it limits the ability of smaller providers to provide offerings outside of the Big Telecom incumbents'
- 'Independent ISPs will also have less ability to offer services that the big providers don't, because they don't have access to the quality of service controls ... enabling the large telcos to largely control the customer experience'.

In defence of its decision, however, the CRTC states: 'As competitors have not made significant use of Bell Canada's Layer 2 aggregated HSA service and demand for the service is decreasing, the Commission is not persuaded that competitors would choose the disaggregated version of the Layer 2 service, given that it could potentially have service provisioning costs similar to those of the Layer 2 aggregated service.'

Regarding interconnect/colocation points, several competitors had told the CRTC that a requirement for colocation in Bell Canada's central offices to terminate their transport facilities would represent a significant barrier to their use of the disaggregated wholesale HSA service because of high costs; therefore the regulator ruled that Bell (as well as the large cablecos) must provide an external 'meet-me point' to support competitor interconnection to the disaggregated wholesale HSA service (in Bell's case, in addition to its tariffed colocation option). As the next step towards implementation, the CRTC directed Bell Canada and the cablecos to file tariffs with supporting 'Phase II' cost studies for disaggregated wholesale HSA within 60 days.

## Croatia sets new termination rates for 2017

The Croatian Regulatory Authority for Network Industries (Hrvatska regula-



torna agencija za mrežne djelatnosti, HAKOM) has set new fixed and mobile wholesale termination rates for the three years from 2017. The mobile termination rate (MTR) will drop from HRK0.063 (USD0.0093) per minute to HRK0.047 with effect from 1 July 2017. The cost of terminating a call on the



build their own links ('transport component') to access wholesale services via a larger telco/cableco's central office/head-end – known as 'disaggregated' wholesale access – whilst the obligations for wholesale fiber access will initially be implemented only in Ontario and Quebec, the domain of incumbent PSTN operator Bell Canada and three major cablecos, Rogers Communications, Videotron and Cogeco. The CRTC will review implementation in Western provinces next year, when it is expected to impose new obligations on dominant Western incumbent PTO Telus Communications and major cableco Shaw Communications, whilst Saskatchewan/Manitoban provincial incumbents SaskTel and MTS will also eventually be required to implement the directives. Whilst the new wholesale regime has been generally viewed as good for competition, consumer choice and internet pricing, some of its details were criticized by advocacy group OpenMedia for not going far enough to ensure that independent ISPs can compete on a level playing field, and for not ensuring the smaller ISPs have the autonomy to offer innovative new services to differentiate themselves from the big incumbents. Telecom Decision CRTC 2016-379 (September 20, 2016) is a follow-up to Telecom Regulatory Policy 2015-326 which determined that the provision of tariffed wholesale high speed access (HSA) by large incumbent carriers would continue to be mandated but 'aggregated' services (including both access and trans-

fixed network of incumbent operator T-Hrvatski Telekom (T-HT) has been increased to HRK0.0088 per minute at peak times (up from HRK0.0060 at present) and HRK0.0044 per minute off-peak (HRK0.0030 currently), effective from the same date, while the call origination cost will rise to HRK0.0101 peak (from HRK0.00836) and HRK0.0050 off-peak (from HRK0.00418). HAKOM says the decisions have been approved by the European Commission (EC).

## EC withdraws proposals for 'fair use' limits on roaming surcharge abolition

European Commission (EC) President Jean-Claude Juncker has ordered the withdrawal and redrafting of proposals for a "fair use" policy that would go along with the abolition of roaming surcharges within the EU. The EU's new roaming rules, finalized last October, dismayed consumer groups. While many were expecting the outright abolition of roaming surcharges, the fair-use loophole allows for conditions to be attached. Earlier this week, commission VP Andrus Ansip and digital economy commissioner Günther Oettinger said roaming charges would only be abolished for a minimum of 90 days per year, once the new rules come into force in 2017. Operators could offer more days of surcharge-free usage, they said, but they were setting this minimum level in order to "strike the right balance" between protecting those who travel within the EU (apparently for an average of 12 days a year) and operators' network investments. If people could roam with no limits at all, they might abuse the system, the Commission argued. Consumer groups were apoplectic. The European Consumer Organization (BEUC) complained that the limits would not create a "real digital single market" as promised, and that the Commission was "focused on safeguarding the short-term interests of the telecom sector and not really focusing on the long-term interests of consumers and citizens." Their outrage appears to have been heard. "In the light of the feedback that we have received... the president has instructed the services to withdraw that draft proposal and to work on a new one, a better one," commission deputy chief spokesman Alexander Winterstein said in a press conference. Winterstein would not be drawn on precisely what the problem with the original proposal was. "The president feels that this

proposal is not satisfactory and that we need to aim higher and come up with something better," he said when pressed on the details, although he noted that Juncker's decision was political in nature. "Roaming charges are going to disappear entirely by June 2017," he added, claiming the Commission had always been consistent on this point.

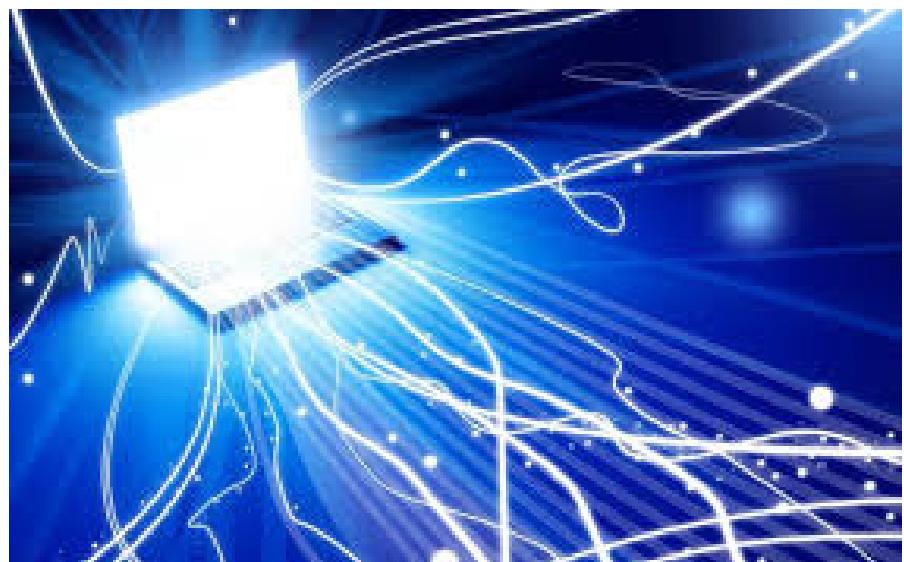
## EC to relax wholesale access rules in bid to encourage fiber investment

The European Commission plans to relax rules that require telcos to open

across the European Union. The proposed changes form part of Brussels' sweeping overhaul of the EU's telecom regulations, which are expected to be unveiled later this month.

## EC proposes cap of 90 days a year on roam like home

The European Commission has issued its first proposal for a fair-use policy for roaming, suggesting a cap of 90 days per year on the use of 'roam like home' rates in the EU. This would be the minimum number of days consumers would be allowed to roam in



up their infrastructure to rivals in a bid to encourage the deployment of new fibre networks, it emerged on Wednesday. According to a document seen by Reuters, operators will be encouraged to co-invest in shared fibre-to-the-home (FTTH) rollouts by offering them lighter access rules in return. National telco regulators will also be advised to consider existing commercial arrangements between telcos and the level of retail competition before imposing mandated wholesale access rules. It is hoped that these proposals will strengthen the business case for rolling out new fiber networks in areas where there is little financial incentive. Furthermore, according to the document, regulators will be given the power to sanction telcos that deviate from their intended network investments without a valid reason. In addition, Reuters reports that the Commission aims to set minimum spectrum license duration of 25 years in a bid to coordinate how airwaves are assigned to mobile operators

the EU at the same price as in their home country. The possibility of a limit on roam like home was included in the original EU regulation passed last year, which sets a date of June 2017 for an end to all roaming surcharges in the EU. It was left up to the Commission to define the terms aimed at preventing abuse of the roam like home regulation. Operators will be allowed to apply the FUP in order to prevent permanent roaming using a



SIM from another country, something consumers may consider if foreign offers are cheaper than their domestic rates. After using 'roam like home' for 90 days a year, customers would be subject to additional surcharges on EU roaming, but these could not be any higher than the Commission's proposed new wholesale roaming rates. The latter are still subject to approval from the European Parliament and Council, but were proposed at 4 eurocents per minute, 1 cent per SMS and 0.85 cents per MB. The FUP would also allow a more general cap on the use of 'roam like home' for customers with plans allowing unlimited usage or very high volumes. The amount of roaming by these customers at domestic prices could be limited to the average amount they consume when in their home country, after which the operator could impose surcharges. The average consumption is determined by all users of the respective plan over a year and must be stated in the terms and conditions of the contract. The Commission also allowed for an exception for people working everyday across borders, who would not be subject to the same fair-use limitations. They would be expected to still connect to their home network on a daily basis. In general, all mobile users would be expected to connect to their home networks every 30 days in order to qualify for the roam-like-home rates. The roaming regulation also allows operators to charge more for roaming if they can prove they are unable to cover their costs for roaming when charging the same rates as in the home market and the losses on roaming could force them to raise domestic prices. The Commission's proposal includes details on how the costs of providing roaming are calculated and the data operators must supply in order for national regulators to evaluate a request for adding roaming surcharges to retail rates. Operators would have to show they have a negative margin of at least 5 percent on providing roaming. In addition, they must show that they are not able to absorb the losses as part of a bigger group of companies within the EU or under the competitive climate of their domestic markets, nor could they alternatively apply a more restrictive fair-use policy rather than raising roaming prices. The Commission's draft implementing regulation must still be discussed with the member states and the Body of European Regulators of Electronic Communications (BEREC). It already held a public

consultation earlier this year and aims to implement the policy by 15 December this year.

## ACCC mulls mobile roaming declaration; releases market study issues paper

The Australian Competition and Consumer Commission (ACCC) has announced that it is launching an inquiry considering whether or not it should declare a wholesale domestic mobile roaming service. The regulator said

need to manage significant demand for data; the transition to the National Broadband Network (NBN) and what this means for competition and meeting consumer expectations; the relationship between mobile and fixed-line networks; industry consolidation and the transition to a new market structure; and the emergence of new technologies and delivery platforms. Submissions are invited until 14 October 2016, with the ACCC expected to release its draft findings for comment in mid-2017 before publishing a final report by the end of that year.



that the declaration inquiry will focus on a number of key issues, including: how consumer demands for mobile services are evolving, and whether there are differences in regional areas to urban areas; the likely investment plans of each of the mobile network operators to extend coverage and upgrade technology, absent a declaration; whether there are any significant barriers to expanding the reach of mobile networks; and any lessons from similar experience with domestic mobile roaming in other countries. The ACCC noted that it had previously considered mobile roaming in regional areas in inquiries held in 1998 and 2005, though on both occasions it opted not to regulate an access service as it was satisfied roaming agreements were being commercially negotiated. Separately, the ACCC has published an issues paper which calls for comment on a range of matters that may affect competition, the efficient operation of markets, and investment incentives over the next five years. With the paper forming part of the regulator's communications market study, it is looking to address a number of key areas including: the



## Improving Customer Support with Service Management Integration

Service management is evolving. Modern online tools are giving people across the organization direct visibility into their service provider's service management tools to raise tickets and synchronize change management, for example.

No longer just a one-way street, customers are increasingly integrating their service management platform with their service provider's. This integration of internal and outsourced resources is helping ensure a better and more responsive customer support experience. This transformation is being driven by the increasing use of cloud-based service management platform ServiceNow in both enterprises and service providers.

Integrating service management solutions with the customer's service

management environment enables services such as incident management and change management in a seamless manner and from end-to-end. This allows us to work much more closely with the customer, both centrally and with their local IT teams.

### **Leading factor in service provider selection**

According to research company Current Analysis, more than 75% of enterprises said that customer support was a leading factor in service provider selection. Further, over 80% of them said they would terminate their relationship with their incumbent provider if their customer support experience was poor.

Incident management is a crucial part of this support. The research from Current Analysis found that the most important elements of the



**Business  
Services**

trouble ticketing process are repair time, communications regarding incident status, and response. "This highlights the importance of timeliness and communications to busy IT managers," says the analyst.

One of the key reasons customers choose to integrate their service management platform is to have better visibility into the status of their infrastructure, including performance, any incidents under review and changes being implemented. This is especially important for local teams in global companies, because it means they no longer need to go through central IT to access support.

They want their local IT teams to be informed of any issues with their infrastructure in advance of any failure. With the integration they can simply log into their own service management platform to see the status of the network and any incidents under investigation.

the customer peace of mind when managing their digital transformation.

#### **Five reasons to choose service management integration**

1. Faster incident resolution meaning less downtime
2. Better and more timely communication about incidents
3. Accurate data on incidents and device configuration
4. Summary information view that is common to both sides
5. Closer partnership between supplier and customer, thereby enabling the customer's digital transformation



Change management is another area that can benefit from service management integration. By synchronizing the configuration management database, the customer can have a common platform and visibility into the infrastructure to understand the implications of any configuration changes.

There is a big link between change management and incident management. For example, a solution to a recurring problem with a device is often a change to its configuration.

Ultimately service management integration helps build a partnership between service provider and customer, driving increased efficiency and improved incident resolution. This ability to closely monitor their infrastructure gives



## ▼ TECHNOLOGY NEWS

### TECHNOLOGY UPDATES

#### Qualcomm warns on 5G network complexity

Chip giant Qualcomm believes there are "incredibly complex" challenges facing the industry as it attempts to bring 5G technology to commercial reality. Speaking at a media briefing in London earlier today, Ben Timmons (pictured), senior director – business development, Qualcomm Europe, hailed 5G as "more coherent" than either of the previous generations (3G and 4G), even though the standardization process is at least two years away, and believes the development will prove a massive step forward from 4G, which really only gave us "the ability to deliver higher data rates". However, with so many elements to a 5G network, Timmons moved to dampen "some fairly grand statements" made about a 2018 or 2019 launch of the technology. He believes players could come to market that have features of 5G in the timeframe, but not the full package. "It's incredibly complex," he warned. "With 4G, if you were a reasonably successful WiMAX company with a decent chipset you could make the transition and adjustments to deliver a working LTE chipset. I'm not sure it is possible with 5G. It will require the management of this wide range of technology in an end user device... it is not going to be an environment where challenger technology vendors emerge."

#### Capacity challenges

Qualcomm's Timmons believes one of the critical factors of a 5G network will be capacity, with it setting out to solve challenges in providing connectivity to a large number of people over wide areas, while also solving problems of inconsistent data speeds to multiple devices and applications. He said latency and reliability will also prove a key part of 5G, because, as it stands today, "3G and 4G are not good enough to do mission critical stuff with", and, as widely touted in the industry, the technology will aim to enable emerging solutions like autonomous vehicles and healthcare applications. "5G will mean big improvements in latency, allowing you to enable the kind of control systems that today you wouldn't trust with a wireless network," he noted.

#### NB-IoT and 5G

The third element of Qualcomm's vision for 5G is the Internet of Things, and Timmons believes, together with the 3GPP-backed NB-IoT Low Power Wide Area network technology standard, the market will solve current capacity challenges to the core network, in connecting billions of devices. He added that NB-IoT could also be considered as a 5G technology, "because it is bringing some of that low power capability". Notably, 3GPP is also charged with developing 5G standards. "NB-IoT will continue to develop as stan-

dards progress," he said. "It's not as if we are going to implement it then tear it away – these things will morph into each other with the standards process... in the way there will be a big change in mobile broadband with 5G, I think the changes in NB-IoT will be a bit more incremental."

## MTS and Nokia test '5G' system

Russian cellco Mobile TeleSystems (MTS) and Finnish technology provider Nokia have announced their first test of a '5G' standard mobile system in Russia. The operator's tests using Nokia equipment resulted in mobile data rates of up to 4.5Gbps using 200MHz of aggregated frequency bandwidth, Comnews reports. Vice-president of Nokia's Eastern European division Juha-Pekka Takala underlined that by 2018 the partners are planning to operate a 5G system on a segment of MTS' commercial network to coincide with football's World Cup in Russia that year. The tests are being carried out following an agreement between MTS and Nokia in May 2016, whilst MTS also has a separate 5G development agreement in place with Sweden's Ericsson, signed in December 2015.

## Vodafone Germany launches 4.5G services at up to 375 Mbps

Vodafone Germany has announced the launch of 4.5G mobile technology, supporting speeds of up to 375 Mbps. The new technology will be rolled out in 30 cities across the country by end-2016, with new 4.5G base stations now live in 22 of these cities. These

include the centers of Berlin, Dresden, Duesseldorf, Cologne, Frankfurt, Hamburg and Hanover. The roll out of 4.5G technology coincides with the launch of the new iPhone 7 and iPhone 7 Plus in Germany. The new 4.5G speeds can be used by customers with an LTE Max smartphone tariff. The technology is also supported by the Samsung Galaxy S7 and Galaxy S7 Edge smartphones. Vodafone deploys triple carrier aggregation in 800, 1800 and 2600 MHz bands.

## Deutsche Telekom, Nokia Bell Labs near Shannon Limit with 1-Tbps demo

Deutsche Telekom, Nokia Bell Labs, and the Technical University of Munich on Friday achieved a 1-Tbps transmission rate over fiber in a field trial of a new modulation technique. 1-Tbps is close to the theoretical maximum transfer rate of a fiber channel, referred to as the Shannon Limit, explained Nokia. "To guarantee a high customer experience for future services we need optical transmissions with increased capacities, reach and flexibility over deployed fiber infrastructures," said Deutsche Telekom CTO Bruno Jacobfeuerborn, in a statement. To reach the high data rate, the companies used a new modulation technique called Probabilistic Constellation Shaping (PCS), which has the effect of transmitting signals that are more resilient to noise and other impairments, enabling networks to support even faster connection speeds. Nokia Bell Labs claimed that Friday's demonstration represents a key milestone that could extend the future use of optical networks.

"Future optical networks not only need to support orders of magnitude higher capacity, but also the ability to dynamically adapt to channel conditions and traffic demand," said Marcus Weldon, Nokia CTO and president of Nokia Bell Labs. "Probabilistic Constellation Shaping offers great benefits to service providers

and enterprises by enabling optical networks to operate closer to the Shannon Limit to support massive data centre interconnectivity and provide the flexibility and performance required for modern networking in the digital era," he said.

## FCC chief warns on 5G backhaul

A lack of competition in the backhaul market threatens to delay the buildout of 5G networks, FCC chairman Tom Wheeler told a US Senate committee. Back in April, Wheeler backed a new regulatory framework so customers could more easily switch provider for so-called Business Data Services (previously known as Special Access lines), used by operators to connect cell towers and antennas. The same lines are used by small businesses, retailers, banks, manufacturers, schools, hospitals, and universities to shift data. Supplying backhaul is a profitable activity for the largest carriers in the US, notably AT&T and Verizon. Others, including Sprint, complain the market is uncompetitive. "To seize the opportunities to increase the deployment of mobile networks and to move towards 5G connectivity, we're going to need a lot more backhaul to handle the massive increase in data traffic," argued Wheeler to the Senate Committee on Commerce, Science and Transportation. To achieve that goal, Wheeler reckons the backhaul market needs a shake-up. "The Commission has a long and complicated history with Business Data Services and the time has come for action. Reform is supported by the nation's leading wireless carriers, save one, and my goal is to conclude this proceeding no later than the end of this year," said Wheeler, without naming the single carrier who's not supporting his proposal. In addition to Business Data Services, Wheeler updated the committee on a number of other areas regulated by the FCC, including the ongoing incentive auction and privacy.

## Ericsson first to deliver 5G NR radio

Ericsson is commercializing the world's first 5G NR radio for massive MIMO, with the first deployments coming in 2017. Together with the Ericsson 5G Plug Ins announced in June and Ericsson's already commercially



available Radio System Baseband 5216, which currently powers Ericsson's award winning Radio Test Bed, Ericsson is first to deliver all components of a 5G access network. Tom Keathley, senior vice president, Wireless Network Architecture and Design, AT&T, says: "As we accelerate toward 5G, it's beneficial to have a flexible radio platform that can be deployed not only for LTE, but also versions of future 5G NR standards." AIR 6468 combines advanced antennas with a large number of steerable ports to enable 5G technologies of beamforming, Massive MIMO and -- building on that -- Multi-user MIMO, initialized as MU-MIMO. These capabilities improve user experience while enhancing the capacity and coverage of the network and reducing interference. The new radio provides LTE support as well, so it is applicable in today's networks. Huang Yuhong, Deputy Head, China Mobile Research Institute (CMRI), says: "Massive-MIMO, also known as 3D MIMO, is an important milestone in China Mobile's technology roadmap from 4G to 5G. We are very happy that Ericsson's new radio product is coming to market soon to meet our needs and enable us to integrate 5G technologies into our existing networks." A host of new additions to the Ericsson Radio System are also coming that address key 5G requirements, in today's networks. Daniel Staub, Head of Joint Mobile Group, Swisscom, says: "On the road to 5G, we will continue to invest in LTE advancements that will become part of our 5G networks. For us, it is key that Ericsson has chosen to focus on advances that will support us in this evolution. These enhancements will further improve the customer experience."

## New chip could bring highest level of encryption to any mobile device

Random number generators are crucial to the encryption that protects our privacy and security when engaging in digital transactions such as buying products online or withdrawing cash from an ATM. For the first time, engineers have developed a fast random number generator based on a quantum mechanical process that could deliver the world's most secure encryption keys in a package tiny enough to use in a mobile device. In

The Optical Society's journal for high impact research, Optica, the researchers report on their fully integrated device for random number generation. The new work represents a key advancement on the path to incorporating quantum-based random number generators -- delivering the highest quality numbers and thus the highest level of security -- into computers, tablets and mobile phones. "We've managed to put quantum-based technology that has been used in high profile science experiments into a package that might allow it to be used commercially," said the paper's first author, Carlos Abellán, a doctoral student at ICFO-The Institute of Photonic Sciences, a member of the Barcelona Institute of Science and Technology, Spain. "This is likely just one example of quantum technologies that will soon be available for use in real commercial products. It is a big step forward as far as integration is concerned." The new device operates at speeds in the range of gigabits per second, fast enough for real-time encryption of communication data, such as a phone or video calls, or for encrypting large amounts of data traveling to and from a server like that used by a social media platform. It could also find use in stock market predictions and complex scientific simulations of random processes, such as biological interactions or nuclear reactions.

### Shrinking the truly random

The random number generators used today are based on computer algorithms or the randomness of physical processes -- essentially complex versions of rolling dice over and over again to get random numbers. Although the numbers generated appear to be random, knowing certain information, such as how many "dice" are being used, can allow hackers to sometimes figure out the numbers, leaving secured data vulnerable to hacking. The new device, however, generates random numbers based on the quantum properties of light, a process that is inherently random and thus impossible to predict no matter how much information is known. Although other researchers have developed quantum random number generators, they have all been either larger or slower than the device reported in the Optica paper. "We have previously shown that the quantum processes taking place exhibit true randomness," said Valerio Pruneri,

who led the collaborative research effort. "In this new paper, we made a huge technological advance by using a new design that includes two lasers that interfere with each other in a confined space. This makes the device smaller while keeping the same properties that were used in the past experiments."

### Creating a practical device

The researchers used photonic integrated circuit (PIC) technology to create two quantum number generators that together measure 6 by 2 millimeters. PIC technology offers a way to integrate photonic components -- such as the lasers and detectors used by the new quantum random generator -- onto a chip with a small footprint and low power consumption. Most importantly, PIC-based devices can be integrated with traditional electronics, which could allow the random number generator to be used with the driving, reading and processing electronics necessary for computation or communications. "We proved that quantum technologies are within practical reach by exploiting PICs," said Pruneri. "Quantum random number generation as well as quantum cryptography and other quantum-based technologies will benefit from PIC-based technology because it allows one to build commercial and innovative products. Ours is a first demonstration."

## New service improves cloud storage usage on mobile devices

A new service developed at Binghamton University, State University of New York could improve performance of mobile devices that save data to the cloud. Storage and computing power is limited on mobile devices, making it necessary to store data in the cloud. However, with the myriad of apps from a myriad of developers that use the cloud, the user experience isn't always smooth. Battery life can be taxed due to extended synchronization times and clogged networks when multiple apps are trying to access the cloud all at the same time. "We may be using many different apps developed by different developers that make use of cloud storage services, whereas on PCs we tend to use apps offered by the official providers. This app and developer diversity can cause problems due to a developer's inexperience and/or

carelessness," said Yifin Zhang, assistant professor of computer science at Binghamton University's Thomas J. Watson School of Engineering and Applied Science. Zhang and a team of Binghamton University researchers designed and developed StoArranger, a service to intercept, coordinate and optimize requests made by mobile apps and cloud storage services. StoArranger works as a "middleware system," so there is no change to how apps or an iPhone or Android-device run, just improved performance of both the device and the network overall. Essentially, StoArranger takes cloud storage requests--either to upload a file or to open a file for editing--and orders them in the best way to save power, get things completed as quickly as possible and minimize the amount of data used to complete the tasks. Even though the work could affect millions of mobile devices and users--e.g. Microsoft's cloud computing and storage system Azure had 10 trillion objects stored on its servers as of January 2015--it is only a promising first step in the development of StoArranger, which isn't commercially available. Further research is scheduled for evaluation experiments, and a full paper will be submitted later this year. "We are planning on developing an app for public use," Zhang said. "We are trying to solve problems without changing operating systems or the existing apps, which makes our solution practical and scalable to existing smartphone users." Zhang presented the paper with Binghamton Ph.D candidates Yongshu Bai and Xin Zhang, both co-authors of the paper, at the proceedings of the seventh ACM SIGOPS Asia-Pacific Workshop on Systems (APSys '16) in Hong Kong in August. "The programming committee thought the work presented is a good demonstration of the negative effects of the way that current cloud storage providers chose to deploy their services," said Zhang. "The solution we proposed could be a practical way to solve the problem."

## South Korea to create funds for VR, AR industries

South Korea will create 40 billion won (US\$34.5 million) in special funds to foster the virtual reality (VR) and augmented reality (AR) industries, the science ministry said. The Ministry of Science, ICT, and Future Planning

said funds are aimed at bringing more investment in the fields and to catch up with other global powerhouses. The ministry said it will invest 12 billion won annually into the fund for the next two years and the rest of the 20 billion won will be supplemented from private funds. The fund will be established in the form of the Korea Venture Fund, officials said, noting that the ministry will soon select a company to operate the funds. The ministry said it will evaluate based on strict criteria to pick a qualified management company for the next three months. "The government wishes that the special funds for VR and AR industries would foster the related industries as they are the centerpieces of the future," said Seo Seok-jin, a ministry official handling related policy. The ministry said it will focus on investing in not only VR and AR hardware but also projects and companies producing contents. The government earlier announced a package of measures to foster the VR and AR sectors, saying that the sectors will be added to the list of "new industries."

## Ericsson study shows 5G expectations vary by industry

From immersive experiences on VR headsets to securing assets at faraway locations, a new report from Ericsson finds industries hold a variety of hopes for 5G. The vendor contacted 650 executives globally -- including CIOs, CTOs, CMOs, and other heads of IT Infrastructure -- from the eight industries most likely to be impacted by 5G: media/gaming, utilities, automotive, public safety, high-tech manufacturing, internet/digital native, healthcare and financial services. In the media industry, executives hoped 5G will enable immersive experiences, such as ultra HD 4K and virtual reality, taking advantage of the higher capacity available through 5G. A significant majority also pointed to personal 360-degree broadcasting and fixed wireless broadband as roles for 5G. Meanwhile, senior executives from the utility sector expect increased productivity, faster time-to-market for new products and services, and greater efficiency. Enhanced monitoring and maintenance of assets located in remote and potentially hazardous locations using sensors is another benefit. Interestingly, while executives in the automotive sector obviously

highlight the connected car and self-driving vehicles as areas where 5G will play a significant role, enhanced GPS including instant traffic and map updates is seen as the favoured use of the technology globally.

## Telecom Italia opens mmWave lab

Telecom Italia this week claimed to be the first European telco to open a millimeter Wave (mmWave) spectrum lab dedicated to researching its potential use in 5G networks. Located in Turin, the facility comprises a far-field compact antenna test range and a spherical near-field test range, enabling the operator to evaluate the performance of frequencies ranging from 6 GHz to 100 GHz. "5G will support a new range of services and applications able to support the digitalization of the economy, with a special focus on the Internet of Things and vertical markets," said Gabriela Styf Sjoman, head of engineering and Telecom Italia Group Labs at Telecom Italia, in a statement on Wednesday. "To support all these applications, a strong capacity and performance increase of the wireless network is required." While mmWave spectrum can support very high data rates, its propagation characteristics make it challenging to use for wide area mobile coverage, necessitating the use of beamforming technology to direct signals between the transmitter and the receiver. Test ranges like those being put to use in Telecom Italia's new lab can help operators identify and overcome mmWave spectrum's inherent limitations. "Very high frequencies and innovative antenna systems are among the main building blocks of 5G. The new lab opened in Torino will allow us to understand, develop and exploit these new technologies, and to cooperate with key international partners to accelerate equipment availability," Styf Sjoman said.

## New digital antenna could revolutionize the future of mobile phones

Aalto University's Radio Science and Engineering researchers have developed a method that allows antennas to make the shift from the analogue to the digital world. The antennas currently in use are mostly based on technology developed half a century ago. 'Traditionally one antenna works

with either one or a few different frequencies. Now we can take advantage of advanced digital electronics and combine several small antenna elements to work together as one antenna that can be made to operate digitally with any frequency. In this way, many smartphone applications like GPS, Bluetooth and Wi-Fi will no longer need their own antennas. Instead, all of the phone's data transfer can take place through one digitally controlled antenna. This in turn makes phone design easier and enables a larger screen size relative to phone size as the antenna does not require so much space', explains doctoral candidate Jari-Matti Harnula. The new antenna also makes it possible to reach the data transfer speed set as the objective for the next generation of phones, which is 100 to 1000 times faster than that of current phones. In addition, battery life will be improved owing to the greater efficiency of the new method.

#### **Antenna control requires new technology**

Thanks to the new method, the antenna can have even greater bandwidth, which leads to a higher data transfer speed and improved efficiency. These new antennas may also dispose of the analogue components that traditional antennas use to tune into the desired frequency. This facilitates antenna design and enables the creation of more compact antennas with better radiation efficiency. With antennas designed using the standard technology, it is possible to obtain either a broad frequency range or high efficiency, but not both at the same time. Antennas' radiation efficiency has in recent times been falling because the frequency range used by mobile phones has been continuously increasing. Poor radiation efficiency leads to a short transmission range, for which network operators are then forced to compensate with a denser network of base stations. Energy is wasted in both the phone and the base station. In addition, increasing the network density is expensive. Professor of Radio Engineering Ville Viikari believes that the new method will revolutionize the fifth generation of mobile phones and maintain Finland as one of the leading countries in the development of mobile phone antennas. For example, the antenna type developed by the Department of Radio Science and Engineering at the beginning of the 21st century is the main type in use in current phones. Now is the time to

forge the solutions for a new generation of mobile devices. 'The next step in the development process is under way with the commencement of tests in cooperation with Huawei using fifth generation mobile phone devices. We are also developing together with Aalto University researchers digital electronic systems for controlling the antennas', Mr. Viikari adds.

## Cloud spending in India to cross \$10 billion by 2020

Spending on cloud services is expected to cross \$10 billion by 2020, driven by factors like investments to set up local data centers and rapidly growing developer ecosystem in the country, according to research firm Zinnov. India continues to be a prominent market for cloud technology adoption and public cloud market is likely to cross the \$1 billion mark in 2016, Zinnov said in a study titled 'Indian Public Cloud Market Landscape'. Public cloud, under which a third-party cloud service provider makes resources like applications and storage available to the general public over Internet, is expected to grow at a CAGR of over 34 per cent to touch \$3.9-4 billion by 2020. Cloud computing frees companies from potentially expensive costs of purchasing, managing and maintaining on-premises hardware and software infrastructure. "With multiple growth drivers like investments in local datacenters, maturing channel partner ecosystem, and rapidly growing developer ecosystem, cloud spending will continue to dominate the market landscape and cross the \$10 billion mark by 2020, including both public and private cloud spending," the study said. Software-as-a-Service (SaaS) is expected to continue to be the biggest spend category within public cloud at \$2.6-2.8 billion, followed by Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) cumulatively accounting for \$1.2 billion by 2020. While the mature enterprise ecosystem is driving significant demand, the vibrant SMB/startup landscape and government initiatives are indeed bound to increase the public cloud consumption going forward, the report said. IT/ITeS vertical accounts for 35-45 per cent of the total public cloud spending, while massive investments in data centers by technology vendors for banking, financial services and insurance segment is

driving cloud adoption. Other sectors like manufacturing, healthcare, retail/e-commerce and telecom are also driving adoption. "Cloud market will present a USD 10 billion opportunity by 2020 and positions India as a strategic market for global cloud vendors. We expect technology companies to continue to make investments in innovative go-to-market strategies and partnerships to tap this huge opportunity," Zinnov Partner and Practice Head Praveen Bhadada said. Zinnov expects to see at least 15-20 top global cloud companies enter India market in a big way in the next 12 months, he added.

## 5G connections may reach 690 million by 2025

There will be around 690 million 5G connections by 2025, five years after the standard is expected to be approved, Strategy Analytics predicts. The research firm expects 5G to account for 7% of mobile connections by this time, driven by early adopters in the US, South Korea and Japan. China has also laid out a 2020 5G launch plan, Strategy Analytics notes, which will help accelerate adoption. Operators including NTT DoCoMo, SK Telecom, Verizon and AT&T are leading the charge. Commercial 5G handset sales are meanwhile expected to exceed 300 million by 2025, according to Strategy Analytics director Ken Hyers. "While the first commercial 5G handsets will appear in small numbers in 2020 in South Korea and Japan, from 2021 more countries including the US, UK, Sweden, UAE and China will see their own launches," he said. "By 2022 tens of millions of 5G handsets will be sold, and as a proportion of total handset sales will reach low single digit percentages." The first trial 5G handsets expected to emerge in 2018 are expected to have issues including short battery life, no 4G handover or unstable connectivity, Strategy Analytics said. But these teething problems are expected to have been largely resolved once commercial handsets reach the market.

**Customer Experience**

**Contact Center Strategy**

**the world of digitization**

**Mr. Ismail Mohammad**  
SVP Customer Operations  
**du**



## Strategic Role of Contact Centers in Customer Experience Management



In today's fast-paced digitisation age, customers demand personalised attention and real-time responses to all their enquiries. To cater to these growing demands successfully and maintain client relationships, contact centers are required to deliver the best service constantly and consistently. It is common knowledge that customer service is now a vital component that enables brands to stand out from the competition and build a solid reputation. Irrespective of the size and industry, companies must consider all possible ways to update, modernise and improve their service offerings and standards.

While customer service representatives are on the front lines of day-to-day customer interactions, contact centers are not always a pivotal portion of customer experience management (CEM) strategies in companies. Many businesses still take an old school view of contact centers as

routine transaction handlers, even if that transaction includes buying products such as airline tickets, providing telecoms service, checking credit card balances or simply serving as a gatekeeper to deal with unhappy customers.

It is the call centers that are most often marginalised; the call centre is thought of as an essential department, mostly with a cost structure required to deal with unhappy customers and to put out fires. It's not observed as an indicator of the early issues, which can help in driving new business strategies.

The fact of the matter is that the needs, perceptions and influences of our customers have a much greater effect in shaping the direction of a company, and most industry experts agree that contact centers need to play a more prominent role. Instead of simply having limited daily interactions with customers,

properly skilled and empowered contact centers can be influential and increase the profitability for the business, while simultaneously improving customer relationships and building the market positioning of the company. Today's call centres should not simply take calls and shape the customer bond; they should take hold of the reams of information passing through them daily and use it to report on things in a much more strategic way, specifically on the trending and tracing of issues. Call centres can offer a perspective on the lifetime value of a customer, especially those customers who were saved as a result of better handling and problem resolution efforts.

Despite the potential of the contact center to help drive CEM, the truth is that many organisations are not well poised to serve in this highly strategic fashion. From a management point of view, contact centers are often run by those professionals who are more equipped with operational backgrounds but lack experience with strategy and profitability planning; hence, they are easily ignored and removed from the business covering broader CEM goals.

On the other hand, the metrics often used to evaluate the performance of contact centers can also be a hindrance, as they're typically not in harmony with the principles used to measure customer experience and customer satisfaction goals. In addition, the way in which most contact centers communicate and relay customer intelligence back to other areas of the business is often considered far too unreliable and subjective, mainly lacking on the analytical insights necessary to drive viable business impact.

We see this evolution mainly encompassing two essential building blocks:

### **1. Systematic Information flow**

Above the management vision, a CEM-directed contact center must have established processes that loop customer intelligence back into other areas of the business, instead of only imparting isolated incidents or summarising customer complaints in an ad-hoc manner. Hence, an organisation must retool its reporting parameters, which should support a systematic flow of statistics while leveraging technology around analytics to help classify patterns that can reveal valuable customer insights.

Informal note taking and circulation of customer letters for a monthly or quarterly report that classifies issues, identifies quality trends or summarises key findings in customer surveys should be made a custom in lieu of just casually passing around call tags or a random selection of feedback. Today's contact center has the information and data that can be incredibly useful in defining how the company approaches customer experience management. It is imperative for contact center teams to become more apt at self-promotion and to ensure that higher management is aware that they have the required data. This data should be packaged in a format that is easily understood by anyone who has a stake in it, be it managers or executives.

On a higher level, companies must establish a cross-functional collaboration and connectivity between the contact center and other critical areas involved in CEM, including the commercial and technology teams. Forming a cross-functional task force will help the company achieve the bigger goals of its CEM initiatives across the organisation.

For me, one of the big challenges organisations are facing when it comes to customer experience is the notion of understanding the interaction the customer has already had, so that they don't have to start from scratch when they come to the contact centre. With the process variations, technological implementations and cultural shifts, it's not an easy endeavor to make the contact center evolved as a CEM centric unit within the greater scope of the organisation, however the benefits are worth every effort.

### **2. Leadership and Coaching at Contact centers**

The best way to position the contact center in order to meet an organisation's CEM objectives boils down to having a balance of traditional change management practices along with a new leadership focus, which aligns the contact center more closely with the overall objectives of organisation. In addition, creating a culture - not just within the contact center, but across the organisation should start from at the top and have a trickle-down effect.

Most of the change management and cultural shifts require reorienting contact center management to meet an entirely new set of requirements that go beyond the traditional attributes of operational excellence. Call center managers are required to have a keen grasp of financial facets, strategic thinking, business process improvement and organisational behavior on top of their traditional focus on driving efficiency, better call-handling times and profitability aspects. In addition, they must have access to C-level executives including CFOs, CHROs and CCOs to implement this change, as call center managers can no longer consider their sector as purely a production environment. They have to look at the entire value chain that their call center can have in terms of generating revenue on its own.

One of the key initiatives from the management teams should be in providing frequent guidelines and trainings to assist call center agents in the resolution of problems efficiently based on what the customer is saying, instead of simply adhering to a formal and pre-prepared script. The person in this role has to be a strategic thinker, who has the ability to develop people and who can help coach them to adopt these behaviours. This nuanced skill set evolves around leadership, culture and human development.

Along with the management, contact center staff have to be groomed in how to properly listen, manage and grow the customer assets and understand the value of their customers. For example, if a loyal and high ARPU customer is irate over a small service charge, the agent must have the authority to decide in waiving off the charges as opposed to following a memorised set of procedures and policies that mostly serve to aggravate customers.

Too often, we talk about empowering agents to resolve issues and address some critical things without feeling the need to escalate or transfer the call to supervisors because from one side it is expensive and on the other hand, it is not a good experience for the customer.

My take on this and how we as du are evolving our contact centers is completely based on this philosophy and I think the evolution is still ongoing. It took several years to change the service culture, and it is not possible to make this change overnight; however, having the right vision blended with a collaboration across all verticals we are trying to turn the tables every single day for our customers.



## LTE and IoT Growth Presents Rising Challenges in MENA



**Nour Al Atassi**  
Regional Vice President and  
Managing Director  
Middle East and Africa,  
*Syniverse*

Of all the regions in the world, the Middle East and Africa is one in which some of today's biggest challenges in mobile are coming together to present a particularly crucial opportunity. Soaring demand for bandwidth capacity, new competition from apps and OTT players, and rapid growth of new technologies like LTE and the internet of things represent but a few of these rising challenges.

Specifically, the region's large population, surging mobile data use and lack of fixed-line internet connectivity promise a tremendous opportunity for mobile data services in the next few years. From 2014 to 2020, for example, the GSMA projects that the percentage of mobile broadband connections will shoot from 34 to 69 percent in MENA. Critically, the lack of fixed broadband infrastructure means that the fixed-line stage of internet connectivity will largely be skipped, and many mobile users will move directly to mobile for their method of going online.

These factors point to huge opportunities, but ones that require careful understanding and planning. As mobile data use continues to accelerate and evolve across MENA, it's imperative

that operators have a full-scale strategy in place to be able to seize the opportunities now coming to a boil.

Based on recent work with mobile operators in this region over the past several years, I've developed two perspectives on strategies that I see as essential for operators to implement:

**1. Expanding 3G and 4G networks to cater to smartphone use** - From 2014 to 2020, smartphone connections in MENA are forecast to shoot from 117 million to 327 million, according to the GSMA. This rapid rise in smartphone use will present an acute need for the further buildup of 3G networks as well as the rollout of 4G/LTE networks as users begin to take advantage of more data-intensive services.

This deployment, however, involves numerous challenges. First, in addition to needing new equipment, new pricing structures and new roaming partnerships, operators that are expanding their 3G networks or launching 4G networks must focus on establishing reach to a maximum number of networks, so

they can offer the widest coverage for their users. IPX has emerged as a fundamental network backbone for 3G, 4G and other next-generation services to allow operators to achieve this reach. Second, enabling ubiquitous roaming for these networks requires comprehensive testing of critical roaming processes, like clearing and settlement. IPX likewise provides a versatile platform for the enablement of this testing.

IPX solutions now can be scaled and fit to a number of differing technology specifications. Consequently, operators should look to invest in IPX as a core part of their strategy to be able to meet the demands for their 3G and 4G network deployments.

**2. Protecting against fraud from the internet of things -** With the increase in smartphone use in MENA, the internet of things (IoT), while still relatively a small part of the total connections in the region for now, is growing quickly and beginning to bring with it serious problems. According to the latest GSMA data, IoT by 2020 will represent over 23 billion global connections, and with this rapidly expanding world of internet connections, a new generation of fraudsters is taking root.

Connected devices that provide increased convenience and improved services are also collecting, transmitting and storing vast amounts of consumer data, and creating a number of new theft and privacy risks. As a result, with everything connected to Internet theoretically able to be hacked, millions of new devices, business processes and network connections have now become hackable. Additionally, the danger doesn't just come from some data suddenly becoming easily available through transmissions on the internet; it comes from the ingeniousness of fraudsters in constantly searching for new ways to pick the locks of the internet across rapidly evolving environments with countless points of entry.

Through recent work with customers, we've begun to address two types of IoT fraud, among others, that present particular rising threats and ones needing stronger responses:

- **ATM fraud** – One of the more egregious thefts in the IoT world comes from this type of fraud attack. Using web-based controls, fraudsters can change account balances and access restrictions to directly tap into machines loaded with cash. The way this kind of fraud emerged is an example of how IoT is now decentralizing the control of infrastructure in the same way that the web decentralized access to information. Banks began using IoT-enabled ATMs to decentralize their ATM operations. Then, fraudsters discovered this IoT-based system as a point of entry through which account balances could be accessed and manipulated. Through this control, fraudsters began to perpetrate any number of transactions. A typical method involves withdrawing money from ATMs without having the balance of an account reduced, because the account has been programmed to show an unchanged balance. Using these methods, one attack resulted in \$40 million being robbed from just 12 accounts.
- **Ad fraud** – This attack occurs when fraudsters spread malware through a piece of code in an ad. When a user clicks on that code, the code takes over the user's device and creates a botnet, a network of computers infected

without the users' knowledge. Fraudsters then can use this botnet to send spam emails, transmit viruses and engage in other acts of cybercrime. This botnet risk perpetrated through ad fraud underlies a central threat of IoT fraud: It's not the devices themselves that present the security risk as much as it is the Trojan horses they represent in terms of being vulnerable to attacks. For example, many newer IoT devices, such as baby monitors and refrigerators, don't even have security systems protecting them from botnet attacks because of their limited memory and slow processors. In the same way, ad fraud offers an ideal pathway to creating a botnet because, in general, security intrusions come from perpetrators trying to hack into a system directly, or from perpetrators using a third-party code to try to get into a system indirectly. Ad fraud offers one of the biggest third-party codes available to exploit users' devices and is much easier than a brute-force attack.

Surging data use will soon drive a dynamic phase of mobile development in MENA. This growth will allow a wide-scale bypass of fixed-line internet access, but it will also spur unprecedented demands for high-speed networks and extensive data service. It's imperative that operators have full-scale IPX strategies and IoT fraud protection strategies in place to meet the demands to enable this exciting future.



## Satellite Broadband will Help Emerging Markets Achieve Information Technological Parity



**Najat Abdulrahman**  
Executive Director – Business Development  
**Yahsat**



In the cut-throat environments faced by all businesses worldwide, satellite broadband services in emerging markets are playing a crucial part in providing operational continuity solutions. They enable their enterprises to achieve zero downtime, and gain access to a level playing field based on instant communications and information transfer. This latest broadband technology, unfettered by the limitations of older systems can actually put businesses in emerging markets on an equal footing to their competitors worldwide, and allow the competitive advantages of their products and services to regain center stage.

Until relatively recently, much of the world's more advanced connectivity was driven by legacy cable infrastructure. This type of physical infrastructure, labour-intensive and disruptive to install, required significant governmental and private sector investment to build and maintain; but for many, cable based systems only provided communications channels that were susceptible to outages and periodically slow connections. For urban areas, the adoption of higher bandwidth channels has come at a greater speed but for those in more remote parts of the

world, the ability to gain access to these services has been far slower – barriers to the ability of infrastructure providers and governments to build networks to these areas – whether for reasons of geography or economics, seemed in the era of cable to be insurmountable.

By 2016, the analyst community reported that subscriptions of globally fixed broadband, had reached a 13% penetration level, up 5% in the past six years. While the increase was encouraging, the speed of adoption within emerging markets was not great enough to match the potential for real economic progression that could have been achieved with up-to-date IT connectivity. Despite the huge potential of emerging markets in terms of resources and manpower, many areas of these markets found themselves hamstrung by their lack of access to the information and communication capabilities that would be allow them to develop fully.

Satellite communications have been able to jumpstart the process of giving these communities access to these services, and is revolutionizing the way they educate their children, access markets for their goods and maintain good health.

Through satellite broadband communications, users in the remotest parts of the world are now able to take a giant leap forward when it comes to high performance broadband, and are not subjected to the costs and physical limitations that would be present with the older model of cable based systems. No longer limited by their location, rural communities are achieving a speed and level of social development unparalleled in the history of the world.

The benefits of a transition to satellite communications are clear. Nations are now able to connect all of their people instantly, putting agricultural goods providers in touch with markets, and providing real opportunities to local populations without having to instigate mass urbanization with all of the social and economic problems that accompany it. Emerging markets can now take their place on the world stage without having to adopt a wholesale restructuring, allowing them to sidestep many of the pitfalls that have plagued the first wave of emerging markets. Aside from these economic and social benefits, satellite communications offer a flexibility that cannot be mimicked by traditional cable based technology. Wherever the user's location, he or she can benefit from a uniform level of high speed broadband that is not limited by the ability and willingness of governments and infrastructure providers to lay cables, or by the need to plug in physically into the system. A doctor can enjoy the same level of access to the latest medical expertise wherever he is on his rounds, just as a child can enjoy a face to face tutorial without a two hour trek to the "local" school.

Similarly through satellite communications, broadband connectivity is no longer limited to the incumbent telecommunications providers of a given country, allowing customers and businesses the impetus to drive for greater competitive pricing structures and demand more advantageous regulatory practices from the industry. Nor does it endure the need for terrestrial operators' local maintenance of wireless facilities and access to backhaul, which can be challenging in many rural areas.

The very nature of the technology offers a scalability that existing legacy systems will find challenging to match. The ability to deploy satellite terminals in multiple locations irrespective of the size of the local population base can provide instant high speed access to hundreds of thousands of customers. By maximizing spectrum efficiency via the latest technologies, governments and infrastructure providers can also ensure that satellite broadband is not only relevant to remote communities – the choice of lower cost, universally accessible broadband technology can bring significant benefits to urban communities too, especially those previously outside the recognized mainstream of internet connectivity, but also any business owner for whom zero downtime can make the difference between explosive growth or rapid decline.

Since 2006, the world satellite industry has grown from \$105 billion to over \$208 billion. This still only represents a fraction of the global telecommunications market but the rate of conversion is also growing. As in all industry sectors, the economic challenges of the last few years mean that telco corporations are actively searching for new markets, and business models that are mutually beneficial for all the parties, including the end user. Perhaps the most positive outcome of the worldwide economic crisis, this newfound emphasis on the needs of all users represents a huge

opportunity for emerging markets as well as the companies and organizations that provide the infrastructure; with this in mind, it is hard to imagine that the satellite broadband sector will not continue to experience enormous growth, and occupy an ever larger proportion of overall internet provision.

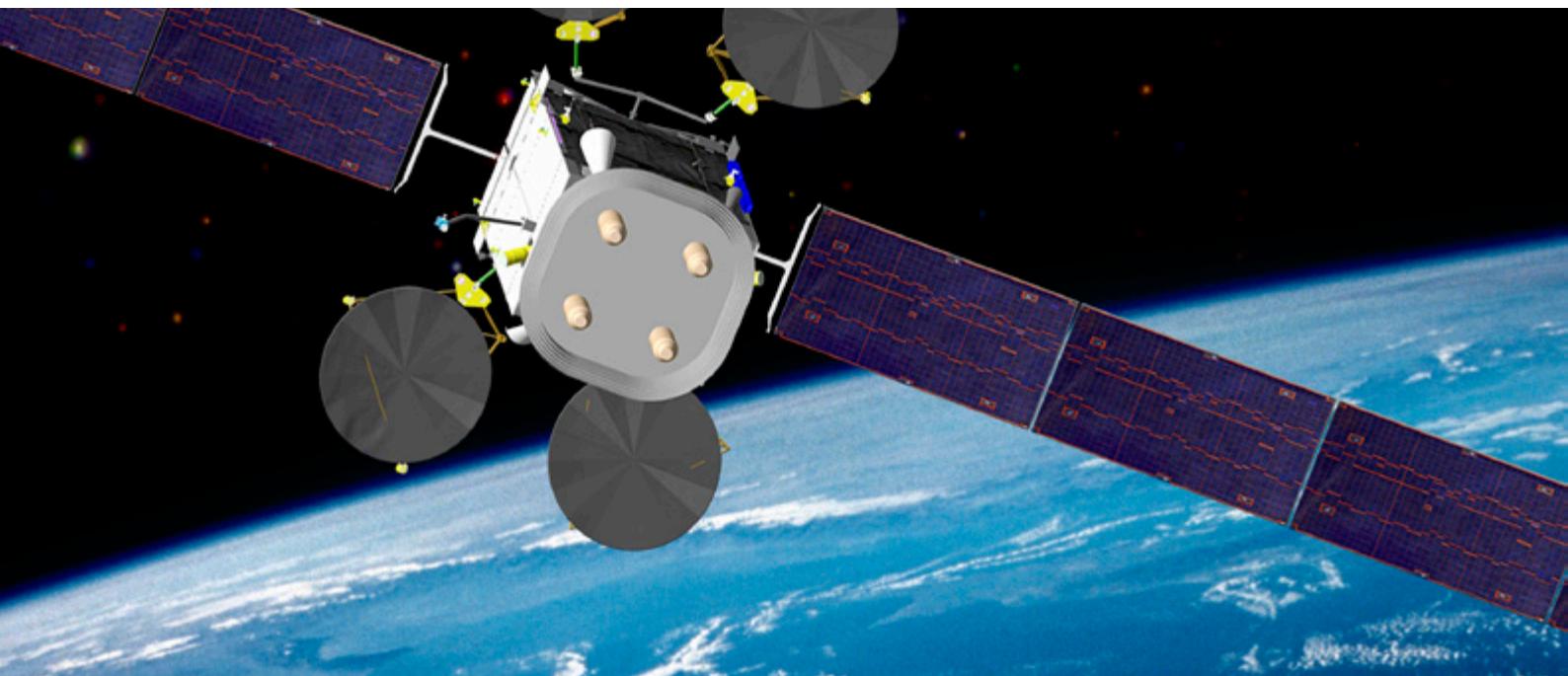
Yahsat has been developing and delivering on this premise since 2007, connecting some of the remotest places on the planet. Through the Ka-band multi spot-beam technology, which it is the first company to deploy in the Middle East, Africa and South and Central Asia, Yahsat has been able to deliver strong signals through small beams to achieve continuous uninterrupted connectivity. Using small satellite dishes with state of the art technology, Yahsat is able to actively allocate power to ensure a smooth satellite link is maintained even in adverse weather conditions anywhere it is needed.

This system offered under the brand name, YahClick, offers consumers and businesses a highly reliable, instantly available service with total independence from terrestrial infrastructure and critically, with no last mile issues. Alongside local partners, YahClick will allow the unconnected the ability to benefit from open, seamless, scalable, and tailored world-class solutions. This represents nothing short of a revolution in the ability of these markets to access the online services they need to achieve higher levels of economic performance, healthcare and education.

From the most populated and well wired urban areas to the remotest of regions, their economic future based on satellite telecommunications is clear. If a small business in super-wired North America doesn't have to suffer the catastrophic effects of internet downtime, and therefore stay permanently at the peak of its efficiency, now, with the support of satellite internet connectivity, a similar venture in Pakistan doesn't have to either.

For the first time in history, small businesses will be competing on a more or less equal footing. Add in the advantages of a skilled work force educated by satellite broadband, and higher levels of worker health based on doctors' uninterrupted online access to healthcare advice and expertise, emerging markets are, for the first time, operating at a level that matches their potential. Blessed with youthful populations and resources that they are now able to exploit, these markets are firmly on the road to approaching parity in opportunity – and with lower costs of living and labour costs, companies from emerging markets in Asia and Africa will often find themselves with a competitive edge over similar enterprises in more established, and creatively moribund, developed economies.

As the world's most developed economies struggle to maintain a competitive advantage based on older technology and economic models, new technologies such as satellite broadband represent a real chance for emerging markets to influence the shape of a new global economy; where the latest technological advances were previously reserved for economies established during the era of heavy industry and manufacturing, systems such as YahClick are placing previously neglected communities at the heart of the next generation of economic development. This represents a shaking of the foundations as profound as the launch of the internet itself.



## ▼ SATELLITE NEWS

### SATELLITE UPDATES

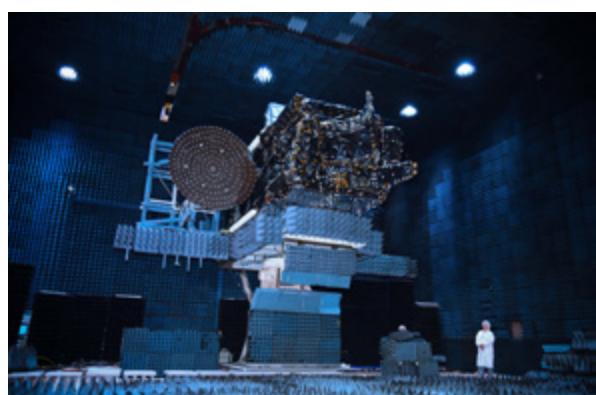
#### EUMETSAT Relocates Meteosat 8 over Indian Ocean

The European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) has shifted Meteosat 8, the first satellite in the Meteosat Second Generation (MSG) series of meteorological satellites, to 41.5 degrees east over the Indian Ocean. There, the satellite will replace Meteosat 7, which is approaching the end of its nearly 20-year lifetime in space. Previously Meteosat 8 served as a "hot backup" at 3.5 degrees east for Meteosat 9, located over Europe at 9.5 degrees east, and Meteosat 10, located over Europe and Africa, at 0 degrees. EUMETSAT's flight operations team set the spacecraft on an approximately 80-day journey to reach its new position. The organization used a drift orbit to save fuel and keep a safe distance from other spacecraft. During the transition, EUMETSAT also tested out a number of the satellite's instruments. A complete validation test campaign for the new service follows, which includes about two months of parallel operations with Meteosat 7, with data dissemination to users. These tests will lead to a formal operational readiness review preceding operational service early next year. Meteosat 8 is EUMETSAT's contribution to the Indian Ocean Data Coverage (IODC) service, and will work together with India's INSAT 3D, at 82 degrees east, China's FY-2E at 86.5

degrees east and Russia's Elektro L N2 at 77.8 degrees east in an international, cooperative arrangement.

#### EchoStar Prepares for Q4 Satellite Launch, Makes OTT Investment

Space Systems Loral (SSL) has certified the EchoStar 21 satellite ready to ship ahead of a fourth quarter 2016 launch. The com-



munications satellite — to be located at 10.25 degrees east — was intended for launch in April 2016, but was placed in storage after the delay of its May 2016 Proton launch. SSL has now completed final shipment preparations at its Palo Alto, California facility, where the spacecraft

will remain in storage until EchoStar receives notification of launch vehicle availability. EchoStar subsidiary EchoStar Mobile Limited (EML) will use a portion of EchoStar 21's capacity to provide commercial communications wholesalers with a network for IP-based Mobile Satellite Services (MSS) for voice and narrowband data services in Europe. EML is an EU-wide licensee authorized to provide an integrated MSS network with a complementary ground component. The company has provided notice of the completion of construction and temporary storage of EchoStar 21 to relevant EU and member state regulators. Recently EchoStar also deepened a contract with Xavient, which over the past year has added development, support and testing platforms across various consumer level applications catering to the Over-the-Top (OTT) industry. Through Xavient's OTT Lab, the firm tests the performance and functionality of software in a growing number of platforms and mobile devices that deliver OTT programming to consumers. These devices include Apple TV, Microsoft's Xbox One, and the Samsung Galaxy Tablet, among others.

## Boeing Open to Partnerships on LEO Broadband Constellation

Boeing is interested in having partners to join the company as it seeks

way forward. "We would like to have somebody join us, but it doesn't necessarily depend [on this]," Craig Cooning, President of Boeing Network and Space Systems, told reporters September 14 at World Satellite Business Week. "It could be multiple partners, and clearly a lot of our existing customers, when they saw the filing, there was a lot of curiosity around it." In the filing, Boeing asked for additional uplink spectrum for Fixed Satellite Services (FSS), in the 50.4 to 51.4 GHz and 51.4 to 52.4 GHz bands, as well as for the authority to launch and operate an NGSO satellite system for low-latency, very high data-rate broadband across the United States and the world. Should Boeing operate such a constellation, it would greatly expand the company's role in the satellite industry beyond manufacturing and launch. Cooning said Boeing has gotten the chance to meet with potential partners along with customers about the potential LEO system. He admitted some customers did show concern about doing business with a newfound potential competitor — which is similar in ways to satellite operator's reactions to SpaceX's LEO plans — but he said Boeing is optimistic that customers will see it more as a chance to work together rather than be dissuaded from buying Boeing satellites. "We've had opportunity to talk to most of them at this point and they understand where we are going, they understand the opportunity for some sort of partnership as well, and we hope and we believe that as we get further into this project, that they will come along with us," he said. Boeing's rationale for building and operating a LEO constellation stems from the frequently cited implacable rise in connectivity needs around the world. Between rising commercial demand and government-driven universal broadband service obligations, the company expects satellite could play a major role.

## Intelsat Wins HTS Contract from TIM Brasil

TIM, one of the largest mobile communications operators in Brazil, has entered an agreement to use Intelsat EpicNG High Throughput Satellite (HTS) services in its network infrastructure, providing expanded connectivity throughout the country. Under the multi-year agreement, TIM will become the first Mobile Network Operator (MNO) in Brazil to incorporate

HTS services into its infrastructure, according to Intelsat. TIM will use Ku-band on Intelsat's first EpicNG satellite, Intelsat 29e at 310 degrees east, to support the roll-out of new sites in currently underserved areas, as well as to support the deployment of 3G and 4G services. The Intelsat EpicNG solution will augment TIM's existing C-band network to serve new demand. Intelsat 29e launched in January this year and entered service in March. The operator anticipates launching two more EpicNG satellites in 2017 that will also provide full coverage of Brazil with additional throughput and resilience.

## Cloud Constellation Gains SolarCoin as Customer for Forthcoming SpaceBelt Network

Cloud Constellation has entered into an agreement with The SolarCoin Foundation (SCF) whereby SCF will purchase orbital storage capacity on Cloud Constellation's SpaceBelt network. SCF intends to use SpaceBelt as its primary means of connectivity for SolarCoin space transactions with prospective customers. SpaceBelt is a patent-pending high-speed global cloud storage network of space-based data centers, interconnected to form a secure cloud infrastructure to service providers, enterprises and governments around the world. The Low Earth Orbit (LEO) satellite system is being designed for secure storage and transport of mission-critical, sensitive data without interruption or exposure to surreptitious elements or unintended jurisdictions. SolarCoin is a global crypto-currency program that rewards owners of solar power systems. The rewards are converted to Bitcoins that can then be used to purchase goods and services or converted to hard currency. The free program has provided SolarCoins to members in 23 countries. SCF plans to purchase capacity on the SpaceBelt network to securely host its cold storage vault and protect its \$5 billion treasury of SolarCoin currency. "Crypto-currency is a hot commodity — so hot, in fact, that hackers have already pulled off heists that have left consumers empty-handed. We wanted to find a way to securely store our currency, and the SpaceBelt is a perfect fit," said Nick Gogerty, founder of The SolarCoin Foundation.



to create a new Non-Geosynchronous (NGSO) satellite constellation for broadband services using V-band. The company first revealed intentions of fielding a Low Earth Orbit (LEO) system in June by filing with the U.S. Federal Communications Commission (FCC) asking simultaneously for permission to operate such a system and for the spectrum rights to make it possible. Now as Boeing continues to pursue this system, the company says making the constellation into a multi-party effort would be an ideal

## ViaSat Awarded US Government Protected Satcom Demonstration Contract

ViaSat has received a cost-plus-incentive-fee contract worth \$33,291,975 from the U.S. government to provide wideband jamming-proof communications to tactical users across both government and commercial satellites. The contract is for the Protected Tactical Service Field Demonstration (PTSFD) program and includes the development of a Protected Tactical Waveform (PTW) modem as well as an embedded cryptographic unit. The PTSFD program aims to demonstrate the ability to provide wideband anti-jam communications to tactical users of the Wideband Global Satcom (WGS) constellation and commercial systems. According to ViaSat, the program enables the U.S. government to take advantage of Commercial Off-The-Shelf (COTS) systems. PTSFD seeks to provide a higher degree of operational flexibility and greater amounts of bandwidth than is possible with the U.S. Air Force's Advanced Extremely High Frequency (AEHF) constellation alone. ViaSat expects to complete this work by Sept. 30, 2020. "This PTW modem, coupled with our ViaSat 3 ultra-high capacity class of satellites, uniquely positions ViaSat to provide global, interoperable communications to deployed warfighters with the most assured, resilient and fastest satellite service available," said Ken Peterman, SVP and general manager of ViaSat's Government Systems Division.

## Spain Taps Indra to Build Space Radar System

The European Space Agency (ESA) has awarded Indra contracts to deploy a space surveillance and tracking system known as S3T for objects in

Low Earth Orbit (LEO). The company is tasked with developing and supplying the surveillance radar to cover between 200 and 2,000 kilometers. Additionally, Indra is to coordinate implementation and integration of the operations center and the radar and electro-optical sensors for gathering complementary information. The S3T system is to provide Spain with a catalog of Earth orbiting objects that can enable collision warnings for satellites, space debris and space infrastructure; an object re-entry warning service that includes information on the time and place of Earth impact; and a fragmentation service, which will detect the presence of new debris clusters and help to identify the originating object or objects. Once the system comes online, Spain will be one of the few countries capable of providing such services to the European Commission, which plans to harness the infrastructure of member states to monitor and track the trajectories of objects in space. The total contract is worth 17 million euros (\$19 million). According to Indra, the scalable design of the system may transform it into the most powerful radars ever designed in Europe through successive phases of Spanish and European investment.

## Inmarsat, Hughes and SpeedCast Become Skynet Partners

Airbus Defence and Space, owner and operator of the Skynet X-band satellite system, has struck up partnerships



with Inmarsat Government, Hughes Network Systems, and SpeedCast to offer Skynet military satellite communication services. The three companies are able to offer Skynet services to Australian, New Zealand and U.S. forces operating across the globe. Inmarsat Government will include Skynet services as part of its portfolio offer to U.S. government customers.

Hughes will use the partnership for U.S. government tactical missions, primarily using the Xebra service, which uses the Hughes HM300 lightweight X-band satellite terminal and Airbus Defence and Space's Skynet capacity. SpeedCast will be offering the tactical secure communications services to the Australian and New Zealand government. In addition, Airbus Defence and Space has recently appointed SpeedCast to manage a new anchor station facility for the Skynet 5A military satellite, which is based at SpeedCast's existing teleport in Adelaide, Australia. The new partnerships follow the relocation of Skynet 5A from 6 degrees east to 95 degrees east over the Asia Pacific region in September 2015. The Skynet network now offers global military coverage in X-band and Ultra-High Frequency (UHF) through a constellation of eight satellites and an accompanying ground network. Airbus Defence and Space fields the hardened communications system to provide Beyond Line of Sight (BLOS) communications to the U.K. Ministry of Defense (MOD), as well as for other NATO and allied governments.

## Optus Selects Gilat to Extend 3G Coverage to Rural Areas in Australia

Optus has selected Gilat Satellite Networks CellEdge Software Defined Radio (SDR) small-cell-over-satellite solution to extend 3G cellular coverage to regional and remote areas in Australia. By choosing Gilat's CellEdge SDR, Optus aims to extend its 3G mobile network areas along some of the major highways of the Northern Territory and Western Australia, providing a "check in" capability. Gilat provides an integrated solution, which combines small cell and Very Small Aperture Terminal (VSAT) functionality, and allows cost effective and fast deployment of cellular coverage.

"Gilat's small-cell-over-satellite solution enables us to provide mobile connectivity to unserved and underserved areas," said Paul Sheridan, vice president of Optus Satellite.

## Latin American Satellite Operators Battle Recessions, Inflation

Satellite operators in Latin America's



three largest economies are hopeful that economic weakness in the region will pass in the near future. New presidents in Brazil and Argentina, and policy changes in Argentina and Mexico specifically, are having salient impacts on the countries' telecommunications sectors. "It is a really tough year for us," Gustavo Silbert, president of Brazil-based Embratel Star One, said Sept. 12 at World Satellite Business Week in Paris, France. "Inflation is around 10 percent, so it is very, very bad. Unemployment is around 11 percent. Those are the bad things that happened, but what we see now is a kind of turning point; we have a new government with a lot of expectations." Brazil impeached its president, Dilma Rousseff, this August after nearly a yearlong process. The impeachment, combined with the Zika crisis and ongoing market challenges from factors like the weak state of the oil and gas market, have further stressed the country's economy. Silbert said Star One typically makes purchases in U.S. dollars but sells in Brazilian reals, making currency depreciation another challenge. Still, he said the company has had some notable highlights, particularly with the recent Rio de Janeiro Olympic Games. He said Star One provided 25 dedicated channels for the Olympics in full HD, as well as some 4K, and made content accessible to "every screen," including using internet to reach multiple devices. In Argentina, national satellite operator Empresa Argentina de Soluciones Satelitales Sociedad Anonima (ARSAT) said inflation has stalled out the economy, but with the country's renewed interest in international friendships, moods are upbeat for near-term turnaround. "Certainly the fact that inflation reached 20, perhaps 30 percent or more in the past years created stagflation of the economy, and we are in the battle to control inflation," said Henoch Aguiar, vice president of ARSAT. "We think in the next months we will see that and expect good movements of the economy for the next year." Aguiar added that while the national economy has struggled, satellite in particular has grown at an appreciable rate. In an accompanying presentation, he said 65 percent of ARSAT 1, the operator's first satellite, which launched in 2014, is already contracted. The satellite has a 14 percent backlog, 10 percent more capacity sales are forecasted for next year, and another 10 percent are not being leased commercially. ARSAT 2, launched in 2015, is 35 percent uti-

lized, with a 25 percent backlog and future forecasted sales of 30 percent within the next one to two years. Like its predecessor, 10 percent of the satellite is also not available for commercial lease. In a step change from the past, Aguiar said the Argentine government is planning to shed some of its protectionist policies in favor of letting international satellite operators sell capacity in the country. Even among differing political parties, he said this mindset remains the same: "all of them share one idea — Argentina must be open to the world." Aguiar said the recession in Argentina has impacted data services more so than broadcast television, with entertainment apparently carrying more value during hard times. Silbert said broadcasting is down in Brazil, though he added Star One's 70 degrees west orbital location has amounted to a "hot spot" for the operator as an estimated 20 million receive-only C-band television dishes are pointed at the operator's satellites at this position. That equates to almost 40 percent of houses in the country, he said. Mexico's Secretaria de Comunicaciones y Transportes' (SCT) Mxsat Program, though part of the government, is also feeling economic pressures as it tries to finance a replacement for the Centenario satellite destroyed in a 2015 Proton failure. Omar Charfen Tommasi, Mxsat program director at SCT Mexico, while stressing that Mxsat does not have a profit motive, said the organization lost replacement satellite money because of Mexico's financial situation. "With the gas and oil prices going down and with a sequestration process, we have budget constraints and we need to get creative in carving the correct financial solutions for our needs. That is the case with the new satellite we are planning to buy to provide backup to the Morelos 3 satellite due to the launch failure that we had last year," he said. Centenario was the second of a would-be trio of satellites Mexico's SCT had planned for national communications services and was identical to the third satellite, Morelos 3. The satellites were to serve as backups for each other. Tommasi said the SCT still has a requirement for three spacecraft to meet needs in fields such as national security, e-learning, and telemedicine. "For Mexico Connectado, we have 100,000 sites connected. Only 30 percent of those are connected via satellite, but we want to increase that number. We want to reach 200,000 sites in the next two years," he said. According

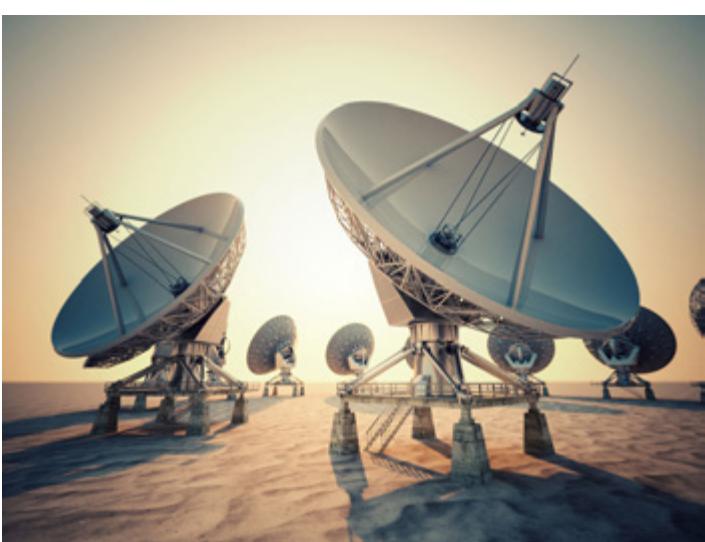
to Tommasi, the SCT did recover the insurance amount of the lost satellite, but this money "went into the Mexican treasury and was used for other priorities." He said SCT has been engaged in performing a market study on getting a replacement satellite and hopes to issue a Request for Proposal (RFP) to satellite manufacturers by the end of this year. Tommasi said Mexico's commercial telecommunications sector has grown robustly over the past four years thanks to legislative changes that have introduced competition. He said prices have fallen for connectivity by 23.2 percent over the last three years, and Foreign Direct Investment (FDI) in telecommunications is now second only to oil and gas. The SCT estimates Mexico has 54 internet users for every 100 residents, up from 21 out of 100 prior to 2012 reforms. SCT is expanding access to connectivity further now that the Mexican constitution deems connectivity to be a human right for its citizens.

## Inmarsat Inks Contract to Deliver Aviation Safety Services in China

Beijing Marine Communication & Navigation Company (MCN) and Aviation Data Communication Corporation (ADCC) have contracted with satellite operator Inmarsat to provide aviation safety services to Air Navigation Service Providers (ANSPs) and operators in the People's Republic of China (PRC). The Memorandum of Understanding (MoU), signed this week, outlines MCN/ADCC's intention to offer cockpit communication services, including Inmarsat's Classic Aero and next generation SwiftBroadband-Safety (SBB-S) services, across the country. The companies expect to finalize the partnership later this year. Classic Aero is a voice and data safety service that offers satellite surveillance and communications — such as Future Air Navigation System (FANS) and Aircraft Communications Addressing and Reporting System (ACARS) — that meet International Civil Aviation Organization (ICAO) global flight tracking requirements. SwiftBroadband-Safety uses IP-based broadband capabilities to offer connectivity for cockpit and aircraft operations. The solution is capable of delivering flight data streaming and real-time Electronic Flight Bag (EFB) applications such as graphical weather.

## Eutelsat Takes a Stake, Partners with V-Nova for Compression Technologies

Eutelsat Communications is taking a minority stake in V-Nova, a London-



based expert in advanced video compression technology. Eutelsat and V-Nova also plan to enter into a commercial partnership focused on satellite video transmission markets, where Eutelsat will exclusively distribute V-Nova's Perseus-powered compression solutions in jointly defined offers for pre-agreed markets. Perseus delivers significant performance improvements in terms of picture quality, processing speed, latency and power consumption, and is compatible with legacy and new hardware, according to V-Nova. Eutelsat leveraged this solution to deliver live 4K lossless contribution of major matches during the UEFA Euro 2016 Championship in June and July this year. "In partnering with V-Nova we are adding to our competence in the broadcasting chain and, specifically, we are increasing our technology advance by enriching the end-user experience for client broadcasters," said Julien Seligmann, Eutelsat executive vice president of global video services.

## STC, Intelsat to Provide Connectivity to Oil & Gas Market in Saudi Arabia

Saudi Telecommunication Company (STC) has extended its relationship

with Intelsat to support operations for the largest oil and gas producer in the Kingdom of Saudi Arabia using Intelsat's satellite solutions. Under a multi-year agreement, STC will use connectivity provided by Intelsat 10-02, located at 1 degrees west. STC uses multiple satellites in Intelsat's globalized network to provide high-quality broadband networking for corporate customers in the banking, government and oil and gas sectors operating throughout the Middle East and Asia. "The operations of oil and gas companies are important to Saudi Arabia and the global economy, and reliable broadband communications are a vital part of the sector's daily operations," said Walid Al Wabel, general manager of operations management at STC. "Demand for VSAT connectivity in Saudi Arabia and the Middle East remains

strong, demonstrating that satellite is the best option for delivering reliable communications services to large enterprises with hundreds of locations spread across vast and sometimes remote areas," said Shahrokh Khanzadeh-Amiri, Intelsat's director of sales for the Middle East and North Africa.

## GATR and Intelsat General Achieve High-Throughput Link via Ultra-Portable Satellite Terminal

Cubic Corporation announced that its subsidiary GATR Technologies, which operates within the Cubic Mission Solutions (CMS) business division, and Intelsat General Corporation successfully established a 26-megabits per second (mbps) downlink and a 10+ mbps uplink, carrying multiple data streams during performance testing of GATR's prototype GATR-FLEX sub-meter Ku-band, ultra-portable terminal. GATR and Intelsat General performed a series of tests using the open architecture, high-performance Intelsat EpicNG satellite Intelsat 29e, GATR-FLEX antenna, and GATR's e850 ruggedized iDirect satellite modem, which maximized the throughput of

the iDirect Evolution series modems. The tests measured throughput while taxing a single satellite link with data, voice and High-Definition (HD) streaming video, which is normally done by two separate terminals over separate networks. Cubic|GATR and Intelsat General anticipate higher performance with the next generation of iDirect Velocity modems. Additional products from CMS subsidiaries were also used for the tests, such as DTECH's M3-SE networking stack of routers, switches, servers, encoders and voice appliances, as well as Teralogics' Unified Video Cloud and Server application for real-time Full Motion Video. Unified Video demonstrated HD video contribution and consumption streaming over the same satellite link for the command and control services.

## Vector Space Systems Wins \$2.5 Million in NASA and DARPA Contracts

NASA has selected Vector Space Systems' Phase 2 proposal under the 2015 Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) program to continue development of an advanced prototype of the upper stage for the Vector-R launch vehicle. The contract, proposed through Vector's acquired Garvey Spacecraft Corporation subsidiary, complements an earlier SBIR award from the U.S. Defense Advanced Research Projects Agency (DARPA) that addresses the use of the Vector-R first stage as a second stage for the XS-1 Experimental Spaceplane. In conjunction with the awarded contracts, totaling approximately \$2.5 million, Vector is investing in related infrastructure and range site preparations to enable high performance flight testing by the fourth quarter of 2017. Under this NASA Phase 2 STTR project, the Vector team is finishing the design and will then transition into assembly, integration and checkout of a full-scale prototype of the Vector-R upper stage engine. Vector will then integrate this stage with a prototype first stage engine, gained from a contract with DARPA, to create a fully functional two-stage flight test vehicle. The team members include academic partner University of Alaska Fairbanks and the Alaska Aerospace Corporation (AAC). The AAC hosted precursor ground operation

pathfinder tests at its launch facility on Kodiak Island during Phase 1 that validated the feasibility of this site for the upcoming high performance mission. The Vector-R launch vehicle is dedicated to servicing the micro satellite market. The rocket is an advanced vehicle made of an all carbon fiber airframe, lightweight pressurized propulsion systems and an agile modern avionics system. The company expects Vector-R to become fully operational by 2018.

## Boeing to Build Communications Satellite for Global IP to Expand Broadband in Africa

Boeing will build a 702 satellite, called



GiSAT, for Cayman Islands-based Global IP with a new digital payload offering twice the capacity of previous digital payload designs. Global IP will use the satellite to deliver streaming media, digital broadcast and other communications services to Sub-Saharan Africa with a coverage area encompassing 35 countries and 750 million people. Scheduled to enter service in 2019, GiSAT is designed to operate with more than 10 gateways in Europe and multiple gateways within Africa. "Our vision for GiSAT is to provide end users with connectivity and services that are affordable, rich in local content and truly broadband in nature," said Bahram Pourmand, CEO of Global IP. "With the ability to reconfigure the GiSAT on-board pro-

cessor, the Boeing digital payload will allow us to broadcast different channels to different beams from different locations, providing better service to broadcasters, mobile operators and Internet Service Providers (ISPs)."

## Eutelsat Releases HDR Ultra-HD Channel on its Hot Bird Neighborhood

Eutelsat Communications announced the launch from the Hot Bird video neighborhood of an Ultra-HD channel showing High Dynamic Range (HDR) content using Hybrid Log-Gamma (HLG) technology, the new HDR standard developed by the BBC and NHK. Eutelsat has teamed up with 4EVER-2, the French collaborative project on Ultra-HD, Ateme and Samsung to show the spectacular appeal of HDR Ultra-HD at IBC 2016. Eutelsat demonstrated Ultra-HD images encoded using HLG, with HEVC encoding by Ateme, at IBC. HLG, which was recently adopted by the International Telecommunications Union (ITU) as an international standard, uses a single distribution bitstream, which can be decoded by HDR receivers and also by legacy Standard Dynamic (SDR) displays, providing broadcasters with a way to accelerate time-to-market of their Ultra-HD content. Called "HotBird 4k2 HDR," the new channel is broadcasting across Europe from Eutelsat's flagship Hot Bird

neighborhood. It is showing sports, cultural and wildlife content from the 4EVER-2 consortium, dbW Communication, The Explorers Network and RAICom. The channel is broadcast at 50 frames per second, with 10 bits of color depth (1 billion colors) in the BT2020 environment. Content was presented on Samsung's newest Quantum dot SUHD TV, which is capable of producing up to 1 billion colors and offering more than 1000-nit brightness. HDR television creates richer and more dynamic images by increasing the contrast ratio between the lightest and darkest areas of the screen and increasing the volume of colors a screen can display, according to Eutelsat.

## Arabsat, Newtec Expand Partnership to Enhance DTH, Government and Telecom Services

Arab Satellite Communications Organization (Arabsat) and Newtec have announced an expansion of their partnership, enabling optimized solutions for broadcast and telecom customers. Signed during IBC 2016, the new contract will see Newtec provide Arabsat with its Newtec Dialog multiservice platform to enhance the operator's Direct-to-Home (DTH) services, as well as its offerings in government and telecom markets. Newtec Dialog is a multiservice platform, which enables tailored services and guarantees optimal modulation and bandwidth allocation, whether it is being used to provide enterprise, consumer broadband, cellular backhaul or mobility services, according to the company. It features three return technologies — MF-TDMA, SCPC and Newtec's Mx-DMA — ensuring maximum bandwidth efficiency and return on investment. Newtec's solution for Arabsat also incorporates its pre-distortion technology Equalink, which the company states can provide an additional 15 percent of data traffic in the same satellite capacity.

## Thuraya Announces Plans for L-Band Network Evolution, New Constellation

Thuraya Telecommunications Company has finalized its next generation constellation plans to extend its geographical reach, move into new market sectors and launch new services and devices. The company announced its L-band network will undergo extensive evolution. While continuity is assured with both existing satellites Thuraya 2 and Thuraya 3 continuing to operate as planned, the current satellite footprint will be enhanced significantly with the planned launch of next generation satellites from 2020. The next generation system will focus on delivering high mobility services in core and new markets. These will be complemented with High Throughput Satellite (HTS) services for bandwidth-hungry applications in land, maritime and aeronautical markets. The constellation will be supported by highly advanced platforms for the provision

of "new wave" Internet of Things (IoT) and content services, with multicasting and broadcasting capabilities. This will enable Thuraya to address new growth markets requiring the mobility, capability and coverage available through L-band or HTS services, or in many instances through a combination of both, according to the company. Having prepared and finalized its next generation plans with global management consultancy A.T. Kearney, Thuraya is now in the process of appointing a financial adviser to begin its fundraising activities. Discussions are already in progress with a number of potential strategic investors, according to Thuraya.

## Yahsat CEO Explains Recent Panasonic Collaboration

Yahsat, the Middle East satellite operator, hopes its recent deal with Panasonic Avionics will give it greater scope to make its presence felt in the mobility market. This was an important deal for the company as it looks to markets like aviation to grow revenues. Masood Mahmood, Yahsat's CEO told Via Satellite, "Yahsat is ideally placed to provide flexible solutions for companies that need connectivity in the skies, at sea or in remote locations. Similarly, Panasonic Avionics is the world's leading supplier of inflight entertainment and communication systems; as such collaborating together to develop a global benchmark in In-Flight Connectivity (IFC) was a natural step for us." However, while Yahsat's major focus is on the Middle East, the deal with Panasonic could open it up to other markets. Yahsat has made no secret of its aspirations to become a stronger player in markets like Latin America. Mahmood sees this collaboration as an "international growth opportunity." "With Panasonic Avionics' global network of clients and partners, and Yahsat's current and future footprint, we anticipate that the solutions we develop jointly will be global in nature. This would also allow us to have consistent service for passengers across their entire flight," he said. Mahmood expects IFC to become an important part of Yahsat's business alongside other diverse business sectors including energy, healthcare and financial services, in addition to countries requiring connectivity for remote, unserved and underserviced areas. "We anticipate that IFC services will be an increasing-

ly important differentiator for airlines as they compete in a fiercely competitive global market place," he said. "The potential of this partnership, as we explore the opportunity to launch a Yahsat satellite constellation that would serve Panasonic's general mobility needs, reaches beyond simply the scope of airlines and aircrafts. We expect the solutions we develop with Panasonic to serve aviation. While the economies of true broadband global inflight connectivity are difficult to justify today, we believe that this is an important area of growth that we can utilize synergies with our existing business to make the case possible." This is not first major announcement that Yahsat has made in terms of IFC. Last year, the company revealed plans to test high-speed inflight satellite connectivity using an Etihad Airways A320 aircraft. It was a significant collaboration for Yahsat. "Our Ka-band capacity provides higher speeds and cheaper rates compared to legacy inflight connectivity systems based on Ku-band, which will result in faster and more reliable connection," said Mahmood. "Yahsat is always open to exploring new partnerships to develop new technologies that will solve connectivity challenges across the globe. The Middle East has become a logistics hub for some of the leading global airlines, and being based in this region can give us an advantage in terms of getting some of these partnership discussions going." Yahsat believes the IFC market is evidently big enough to support a number of different players. Mahmood highlighted some recent research where a company called Visiongain assessed that the connected aircraft market is valued at \$2.2 billion in 2016 and is set to grow exponentially in the coming five to 10 years, with this being due to an increase in demand from Wi-Fi enabled devices. "As a result, there is a huge opportunity for companies such as Yahsat to provide vital connectivity links to airlines, enabling them to provide high-speed reliable satellite broadband Internet," Mahmood added.

## Hughes Reveals Second Generation Jupiter Satellite Broadband System

Hughes Network Systems has released the second generation of its Jupiter system. Building on the first version, the new iteration incorporates a second-generation System on a Chip

(SoC-2) and new family of broadband VSATs. According to the company, the second-generation system yields improved operating economics for satellite service providers, notably through highly efficient allocation of bandwidth. The new Jupiter system features support of Digital Video Broadcast-Satellite Second Generation X (DVB-S2X) — the satellite industry's latest approved air interface standard. The new HT2000 family of broadband terminals supports 200 Mbps of throughput and includes versions for markets including consumer, enterprise, trunking, and aeronautical mobility. Hughes has also enhanced the Jupiter system's gateway architecture for improved scalability and performance. The new release employs extensive virtualization and advanced blade server technology resulting, in as much as 10 Gbps of capacity per rack, making it supportive of operations on High Throughput Satellites (HTS). For conventional satellites, the same architectural approach enables operations on up to four satellites in a single blade chassis.

## Advantech Wireless Adds ChannelTek as Partner and Reseller in Pakistan

Advantech Wireless has appointed ChannelTek Enterprises, a system integrator for satellite television channels, as an authorized reseller/partner in Pakistan. ChannelTek will provide sales as well as customer service, support and training to customers throughout Pakistan. Shahid Rahman, vice president of sales and business development for Advantech Wireless in South Asia said the company's recent expansion in the region led to the need for more sales and support channels. "ChannelTek has the resources, proven track record and technical capabilities to support our products and services in Pakistan," he said. ChannelTek is also the biggest distributor of broadcast and professional audio video and products supporting several global brands, according to Advantech. "Our team is very excited about this agreement and is looking forward to capture markets not only for [Solid State Power Amplifiers] SSPA's but also expand the product range to broadcast antennas, [Digital Satellite Newsgathering] DSNG, and complete VSAT systems," said Syed Mubashir Imam, CEO of ChannelTek.



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

Follow Us:  