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2018

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5th April 2018
Safinah Ballroom, Jumeirah Beach Hotel, Dubai

In the Future

SAMENA Telecommunications Council's Beyond Connectivity conference is an annual event, bringing together senior to top-executives from regulatory bodies, telecom operator groups, technology companies, as well as other ICT industry players, including management consulting companies.

Beyond Connectivity 2018, being held in joint partnership with Tech Mahindra, one of SAMENA Council's newest members, will focus on Tech Mahindra's proposed theme of "In the Future". To be held on April 5th 2018 in collaboration with Tech Mahindra, the one-day conference will provide a strategic knowledge-sharing platform for SAMENA Council's members and other stake holders to discuss the evolving telecommunications landscape and industry challenges, and to get a glimpse of the future through the eyes of Tech Mahindra, a valued new addition to SAMENA Council's membership. The event will delve into major industry matters, which will be deliberated on through panel discussions. Such matters include understanding the future from system, technology, security, and digital-experience perspectives, and correlating preparedness for the future with the sustainability of the digital ecosystem, in which telecom operators, regulators, and technology providers have a special set of roles and responsibilities to exercise.

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Connected World.
Connected Experiences.

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Global Digital Services-Global Competition

The notion of digital transformation is inherently built on the availability of digital services, made possible through mobile, supported with the understanding of the digital transformational aspects of the telecom business and of the digital economies that concern the interest and aspirations of all stakeholders. For the new generation of digital services, creating new possibilities in the use of mobility en route to digital transformation is imperative.

With data flows or flow of data goods across borders taking on the same shape that physical goods once did, we can appreciate well the significance of addressing data-centric requirements of our emerging digital economies, and the manner in which such economies would function and flourish with the use of new digital services. In a world where data is the essence of emerging economies and where access to and monetization of data can and will have tremendous ramifications on how competition is created and how companies, especially telecom operators, operate in future environs, it is to be recognized that exponentially rising data flows and exchange of information happening all across the networks translates into a real economic value. This is a result of globalization as well as digitization. To this effect, it is an already known fact that time spent using digital platforms and services will continue to increase exponentially over the foreseeable future. With new business models and digital breakthroughs emerging, operating in the over-the-top environment poses new demands for all stakeholders of the digital communications industry, and merits that the industry, as whole, takes steps to create better enablers of globalized digital services, meeting local and regional needs.

Data flows in play are a reflection of human communication needs, the enabler of human creativity through the exchange of new ideas, and a source of inspiration that is driving the movement of finances, people, and new type of services across communities and across national boundaries. Indeed, e-commerce is one dimension of these data flows; others are better, more personalized, perhaps even AI-driven platforms that make human communication more robust and digital rich.

As an industry body that is witnessing the emergence of new possibilities in the region, SAMENA Council, with focus on digital services and data regulation as a part of its strategic engagement with public and private stakeholders in the region, draws stakeholder attention to the need to see digital services beyond just one-to-one communication or entertainment. That is, for example, digital platforms for both traditional employment and freelance assignments are beginning to create a labor market of their own. The availability of these digital platforms and the digital services will make new things possible. Similarly, digital services could be created by large companies to manage their international operations with more efficiency. A myriad of other services, such as to aid healthcare workers, or to facilitate framers, or to allow drones to provide and help process precision data, can also be created and should be looked upon with a global perspective.

Regardless of the type of digital service created, attention to its anticipated contribution to data influx, cross-border communication challenges, impact on both global and local market competition, and the need to create new business models that aid ecosystem sustainability and fair-play would have to be paid.

Bocar A. BA
Chief Executive Officer & Board Member
SAMENA Telecommunications Council

SAMENA COUNCIL ACTIVITY

SAMENA Council's New Leadership Unveiled for the 2018-2020 Term

The South Asia - Middle East - North Africa region's premier telecommunications industry association, SAMENA Council, has announced the election of Mr. Osman Sultan, CEO - du, Mr. Ahmed El Beheiry, CEO & MD - Telecom Egypt, Eng. Tarig Hamza Zain Alabdeen, CEO - Sudatel, Mr. Marwan Hayek, Chairman & CEO - Alfa Mobile, and the re-election of Mr. Scott Gegenheimer, CEO of Operations - Zain Group, and Eng. Salman Al Badran, CEO - Viva Kuwait to the SAMENA Council Board of Directors.

The SAMENA Council Board election was held during the General Assembly, organized during Mobile World Congress in Barcelona, Spain. Attended by members of SAMENA Council, with Telecom Operator members holding the exclusive right to vote for the new leadership for a fresh two-year term, the election process was conducted in accordance with the statutes and governance policies of the SAMENA Council.

Following the General Assembly, through a voting process, Saudi Telecom Company was re-elected to Chair the Board of Directors, represented by its new Acting Group CEO, Eng. Nasser Bin Sulaiman Al Nasser. Batelco Group, also by vote, was re-elected as Vice-Chair of the Board, represented by its CEO, Mr. Ihab Hinnawi. It is also a matter of pleasure for SAMENA Council to know

and inform its membership that H.E. Dr. Khaled H. Biyari, who had been chairing the SAMENA Council's Board as the GCEO of STC, has now been been appointed, by Saudi Royal Decree, as Assistant Minister of Defence for executive affairs.

The election of the top seats marks the beginning of a new term of leadership, necessary for driving forward SAMENA

Council's future contributions to the telecommunications industry, in particularly with regard to developing collaboration with regional regulatory authorities on issues that require that public and the government sectors to work together.

Earlier, Orange (Jordan), which is a Founding Member of the Board of Directors -- as are Etisalat, Omantel, STC, and Batelco -- had assigned a group-level representation of Orange Group through its ambassador in the Middle East & Africa, Eng. Atef Helmy, who will now occupy the seat at SAMENA Council's Board. For the occasion of General Assembly, Etisalat was represented by its GSVP - Corporate Communications, Dr. Ahmed bin Ali, while Omantel was represented by its CEO, Shaikh Talal Said Al Mamari.

Remarking on the successful completion of the Board election process and the entry of the renowned telecom networks and highly respected private-sector leaders to the SAMENA Council's Board of Directors, Bocar A. BA, CEO & Board Member, said "With the cumulative knowledge and wisdom of our previous Board, led by STC through H.E. Dr. Khaled Biyari and Batelco Group through Mr. Ihab Hinnawi, SAMENA Council succeeded in advocating the industry's fundamental priorities for inclusion in the global agenda and for drawing global focus on private-sector

enablement. Under our new, powerful, and very dynamic leadership, with the re-election of STC as the chair, now being represented through GCEO Eng. Nasser Al Nasser, I foresee making major strides in SAMENA Council being able to play its sector development partner's role and projecting its advocate's voice for the sustainability of the digital ecosystem, for an improved business environment for Telecom Operators, and for facilitating next steps in the realization of digital economies in the region. I express my deepest excitement over SAMENA Council's membership's participation in the General Assembly and for electing SAMENA Council's new leadership. Congratulations to du, Telecom Egypt, Sudatel, Alfa (Managed by Orascom Tmt), Viva Kuwait, Zain Group, STC, and Batelco, and thanks to Omantel and Etisalat for their continued leadership in the Board. It is also an honour for SAMENA Council as a sector-

development partner for both private and government sectors that its ex-Chairman, HE Dr. Khaled Biyari has been appointed by Royal Decree to head executive affairs as Assistant Minister of Defence in an important government body with which the Saudi and the regional telecom industry has an integral interaction and requires active engagement on developing future technologies."

For a term of two years (2018 - 2020), the elected and re-elected Directors will occupy the Board seats, allowing their respective companies (all telecom operators) to collectively define the strategic direction of SAMENA Council's industry activities, while also representing their unique market needs and issues, which SAMENA Council will address by building co-operation and conducting collaborative activities with respective telecom regulatory authorities in the region.

SAMENA Council's Chairman's Message

Eng. Nasser bin Sulaiman Al Nasser
Chairman, SAMENA Council
Acting Group CEO, STC

It is my privilege to share my first thoughts with the members and readers of of SAMENA Council in my role as the new Chairman of the Board of Directors of SAMENA Council. I am honored to be in the company of esteemed private sector leaders, who, collectively, represent the essence of what SAMENA Council embodies.

Our industry is constantly transforming and evolving, creating new opportunities for all of us, but also requiring more responsibility and, sometimes, quick reactions as well, to be able to understand and respond to challenges ahead. For us to open new possibilities in the world of digital communications for ourselves, for our valued customers, and for the government-sector stakeholders -- whose closeness, willingness, and collaboration with us are required more than ever before to meet common goals -- we need

to understand ourselves and facilitate other stakeholders' understanding of the depth of real challenges and issues; and adopt technologies, seek best practices, and continually gain insights from experiences that others have created for us. This is where SAMENA Council, among many other things, can assist us.

As the enablers of the digital economy, telecom operators have made among the most foundational contributions toward the society's ability to create and experience new possibilities. Telecom operators need to continue doing that. Our vision of the future during these digitization-driven times necessitate our alignment with realities, priorities, and visions of other stakeholders. This is a key determinant of progress in digital development and in the realization of digital economies in the SAMENA region.

Telecom operators are currently operating at a time when many sensitivities exist on multiple fronts, and the act of balancing them has become more difficult to manage. This is very much evident in the context of digital services, data regulation, spectrum requirements, and better incentives in the form of reduced

taxation and industry fees. There are other such sensitive challenges relating to the Internet. The Internet is the foundation on which digital economy is built. Internet is empowering people in many new ways. In recognition of the important societal and economic benefits that can be derived from the use of the Internet, there is a need to set collaborated visions, supported by ICT development action plans, to enable telecom operators to do more for the benefit of the entire ecosystem.

Between 2011 and 2015, telecom operators globally invested more than US$800 billion, a major share of which went to mobile broadband and LTE expansion. In part due to such high investments, subsequent pressures on cash-flow margins emerged across the world. By some estimates, the mobile ecosystem has been generating close to 4% of global GDP since 2015, and over 30 million people across the globe are directly or indirectly employed by this ecosystem or by industries linked to it. Thus Telecom Operators do remain a reliable contributor on substantial fronts, and it is important that we are enabled to enlarge our contributions both financially as well as socially.

Telecom operators, governments, regulators, and all-digital ecosystem players have a responsibility and a role to play in order to improve the level of affordable, quality connectivity. The Industry's general sentiment is that we can safeguard benefits of digital progress by reducing the cost of service offerings and leaping forward by endeavoring to rollout future networks and offer innovative services to our customers.

With the support and co-operation of the Board of Directors and the Membership of SAMENA Council, I look forward to witnessing with you many of the challenges and issues addressed by SAMENA Council, which has already demonstrated itself to both the Private and the Public sector that it is a resource they can rely on to fill communication gaps and to bring all stakeholders together under one platform.

I wish the Directors and Members of the SAMENA Council much success and invite them to take an active role in addressing the industry's issues, collectively.

New Board Members Speak

Eng. Salman Bin Abdul Aziz Al Badran
CEO
VIVA Telecom - Kuwait

"We are excited about the opportunity for being elected to the Board of Directors of SAMENA Telecommunications Council and look forward to adding values to SAMENA's vision and mission and building upon our past successes as we approach our 10th anniversary this year." Adding, "VIVA will continue to implement its current set strategy and strengthen its position as a leading telecom firm in the region."

Mr. Osman Sultan
CEO
Emirates Integrated
Telecommunications Company (du)

"We are proud and honored to join the Board of Directors of SAMENA Council. We are living in a world where mobile technology is driving profound change across the ways we live, work, and communicate. We are in the midst of a digital transformation that has the potential to improve our lives from every angle: whether it's enhanced connectivity and communication on an individual basis, new value propositions and revenue streams in business and industry, or increased efficiency and adaptability for governments and entire nations. The scale of this shift is immense and opportunity is ripe for the right players in the right conversations with the right people. Joining this select group positions EITC correctly and we look forward to enacting positive change as the industry and society moves forward together."

Mr. Ahmed El Beheiry
Managing Director & CEO
Telecom Egypt

"I am very pleased with Telecom Egypt joining the Board of Directors of SAMENA Telecommunications Council. Telecom Egypt is in the midst of a major transformation to a fully digital integrated operator.

Telecom Egypt has always been the regions leader for telecommunications services with more than 150 years of history, and with launching our new mobile operation "WE" last September, and being one of the top international carriers' operators in the region makes us thrilled to be part of the SAMENA board."

Mr. Scott Gegenheimer
Group CEO - Operations
Zain Group

"The regional telecommunications industry is undergoing significant change. We are witnessing explosive data growth with users consuming up to 18 – 20 GB per month in several markets fuelled by higher take-up of video and audio content streaming, the use of personal and enterprise cloud services and higher smart device penetration. New country visions and ICT strategies are emerging all of which actively embrace the impact of the digital economy, e-Government services and which will spur the deployment of new technologies such as 5G, artificial intelligence, FinTech, connected cars and IoT. Against the backdrop of these positive developments, we are faced with the challenges of macro-economic pressures resulting in new taxes, removal of energy subsidies, costly spectrum and licence renewals, revenue erosion from OTT services and the urgent need for regulatory modernisation in the form of revised telecom laws and legislation and reduced industry taxation. The current approach is just not sustainable. As an industry, we need to bring stakeholders – including operators, advocacy bodies, governments, regulators, ecosystem partners - together to formulate and take the necessary steps to create a pro-investment and sustainable environment for operators who will in turn invest to build strong digital economies."

Mr. Marwan Hayek
Chairman and CEO
Alfa

"The election of Alfa as Board member of SAMENA's Board of Directors demonstrates the trust of the Council's members in Alfa's leadership and in Lebanon's mobile sector. This is a significant moment for Alfa, for Lebanon, and for me personally. We are the first mobile operator from Lebanon to join the Board which makes us more than proud". "As Board Member for the next 2 years, I look forward to contributing to the collective efforts of all SAMENA members to further evolve and advance the telecoms Industry in the region and sharing all milestones and progress we are achieving in Alfa and Lebanon's mobile sector as well as exploring ways of how to bring more innovation to the Industry".

Eng. Tarig Hamza Zain El Abdein
CEO
Sudatel

"I do believe that the mission of SAMENA Council is so important for the telecom industry. SAMENA Council is a unique platform for diversified objectives. It helps tremendously the telecom sector in different areas. I have been honoured, this year, to be part of the Board of Directors which will add extra responsabilities to be assumed. As a leading telecom operator, this election will allow Sudatel to join the decision making team of this Council and share it's knowledge, know-how and expertise with all the members".

SAMENA Council and TRA Bahrain Co-operation Building Efforts a Step toward Addressing Challenging Industry Areas

CEO and Member of the Board of Directors of SAMENA Telecommunications Council, Bocar A. BA, met with his HE Sh. Nasser Bin Mohamed Al Khalifa, Acting General Director of Bahrain's Telecommunications Regulatory Authority (TRA), and discussed bringing public-private sector engagement to the next level, whereby the industry's sustainability needs as well as progress in regulatory transformation could be maintained in the larger digital transformational requirements of the region. SAMENA Council's ongoing active engagement with other regional regulators has been the key driver for further building on an active relationship with TRA-Bahrain, to contribute to the TRA's recognizably progressive regulatory efforts. The SAMENA Council delegation to the TRA's Headquarters, including Imme Philbeck, Chief Economist, and Izhar Ahmad, Director Communication, discussed with the TRA's team Needs and Challenges of the GCC Digital Communications Industry, Sector Development Co-operation, Private-Sector Representation & Transformation of Regulatory Roles, and defined a way forward for Collaboration on key areas. Bocar BA has stated that

"H.E. Sheikh Nasser's hospitality and the TRA team's open communication with SAMENA Council on regulatory priority areas are of immense value to us. Our intent is to define and measure SAMENA Council's active collaboration with the TRA on Digital Services and Spectrum issues, and we look forward to contributing to the TRA's efforts as a private-sector organization, fully backed by a telecom-operator Board of Directors to collectively represent the larger interest of the digital communications industry by working closely with regulatory authorities throughout the region."

Cybersecurity Provider KoolSpan Joins SAMENA Council as New Member

KoolSpan, the leading provider of secure communications solutions enabling businesses and consumers to make phone calls and send text messages securely, has joined the SAMENA Council. KoolSpan's TrustCall solutions are powerful, easy to install, manage and use on leading smart phone operating systems, including Android and iOS. Mr. Bocar BA, CEO & Member of the Board of SAMENA Council, upon KoolSpan's joining as a member, stated that "KoolSpan's security and

privacy solutions highlight and address the threat of loss or theft of intellectual property, vital information, and proprietary assets. These are issues that are now surfacing fast as we make progress toward creating a digital society. These offerings by KoolSpan should find much interest among our members to explore potential business opportunities, and to create thought-leadership using SAMENA Council's various platforms available to both new and existing members." New members join SAMENA Council for multiple reasons, including for its platforms that allow stakeholders and innovative players to generate new business opportunities as well as interact with regional public and private-sector leadership, while working toward addressing digital development matters that will define the future of the industry.

Telecom Egypt Joins SAMENA Telecommunications Council as a Member

SAMENA Telecommunications Council has announced that Telecom Egypt, one of the oldest and largest telecom companies in the SAMENA region, has become its latest Operator Full Member among the region's largest telecom operator networks as well as leading regional telecoms technology companies, and specialist firms. Mr. Ahmed El Beheiry, Telecom Egypt's CEO & MD, upon joining SAMENA Council, stated that "Telecom Egypt has been, and will always be, a key partner in the rise and expansion of the ICT sector in Egypt and the region. We believe in the importance of understanding the needs of our customers and leverage our capital and network investments and industry alliances to create offerings that ensure a top-notch customer experience to our consumer and enterprise customers. We look forward to represent the Egyptian market within the SAMENA Council and to contribute to the growth of the industry across borders." SAMENA Council's CEO and member of the Board, Mr. Bocar BA stated, "We are thrilled by Telecom Egypt's decision to become an important part of SAMENA Council. As an integrated operator in one of the oldest telecom markets in the world and over a dozen submarine cable systems linking continents, TE can assist in and benefit from drawing collective stakeholder attention to facilitating the launch of advanced digital services in Egypt, while bringing back the experience to the members of SAMENA Council. I warmly welcome Telecom Egypt's CEO & MD, Mr. Ahmed El Beheiry, and the Telecom Egypt's team to the SAMENA Council. We look forward to doing big things together in the interest of the regional and the Egyptian ICT sector." Since its inception, SAMENA Telecommunications Council's membership platform has played an integral role in generating new approaches to deal with key industry challenges, bringing regulators, operators and vendors together, while working towards addressing digital development matters that will define the future of the industry. With Telecom Egypt's membership, the SAMENA Council will start pursuing important stakeholder collaborative work in Egypt, including cooperation-building to align public and private sector priorities in North Africa.

Turkey's Innova Brings Software Development Expertise to SAMENA Council's Membership

Innova, a new member of SAMENA Council, has brought new software development expertise to the SAMENA Council's membership. Areas of business in Innova include OSS/BSS Systems for Telecom Operators, Financial Transaction Applications, ERP, CRM and BI systems, portals, custom software development IT systems management and infrastructure, IT security and kiosk systems. With more than 1000 people serving its clients, Innova has delivered solutions and services to customers in 37 countries to date. Major customers of the company are fixed line and GSM operators in Turkey and abroad, banks, as well as other prominent organizations in the manufacturing, public and service industries. Bocar BA, CEO and Member of the Board, says "Powerful software expertise and tools are essential to digital transformational goals of the private sector as well as the public sector. Innova can greatly contribute to the region's digitization efforts, and we warmly welcome the decision by Innova to join SAMENA Council and explore how potential collaboration opportunities with other SAMENA Council members can be unearthed to provide new digital experiences to both individual and enterprise customers of telecom operators." Like Innova, new members join SAMENA Council for multiple reasons, including for its platforms that allow stakeholders and innovative players to generate new business opportunities as well as interact with regional public and private-sector leadership, while working toward addressing digital development matters that will define the future of the industry. Innova IT Solutions A.S. is one of Turkey's leading IT solutions firms, with a team of 1211 professionals with experience of working with a wide range of technologies. Since 1999, Innova has been providing platform-free solutions to the public sector and private companies, particularly those operating in the telecommunications, finance, manufacturing and service sectors. It has exported its solutions to 37 countries in four continents, and adheres fully to the standards of the ISO 9001:2000 certification. Innova offers a full range of financial technologies, loyalty and customer experience solutions, aviation solutions, IOT solutions, smart store technologies, self-service and automation solutions.

STC

الاتصالات السعودية

STC Global Network

SEA-ME-WE5 has been designed in a unique and diligent way to ensure the reliability of the system and the integration with other cable systems.

For more info, visit www.stc.com.sa

SAS - 2
Length: 300 km
Capacity: 1.2 Tbps

GBI
Length: 4,600 km
Capacity: 9 Tbps

MENA
Length: 9,000 km
Capacity: 1.2 Tbps

FLAG
Length: 28,000 km
Capacity: 1.2 Tbps

SEA ME WE 5
Length: 20,000 km
Capacity: 24 Tbps

EIG
Length: 15,000 km
Capacity: 8 Tbps

IMEWE
Length: 12,091 km
Capacity: 8 Tbps

SAS - 1
Length: 300 km
Capacity: 1.2 Tbps

EASSy
Length: 10,500 km
Capacity: 10 Tbps

SEA ME WE 4
Length: 18,000 km
Capacity: 7 Tbps

SEA ME WE 3
Length: 39,000 km
Capacity: 1 Tbps

SAMENA Council Members at MWC 2018

Huawei Goes Beyond Traditional Boundaries to Enable a Fully-connected, Intelligent World

During a media and analysis briefing ahead of Mobile World Congress 2018, which was held in Barcelona in February, Huawei, the leading global ICT solutions provider, emphasized the importance of all industries to work together and go beyond traditional boundaries to achieve fully-connected, intelligent world.

At Mobile World Congress 2018, Huawei set to launch over 20 new products, showcased the results of its cooperation with over 300 partners, hosted a new numbers forums, and engaged in many other activities to share its practices and exchange views with the industry. The media and analysis briefing highlighted Huawei's views on emerging trends in the context of its latest product launches, with a particular emphasis on 5G.

Huawei believes that the 4th Industrial Revolution – where ICT networks are the foundation and AI is the enabler – is bringing us to an intelligent world where all things will sense, be connected, and intelligent resulting in a digital transformation market worth US$23 trillion. However, progress should be made by all stakeholders in the areas of capabilities, connections, business, experience, and partnerships to tackle the traditional obstacles and shape a better future.

With the intense amount of focus and investment across the Middle East into ICT capabilities – empowered and encouraged by regional governments' vision agendas – Huawei's developments will likely contribute significantly to the region's development of Smart City infrastructure and the total enablement of the Internet of Things.

Ryan Ding, Executive Director of the Board and President of Huawei Carrier BG, said: "This year was an exciting one for Huawei at Mobile World Congress. Huawei focuses on ICT infrastructure and smart devices to provide a plot of 'rich soil' for the development of information, automation, and intelligence technologies. In this 'soil', partners can grow their content, applications, and cloud."

Ding added, "Before entering the intelligent world, we are still faced with many challenges. To achieve sustainable business growth, we need to keep moving beyond existing constraints and boundaries, first internally and then externally." He called on all industries to go beyond the boundaries in the areas of capabilities, connections, business, experience, and partnerships and together shape a better future.

In 2018, Huawei will invest CNY5 billion in R&D for 5G, and launch a full range of commercial 5G equipment, including wireless access networks, bearer networks, core networks, and devices. Additionally, Huawei will drive the large-scale commercial deployment of NB-IoT networks around the world, and increase the number of NB-IoT connections to over 100 million.

Many of these 5G offerings were on full display in Barcelona, showcasing Huawei's ability to enable all-online data, operations automation, and intelligent decision-making. They will help carriers deliver a Real-time, On-demand, All-online, DIY, and Social (ROADS) experience through their internal O&M processes. Externally, these solutions enable carriers to build a 360-degree customer experience assurance system across all channels, all processes, all services, and the entire lifecycle.

The Mobile World Congress 2018 was held in Barcelona from February 26 to March 1. At the MWC, Huawei gave keynote speeches, hosted forums, and engaged in many other activities under the theme of "ROADS to a Better Future". The company was looking to discuss plans for industry development with industry players and, together, shape a better future. During the MWC, Huawei also showcased its latest products and solutions and, together with partners, provided demonstrations in multiple scenarios.

Huawei's exhibits were located at booth 1J50 in Fira Gran Via Hall 1, booth 3130 in Hall 3, and the Innovation City Exhibition Zone in Hall 4. For more information, please visit: www.huawei.com/mwc2018.

Getting Through the MWC Hype Storm – The Challenge to the Mobile Industry and (Spoiler Alert) the Solution

Bringing together well over 100,000 mobility professionals from around the world, this week marks the return of the largest annual conference on mobility, Mobile World Congress 2018 in Barcelona. With tremendous splashes and lavish media events, MWC is the main event for mobile companies to showcase their solutions and highlight new developments and innovations. This year is no different. However, if one looks more closely, underneath the hype, it is clear that a great deal has changed in the last year and the mobile industry of 2018 faces serious risks and needs additional important cybersecurity innovation. That is why we are proud that Samsung has chosen to demo TrustCall Native Enterprise for Samsung in its booth, the first and only solution that marries security, ease of use and enterprise features, policy enforcement and management.

For a few years cybersecurity experts have warned about the vulnerabilities in the global communications system enabling surveillance and eavesdropping of voice and text communications. Specifically, cybersecurity experts demonstrated that internetworking protocols, Signaling System 7 (SS7) and Diameter, with relative ease are capable of being used broadly and from remote distances, including from another carrier's network, to monitor people's conversations and SMS text chats. These attacks also take place on modern LTE and 5G networks because voice and text data is transmitted in the clear "between the towers," whether across a single carrier's network or traversing networks during roaming. While knowledge of these vulnerabilities is several years old, it remained primarily the concern of cyber geeks and little attention was paid by the business community and general public. All that changed in 2017.

In 2017, public awareness of the threats to mobile voice and text communications increased dramatically driven by events globally, from the Middle East to Asia, Europe to Africa, and Canada to Latin America. In one of many examples, Mexico has been rocked by the "Pegasus" scandal, in which the government monitored citizens' communications in violation of legal processes. However, the greatest awakening in 2017 happened in the business community, as business people came to understand that monitoring and interception of phone calls and texts has gone mainstream. Economic and corporate espionage, whether conducted by foreign governments, hackers, criminals or competitors has become a top threat and addressing it a high priority.

According to US Government and cybersecurity experts globally, the only effective way to protect mobile communications is to implement strong end-to-end (E2E) encryption for both calls and texts on the device itself. At KoolSpan we conducted additional market research to understand the requirements of business people. We spoke with hundreds of organizations ranging from defense, law enforcement, treasury and others in government to Fortune 1000 corporations in energy, natural resources, manufacturing, finance, legal, and others to many small and medium sized businesses. Our conversations covered more than 60 countries across six continents.

The feedback we received included the following:
- "Our people use secure calling some of the time, but often they forget."
- "Sometimes a conversation starts off about non-sensitive topics and then shifts in the middle, but the participants do not shift to a secure solution once they're already speaking."
- "Company provided cyber education campaigns only go so far. Changing human behavior is very difficult if not impossible."
- "We used encrypted communications in the past, but people stopped using it because it sounded terrible and didn't always work."
- "Too few people were using it. So they had to switch to regular insecure calls when calling those people."
- "People did not bother to download and install the application. We should push it to their phones."
- "We want a solution that we can implement and enforce across our organization. And manage it, when people leave, for example."
- "Security should be built-in."
- "Encrypted calls need to work everywhere and sound better."

KoolSpan's research revealed three significant impediments to broad adoption of E2E encrypted voice and text solutions; (1) bad user experience, especially poor audio quality, (2) user inertia in the sense that getting people to change their behavior to communications via other applications is spotty and that employee training is only partially effective at best, (3) user error, because a human decision to communicate securely for one call and then regularly (insecurely) on another inevitably results in human error. We recognized that businesses require a solution where people should not have to decide to call securely; it should happen automatically, by default.

Taking these lessons to heart KoolSpan set out to solve these challenges and eliminate the historical tradeoff between security and ease of use. TrustCall Native Enterprise is the first and only solution that addresses all three challenges. TrustCall Native Enterprise integrates with regular smartphones, so that when calling or sending a message with the native Phone, Message, and Contact applications, the call or message is automatically encrypted end-to-end so long as the recipient is also a TrustCall user.
- TrustCall provides high definition (HD) quality audio that sounds noticeably better than a regular call, even on remote and low bandwidth networks.
- TrustCall Native Enterprise requires no change in behavior or training.
- Communications are encrypted automatically, by default, without human decision.

For security adoption to be broadly successful, it must be convenient, easy to use, deliver HD audio quality, transparent to end users, and automatic. TrustCall Native Enterprise is the first and only solution to solve these challenges and do it with a true enterprise ready solution.

As a Strategic Partner of the Jordanian Pavilion

Umniah sponsors 8 Jordanian startups at the Mobile World Congress in Barcelona

Umniah has joined renowned global communications and information technology companies at the World Mobile Congress (MWC) 2018, which is being held this year in Barcelona between February 26 and March 1, and is organized by the International Association for Mobile Phone Networks under the title "Creating a Better Future."

Umniah is the strategic partner of the Jordanian pavilion in the MWC 2018, which was organized by the Information Technology Association of Jordan (int@j). The company also offered its support to eight Jordanian startups companies to participate in this international event, as part of The Tank by Umniah strategy to encourage young Jordanian entrepreneurs to bring their innovative ideas to fruition, turning them into income-generating projects in the field of communications and information

technology, in addition to providing them with networking opportunities.

Umniah Marketing Director, Zaid Ibrahim, confirmed the company's prestigious affiliation with this global event, which is considered the largest platform in the world of communications and information technology companies as well as mobile phone manufacturers. Annually, the MWC sees the participation of over 200 countries, with attendance that tops 100,000 people.

Ibrahim added, "The MWC provides us the opportunity to examine the latest and most cutting-edge developments in the global communications and information technology sector. It also introduces participating international companies to the high levels of advancement and development enjoyed by the communications and information technology sector in Jordan, which continues to expand and achieve, contributing an impressive 12 percent to the country's gross domestic product.

Speaking about Umniah's sponsorship for the eight startups at the MWC, Ibrahim explained that long-term partnerships with emerging companies are a top priority for the company and its business innovation center, The Tank. He went on to add that Umniah continuously strives to provide a suitable environment as well as offer technical support to young Jordanian entrepreneurs, allowing them to implement and launch their innovative projects.

The Mobile World Congress and Exhibition, which has been running since 1987 in the Spanish city of Barcelona, is considered the largest specialized exhibition in the world, and is attended by the world's foremost operators and manufacturers of communications networks, as well as a large number of exhibitors in the areas of communications systems, such as service quality, very high-speed Internet systems, and equipment to monitor and measure interference in the frequency spectrum.

LTE Reaches Milestone to Comprise Majority of Global Roaming Traffic

Eight-year timeline for global LTE roaming proliferation demands that the mobile industry prepare to seize 5G opportunity

New data released by Syniverse shows that LTE usage has finally turned the corner and that inter-regional LTE data roaming traffic has surpassed non-LTE data roaming traffic. Specifically, LTE traffic rose to 54 percent of global outbound roaming traffic in 2017, up from 42 percent in 2016.

The new figures come from a Syniverse study that analyzed global roaming traffic records from its global IPX network that connects nearly 1,000 mobile operators, including most of the world's LTE providers. The six regions studied show that LTE roaming volume grew 121 percent overall in 2017, but they also illustrate that the majority of LTE roaming is still concentrated in the Americas, which represents 79 percent of the total global volume.

"Syniverse's data shows that, eight years after its first commercial launch, LTE is only now a truly mature global technology," said John Wick, Senior Vice President and General Manager, Service Provider Group, Syniverse. "The data underscores the need for the industry to more urgently prepare for 5G and the internet of things (IoT). If the 5G use cases exciting the industry are to become a reality and ubiquitously adopted, steps need to be taken soon to strengthen and evolve the entire framework of interconnection, interoperability, security and roaming that many of these new 5G services would rely on. These considerations have delivered the foundation for previous technology generations and will be more important than ever for 5G to succeed."

The Syniverse study found that a major barrier to providing a consistent LTE service footprint beyond home markets lies in secure inter-regional connectivity for devices and networks to communicate with each other. To this end, the data highlights

LTE Now Majority of Global Roaming Traffic

54% LTE Roaming
Non-LTE Roaming
46%

the need for operators to deploy an IPX network to provide the critical interconnectivity necessary to not only enable global LTE reach but also provide the initial thrust for 5G to build upon.

The value of 5G for operators lies in its ability to integrate and capture opportunity from new vertical markets and services, including IoT, while also providing more rich user experiences. Many of these services will need security, interconnection, roaming, and interoperability, as well as a wide range of service-level agreements.

IPX infrastructure has contributed immensely to the proliferation of LTE roaming. By extension, as LTE-5G coexistence scenarios become standardized and expected to be the norm to deliver capacity and coverage, IPX will serve as the foundation for global 5G connectivity for billions of "things." Specifically, IPX will maximize the interconnection footprint for LTE networks to achieve this global reach in addition to efficiently extending the interconnection framework to various vertical markets beyond the existing communication services. This is critical for the industry to capture the opportunities that 5G promises to bring.

"Our data points to the fact that while the rollout of LTE networks is advancing at a healthy rate, the mobile industry must accelerate its efforts to fully capture the 5G opportunity," said Wick. "Industry attention has been focused on the most innovative technologies of 5G. However, just as crucial for 5G adoption is integrating technologies like IPX to ensure global connectivity and security, which have been important pillars in the success of the mobile industry."

Further details about the findings of Syniverse's inter-regional LTE roaming study, including in-depth data and visual breakdowns, can be accessed at http://bit.ly/2omG90R. In addition, learn more about the five critical factors for 5G market introduction in a recent post on the Synergy blog at: http://synergy.syniverse.com/2018/02/5g_outlook_2018/

Inter-region Outbound LTE Roaming Concentrated in Americas

11%
79%
7%
3%
1%

Accelerating and Enabling Your 5G Transformation Journey

Cisco's 5G solution portfolio has been built-up to enable service providers to realign their technology infrastructure with new business uses cases and new customer offerings, explains Ali Amer, Managing Director, Global Service Provider Sales, Cisco Middle East and Africa

5G, IoT, Smart Cities, Artificial Intelligence, Security and Edge Computing were some of the trending topics discussed at Mobile World Congress (MWC) 2018, the world's largest gathering for the mobile industry, organized by the GSMA in Barcelona every year. More than 100,000 visitors from 205 countries visited MWC 2018 to discover the future of mobile as top technology companies and service providers introduced their latest innovations at the event.

Apart from showcasing its capabilities on 5G, IoT, Spark, managed services, cloud, security, infrastructure, mobile edge compute, network automation, and services, Cisco made several announcements at MWC 2018. We launched Cisco 5G Now to help operators get started with their 4G infrastructure while preparing for 5G optimized services. We also announced our collaboration with regional service providers such as du, Saudi Telecoms Company (STC) and Ooredoo Kuwait to help build a future-proof network and unlock the commercial potential of

ultra-modern 5G mobile networks. With our next-generation network technologies and services, STC is gearing up for the 1st commercial launch of 5G services in Saudi Arabia.

Cisco's 5G solutions are critical to enable more than 27 billion connected devices to go live on service provider networks by 2021. Beginning 2020, 5G connections will grow more than a thousand percent from 2.3 million in 2020 to over 25 million in 2021. Cisco is driving disruption in the global service provider industry with technology innovations in systems, silicon, optics and security, mass-scale networking, automation, optical, cable access, video and mobility.

Cisco's global role is broadly focused across three areas: planning for new 5G-enabled services, mapping the right 5G infrastructure, and helping to manage and secure massive 5G networks. The specific areas include multi-cloud, IP core, 5G packet core and service edge, access, client services, security, and professional services. Cisco is working closely with more than 20 global service providers and mobile operator customers in advancing their 5G action plans, including regional players such as STC and du.

In 2018, the discussion on 5G is going to be different - it will be all about what we are doing with 5G rather than enabling 5G. Industry vendors are talking about 5G architectures, with new technology such as mobile edge compute - where we are moving the cloud closer and closer to the edge of the network. Cisco is continuing to innovate on performance, density, virtualization, cloud and mobility to help make 5G a reality for service providers. For this, networks need to scale in entirely different ways. To drill down further, 5G is not just about the new spectrum, it is about changing the entire network to be highly scalable.

With 5G, Cisco is helping service providers move from being bandwidth providers to Network-as-a-Service providers, which will help enterprise customers, who are asking for dedicated and secure network slices on-the-fly. Cisco is enabling this delivery through 5G-enabled IP products, 5G packet core, cloud services and service enablement. Other services-based use-cases include managed and virtual reality collaboration, and SDWAN, amongst others. This is how Cisco is helping service providers leverage their new 5G architectures to launch new, revenue-generating services.

At present, Cisco is actively demonstrating network slicing and how it is giving customers the ability to control the network, using technologies like Segment Routing and IPv6. Through its 5G solutions, Cisco will help service providers provide offerings for IoT services in retail, mining, transportation and more, by providing them device management through Jasper product lines, ruggedized routers, and cloud and data management with Kinetic.

Cisco's history comes from enabling infrastructure and it will continue to lead in this space with its virtual packet core and CUPS, SONFlex, new access 500 series routers, 5G core and IP core, Security, and OpenRAN, amongst others.

While Cisco and other vendors will continue to innovate in its core areas for the requirements of the 5G industry, we do come to a critical point. With IoT and connected device driven, mass scale 5G networks, service providers will be compelled to simplify their operations. Human beings will no longer be able to configure, monitor, manage and update such increasingly complex and massive networks. It will be just too big to manage manually. With the scale-out of 5G networks, it will be important to keep operational costs low and ensure that no manual errors are allowed on such vast and complex networks.

What Cisco is doing in automation is truly disruptive - it is automating configurations, monitoring, self-learning and self-healing networks. In the future, networks will be built to self-optimize. Cisco Crosswork is an example of an automation platform, and Cisco is offering ready-to-go bundles for service providers to get started in their automation journeys.

With Cisco's automation solutions, service providers are benefitting by having 78 percent faster customer service onboarding, 81 percent faster execution of change requests, 84 percent faster execution of maintenance procedures, and 70 percent improvement in mean time to repair.

Taking a much broader bird's eye view, 5G is about new business models and the opportunity for change, in order to tackle key connectivity challenges facing governments, industries and communities. It is about models that help address country-level and business case challenges. 5G is an opportunity to align technical use cases with economic gains.

It is an opportunity to drive new sources of network value through network slicing, automation, software-defined and disaggregated radio, and advanced applications such as augmented reality. 5G is an opportunity to look beyond hype, beyond speeds and feeds, and discover 5G use-cases that can add value and differentiate a service provider.

5G should provide the opportunity to drive adoption of neutral host and shared infrastructure business models. It is an opportunity to see establishment of virtual mobile network operators changing the competitive landscape for today's mobile network operators. 5G is also an opportunity for countries to reduce digital exclusion.

While progressing down the 5G journey, whether you are a regional service provider, government or enterprise business, it will help to rely on a trusted partner to identify, prioritize and exploit opportunities that 5G can provide.

Ali Amer
Managing Director
Global Service Provider Sales,
Cisco Middle East and Africa

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MEMBERS NEWS

STC Assigns Nasser Al Nasser as Group CEO

Saudi Telecom Company announces that, upon the Royal Decree appointing HE Dr. Khaled Bin Hussain Biyari as Assistant Minister of Defense for Executive Affairs, the Board of Directors approved on February 26, 2018, the resignation of HE Dr. Khaled Bin Hussain Biyari from his position as Chief Executive Officer of the Company. The Board of Directors expressed their thanks and appreciation to HE Dr. Khaled Bin Hussain Biyari for his excellent efforts during the tenure of the CEO of the Company, wishing him success in his new position.

On February 26, 2018, the Board of Directors decided to assigned Eng. Nasser Bin Sulaiman Al Nasser as acting Chief Executive Officer of the Company starting from 26/2/2018 for a period of six months, with the wishes of the Board for success. Eng. Nasser Bin Sulaiman

Al Nasser holds a Bachelor Degree in Electrical Engineering, He has extensive experience in the telecommunications sector started with the launch of mobile services in 1996, where he played a key role in the establishment of the mobile network and its expansions. He then moved to CITC. During that period, he played a key role in opening the market and issuing mobile and data licenses.

He also worked for Mobily in charge of the network and information technology sector. In 2015, he moved to Saudi Telecom Company as s senior VP for technology and operations. In 2018, he was appointed Chief Operating Officer of Saudi Telecom Company, and currently he is the Chairman of the Board of Directors of STC Solutions and a member of the Board of Directors of the Turkish Telecommunications Company, and

the Turkish company Avea. Nasser Al Nasser has many specialized courses in communications and networks, as well as advanced courses in finance and leadership.

STC Reports a 14% Rise in Net Profit in 2017

Saudi Telecom Company (STC) has published its financial results for the twelve months ended 30 December 2017, reporting a 14% increase in net profit to SAR10.2 billion (USD2.7 billion) from SAR8.9 billion reported in 2016. The company attributed the positive result mainly to a SAR3.2 billion decrease in cost of revenues, coupled with the SAR285 million year-on-year decrease in operating expenses. In the period under review, STC reported revenues of

SAR51.4 billion, a 4.3% decrease y-o-y from SAR53.7 billion, while EBITDA reached SAR19.3 billion, up 7.1% from SAR18.0 billion. STC Group's CEO Khaled Biyari commented: 'The 2017 year-end revenue from services has decreased by 4.3% for the twelve-month period compared to the comparable period last year. This is mainly attributable to the decline in consumer sector performance due to challenging economic conditions and regulatory environment, for example

lifting the ban on VoIP [services] that significantly affected the international calls revenue. However, the impact of voice decline on the overall group's revenue was significantly offset by the strong growth of data revenue. Furthermore, [fiber-to-the-home] FTTH customer base in Q4 2017 increased by 5.1% and 20% as compared to Q3 2017 and Q4 2016, respectively.'

Dr. Biyari Speaks About the Future of Digital Technology

Dr. Khaled Biyari, STC Group CEO, participated with a work paper titled (The Future of Digitization in the Kingdom), at KAUST. He spoke about the endeavors to lessen the gap between academic and industrial sectors. Dr. Biyari, cited the company`s role in supporting

entrepreneurs through Incubators such as: "InspirU" and financing investments through "STC Ventures" to empower Innovation. This annual general meeting was a chance to exchange expertise and facilitate collaboration.

STC Reveals Health Care and Asset Management Solutions in IoT Conference

Saudi Telecom Company (STC), represented by Enterprise Business Unit, reveals the latest solutions and services of Internet of Things that the company presents, during the "Saudi International Exhibition & Conference for Internet of Things", which will be launched in Riyadh. STC will show its services as well in smart cities platforms, health care solutions, transportation solutions, asset management and many innovative solutions. STC Participates as a strategic sponsor, in addition to its specialized booth about the latest technologies of IOT, while some executives participate with speeches and work papers during the conference days from 28-30 January. On this occasion, Dr. Tariq Enaya, Enterprise Senior Vice President at STC, confirmed that what the company presents in this conference reflects a part of its digitization strategy in line with its active role to achieve the objectives of the Kingdom`s vision 2030 as a key provider of digital services to the Public/Private sectors. Stating that a number of STC Speakers will express their visions about the relation between IOT and the Kingdom`s vision 2030, Investment trends in IOT, enriching the debate on how IOT influence our lives and future, in addition to highlighting cybersecurity challenges. The expected attendees to the conference reach 15K expert from around the world. It will hold a large technical exhibition with more than 90 exhibitors, representing the major companies of telecommunications, technology, networking, smart applications, energy, transportation and health solutions, that keep pace with the social changes associated with technical transformation and the concept of IOT, as well as simulating the next generation of Saudis.

STC Announces Agreement with Corning Incorporated to Supply Fiber to Home Solutions

STC and Corning Incorporated announced that Corning will supply and share its FTTH optical solutions with STC, as an enabler to the STC national network for high-speed connectivity and fiber-to-the-home (FTTH) applications. The arrangements builds on the existing strategic relationship between STC and Corning, which has already supplied more than 1.5 million kilometers of optical fiber in STC's KSA network. As part of this strategic relationship, the two companies will also develop a program to provide advanced technical training to STC fiber engineers and technicians. Corning invented the first low-loss optical fiber in 1970, which helped in the launch of the new age of optical communications and ultimately transformed the way the world creates, shares, and consumes data. Since that time, Corning Optical Communications has deployed more than 1 billion kilometers of optical fiber for networks across the globe. Eng. Nasser Sulaiman Al Nasser, STC Chief Operations Officer, said: "STC is building the largest fiber network in the history of the kingdom. I am delighted to see us strike such an initiative with Corning, which will help meeting STC's strategic goals for digital Services, and will align with the objectives of the National Transformation Program (NTP 2020) and Vision 2030. Corning is a pioneer in fiber optics solutions and FTTH, and we are excited to build such an extended strategic relationship with one of the most progressive and internationally renowned companies." Mr. Clark Kinlin, executive vice president of Corning Optical Communications, said: "STC enjoys a strong reputation as an innovator in the Middle East. It established itself as a leader in advanced broadband technologies such as FTTH. Corning shares STC's commitment and vision for innovation, and together, we will leverage our engineering capabilities, experience and solutions to build the KSA national network to the highest possible standard. We are honored to make the investment necessary to extend our partnership with STC."

Batelco 2017 Revenues Up by 3 Percent

Batelco, a regional telecom group with operations across 14 countries, has posted revenues of BD379.4 million ($1,006.4 million) for the full year 2017, as compared to BD367.1 million ($973.7 million) in 2016 marking a 3 per cent rise. Organic gross revenue, which grew for the first time since 2009, was boosted by double-digit growth in broadband and digital services, reporting 16 per cent and 13 per cent growth respectively. Quarter on quarter gross revenues also reported an 8 per cent increase compared to 2016 of BD101.9 million ($270.3 million) in Q4 2017 compared to BD94.1 million ($249.6 million) in Q4 2016. Group operating profit grew by 2 per cent notwithstanding voluntary employee retirement costs of BD8.1 million ($21.5 million) incurred in Batelco Bahrain. Adjusted net profit, excluding impairments and one-off gain on land, was more than BD40.0 million ($106.1 million).The Group's balance sheet remains robust, with cash in hand of BD158.7 million ($421.0 million). The Board of Directors has recommended a full year cash dividend of BD41.6 million ($110.3 million), at a value of 25 fils per share to be agreed at the Group's Annual General Meeting, of which 10 fils per share was already paid during the third quarter of 2017 with the remaining 15 fils to be paid following the AGM in March 2018. The dividend is consistent with previous years and is an example of Batelco's commitment to its shareholders.

Batelco's chairman Shaikh Mohamed bin Khalifa Al Khalifa, said: "We continue to progress well in order to execute our strategic plan. The business is in great shape, with strong fundamentals, a solid subscriber base and a local market that is outperforming. However, some of our international businesses continue to feel the impact of the political and economic instability across the region and we are providing them with all the support necessary to get them through this difficult period. "Overall, I am pleased to see that our hard work is paying off. We have maintained a robust cash position and we will pay our shareholders a dividend this year consistent with prior

year payouts. I am highly optimistic for the future of Batelco Group as we continue into 2018. We have a sound strategy, an accomplished executive team and a pipeline of products and services to support us in our path forward. As we look ahead, our goal is to build on this recent success and continue to be a national champion for Bahrain." The Group's net profits have previously been impacted by the reduction in the carrying value of its international investments and goodwill; whereas management and the Board of Directors prudently and promptly took the necessary impairments to reflect the fair value of these investments. Batelco Group CEO Ihab Hinnawi said: "2017 saw Batelco Group perform well despite a challenging regional operating environment, as demonstrated through our strong financial performance and transformational programmes, which saw a 3 per cent increase in revenues from the previous year. The growth from the past year was mainly driven by our operations in Bahrain, Jordan and the Maldives, and through our diversified revenue streams – primarily digital and broadband services." "While we reported a decline in net profit, this was primarily due to the prudent and conservative strategy of our management team to impair certain assets in Yemen and Jordan, and is not a reflection of the overall health of Batelco. We believe the Group is fundamentally in great shape and we expect net profits in the range of BD40 – 45 million in 2018."

E-Vision Enters Exclusive 5-Year Deal with STARZ PLAY

E-Vision, a fully-owned subsidiary of Etisalat, and STARZ PLAY, the fastest growing streaming video on-demand service in the MENA region has announced a first-of-its kind, five-year content deal with Etisalat. Etisalat eLife customers can enjoy more than 10,000 hours of the best blockbuster Hollywood and Bollywood movies, same-time-as-the-US TV shows, documentaries, kids entertainment and dedicated Arabic content all ad-free and in HD or 4K quality on TV and mobile devices. Humaid Sahoo, CEO of E-Vision, said: "Enhancing the already existing partnership with STARZ PLAY is the natural evolution to the efforts and partnership that started three years ago. STARZ PLAY's content and service has proven to be an attractive and differentiating service. E-Vision's strategic objective to secure premium and exclusive content to differentiate its offering is the driving force to enter into a long-term partnership with STARZ PLAY. E-Vision is very excited to disseminate STARZ PLAY's offering across Etisalat Group territories." The partnership will enable Etisalat UAE customers to enjoy STARZ PLAY exclusively across its IPTV and mobile services. Etisalat International operations will also be able to offer the

STARZ PLAY service, accessing and differentiating its content offering in their respective territories under special terms. E-Vision and STARZ PLAY will work closely to expand its relationship to enhance the offering through exclusive and different synergy opportunities across content and technology areas. Maaz Sheikh, CEO of STARZ PLAY, said: "Our research has shown that more and more consumers in the UAE are watching TV through the eLife TV service. With this strategic partnership, we are bringing together STARZ PLAY with Etisalat's Elife service. Etisalat customers can now access their favorite TV shows and the biggest movies on STARZ PLAY with one simple click of a button on their E-life remote control." From award-winning

series such as Vikings, which is available on STARZ PLAY at the same time as the US, to the hotly-anticipated, premiering soon Britannia, which details the Roman invasion of Great Britain in 43AD, eLife TV subscribers can also get on-board with perennial favorites and classics such as Power and Grey's Anatomy. STARZ PLAY streams thousands of hours of blockbuster Hollywood and Bollywood movies, documentaries, children's entertainment, 'same-day-as-the-US' series, and dedicated Arabic content to subscribers in 19 countries. The platform features English, Arabic and French audio options and user interfaces, plus one-click Arabic subtitling.

Etisalat Group Reports Consolidated Net Profit before Federal Royalty of AED 17.45 Billion

Etisalat Group has announced its consolidated financial statements for the 12 months ending December 31 2017.
Financial Highlights and Key Developments for 2017
- Etisalat UAE subscriber base reached 12.6 million, representing a year on year growth of 3%.
- Etisalat UAE revenues amounted to AED 31.2 billion and increased year over year by 3%.
- Etisalat UAE net profit after federal royalty amounted to AED 8.2 billion and increased year over year by 5%.
- Etisalat UAE Full year EBITDA in 2017 increased by 2% to AED 16.7 billion resulting in EBITDA margin of 53%.
- Proposed dividend payout of 40 fils per share for the second half of 2017, representing a total dividend payout of

80 fils for the full year and a dividend payout ratio of 82%.
- Credit Ratings by agencies S & P Global and Moodys affirmed Etisalat Group's high credit rating at AA-/Aa3.
- UAE ranked as global leader in Fiber Optic Network by FTTH Council.
- As part of its strategic partnership with Dubai Future Accelerators, Etisalat has launched two challenges in the areas of health and digital security risks.
- Etisalat launched 'Open Innovation Center' to showcase Smart Solutions to Governments and Businesses hence, driving the Digital Transformation.
- Etisalat announced the successful deployment of pre-commercial 5G network in certain locations in UAE and successfully completed the fastest 5G live trial reaching 71Gbps

- Etisalat Receives Tier III Gold Certification for Operational Sustainability
- Etisalat enhances International Connectivity to UAE with AAE-1 Submarine Cable System
- Etisalat UAE revamped loyalty program 'Smiles', focusing on digital channels and bringing larger value to customers.
- Etisalat launched ""swyp" the new digital brand targeting the youth and digital millennials in the UAE
- Etisalat launches first IPX Exchange platform in MEA, which will augment its already existing SmartHub data center services.
- Etisalat launched 4G service in Egypt.
- Etisalat selected as the digital transformation partner for Dubai International Financial Center (DIFC)'s

- FinTech accelerator program.
- Etisalat launched M2M in-vehicle WiFi enabling connected fleets businesses as part of its next generation IoT solutions.
- E-Vision Partners with MBC GROUP in Exclusive IPTV/OTT Channel Distribution Rights deal in the UAE
- Etisalat introduced 'Create Your Number' service for all post-paid subscribers first time in the UAE.

Industry Recognition
- Etisalat named 'Most Valuable Brand' in the Middle East & Africa 2017, with a brand value that stands at 7.7 bn USD.
- Etisalat named 'Best Telecom Brand' and 'Best Middle East Operator' at TR Excellence 2017
- Etisalat named 'Best Operator' by 'Telecoms World Middle East 2017'
- Etisalat named 'Best Middle East Wholesale Operator' at TR Excellence 2017
- Etisalat's Maroc Telecom Named 'Best African Operator' at TR Excellence 2017
- Etisalat won 'Telecom Group of the year' from Comms MEA
- Etisalat won 'Best Telecom Strategy of the year' from Broadcast Pro ME
- Etisalat's Smart Hub has Won the DCD Award in "Excellence in Regional & Global Datacenter Connectivity" (DCD – Data Centers Dynamic)
- Etisalat won the prestigious "Innovation Idea in Program Management" Award for the successful management & completion of Dubai Parks and Resorts project.
- Etisalat Group, Accenture and DXB Entertainments won at GLOMO Awards for Best Use of Mobile for Travel, Leisure & Hospitality for the Dubai Parks and Resorts Mobile App.

Chairman's Statement:
Etisalat Chairman, Eissa Mohamed Al-Suwaidi, said: "2017 proved to be yet another year of good achievement for Etisalat as we affirm our position as the leading operator in the markets where we operate. Maintaining good performance, despite the global challenges facing the telecom industry, is an evidence that we continue to provide value to our customers and shareholders. We remain in a strong position to realize the opportunities that will come with the digital transformation the group is undergoing. Thanks to our experience and our strategic focus on innovation, Etisalat Group is well placed to harness growth opportunities as we continue to move forward. "I want to praise the wise leadership of the United Arab Emirates for supporting the telecommunications sector. Etisalat is fully aligned with the Government's drive to position the UAE among the most advanced countries in the world. "With the unwavering support of the UAE leadership and our shareholders, along with the commitment of our world-class management team and the loyalty of our millions of customers across our footprint, I am confident that 2018 will continue the pattern of long-term, sustainable success that is the hallmark of Etisalat Group.

GCEO's Statement:
Engineer Saleh Abdullah Al Abdooli, Group Chief Executive Officer, Etisalat, said: "In 2017, Etisalat Group continued to deliver on its promise of strong performance despite the increasing global economic challenges and the mounting pressure facing the telecom industry. We have showcased good results underpinned by our continued commitment and

investments toward next-generation services and solutions adding remarkable value to the communities we serve and enhance overall customer experience. "Last year Etisalat Group launched a new corporate strategy focusing on 'Driving the Digital Future to Empower Societies' enabling us to consistently push our boundaries, by responding swiftly to the global digital advancements and proactively delivering cutting-edge services and solutions to our customers. The establishment of the 'Open Innovation Center' was a strategic step in this direction allowing us to highlight digital innovation, its capabilities and how digitalization can come to life for Etisalat customers, businesses and governments. "We will continue to focus on creating the world's best and leading networks across our markets to deliver long-term value to all our stakeholders. The successful launch of the first pre-commercial 5G in UAE will enable our nation and businesses to achieve transformational growth by leveraging on new-age technologies like IoT, Artificial Intelligence (AI), robotics, cloud and future technologies that will reshape our society and industry on a large scale. "Etisalat Group is confidently moving forward in enriching lives and enabling societies across its markets. As a group, we will continue our efforts to sustain a healthy portfolio that maximizes synergies, and focuses on enhancing customer experience, while adding value to our shareholders. "We are thankful to the wise leadership of the UAE and our shareholders for their steady support in this journey, our customers for their continued confidence and trust and to our dedicated employees across our footprint for their hard work and creativity allowing us to drive the digital evolution."

Subscribers:
- Aggregate subscriber base reached 142 million, representing a year over year increase of 1% on a like for like basis.
- In the UAE the subscriber base grew to 12.6 million subscribers in the fourth quarter of 2017 representing a year on year growth of 3%.

Revenues:
- Etisalat Group's consolidated revenue for the fourth quarter of 2017 amounted to AED 13.5 billion, representing an increase of 4% in comparison to the same period last year.
- In the UAE, revenue in the fourth quarter increased year on year by 3% to AED 8.1 billion.

EBITDA:
- Group Consolidated EBITDA for the fourth quarter of 2017 increased by 3% year on year to AED 6.4 billion.
- In the UAE, EBITDA in the fourth quarter of 2017 was AED 4.1 billion increasing year-over-year by 2% leading to an EBITDA margin of 51%.

NET PROFIT:
- Consolidated net profit after Federal Royalty reached to AED 2.0 billion in the fourth quarter of 2017.
- Earnings per share (EPS) amounted to AED 0.23 in the fourth quarter.

Omantel FY Revenue up 45% following Zain Stake Acquisition

Oman Telecommunications Company (Omantel), the Sultanate's incumbent telecoms operator, has announced its preliminary unaudited financials for full-year 2017, which include the results of Zain Group for the period from 15 November to 31 December 2017,

following the acquisition of a controlling stake in the Kuwaiti firm in November last year. Omantel has posted a 44.7% rise in group revenue from OMR519.4 million (USD1.3 billion) in 2016 to OMR751.7 million the following year, mainly due to the consolidation of Zain's revenue,

which contributed OMR219.6 million to the total. EBITDA rose by 60.6% year-on-year to OMR290.8 million, while net profit fell 7.8% from OMR115.8 million to OMR106.8 million over the same period, including OMR35.7 million contributed by Zain Group.

Orange Jordan Announces '4G+' Launch

Orange Jordan has officially announced the launch of LTE-A ('4G+') mobile services, upgrading the 1800MHz LTE network it launched in May 2015 with multiple frequency bands using carrier aggregation (CA). At a press conference to mark the launch, the company highlighted that the decision of the Telecommunications Regulatory Commission (TRC) to approve its request for a 2×10MHz block of 2600MHz frequencies will boost 4G network performance, 'especially in heavily populated areas'. Orange Jordan's Chief Officer of Networks and IT, Waleed Al Doulat, stated that 4G+ services 'will cover most of the Kingdom' with mobile data speeds of up to 250Mbps using

CA, MIMO and High-order Modulation technologies, whilst the company's press release added that 'the spread of 4G+ covering all of the Kingdom's governorates is not far away', although without giving any initial LTE-A launch coverage information. The LTE-A upgrade forms part of Orange Jordan's five-year 'Essentials 2020' investment plan under which it has so far allocated around JOD100 million (USD141 million), including JOD39 million paid to the TRC for new frequencies, with the remainder spent on network/IT upgrades and installing new towers. The operator's 4G LTE (1800MHz) coverage reaches 92% of Jordan's population, compared to its 96% 3G network footprint.

VIVA and Boubyan Bank Ink a Multi-Currency Financing Agreement

VIVA, Kuwait's fastest-growing and most developed telecom operator, and Boubyan Bank inked a multi-currency financing agreement of KD 40 million includes Murabaha facility according to Islamic Sharia Compliance, to finance VIVA's plans to upgrade its network and expand in the State of Kuwait, with 5 years tenor, on Monday 12 February 2018. Eng. Salman Bin Abdulaziz Al Badran, VIVA's Chief Executive Officer and Mr. Adel Abdulwahab Al-Majed,

Boubyan Bank's Vice Chairman and Chief Executive Officer, signed the agreement in the presence of VIVA's CFO Mr. Mohammed Bin Abdulmohsen Al-Assaf, in addition to VIVA and Boubyan officials. Commenting on this occasion, Al-Badran said: "Coinciding with VIVA's first decade celebration, this strategic partnership with Boubyan Bank is a robust ground to further expand and develop VIVA's operations by investing in its network and its high quality of services, products and technical solutions. The financial strength that VIVA witnesses today reflected in VIVA's recent announcement of its financial results 2017, fosters customers' loyalty and trust that we endeavor to maintain it since VIVA's inception." "Our strong competition in the Kuwaiti telecom market through meeting our customers' aspirations and ambitions, proves our leadership and promotes our capability

to deliver the best", he added. On his part, Al-Majed said: "The relationship of Boubyan Bank and VIVA is a remarkable one, and stands as an example for strategic alliance which benefits the local economy". He further expressed that he was glad to continue such a relationship with one of the most prominent telecom companies in the region. "Such a financing would help fund the company's expansion plans and reflect positively on the company's clients and help achieve the company's domestic expansion targets", he added. "Over the past years, Boubyan Bank succeeded in achieving remarkable growth rates in its corporate credit portfolio by attracting a number of operational companies known for their financial and economic creditworthiness while continuing to maintain the highest standards of credit quality, studying and diversifying risks", he added.

Zain Group Posts 2% Y-o-Y Increase in Net Profit to KWD1bn in 2017

Telecoms group Zain has published its consolidated financial results for the twelve months ended 31 December 2017, reporting revenues of KWD1 billion (USD3.3 billion), down 5% year-on-year, while EBITDA decreased 19% annually to KWD414 million. The company booked a net profit of KWD160 million in the twelve months under review, up 2% y-o-y. Zain disclosed that it incurred foreign currency losses amounting to USD82 million in respect of net income and USD213 million in respect of revenue for the twelve-month period to 31 December, predominantly due to a 53% currency devaluation in Sudan. In operational terms, Zain Group reported a consolidated customer base of 46.6 million at 31 December 2017, down 1% y-o-y. In Kuwait subscriber numbers reached 2.7 million (up from 2.5 million the previous quarter although down from 2.95 million at end-2016 as the company reported 'intense' price competition), while Jordan saw its customer base decrease to 3.9 million (down 8% y-o-y). Zain Saudi Arabia's subscriber base also decreased, to 8.2 million in Q4 2017, as a result of the government's biometric identification project (which reduced the number of pre-paid SIMs to two per ID), while Zain Iraq served 14.7 million users at end-2017, up 16% y-o-y. Group CEO Bader Al-Kharafi said: 'The ongoing implementation of our digital lifestyle strategy combined with substantial investment in network technology upgrades and cost optimization initiatives is proving successful as we recorded growth in several key financial metrics across many of our key markets for the full-year and fourth-quarter of 2017 ... Notable positive highlights for the year include the SAR1

billion (USD264 million) net profit turnaround in Saudi Arabia where the transformation program is taking full effect resulting in the operation recording its first ever annual net profit. We also returned to profitability in Iraq where socio-economic conditions are gradually improving, and we are proactively taking grasp of the many opportunities in this promising market.'

Accenture Supports Abu Dhabi Commercial Bank's Tech Transformation, Setting Stage for New Digital Future

Accenture, the global professional services company, has supported Abu Dhabi Commercial Bank (ADCB) in a historic transformation of the core technology running the bank's day-to-day operations. This transformation sets the stage for the bank's digital future, enabling ADCB to introduce new products and services to clients more easily and swiftly. Accenture helped ADCB replace the separate systems running its retail banking, corporate banking, Islamic banking and trade finance operations with a single core banking solution. The new simplified and merged solution also involved significant changes to more than 130 applications connected to the core system, making it the most complex technology transformation in ADCB's

history. The project took two years to complete, with the new system going live in September 2017. Accenture managed the entire program, from developing the strategy for its implementation to monitoring the execution, and also trained ADCB's staff to provide services to customers with the new system. The changes affected nearly 3,000 ADCB employees, whose extensive training enabled them to be ready to serve customers when the project went live. Critical to the success of the technology revamp were direct involvement of ADCB's top management, which enabled quick strategic decision-making, and the creation of a dedicated transformation team, with commitment from more than 350 key banking staff. ADCB's decision

to launch this complex project was driven by its ambition to be ready for a digital future and leverage the flexibility of the new, state-of-the-art technology to bring more agility to its operations and deliver innovative products to customers. "Our experience delivering core banking transformation programs around the world played a key role in our work with ADCB, helping position them to reduce risks, improve services and increase efficiencies to drive sustainable growth," said Amr El Saadani, a managing director at Accenture who leads its Financial Services practice in the Middle East and Turkey. "We are very happy to have been a part of the bank's transformational journey."

Alfa Welcomes New Year by Celebrating 2017 Milestones during #LebanonCelebrates Evening

Alfa welcomed the New Year by celebr-ating 2017 milestones during an exceptional evening held at Biel in Downtown Beirut. The celebration was held under the theme #LebanonCelebrates focusing this year on the concept of the Lebanese village and the importance of attachment to the land, which is rooted in Alfa's culture. The Minister of Telecommunications Jamal Jarrah and his spouse, Alfa CEO and Chairman Marwan Hayek and his spouse as well as the company's administrative committee attended the ceremony. Minister Jarrah congratulated Alfa's team for the excellent work done in 2017. "The technological progress we have achieved together in this sector is only the beginning, as we are faced with many challenges and we count on you and your efforts," he said. He pointed out "Mr. Hayek has great hopes and aspirations for the sector and for Alfa, and we stand by his side and are always supportive of every project that drives the sector towards further development and innovation." He expressed his admiration for Alfa's family spirit in everything that the company does, in addition to his appreciation for the company's CSR projects, which support the Lebanese community. "In recognition of the struggle of people with special needs who are at the core of Alfa's CSR strategy, which we fully support, Marwan and I have called them the iron-willed. He concluded: "We look forward to further cooperation, progress and development for the benefit of the sector, Lebanon and the Lebanese people".

Airspan Brings the Small Cell Game to the Next Level

With hundreds of thousands of cells installed world-wide, Airspan is delivering on the promise of small cells to improve wireless network capacity and coverage, increase macro network efficiency and revolutionize TCO. Airspan is helping operators densify their networks and lay the foundation for 5G, delivering enhanced mobile broadband Gigabit speeds today on ultra-dense 4G small cell architectures by leveraging features and platforms such as LAA and cloud based V-RAN. With a broad toolkit of network densification solutions based on powerful Qualcomm FSM Chipsets, Airspan is delivering on the promises of small cells with some of the most innovative operators around the world including Reliance Jio in India and Sprint in the US. This has been achieved by forcing paradigm shifts in the way that cell site economics work today. Instead of wasting countless days, hours and dollars in site acquisition and installation, Airspan's ground breaking plug and play and SON technology has made this technology once and for all truly scalable. As of January 2018, Sprint has been able to deploy more than 80,000 Magic Boxes since their launch in Q2 2017, and Airspan's small cells have been a contributor to Sprint's national average download speeds which have increased 60% year-over- year.[1] The benefits are not only for consumers as Sprint reports about a third of our Sprint Magic Box customers are businesses including big box retail stores, hotels, restaurants, commercial office buildings, and schools. Small cells are finally gaining significant traction in wireless networks and operators are just beginning to scratch the surface of the potential game changing benefits that network densification can provide them. The IoT will bring about billions of connected devices that will shape the networks of tomorrow. From high-speed, ultra-reliable, low-latency mission-critical communications that will allow drones to soar higher than ever, to analyzing consumer Big Data in real time at the far edge of the Network, Airspan delivers a technology value chain that enables endless revenue streams for operators and spectrum holders. Airspan's history and understanding of the IoT is second to none. As pioneers in delivering smart grid/city communication networks and developing cutting edge backhaul telemetry solutions for the McLaren F1 team or delivering broadband connectivity to high speed moving jets, trains or buses, Airspan brings unique perspectives on how to monetize the boundless possibilities of 5G applications. Airspan has truly brought the small cell game to the next level with its proven track record of delivering award-winning technology at scale while packing macro feature sets, with Het-Net and SON capabilities into compact form factors that can be rapidly deployed.

Dimension Data Adopts Cisco Umbrella in its Cybersecurity Strategy

Dimension Data, the US$ 8 billion global technology integrator and managed services provider, announced that it has extended the company's protection from ransomware, phishing attacks, bot networks, and all types of malicious software, with Cisco® Umbrella, the industry's first Secure Internet Gateway (SIG) in the cloud. The decision to incorporate Cisco Umbrella follows the company's firsthand experience protecting its own 28,000 employees and addresses its clients' requirement to support an increasingly mobile workforce. Cisco Umbrella is a cloud security platform that provides the first line of defense against threats on the internet. "In today's expanding threat landscape, it is critical to have powerful security tools that effectively support mobility and cloud. With Cisco® Umbrella, we are able to proactively stop threats on any mobile device before they happen with a secure solution that is easily integrated

with existing infrastructure," said Chris Panzeca, Senior Director, Global Strategic Partner Sales, Cisco. "Today, the average user utilizes four devices per day, and this is predicted to increase to five connected devices in the next four years, " said Darren O'Loughlin, Dimension Data's Group Chief Security Officer. "As more enterprises look to harness the benefits of a mobile workforce that leverages cloud platforms, there's a greater need to implement appropriate measures to secure data, infrastructures, applications and users, regardless of where they connect to the internet, and even if they're off the VPN. That's why we adopted Cisco Umbrella into our own cybersecurity strategy." According to the NTT 2017 Global Threat Intelligence Report, attacks targeting end users is one of the top cybersecurity threats on the rise. In line with this trend, security has become the top focus at the highest level. Now, more than ever, security leaders are

being forced to demonstrate a return on investment of their security investments. This includes the business value realized through continuous cyber protection, detection, and response measures. In 2016, Dimension Data published its Securing Workspaces for Tomorrow white paper which explored the topic of how employees across the globe are already demanding a more mobile workplace with the flexibility to work from anywhere, any time, on any device to become more productive and achieve a better work-life balance. "However," said Matthew Gyde, Group Executive - Security, Dimension Data, "While the mobile Endpoint is a potential game changer for businesses, it exposes mobile workers to security risks and vulnerabilities. Mobile users may not have the same level of security as within the office perimeter, and are more vulnerable to cyberattacks. With Cisco Umbrella, threats beyond the network perimeter can be blocked."

New Predictive Analytics, Assurance Capabilities Advance Cisco's Strategy to Reinvent the Network for Digital Business

Cisco announced powerful assurance innovations across its intent-based networking portfolio that will help IT teams shift from reactive to proactive. It will address the 43 percent of time IT spends troubleshooting, while making IT operations more proactive, agile and automated. The software innovations represent significant advancements in mathematical modeling and contextual insights, accelerating Cisco's strategy to reinvent the network for the digital era. Over the past few years, the explosion of devices, adoption of cloud, and exponential growth of security threats have challenged current approaches for building and managing networks. Cisco's vision is to create a network that anticipates operational issues, stops security threats in their tracks, and continues to learn, adapt and protect. To realize this, Cisco is driving the intent-based networking revolution by transforming the entire network, from the data center and campus, to the branch and edge. Today, Cisco is introducing its second wave of intent-based

networking innovation, with powerful assurance products spanning the networking portfolio. In the data center, the Cisco Network Assurance Engine uses continuous verification of the entire network to help keep business running as intended, even as the network changes dynamically. In campus and branch networks, Cisco DNA Center Assurance is delivering a new level of insight and visibility to dramatically reduce the time and money IT spends troubleshooting across wired and wireless environments. And, for customers with distributed IT operations, the new Cisco Meraki Wireless Health reduces mean time to remediate wireless issues with rich analytics and insights. "The network has never been more critical to business success," said David Goeckeler, Executive Vice President, Networking and Security Business at Cisco. "We're reinventing the network ground up to deliver a secure and intelligent platform for digital business. Today, we are taking another major step toward that ambitious goal with intent-based networking innovations

designed to deliver contextual insights and assurance that will help transform IT from reactive to proactive." Cisco's intent-based networking portfolio represents a fundamental shift away from the manual and time-intensive methods by which networks are traditionally managed. These intent-based networks capture and translate business intent into network policies, and activate them across the infrastructure. With the introduction of assurance capabilities, they can now continuously verify the network is operating as intended. Customers globally are embracing intent-based networking. Nearly 200 customers are in early field trails with the new assurance technologies, including Robert Bosch GmbH, REWE Group, Houston Methodist Hospital and Scotiabank. More than 1,100 customers are deploying the recently announced Catalyst 9000 Series switches, with 150 running DNA Center pilots. In the data center, Cisco has more than 14,500 Nexus 9000 customers, with a 45 percent ACI attach rate.

DE-CIX Services Now Available in Two myLoc Data Centers

DE-CIX, the world's leading Internet Exchange operator, is expanding its presence at its Dusseldorf location. With immediate effect, DE-CIX services – such as GlobePEER, GlobePEER Remote, and DirectCLOUD – will now also be available in the two myLoc managed IT AG's data centers "In der Steele 2" and "Am Gatherhof". The two sites will join Interxion in Dusseldorf in becoming "DE-CIX Enabled Sites". Customers of these data centers will only need a so-called "cross-connect" in order to connect to DE-CIX Dusseldorf and Frankfurt. To launch the partnership, myLoc is offering these cross-connects free of charge. With this step, DE-CIX is pursuing its expansion strategy in the core market of Germany and the Rhine-Ruhr metropolitan region. "With myLoc managed IT AG, we have found the ideal partner to drive forward our expansion in the Rhine-Ruhr metropolitan region. The partnership with myLoc allows us to offer our product portfolio at additional locations and to thus be closer to our customers. This will allow our customers to use the services of DE-CIX even more easily and cost-effectively," says Dr. Thomas King, Chief Innovation Officer at DE-CIX. "We are pleased to reinforce our position as an operator of carrier-independent colocation data centers through the presence of DE-CIX at our two Dusseldorf locations. As a long-standing customer of DE-CIX, we are elevating our cooperation to a new level and thus offering our customers new interconnection options right on their own doorstep," says Peter Hansen, CEO of myLoc managed IT AG. Founded in 2015, Dusseldorf belongs to one of five DE-CIX locations in Germany (Munich, Hamburg, Berlin, and Frankfurt) and a total of 13 locations worldwide. DE-CIX in Frankfurt is the world's largest Internet Exchange with a data throughput of over 6 Terabits per second.

Quad9 and DE-CIX Extend Their Partnership at the World's Largest Internet Exchange DE-CIX Frankfurt

In the midst of rising security and privacy challenges, DE-CIX – the world's leading Internet Exchange (IX) operator – and Quad9 – the privacy-friendly DNS recursive resolver that answers DNS queries from a secure network of servers around the globe – have extended their partnership at the world's largest Internet Exchange DE-CIX Frankfurt (Germany). The Quad9 DNS system uses threat intelligence from more than a dozen of the industry's leading cyber security companies to give real-time protection from malicious websites and other threats, including malware or phishing. The Quad9 project runs with the support of Packet Clearing House (PCH), the global non-profit organization that provides operational support and security to critical Internet infrastructure, including Internet exchange points and the core of the Domain Name System. "For DE-CIX, security and privacy have always played a key role in doing business with our customers. Quad9 is highly appreciated within the tech- and data privacy community in Germany and Central Europe. This is why PCH upgraded and extended its installations in Frankfurt. In order to provide an even better service to the community, DE-CIX will establish PCH connectivity at our DE-CIX sites in Munich, Dusseldorf, and Hamburg in the coming weeks," says Dr Thomas King – DE-CIX's Chief Innovation Officer. "Quad9 is dedicated to end-user privacy and does not resell or retransmit personal data. Quad9 has constructed its systems to meet the strict General Data Protection Regulation (GDPR) privacy requirements, which will be in place across the EU in the coming months. Our Frankfurt location, generously sponsored by DE-CIX, is Quad9's most active location right now for queries. In order to accommodate the eleven-fold increase in traffic in the first three weeks since Quad9's public release, we've just completed an upgrade of our servers to meet this impressive demand. We attribute this to the density of peers available at DE-CIX and the popularity of a privacy-friendly service among European users," says Quad9's Executive Director John Todd.

DE-CIX Apollon Goes UAE-IX: Setup and Activation of Two Active Sites in Dubai

Two Nokia 7750 SR12e's are now active in Dubai, and the first customers are connected to the new equipment. After we had shipped everything necessary to upgrade UAE-IX in Dubai to the DE-CIX Apollon technology, the equipment was installed and activated in Dubai. Due to the great support of the team of our partner datamena, the installation and activation could be managed quickly. For the DE-CIX team, the moment when the power went on and the light showed was simply great. For automation purposes, we used an ansible assisted deployment strategy to roll out server systems and services. With this, our engineers in Frankfurt are able to do new installations with just one click and manage complex deployments in the future. Many thanks to our partner for their help - and happy peering in Dubai! The migration of customers will be finalized in the next weeks.

du Profits Jump 14.9% as Telecoms Boom in the UAE

UAE telco du has posted a 14.9% increase in its fourth quarter profits to AED425 million (£82.3 million), according to a company release. Revenues at the Dubai based firm rose by 0.5% to AED3.45 billion (£668 million) in the 4th quarter of 2017. "2017 was a strong year for our company, with revenue reaching the mark of AED 13 billion for the first year since inception. As a result of our solid financial performance and a good efficiency program we can deliver on a sustainable dividend policy in spite of the increasing pressure on the margins of telco service providers globally," said Ahmad Bin Byat, chairman of Du. du's board of directors has awarded a 35 fil per share dividend for the year. Du has already paid 13 fils per share as an interim dividend in October 2017. The remaining dividend of 22 fils per share will be approved at the forthcoming board meeting. "The successes achieved last year are an indication that the strategic transformation our company has undertaken is enabling us to adapt to the evolving industry and accommodate the changes in customer and business behavior," Bin Byat added.

du Offers UAE Nationals Promising Opportunities in the Telecom Industry

Bolstering its support of Emirati professionals and fresh graduates throughout the UAE, du from Emirates integrated telecommunications company, is once again participating in 'Tawdheef 2018' in Abu Dhabi. du continues to boost its Emiratization strategy by offering fresh graduates exciting career opportunities and long-term development plans in the dynamic information and communications technology (ICT) industry. Additionally, du has established strong relationships with universities in Abu Dhabi, and continues to support these institutions by offering students internship and summer training opportunities. 'Tawdheef 2018' is being held between 29 – 31 Jan 2018 at Abu Dhabi National Exhibition Centre (ADNEC), and acts as a platform, which brings together talented UAE Nationals from all fields to meet and interact with officials of top organizations in the country. "As an Emirati company, our participation at 'Tawdheef 2018' is a testament to our efforts to inspire UAE Nationals to join private and semi-private companies. As an organization, we are committed to contributing towards a knowledge-based economy and we believe in the huge potential of the youth in the UAE. We look forward to meeting potential candidates who are graduates or experienced professionals and are interested at exploring careers with us. At du, we are committed to providing job opportunities for both, experienced professionals and fresh graduates who come from marketing, sales, finance and other backgrounds that complement our values and development goals which help them progress further in their career. " said Ali Al Mansoori, Vice President Human Capital Development at du. du from EITC ensures that its employees have a structured career path that helps them get exposed to new on-job skills. There are personalized 'Learning Pathways', which allow colleagues to learn at their own pace, and desired development level, through world class content delivered in a virtual environment. Moreover, du continues to maintain employee engagement through various wellness and happiness initiatives such as Dubai Fitness Challenge. As a result of these initiatives, du has achieved a Gallup score of 4.44 for employee engagement, offering more than just a job to its employees. du will welcome potential candidates at its stand 420 in hall 4 at the fair, to provide them with a chance to present their skills and qualifications with recruitment managers and HR representatives.

du Launches First National Triple-Play Service

The United Arab Emirates (UAE) telco du has launched its first full nationwide triple-play packages, offering TV, internet and telephony services to customers outside its core service area of Dubai for the first time. Since October 2015 a network sharing agreement between du and rival operator Etisalat has allowed the two telcos to provide voice and data products over each other's infrastructure, but the deal has not, until now, been expanded to cover TV services. This has restricted full competition since most users are better off sticking with their original provider since attractive discounts are offered for multi-play bundles. According to a report from The National, du's TV services outside Dubai will be delivered via streaming services du View and OSN's Wavo streaming platform, as opposed to du's traditional IPTV offering. Content includes OSN's Sports and Movies suite, together with local UAE channels.

du Launches Nextgen Cloud UTM Service

Dubai-based telecom provider du has launched its Cloud Unified Threat Management (UTM) service, a next-generation cybersecurity solution that extends organizations perimeters to all sites, securely. It provides an all-in-one security solution that removes the need for procuring, hosting, maintaining and managing on-premises Firewalls. The full-service cybersecurity solution is designed to ensure that no threats can get close to an organization's network. du's Cloud UTM solution has been designed to protect enterprises at the core-network layer. The solution offers anti-virus, anti-spam, anti-spyware, intrusion prevention and web filtering capabilities to protect against cyber security threats. "As more and more enterprises undergo digital transformation, protection against cyber-attacks amongst organizations is more important than ever. With security threats across the region increasing in sophistication and frequency, Cloud UTM gives organizations around the clock protection with the flexibility and scalability of the Cloud. It removes the complexity of managing on-premises firewalls and delivers superior

identification and threat management," said Farid Faraidooni, deputy CEO, ICT Solutions. "Organizations gain a comprehensive solution to protect them from cybercrime, enabling them to defend their critical assets with 24/7 visibility and control." du's Cloud UTM security solution checks the internet traffic against security threats at wire speed using industry-leading technology solutions, before it enters or leaves the customer premises. Data is securely tunneled to du's network based cloud UTM platform and goes through a vigorous screening process, detecting and blocking any malware, malicious links, content, threats or intrusions. This

process is applied to both incoming and outbound traffic, ensuring that anything going in or out is thoroughly cleaned so networks are fully secure and protected. du's Managed Security Services provides secure environments to safeguard organizations against potential security threats and to keep their applications and services fully secure and protected. It delivers Managed Security Services to Government Institutions, Enterprises and Small-Medium Businesses, serving some of the largest and most innovative companies across the region. It supports its customers with 24/7 monitoring and management for dedicated and reliable security protection.

Cloud Unified Threat Management
Turn your router into a perimeter security powerhouse.

Expresso Launches Mobile Money Service

Expresso Telecom, Senegal's third largest mobile network operator (MNO) by subscribers, has launched its 'E-Money' mobile financial service, writes Orbit.

Expresso's rivals Orange and Tigo already offer mobile money products under their 'Orange Money' and 'Tigo Cash' programmes in Senegal. Expresso's

E-Money service will allow subscribers to transfer or withdraw money, pay bills and purchase credit through their mobile phone. General Manager of Expresso Senegal, Abdalla Saeed said: 'This new service will benefit all our customers and all segments of Senegalese society. Expresso intends to increase financial inclusion by providing end-to-end and affordable financial services. The vision of our group is to be at the forefront of companies with the ambition to enable our African continent to transform and develop in the digital economy. For us, this vision involves the development of telecommunication services, for both consumers and businesses, that will reduce the digital divide, improve the efficiency of the company and improve the quality of life for the future society.'

Mediaset Launches Three of its HD Channels on Eutelsat's Flagship Video Position in Italy

Elettronica Industriale, a subsidiary of the Italian group Mediaset, has signed a multi-year capacity agreement with Eutelsat (Euronext Paris: ETL) to accelerate its transition to High Definition (HD). Thanks to this contract, the three flagship channels of the Mediaset Group (Canale 5, Italia 1 and Rete 4) will be broadcast simultaneously in SD and HD on the free tivùsat television package operating from HOTBIRD, Eutelsat's satellite hotspot for the Italian market. Located at 13° East, the HOTBIRD position is a reference video neighborhood in Italy, particularly suited to DTH. Out of a thousand channels being broadcast from this position, more than 300 are in HD. Michel Azibert, Chief Commercial and Development Officer at Eutelsat, said: "The signing of this new contract reinforces the commercial links with two of our historic Italian partners, Mediaset and tivùsat. The switchover of several Mediaset channels to HD is part of the image quality enhancement trend currently sweeping the broadcasting community who want to provide viewers with the best visual experience available."

Huawei to Go Beyond Traditional Boundaries to Enable a Fully-Connected, Intelligent World

During a media and analysis briefing ahead of Mobile World Congress 2018, which will be held in Barcelona this month, Huawei, the leading global ICT solutions provider, emphasized the importance of all industries to work together and go beyond traditional boundaries to achieve fully-connected, intelligent world. At the upcoming Mobile World Congress 2018, Huawei will launch over 20 new products, showcase the results of its cooperation with over 300 partners, host five forums, and engage in many other activities to share its practices and exchange views with the industry. The media and analysis briefing highlighted Huawei's views on emerging trends in the context of its latest product launches, with a particular emphasis on 5G. Huawei believes that the 4th Industrial Revolution – where ICT networks are the foundation and AI is the enabler – is bringing us to an intelligent world where all things will sense, be connected, and intelligent resulting in a digital transformation market worth US$23 trillion. However, progress should be made by all stakeholders in the areas of capabilities, connections, business, experience, and partnerships to tackle the traditional obstacles and shape a better future. With the intense amount of focus and investment across the Middle East into ICT capabilities – empowered and encouraged by regional governments' vision agendas – Huawei's developments will likely contribute significantly to the region's development of Smart City infrastructure and the total enablement of the Internet of Things. Ryan Ding, Executive Director of the Board and President of Huawei Carrier BG, said: "This year is going to be an exciting one for Huawei at Mobile World Congress. Huawei focuses on ICT infrastructure and smart devices to provide a plot of 'rich soil' for the development of information, automation, and intelligence technologies. In this 'soil', partners can grow their content, applications, and cloud." Ding added, "Before entering the intelligent world, we are still faced with many challenges. To achieve sustainable business growth, we need to keep moving beyond existing constraints and boundaries, first internally and then externally." He called on all industries to go beyond the boundaries in the areas of capabilities, connections, business, experience, and partnerships and together shape a better future. In 2018, Huawei will invest CNY5 billion in R&D for 5G, and launch a full range of commercial 5G equipment, including wireless access networks, bearer networks, core networks, and devices. Additionally, Huawei will drive the large-scale commercial deployment of NB-IoT networks around the world, and increase the number of NB-IoT connections to over 100 million. Many of these 5G offerings will be on full display in Barcelona, showcasing Huawei's ability to enable all-online data, operations automation, and intelligent decision-making. They will help carriers deliver a Real-time, On-demand, All-online, DIY, and Social (ROADS) experience through their internal O&M processes. Externally, these solutions enable carriers to build a 360-degree customer experience assurance system across all channels, all processes, all services, and the entire lifecycle. The Mobile World Congress 2018 will be held in Barcelona from February 26 to March 1. At the MWC, Huawei will give keynote speeches, host forums, and engage in many other activities under the theme of "ROADS to a Better Future". The company is looking to discuss plans for industry development with industry players and, together, shape a better future. During the MWC, Huawei will also showcase its latest products and solutions and, together with partners, provide demonstrations in multiple scenarios.

Huawei Unveils Connected Solutions at Bitex

Huawei showcased more agile, more intelligent, more connected solutions designed to shape the future of smart and safe cities at the recently concluded Bitex 2018, an ICT show in Bahrain. Dr. Ebrhim Janahi, CEO of Tamkeen alongside Bitex Management visited Huawei Booth on the first day of Bitex exhibition, for a first-hand look at Huawei's solutions for smart cities, safe cities, smart hospitality, cloud data centers, and agile network. John Lu Yuedong, CEO of Huawei Bahrain accepted the 'Exclusive Digital Transformation Partner' award on behalf of Huawei from Bahrain's Minister of Transportation and Telecommunications, Kamal Bin Ahmed Mohammed. Lu said, "Huawei started its operations in Bahrain in 2004 and shifted its Middle East Regional office to Bahrain in 2009. As the Kingdom strengthens its position as an ICT hub, we are proud to contribute to building the infrastructure in Bahrain that is propelling the overall digital transformation throughout the Middle East. Bitex is the country's largest gathering of ICT experts and our participation as the exclusive 'Digital Transformation Partner' is a testament to our passion and dedication to

building an ecosystem of collaboration and co-innovation in order to empower businesses to stay relevant in the digital economy." Aimed at improving the effectiveness of law enforcement and ensuring a safe society for citizens and visitors alike, Huawei's end-to-end public safety solutions developed in partnership with global security specialists were a key attraction at the show. Attendees at Bitex experienced how Huawei's Smart City solutions use new ICT to sense, analyze, and converge data from city management systems and enable intelligent response to governance, livelihood, and business needs. Huawei also showcased its Agile POL for hospitality, new construction and smart buildings projects, which enables a full-cloud network that is agile, intelligent, open, and secure.

Huawei Predicts 2.5bn Gigabit Users by 2025

More than 2.5 billion customers worldwide will be consuming a minimum of 1 Gb of data per month, by 2025, according to Huawei. Speaking at a Huawei event in London, Peter Zhou, CMO of the

company's Wireless Network Product Line, said that the emergence of Internet of Things (IoT) technology, Artificial Intelligence (AI) and Ultra-High Definition (UHD) video streaming would open the floodgates for data consumption in the years to come. Network operators must act now to meet this growing demand, according to Zhou. "The whole industry is crying out for next generation technology, today" he said. Currently, the average mobile customer in the UK consumes around 2.5Gb of data per month. The world's largest consumer of data per capita, is Kuwait, with citizens in the Gulf state consuming 70Gb per month. Over 100 network operators around the globe currently offer unlimited data tariffs, but many telcos have struggled to adequately monetize the huge quantities of data that pass through their networks. Huawei is set to launch its industry leading AI platform, Atlas, at this year's Mobile World Congress event, in Barcelona. Atlas will utilize CPU

/ GPU / FPGA heterogeneous computing and will be capable of searching through over 100 billion images in a matter of seconds, giving an insight into the sheer power of the next generation of telecoms technology. The growth of AI and IoT could be a real money spinner for telcos, providing they are prepared to think outside the box, according to Huawei. "By 2025 we predict that there will be 40 billion connected devices generating 180 billion Tb of data," president of Huawei's Carrier Business Group, Ryan Ding, told Total Telecom. This presents telcos with a massive opportunity, if they can devise strategies to monetize data traffic. This sentiment was echoed by Huawei's VP for the Carrier Business Group, Edward Fan, who said that "The Golden Age of IoT has arrived." In 2017 revenues derived from IoT technology averaged $8 billion, or 0.5% of a telco's typical revenue. By 2025, Huawei predicts that figure will rise to $400 billion, 20% of total revenues.

Huawei Inks GBP3bn Procurement Deal with the UK

Huawei Technologies has announced a major new commitment to the UK with the signing of a five-year procurement agreement valued at GBP3 billion (USD4.2 billion). In confirming the deal the vendor noted that this builds on a previous pledge made in 2012 when it said it would invest and procure GBP1.3 billion in the UK between 2013 and 2017. With respect to that period, Huawei now claims to have 'significantly exceeded' its target, claiming to have spent more than GBP2 billion in the UK during the five years to end-2017. With Huawei citing its long term customer partnerships with both BT Group and Vodafone Group, it noted that it now has two joint innovation centers in the UK, one in Ipswich with BT, and one in Newbury with Vodafone. Looking ahead, the Chinese firm says it plans to continue making a significant contribution by exploring vital future technologies, including 5G, with its customers at these centers. Meanwhile, Huawei also claimed that its ongoing cooperation with UK universities has seen its work with more than 20 different universities on over 100 individual research projects over the last five years. In terms of future plans, the vendor said it will continue to grow its investment in R&D and collaborate with UK universities over the next five years, with plans for an expanded range of topics to research and more university partnerships.

Huawei's X22 Set Top Box Wins Award

Huawei's X22 set top box has won an iF Design award for top design. The globally renowned iF Design Awards are known as the "Design Oscars". The Huawei set top box' design focused on "minimalism, streamline design and Golden Ratio Segmentation". The device faced competition from over 6,400 candidates across 54 countries.

Minimalism: Using the Huawei self-developed Quad-core 64-bit Hisilicon chipset, the X22 can provide an immersive 4K UHD viewing experience, optimized interaction, 3D games and a 360-degree panoramic video. The design has reduced the footprint of the set top box by 25% compared to the traditional hybrid STB.

Streamline design: The streamline style and curved surfaces create an ultra slim look. The IR sensor is hidden under a glossy middle frame without an independent IR window, providing the STB with a clear and concise look.

Golden Ratio Segmentation: The X22's decorative finish of matte and glossy material contrasts due to the Golden Ratio Segmentation on the top surface and bottom cover is applied with a Golf Pattern, which enhances its anti-scratching ability. It can fit well into any living interior.

The Huawei X22, a hybrid STB, is suitable for use in multiple scenarios, including DVB-C/-T, IPTV, and OTT. It is designed to help multi-service operators (MSOs) improve the user experience with video services, decrease customer churn, and increase ARPU. The iF Design Award, founded in 1953, is one of the three most prestigious international industry design awards.

Mobily Sponsors Saudi Kingdom's First Internet of Things Exhibition

Etihad Etisalat (Mobily) is sponsoring the first Saudi International Exhibition for Internet of Things, at the Riyadh International Convention & Exhibition Center. "Mobily is participating as the main sponsor in this exhibition to present its distinguished services, in addition to keeping up with the latest developments in the telecom and IT sector, and exchange experiences with various participants,"

the telecom company said in a press release. "Moreover, Mobily will introduce its leading experience in the Internet of Things (IoT) technology; Mobily Business is considered the first provider of IoT platforms in the Kingdom. Mobily is keen to be progressive and keep up with the latest technologies used worldwide, in order to put the Kingdom at the forefront of countries in the IoT era." The exhibition

is considered to be an important platform to identify the contributions of IoT to the Kingdom's Vision 2030. The event also aims to gain an insight into IoT values, IoT usability across various industries and the interests of technical solutions providers and enablers, in addition to end user interests.

Nokia Introduces Services, Technology to Help Operators Address Needs of Digital Cities

Nokia has launched services to solve challenges of urbanization. IoT for Smart Cities and Sensing as a Service introduce the benefits of IoT in building economically and environmentally sustainable cities. For urban safety, Nokia introduces S-MVNO for Public Safety service, which enhances commercial LTE networks to meet mission critical requirements of public safety agencies. IoT for Smart Cities is a fully-integrated, modular and scalable framework, which enables operators and master systems integrators to take advantage of unified smart city management while unlocking new revenue streams by rapidly launching new services. Powered by cross-application data sharing, analytics and automation, Nokia's Integrated Operations Center (IOC) orchestrates all smart city operations for enhanced efficiency, faster responsiveness and improved decision making. Blueprint applications include video surveillance, smart lighting, parking, waste management, and environmental sensing. Sensing as a Service provides real-time environmental data and intelligent analytics that operators can monetize by offering CAPEX-free data services to enterprises, cities, public safety authorities and governments. Operators can utilize existing base station sites, with Nokia deploying sensors and integrating all available site equipment into an IoT real-time monitoring platform. Sensing as a Service enables possibilities to detect unusual environmental behavior like illegal construction, trash burning

or unusual particles in the air. Sensing as a Service is powered by a blockchain enabling smart contracts: anonymized, private and secure micro-transactions that allow operators to monetize analyzed data and generate new revenue streams. S-MVNO (Secure Mobile Virtual Network Operator) for Public Safety enables operators to leverage their commercial LTE networks to offer mission-critical broadband services to public safety agencies, and thus generate new revenue streams. The 3GPP-compliant service, which is part of Nokia's ViTrust portfolio, helps commercial LTE networks fulfil stringent requirements on availability, resilience, performance, and security while ensuring interoperability with existing legacy public safety networks.

Nokia's end-to-end service expertise helps to assure mission critical communications performance for high priority first responders across the entire LTE network, including radio, backhaul and core, for extreme reliability. Asad Rizvi, head of Global Services business development at Nokia, said: "Cities need to become digital in order to efficiently deliver services to their habitants. Smart infrastructure, which is shared, secure, and scalable, is needed to ensure urban assets and data are efficiently used. We can help cities with that. In addition, we can help operators generate new revenue utilizing their existing network by providing solutions for smart city players, such as city, transport, travel and public safety authorities."

Nokia Sensing as a Service
Digitalize your network assets for brand new revenue streams

Nokia CTO Confirms 3.5GHz 5G Launches on the Way

Nokia North America CTO Mike Murphy confirmed at least one US broadband provider is preparing to launch 5G on 3.5GHz spectrum and explained operators face cost challenges as they plan deployments in mmWave bands. Murphy told Mobile World Live Nokia is in conversation with several tier-1 and tier-2 mobile operators, as well as cable operators, about deploying 5G at 3.5GHz. He said he has "zero doubt" at least one, if not more, of those players will use 3.5GHz spectrum for initial 5G deployments. In January, cable operator Charter Communications noted it was "actively testing" fixed-wireless applications at 3.5GHz. T-Mobile US and wireless industry association CTIA have also aggressively pushed the Federal Communications Commission to consider new rules for the band which would be more favorable for mobile 5G. Murphy said the focus on 3.5GHz stems from a consensus among operators that low band spectrum will be needed to provide a nationwide 5G coverage layer while mmWave will be used more for "hotspot" deployments in urban areas requiring more capacity. For low band deployments, the CTO explained operators will generally be able to use existing LTE sites. But mmWave rollouts will require much more site density, somewhere in the realm of two-and-a-half times what is seen in today's LTE networks. The need translates to a much higher cost of deploying mmWave spectrum, which is a key challenge operators are trying to solve ahead of planned rollouts, he said. The problem is similar across key mmWave bands, including 28GHz and 39GHz, as Murphy noted there's only a "very minimal difference" between the propagation and penetration characteristics of those two bands. Murphy said some potential solutions to the cost problem include the use of relay nodes, wireless backhaul and lower-cost base stations. But he said the industry continues work on the issue as operators simultaneously seek relief from regulatory siting barriers to densification.

Nokia Launches Managed Security Services for Digital-Era Networks

Nokia is addressing rising security threats to telecom networks by launching its Security Risk Index assessment service and Managed Security Service. Together, they form a unique, holistic approach to targeting security challenges across mobile, IP and fixed networks in the digital transformation era, when new services and virtualized systems also introduce new vulnerabilities. In addition to addressing their own security needs, operators can white label Managed Security Services to enterprises under their own brand, which offers revenue potential in the fast-growing enterprise security market and optimizes time to market. Growing regulatory pressure and increasingly complex networks carrying sensitive data from Internet of Things (IoT), personal devices, and social and business applications have heightened the importance of data security for operators. Nokia is taking a unique, integrated approach that starts from assessing operators' security risks across various security domains, benchmarking against industry peers, and providing a 360-degree gap analysis and suggestions for performance improvements. This is the essence of the Security Risk Index. After the assessment, a managed service, powered by Nokia NetGuard software, will complete the holistic security approach. Nokia experts design the network security infrastructure, information management and monitoring systems to ensure that critical information assets are adequately protected against known and unknown threats, and that the operator meets applicable security compliance standards and regulations. Having secured their own networks, operators can go on to offer the Managed Security Services, or selected elements of it, to their enterprise customers. In partnership with Nokia, operators can easily implement a security portfolio to open a new revenue source and increase customer loyalty. Patrick Donegan, principal analyst, HardenStance, said: "Telecom operators need strategic security partners that have a deep understanding of the unique aspects of their network environment and the threats that they and their customers face. Nokia's Security Risk Index and Managed Security Service propositions are an important contribution to addressing those challenges." Friedrich Trawoeger, head of Managed Services at Nokia, said: "Operators must be prepared for a security breach. A dynamic, managed security proposition is needed to eliminate possible threats, so we are taking a comprehensive approach to security from assessing risks to managing and maintaining our customers' security infrastructure. This is the best approach to defend against attacks. In addition, the resale white label model will allow our customers to monetize the security opportunity." Nokia's security services also utilize Nokia NetGuard, a complete portfolio of robust, end-to-end software solutions that detect, prevent and mitigate cyberattacks by securing traditional and cloud-based network architectures and protecting end-users and IoT devices. Nokia's Managed Security Service and Security Risk Index provide a comprehensive backbone for telecom security. It is important to encompass all areas of security, including the assessment and protection of cross-technology networks operating in multi-vendor environments, as modern networks can be more easily exploited and carry higher risks.

Nokia and Tele2 Sign Strategic Partnership to Provide Global IoT Services

Nokia and Tele2 IoT have signed a five-year agreement to enable the delivery of IoT services to Tele2 enterprise customers based on Nokia's worldwide IoT network grid (WING). Nokia WING will allow Tele2 IoT to rapidly and cost-effectively provide complete IoT services to its enterprise customers in fields including transport, healthcare, smart city and utilities to manage their connectivity needs and assets, such as connected cars or connected freight containers, around the globe. Access to a worldwide IoT network enables Tele2 IoT's enterprise customers to benefit from low latency, regulatory compliance, advanced enterprise onboarding and 24x7 troubleshooting offered as a managed service. Nokia WING is a 'one-stop-shop' IoT managed service that includes a pre-integrated global IoT core network, connectivity management as well as dedicated IoT operations, billing, security and data analytics, along with an application ecosystem. The offering is completed with innovative solutions based on Tele2 IoT technology. The combination of these cutting edge technologies from Tele2 IoT and Nokia WING enables a new paradigm for global IoT connectivity services. The scope of the agreement also includes the collaboration and partnership on various advanced technologies such as 5G, Narrowband IoT (NB-IoT), LTE for machine-to-machine (LTE-M), SIM management and analytics to further accelerate the global IoT ecosystem. Rami Avidan, CEO of Tele2 IoT, said: "Nokia WING is a unique concept for worldwide IoT enablement which will allow us to serve our enterprise customers better and differentiate our offering on a global scale. We are excited about the prospect of helping our customers to easily deploy IoT services, driving new revenue growth opportunities." Ankur Bhan, head of WING at Nokia, said: "Nokia WING will enable Tele2 IoT to offer its enterprise customers a global service with flexible control, low latency and high levels of efficiency and enterprise automation. Together we will work on enabling new IoT solutions that can be adopted in various industries to deliver seamless, reliable and efficient processes to help businesses run more intelligently." Nokia WING has been nominated for a Global Mobile Award for the 2018 Mobile World Congress in the 'Best Mobile Network Infrastructure'. In 2017, it was recognized as the winner in IoT leadership at the TechXLR8 Awards and also won the Global Telecoms' highly commended' award in the category 'IoT initiative of the year'.

Nokia and China Unicom Deploy AirGile Cloud-Native Core Network to Enable New VoLTE and VoWiFi Services in China

Nokia and China Unicom are to deploy a cloud-native core network based on Nokia AirGile technology in seven Chinese provinces. The network will provide new agility which will enable the delivery of high-quality voice services, and lay the foundations for the future evolution to 5G. The deployment of the Nokia cloud-native core network will enable China Unicom to deliver Voice-over-LTE (VoLTE) and Voice-over-Wi-Fi (VoWiFi) capabilities from a single platform, as well as new services such as 'one-number, multi-devices'. As a result subscribers will experience high definition voice calling, faster call set-up and seamless connectivity as they move between China Unicom's 4G network and Wi-Fi access points, and receive calls on multiple connected devices. Nokia will deploy its technology in seven provinces in China, including major industrial and tourist hubs: Sichuan, Inner Mongolia, Jilin, Hainan, Yunnan, Gansu and Hunan. The network will include Nokia AirGile cloud-native core technologies as well as the Nokia AirFrame data center, NetAct, CloudBand and Session Border Controller. Nokia will also act as a product and systems integrator. A cloud-native core network will also offer operators such as China Unicom, the flexibility, responsiveness and adaptability required to deliver high-performance, ultra-reliability and low latency-required by massive IoT and 5G. By deploying a cloud-native core now, Nokia and China Unicom are laying the foundations for this future network evolution. In 2017 Nokia and China Unicom began interoperability with other vendors' equipment, enabling China Unicom to be the first operator to deploy a three-layer decoupled network architecture using network functions virtualization to decouple hardware and software and ensure flexibility allowing each network layer to evolve independently. Gao Bo, head of the China Unicom customer business team at Nokia Shanghai Bell said: "Nokia has the breadth of technology and services expertise to provide an end-to-end cloud native core for China Unicom. The network will deliver new capabilities and allow China Unicom to accelerate the launch of new services, while new agility will help enable a smooth transition toward 5G in the future."

Nokia Opens Cloud Collaboration Hubs to Enable Operators to Realize Their Cloud Strategies

Nokia is strengthening its cloud and data center services by opening a Nokia Cloud Collaboration Hub in Singapore. Another hub will be opened in Irving, Texas in February 2018, to be followed by a third one in Reading, UK. The hubs are execution centers where multivendor cloud services from strategy and design to execution and delivery are provided. They offer innovative tooling and automation, as well as DevOps based cloud development and delivery. The Nokia Cloud Collaboration Hubs include a multivendor lab set-up with experts co-located to help operators visualize, develop and execute tailored use cases

based on their cloud strategies. The global network of hubs provide support to operators to speed up their transition to cloud. The Cloud Collaboration Hub is an evolution of the Cloud Design Center, opened in 2016 in the UK, which has already been delivering multivendor cloud solutions to operators globally. The Cloud Collaboration Hubs are supported by a network of cloud delivery centers for industrialized infrastructure staging and delivery. Nokia is also opening a new cloud delivery center in India to complement one in Hungary. Nokia cloud solutions cover integration to virtual network function (VNF) and IT applications,

as well as hybrid cloud solutions. The hubs provide services for Nokia specific, multivendor and open source solutions. The strong partner ecosystem linked to the hubs enable Nokia to provide best in class cloud solutions to meet the digital service provider needs. Deepak Harie, head of Systems Integration, Global Services at Nokia said: "We are excited to announce the first of our network of Cloud Collaboration Hubs. This represents the next phase of our cloud professional services offering. The Cloud Collaboration Hub model helps make services tangible, and accelerates operators' move towards becoming digital service providers."

Nokia and EDF Join Forces to Test Internet of Things Technology for Industries

Nokia has been selected by French power utility EDF's R&D unit to test the performance of LPWA wireless networking technologies - key emerging standards for Internet of Things (IoT) device connectivity - to support critical operations for industries. The two companies will engage in a comprehensive testing regime, among the first of its kind in the industry, exploring the capabilities of LPWA technologies to support real-world industrial applications. Nokia is EDF R&D's exclusive partner for this effort. EDF R&D will utilize Nokia TestHub Services in Nokia's Device Testing Lab in France - which gives customers access to state-of-the-art, carrier-grade wireless infrastructure - when testing IoT/M2M objects, chipsets, modules and user devices across all wireless technologies and frequencies. This enables devices to be tested on real network infrastructure rather than a simulated network, which reduces guesswork in testing and analysis and minimizes risks in advance of widespread commercial introduction. The testing will compare IoT technologies recently standardized by the 3G Partnership Project (3GPP) - including NarrowBand-IoT (NB-IoT) and LTE-Machine (LTE-M) (also known as enhanced Machine-Type Communications or eMTC) - with other emerging, largely unlicensed IoT technologies. This agreement builds on Nokia's strong track-record providing mission-critical networks to industries, and highlights the company's strong position in the emerging market for IoT connectivity. It also highlights the progress of Nokia's strategy of expanding its customer base outside of the traditional telecommunications sphere, a key focus of the company's diversification efforts. Stéphane Tanguy, head of IT Systems, EDF R&D, said: "The Internet of Things offers tremendous opportunities for our group. Many use cases can be enabled by IOT technologies in various businesses from power generation to marketing. As the R&D engine of the EDF Group, it is our responsibility to characterize the objects, their connectivity,

their integration into IoT platforms and the related end-to end cybersecurity properties. Among the connectivity solutions, it is essential that we understand the performance, the maturity and the adequacy of each technology for our different use cases by an objective and agnostic approach. The cellular IOT technologies (LTE-M and NB-IOT) are two major technologies that we have decided to test with Nokia, which provides us with a very interesting test environment and valuable expertise to carry out these evaluations." Matthieu Bourguignon, head of Global Enterprise and Public Sector, Europe, for Nokia, said: "The use of IoT devices in industrial networks is in its infancy, but given the expected huge numbers of devices that will be deployed in the future, it is critical that our customers can evaluate now the various technologies before making substantial investments. Nokia's Device Testing Lab, staffed by some of the most experienced wireless networking experts in the industry, will make it much easier for EDF to evaluate the performance of LPWA against other emerging technologies and reduce the risk of future deployments."

Nokia to Ship New 5G-Ready Chipsets in Q3 2018

Nokia unveiled a new range of chipsets designed to significantly reduce power consumption in current operator networks, as well as supporting future 5G requirements. Dubbed ReefShark, the chipsets will begin "shipping in volume in Q3 2018". The vendor said 30 operator partners are currently lined up for the new equipment. Reuters added Nokia will begin deploying the chipsets into wireless towers by the end of this year and expects mass-market deployments once 5G-ready devices hit the market as early as next year. Nokia said in a statement the new chips can be incorporated into its existing AirScale suite of 4G and 5G-ready

equipment, and can triple capacity per cell site to 84Gb/s, from the 28Gb/s its chipsets offer today. In addition, by deploying new RF chipsets for Massive MIMO, the size of MIMO antennas can be halved. Power consumption in baseband units can also be reduced by 64 per cent, the vendor explained. The new chipsets comprise of front-end capabilities for LTE and 5G radio systems supporting Massive MIMO, as well as a baseband processor "capable of supporting the massive scale requirements of 5G". Henri Tervonen, CTO of Nokia Mobile Networks said the company "has created a clear competitive advantage" with ReefShark:

"Its combination of power, intelligence and efficiency make it ideally suited to be at the heart of fast arriving 5G networks". Nokia is currently jostling for position with rivals including Huawei and Ericsson in developing mobile equipment ready for future 5G networks. The first 5G networks are expected to launch at the end of this year. The new chipsets form part of Nokia's end-to-end portfolio for 5G, dubbed Future X. Nokia said the portfolio, based on artificial intelligence (AI) automation, will be showcased at Mobile World Congress next month.

Nokia Implements Future X Network architecture for 5G to Deliver Breakthrough Network Performance and Reduce Costs

On the day Nokia unveiled its ReefShark chipsets, the company has outlined the scope of its Future X architecture for 5G, the basis for its new reference silicon design and the foundation of its 5G technology and services portfolio. This portfolio - to be showcased at Mobile World Congress in Barcelona next month - comprises a full, end-to-end network that delivers up to three times more data capacity per cell site and 30% lower total cost of operation* through artificial intelligence-based automation. Nokia's 5G Future X provides unprecedented baseband performance thanks to Nokia's breakthrough ReefShark chipset. ReefShark chipsets also decrease the size of massive MIMO antennas by 50%, increasing deployment options, while achieving a 64% reduction in the power consumption of baseband units.

Machine Learning-enabled beamforming technologies allow networks to 'follow' mobile devices and extend cell range as well as provide massive capacity wherever it is needed. The 5G Future X network is one that scales efficiently to cope with the traffic and constant creation of new services and applications assigned to network 'slices'. Nokia 5G core solutions, such as Cloud Packet Core, combine cloud-native architecture concepts such as network function software disaggregation, stateless functional software elements with 'state-efficient' processing and a shared data layer, with automated cloud networking and dynamic lifecycle management. These enable best-in-class service delivery, agility and operational efficiency. Automation is key to realizing the full operating potential of 5G and dealing with the

massive number of network connections and their different requirements. Nokia's advances in artificial intelligence and machine learning throughout the network to radio cell sites, wherever they are located, improve both performance and operations. Automation on top of a Nokia cloud-native infrastructure can also result in operational savings of around 30%. Nokia embraces a culture of open architecture to enable customers to access - and benefit from - intelligence within their network. Stéphane Téral, executive director, Research and Analysis, IHS Markit, said: "Nokia has taken a holistic approach with its 5G Future X portfolio in order to drive the performance required by 5G applications. With such a wide breadth of technology and services expertise it is in a unique position to optimize the operator path to 5G." Marc Rouanne, president of Mobile Networks at Nokia, said: "With our 5G Future X portfolio we are opening up network data and network intelligence to our customers to jointly program and tailor machine learning and automation that runs on our new silicon. The Future X architecture invented by our Nokia Bell Labs research has made it possible to mix the knowledge across Nokia, between IP, Optics, RF, software and innovative in-house silicon. We now expect to be able to deliver unprecedented capabilities and efficiencies that will allow our customers to transform their service offering for 5G."

" With our 5G Future X portfolio we are placing network intelligence in the hands of our customers, working with them to implement machine learning and automation to meet their specific goals."

Marc Rouanne
President, Mobile Networks

NOKIA

PCCW Global

Viu Signs JTBC's Largest Content Deal in Asia

Viu, a leading pan-regional OTT video service by PCCW Media Group, has signed an agreement with JTBC, a leading Korean cable broadcaster, to offer Viu viewers access to over 80% of JTBC's quality drama series and variety shows. It marks the largest regional content volume deal that JTBC has signed in Asia^. Complementing its existing substantial Korean content from major broadcasters KBS, MBC, SBS and CJ E&M, Viu now offers its viewers the largest volume of Korean drama series and variety shows in Southeast Asia. With this agreement, Viu users can now enjoy over hundreds of hours of content from JTBC's extensive new drama series and variety shows with local language subtitles as fast as 4 hours after telecast in South Korea. This is the most welcome move for avid Korean content fans in key markets like Hong Kong, Singapore, Malaysia, Thailand, Indonesia and the Philippines. Armed with fresh stories and original formats, JTBC ranks as one of the top 5 broadcasters for drama and

variety content in Korea. Recently, JTBC enjoys consistently high ratings with two hit dramas, Strong Girl Bong-soon and The Lady in Dignity, which were the two popular drama series aired on cable TV in Korea in 2017. Ms. Janice Lee, Managing Director of PCCW Media Group, said, "We are pleased to present JTBC's exciting program lineup to fans across Asia which reaffirms Viu's commitment to bringing premium Asian content to our viewers and our position as the preeminent OTT video platform in Asia. In continuing to enrich the breadth and depth of content, Viu has also been expanding its content portfolio with Viu Original series which comprise series produced in Indian, Chinese and Indonesian languages, collaborating with award winning directors, renowned artistes and premium production houses in the region." Mr. Jung Kyung-moon, Chief Executive Officer of JTBC Content Hub, said, "The drama series and variety shows of JTBC have a track record of success with high ratings bearing testament to their excellent quality and

high entertainment value. While we will continue to maintain our premium standards in all our productions, we are very pleased to collaborate with Viu, one of Asia's foremost OTT video services, so that our programs could access a bigger audience across the region with Viu's highly engaged user base." Viu will offer the latest drama series such as Misty and Welcome to Waikiki. Apart from the latest dramas and variety shows, signature titles such as Strong Girl Bong-soon, The Lady in Dignity, Secret Healer and many more will also be available on Viu. Besides top dramas, JTBC is also renowned for its high-rating variety shows with guest appearances of Korean idols and superstars, such as Chef & My Fridge, Men on a Mission, Midnight Madness, etc. Chef & My Fridge features international famous chefs such as Gordon Ramsay with artistes sharing their meal plans as well as content of their refrigerators, which brought another huge success to JTBC's variety shows.

umniah

Umniah Selects Secucloud for Mobile Internet Security

As the Middle East's equivalent of Silicon Valley, Jordan has been working hard for a long time to become a hub for information and communication technologies in the Arab region – and secure internet usage plays a key role in supporting this development. Umniah, a subsidiary of the Bahrain-based Batelco group that has 9.4 million customers in 14 countries and is one of the biggest telcos in the Middle East and North Africa, plans to become a pioneer in this respect. Umniah, as a Batelco group company based in Amman, is working with the German security specialist Secucloud to provide its business and private customers with mobile internet security. Starting in early 2018, the two companies plan to offer a cloud-based, centralized security service that gives users simple and efficient protection against smartphone malware. Once that is in place, Umniah plans to extend the

service to corporate customers. "With the Secucloud solution, we've found just the right technology to extend our service with a key component," comments Umniah's CEO, Ziad Shatara. "We're now able to offer our customers a subscription to flexible and powerful protection that is practically invisible in everyday use. They won't need to install anything on their devices or keep the system up to date. As a result, our customers can focus on their use of the net while working productively and securely with their mobile devices." The service will be based on Secucloud's Advanced Security Suite, which protects mobile internet users from online threats like viruses, Trojans and other malware by detecting and removing them before they reach the user's smartphone. It automatically routes all internet traffic from apps, browsers and background processes through Secucloud's Elastic Cloud Security System (ECS2), where it

is checked for damaging content using a combination of powerful security mechanisms, including anti-phishing, anti-malware, anti-bot, anti-hacking and anti-anonymizer tools. If the solution detects any threats, it blocks the harmful data packets automatically. Dennis Monner, CEO of Secucloud, notes: "As part of Jordan's plans to become an information and communication technology hub in the Middle East, the human factor plays an important role. Although the country has scarce reserves of raw materials, it has a very high level of education and one of the best-qualified workforces in the region. That's why there is such a requirement for reliable internet security. Telcos like Umniah need a simple yet powerful way to protect their customers from damaging content. And that's exactly what we're going to help them provide."

ARTICLE

Data Localisation Requirements - Friend or Foe?

The topic of data localisation increasingly finds its way onto public policy agendas of governments. It often surfaces as a possible answer to a number of public policy concerns in relation to data and the Internet and the Digital Economy at large: how governments can make the use

Mobile data traffic will grow at a Compound Annual Growth Rate (CAGR) of 47 percent from 2016 to 2021. Middle East and Africa will experience the highest CAGR of 65 percent, increasing 12-fold over the forecast period.

of the Internet and the information exchanged and services used safer and more secure (the Center for Strategic and International Studies estimated that cybercrime costs the global economy some $400 billion in annual losses through consumer data breaches, financial crimes, market manipulation, and theft of intellectual property); how governments can gain access to data for purposes of law enforcement; how they can ensure that the privacy of their citizens' is protected; how governments can prevent value erosion of local industries and local economic growth through global competition; and how governments can integrate global platforms into the fabric of national economic and regulatory frameworks. A number of studies (see, for example, McKinsey 2016, the Brookings Institute 2014, the Information Technology and Innovation Foundation 2017, and the European Centre for International Political Economy) have been undertaken that examine the impact and costs of data localisation requirements. Most of these studies conclude that while some of the governments' concerns are valid, the introduction of data localization requirements, which essentially restrict the free flow of data over the Internet and thereby interrupt the operation of the underlying enabling technology – the Internet – may not always be the most suitable response. On the contrary, the impact of disrupting cross-border data flows, regardless of the state of the development of the country, can be severe in terms of welfare and output losses to the overall economy.

The debate on international data flows is centered on the essence of the Internet as a medium that has enabled the free flow of data across borders, and which has become a key input to the global economy today: most of the research on the economic contribution of international data flows shows that the free flow of data over the Internet has been a great enabler of increased economic activity, an engine of growth, a lever for new businesses and SMEs to be instantly global. McKinsey Global Institute estimates that international data flows contributed more to global growth in 2014 than trade in goods: by 2014, cross-border data flows accounted for $2.3 trillion of this value, or roughly

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3.5% of total world GDP. This trend will likely continue with underlying global IP traffic predicted by the CISCO Visual Networking Index to exponentially increase nearly threefold over the next 5 years and 127-fold from 2005 to 2021. Twenty percent of global IP traffic will be mobile and grow at a CAGR of 47 percent from 2016 to 2021 to 49 exabytes per month. Middle East and Africa will experience the highest CAGR of 65 percent, increasing 12-fold over the forecast period.

Free cross-border data flows enable centralized data storage and processing, thereby enabling businesses

Cross-border data flows are surging and connecting more countries
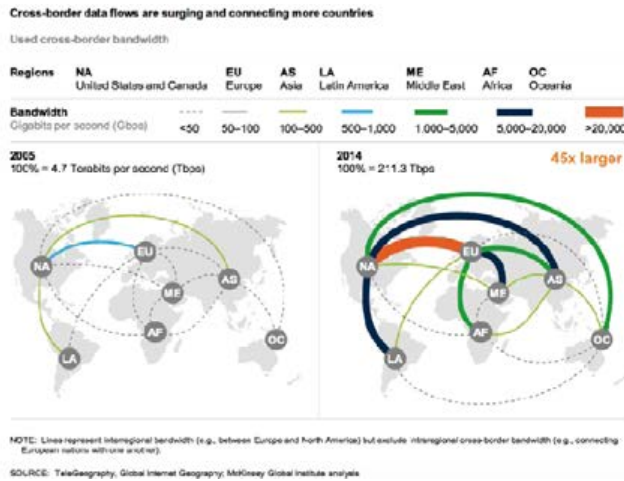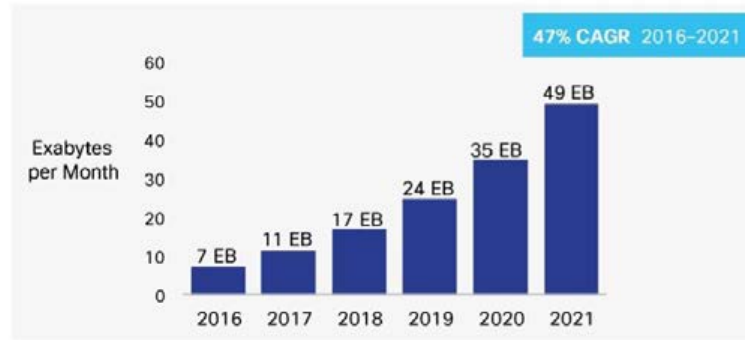
Used cross-border bandwidth

Figure 2. Cisco Forecasts 49 Exabytes per Month of Mobile Data Traffic by 2021

Source: Cisco VNI Mobile, 2017

to take advantage of economies of scale through cloud computing. The increased digitalization of organizations through rapid adoption of technologies such as cloud computing and data analytics has therefore increased the importance of data as an input to commerce: industry associations, policy research think tanks and a number of reports and studies highlight that free-flowing data allows people to access a global range and quality of services and enables businesses to provide their products and services at lower costs and prices. Many new businesses and SMEs only exist online and are instantly global, supplying their products and services from just one location because of free-flowing data. Digitalization has also made the free movement of data more important for internal operations: most studies that examine the impact of international data flows show that local firms and organizations in every economic sector increasingly rely on international data flows for their most basic, daily operations, including to monitor production systems, manage global workforces, monitor supply chains, and support products in the field in real time. The use of data analytics (including the collection and analysis of personal data) across all industries has streamlined business practices and increased efficiency, and has enabled businesses to better understand customers' preferences and willingness to pay, and adapt their products and services accordingly. In telecoms, operators are virtualizing their networks and services through cross-border "cloudification" to enable them to scale their operations, drive down costs and deal with the vast amounts of data generated by consumers, machines and

IoT devices, as well as compete with global competition.

Governments are weary of free-flowing data either because they have valid security and privacy concerns, because they want access for law enforcement, or for reasons relating to national and local economies: opening to all types of flows, and particularly data flows and global platforms has the potential to disrupt traditional industries even as it creates new channels for growth. A significant number of countries therefore have restrictive data regulation in place, including data-residency requirements that confine data within a country's borders. This can take different forms, e.g. requiring companies to store a copy of the data locally, requiring companies to process data locally, and mandating individual or government consent for data transfers. The strictest data localization laws have been imposed in China and Russia. The EU has introduced the EU General Data Protection Regulation ("GDPR"), which does not include explicit data localization requirements, but which spells out strict requirements for personal data that is transferred to non-EU countries.

A report by the Information Technology and Innovation Foundation sets out a list of all the countries that have formal data-localization policies (laws or regulations) in place which have been publicly reported as at April 2017. These include Australia, Argentina, Belgium, Brazil, Bulgaria, Canada, China, Colombia, Cyprus, Denmark, EU, Finland, France, Germany, Greece, India, Indonesia, Iran, Kazakhstan, Kenya, Luxembourg, Malaysia, New Zealand, Poland, Romania,

Examples of strict data localization jurisdictions

China: A new cybersecurity law has come into effect in China in June 2017. It requires "critical information infrastructure operators" — which could be interpreted to include companies in many sectors, including telecommunications, information services, and finance — to store certain personal and business information in China. If a foreign company is subject to this law, it will have to apply for government permission before transferring data out of China. According to legal experts, the law leaves much room for interpretation, which might just lead to companies playing it safe and keeping the data in question in the country. While building the infrastructure for that might not be a problem for big corporations, startups that want to tackle the attractive Chinese market will most likely struggle with the costs involved.

Russia: Since September 2015, Russia has one of the most high-profile data localization laws in the world. It has a very comprehensive scope, requiring that any personal data collected from Russians must be stored and processed on servers located within Russia. Foreign companies must comply with this law or they risk significant fines or even having their websites blocked in Russia. Russia's communications authority, Roskomnadzor, enforces the law actively and even tech giants like Microsoft had to go through an extensive vetting process in order to get certified by the administration.

Russia, South Korea, Sweden, Taiwan, Turkey, UK, US, Vietnam, and Venezuela. While some countries enact blanket bans on data transfers, many are sector specific, covering personal, health, accounting, tax, gambling, financial, mapping, government, telecommunications, e-commerce, and online publishing data. Others target specific processes or services, such as online

Most studies on international data flows and restrictions imposed thereon support the view that data localization is a costly response to questions about the digital economy at large and are mostly imposed out of protectionist motivation.

publishing, online gambling, financial transaction processing, and apps that provide services over the Internet (thereby bypassing traditional distribution).

Data localization's costs to an economy can be significant. The European Center for International Political Economy examined the effects of proposed or enacted legislation in seven jurisdictions, namely Brazil, China, the European Union (EU), India, Indonesia, South Korea and Vietnam. The study found that the impact on GDP is substantial in all seven countries: Brazil (-0.2%), China (-1.1%), EU (-0.4%), India (-0.1%), Indonesia (-0.5%), Korea (-0.4%) and Vietnam (-1.7%). One study found that data localization requirements at the firm level can raise the cost of doing business by 30-60% (and thereby the costs of market entry) when access to cross-border cloud infrastructure is not available.

In summary, most studies on international data flows and restrictions imposed thereon support the view that data localization is a costly response to questions about the digital economy at large and are mostly imposed out of the motivation to shelter national and local economies. They conclude that while legitimate privacy concerns need to be addressed through thoughtful frameworks, data localization and fragmented regulation may have real economic cost. Most studies highlight that the benefits from free cross-border data flows significantly outweigh the losses and conclude that data flows are essential to today's modern economy and will not go away. Cross-border data flows and associated technologies used to deliver data-based services such as cloud computing, data analytics, smartphones, and online platforms have played key roles in shaping today's data-based economy and will continue to do so. The key recommendations to governments from most studies can be summarized as follows:

- Address legitimate privacy concerns through the development of universal standards
- Countries should consider security and privacy protection by design
- Countries should commit to neither imposing measures that would ban the transfer of data, nor to require the local storage or processing of data nor the use of local facilities.
- Countries should think strategically about the role it can play in global value chains
- Countries should address policy and administrative barriers that hinder global flows

Regional Spotlight

There are no general national laws governing data protection and privacy in the SAMENA or GCC region, and there is no unified set of laws, except in Qatar. In Bahrain, sector specific data privacy regulation pertaining to the telecommunications sector has recently been publicly consulted on. National and federal constitutions across the region recognize an individual's right to privacy and sector specific laws deal with data privacy in certain circumstances – particularly banking, healthcare and telecommunications laws.

Qatar is the first in the region to introduce legislation in relation to personal data that is electronically processed, or obtained, gathered or extracted in preparation for electronic processing, or when a combination of electronic and traditional processing is used. It does not contain explicit data localization requirements. The Telecommunications Regulatory Authority of Bahrain (TRA) issued a Draft Regulation on the Privacy of Individuals and Data Protection in the Telecommunications Sector applicable to activities performed by licensed operators and processors established and operating in the Kingdom of Bahrain. The Draft Regulation prohibits the transfer of all personal data outside the Kingdom, which also covers the storage and/or processing of personal data in cloud platforms located outside the Kingdom.

Strict data localization requirements can have stifling consequences for licensed operators' digital transformation efforts and their ability to share in the data economy, provide adequate infrastructure and serve to fulfill governments' agendas with regards to Digital Economy visions and the viable provision of Digital- and IoT Services. Operators are in the process of moving platforms and systems into the cloud, taking advantage of the operational and capital expenditure benefits – including cost savings, scalability, flexible data recovery, etc.. As has been shown by most studies on the costs of data localization requirements, restrictions on the free flow of data can undermine these efforts and may stifle innovation and the provision of innovative products and solutions to customers.

- Countries need to address the dislocations and consider trade-offs and open themselves to global flows at a pace their economies and societies can absorb.
- Countries need to make cybersecurity a top priority
- Countries should recognize that privacy protection and data flows can go hand-in-hand and work with other countries to promote international interoperability among different privacy systems. Countries can use trade agreements to bridge diverse approaches to data protection.
- International organizations (such as the WTO and OECD) should set up a process to monitor, catalogue, and report on policies that negatively affect digital trade and data flows and are related to localization barriers. The ideal outcome would be for barriers to data flows to become part of the WTO's Integrated Trade Intelligence Portal.

REGIONAL NEWS

UAE Makes Artificial Intelligence Leap

The United Arab Emirates wants to be at the heart of the artificial intelligence (AI) revolution and is already testing its mettle as a global tech advocate and innovator. In 2017, the country created the world's first "minister of AI", along with an AI strategy that is leading the transformation of multiple sectors, such as transport, education and healthcare. The UAE has reportedly poured billions of dollars into AI investment and tech startup incubation funds, including its $270m Dubai Future Endowment Fund. "We think the UAE has the strategic need, leadership vision, deep resources and small enough population to potentially become the center of disruption in the AI arena," said Sam Blatteis, founder of research firm The MENA Catalysts and former Google head of public policy for the Gulf. "AI may be a way to help solve some of the UAE's greatest challenges and inefficiencies and get it off the oil-economy rollercoaster." And the UAE's AI landscape is developing at lightning speed. Abu Dhabi government-owned investment company Mubadala and tech giant IBM recently brought in IBM Watson technology to help serve MENA's clients and build an ecosystem of partners and developers; the state-backed Khalifa University has a Robotics Institute exploring AI in manufacturing and AI conferences; New York University-Abu Dhabi is working on several AI-related research projects; and Abu Dhabi Police has introduced AI-powered traffic management control. Dubai is also pushing ahead rapidly with its automated transport ambitions and has positioned itself as the prime testing ground for emerging transport technologies, including driverless vehicles and aerial taxis. But Frederic Paquay, senior consultant digital transformation at Frost & Sullivan, warned that AI "needs a lot of computing power", which calls for bigger investments that not all local companies can afford. "Data is the new oil and even if the region's population is tech-savvy, there is still a shortage of data compared to the US and China," he said. "A lack of talent can also be observed within the industry all over the region. Even the salaries of fresh AI graduates are being pushed to unprecedented levels." Nevertheless, Paquay added: "Regional governments are working hard to make innovation and investment in AI even easier and more reliable. They want to become hubs and pioneers for any innovation in the Middle East and other growth markets." With the right foresight, AI could prove to be a revolutionary force for good in the UAE and further afield, according to Wes Schwalje, chief operating officer of Dubai-based Tahseen Consulting. "The region's current healthcare, jobs market and education challenges could all be significantly relieved by the application of AI and machine learning," he said. Healthcare is a good example of a sector that could reap the benefits of AI technology, said Schwalje. "For example, with an increasingly ageing population and high incidence of chronic diseases, there is demand for personalized specialist care." Schwalje said AI-driven personal healthcare technology can reduce patient-doctor interaction and provide digital health surveillance in real time. "Wearable remote devices could reduce patient visits to healthcare facilities and allow them to receive medical consultation as quickly as possible," he said. "This can significantly improve healthcare outcomes while lowering costs." Image-guided surgical robots are another case of AI adoption in healthcare, he said. "Complex surgeries requiring extreme precision can be conducted using such robots. This can be especially helpful in cases where there is a high risk of fatality due to surgical error." Schwalje said AI could also trigger a giant leap forward for medical education. "AI coupled with virtual reality can be a great learning tool for future doctors by providing them with a virtual learning environment," he said. "Young doctors could practice intricate medical procedures in the virtual environment and predict patient outcomes before applying those procedures on actual patients." And then there is a big opportunity for AI in education, said Schwalje. The biggest challenge the UAE faces is reducing the skills mismatch in the future labor market, he said, and AI could be a tool to develop predictive labor market analysis based on workforce job performance data. "It could enable policy-makers to identify skills gaps and recommend the right educational interventions in line with national development priorities," he added. At a micro level, AI could be used to automate activities in education such as grading and other repetitive tasks, said Schwalje. This could significantly reduce the burden on teachers, who could then focus on professional development and improving learning outcomes for students, he added. Globally by 2021, AI augmentation is expected to generate $2.9tn in business value and recover 6.2 billion hours of worker productivity, according to research firm Gartner. Schwalje concluded: "AI as a technology is in its infancy. The concern that many have regarding the singularity of AI is slightly far-fetched according to my understanding. Even the co-creator of robot humanoid Sophia – the AI robot marvel granted citizenship by Saudi Arabia – opines that Sophia might not be true AI. So AI needs time to evolve before it can be regulated."

PTCL Collaborates with Microsoft for Enhanced Cloud Computing Technology

Pakistan Telecommunications Company Limited (PTCL) and Microsoft have signed an agreement namely Cloud Solution Provider (CSP) partnership and Service Provider Licensing Agreement Partnership (SPLA). The aim of this agreement is to improve the PTCL cloud services. The agreement was signed at the PTCL Headquarters Islamabad. Country Manager Microsoft Pakistan Abid Zaidi and Chief Digital Services Officer PTCL Adil Rashid signed the partnership agreement. PTCL President & CEO Dr. Daniel Ritz, Regional General Manager Microsoft North Africa, East Mediterranean & Pakistan Leila Serhan along with other senior officials from both the firms were also present. Microsoft Cloud Solution Provider Program will provide PTCL with different services via Microsoft Office 365's Microsoft Cloud inclusive Azure, Dynamics 365, Enterprise Mobility Suite, Power BI, Windows & similar other services. Then PTCL can offer these services to its customers all over Pakistan. Dr. Daniel Ritz, President & CEO, PTCL on the occasion said, "PTCL's collaboration with Microsoft is a significant step in our efforts to enhance our Digital Solutions offerings to create

greater value for our Enterprise and SME Customers, who will now get benefit through best-in-class cloud solutions. We believe that this initiative will be a strong catalyst in the development of the ICT sector in Pakistan." Leila Serhan, Regional General Manager, Microsoft said, "Microsoft's mission is to empower every person and organization on the planet to achieve more, and today's announcement is an important milestone on this journey in Pakistan. With Cloud Solution Provider (CSP) & Microsoft Service Provider

Licensing agreement (SPLA) partnership, our customers can now get everything from one vendor which makes PTCL a one-window solution provider, thereby simplifying processes for end customers. This is exactly what the customer needs today." PTCL collaboration with Microsoft will open new interesting doors for the company in terms of digital services. The customers of PTCL can look out for improved cloud services in future. They will be able to use the most up-to-date and advance Microsoft version.

SCO Launches Free 3G/4G Trials

Pakistan's Special Communication Organization (SCO) has begun offering free trials of 3G and 4G services in Azad Jammu & Kashmir (AJK) and Gilgit-Baltistan (GB), ProPakistani writes,

citing unnamed sources. A spokesperson for the state-owned provider was quoted as saying that customers in Mirpur, Muzzafarabad, Kotli, Skardu and Gilgit can now access high speed wireless data services free of cost. The news outlet claims that the SCO had begun offering the services after completing an upgrade to its network late last year, but was instructed to cease charging for the wireless data offerings. The SCO spokesperson denied the report, however, stating that the company only began to offer the service following regulatory approval. SCO is currently awaiting the long-delayed auction of 3G and 4G licenses in the AJK and GB regions, which were excluded from the national spectrum sale in 2014. SCO operates solely in the AJK and GB regions, but has also sought permission to expand nationwide. Alongside SCO, rival cellco Jazz (formerly Mobilink/ Warid) has been given the green light to trial 3G/4G services in AJK and GB.

Teletimes International, a SAMENA Council Media Partner, Awarded at MEET ICT & BITEX 2018 in Bahrain

Engineer Kamal bin Ahmed Mohammed, Minister of Telecommunications, Kingdom of Bahrain presented an award for Teletimes International to its Chief Editor, Khalid Athar at MEET & BITEX 2018 in Bahrain. Teletimes is the exclusive international media partner to this annual event.

UAE a Leading Country in Safe use of Internet

H.H. Sheikha Fatima bint Mubarak, Chairwoman of the General Women's Union, President of the Supreme Council for Motherhood and Childhood, and Supreme Chairwoman of the Family Development Foundation, has stated that the UAE is a leading country in the safe use of the Internet, and is always

working to raise the public's awareness, especially among young men and women, to follow the correct procedures when using social media. In her statement marking the annual Safer Internet Day on 6th February, Sheikha Fatima said that local, regional and international statistics and studies highlight a considerable increase in users that inflict harm and damage society via the World Wide Web. The UAE has therefore succeeded in spreading social awareness among Internet users, to explain the dangers of inappropriate use and also benefit from its many positive aspects, she added. Her Highness stressed that parents must teach their children about better behavior when using the Internet and social networking sites, and also warn them on the dangers of inappropriate web use. UAE women also have a responsibility to monitor their children and teach them about the appropriate use of the internet and how not to become influenced by negative content on social media, especially in the early stages of childhood, so they can avoid the dangers posed by those who promote subversion and evil, Sheikha Fatima concluded.

Iran's TCI Opens up Fiber Networks to Rivals

Telecommunication Company of Iran (TCI) has signed wholesale network agreements with two local ISPs, thus allowing its rivals to utilize its fiber infrastructure to carry their own services. The deals with Shatel and HiWEB mark the first time state-backed TCI has opened up its fiber networks to competitors. A report from the Financial Tribune suggests that other Iranian ISPs such as AsiaTech, Pars Online, Saba Net, Psihgaman, Helma Gostar and Afra Net are now likely to come forward to seek similar deals. Incumbent fixed line operator TCI was ordered by the government last year to share its fiber infrastructure, with telecoms minister Mohammad Javad Azari Jahromi saying at the time that a network rolled out using public funds should be available to all providers, not just TCI. The state-owned firm is deploying a fiber-to-the-home (FTTH) network which will pass some 580,000 households in the first phase of its rollout.

Viva Kuwait Posts USD133m Annual Net Profit

Viva Kuwait, a subsidiary of Saudi Telecom Company, has reported net profit for full-year 2017 of KWD40.0 million (USD133.2 million), displaying steady financial performance following its KWD39.8 million profit in 2016, although the mobile operator's annual revenues slipped slightly, by around KWD1 million to KWD278 million. Viva Kuwait – the country's youngest cellco having launched its mobile network in December 2008 – also claimed that its customer base stood at '2.3 million' at 31 December 2017, which would place it virtually neck-and-neck with Qatari-backed Ooredoo Kuwait, vying for second place in a closely competitive mobile sector behind domestically-owned market leader Zain Kuwait.

LPTIC Sets Out 2018 Objectives, Including 4G and Fiber-Optics

The Libyan Post, Telecommunication and IT Company (LPTIC) has set out its objectives for 2018 in a series of Annual General Assembly meetings held with each of its major subsidiaries, namely Almadar Aljaded (Al Madar Telecomm Company); Aljeel Aljadid; Libya Telecom & Technology (LTT); Hatif Libya; The Libyan International Telecom

Company (LITC); Libya Post and Al Bonia Investment & Services Company. The meetings were the first to be held since 2014 due to the unrest in Libya, and some of the key priorities for 2018 that were put forward by the LPTIC included the launch of 4G LTE technology and the development of fiber-optic broadband networks. Another key theme discussed

in the meetings was for the launch of an ICT sector restructuring project, due to begin in Q2 2018, which would see a NetCo (National Telecoms Company) set up to be responsible for operating and maintaining passive infrastructure, while mobile retail services will continue to be provided by the country's leading cellcos Libyana and Almadar Aljaded.

Cloud Computing to Pave the Way for Saudi's Digital Transformation

As the Kingdom of Saudi Arabia advances toward becoming a technology hub for the region, the country foresees cloud computing to grow by 25% by 2022. These findings were announced during the second edition of Microsoft Transform 2018, an event organized by Microsoft Saudi Arabia dedicated to encouraging conversation on digitalization and fostering the latest digital trends. The event took place today at the Four Seasons Hotel in Riyadh. Microsoft also predicted Saudi Arabia's IT spend in 2018 to reach the value of $40 billion as the government increases its focus on innovation and cloud technology to

drive forward digitalization. In 2016, digital transformation was recognized as a key pillar of the Saudi's Vision 2030. Samer Abu-Ltaif, President Microsoft Middle East & Africa, said "as Saudi Arabia works towards the Vision 2030 agenda, there has not been a more exciting time for the Kingdom. According to the World Economic Forum, the digital economy will be worth over $100 trillion globally by 2025, and Saudi is already positioned to ensure it benefits from this opportunity. Digital transformation truly is at the heart of Vision 2030." "At Microsoft, we believe we can support the Kingdom's vision by focusing on

key industries and building bespoke cloud solutions for those businesses. Microsoft Transform 2018 is a strong platform for us to create conversation on digitalization in Saudi Arabia, and highlight technologies and innovations with our partners in the government, banking, retail, manufacturing and oil & gas sectors. A key priority for Microsoft is creating opportunities to support youth enablement, education and to build the skills of the future in the Kingdom." Microsoft has led several initiatives in support of digital transformation in the Kingdom over the years including a program aimed at building the necessary skills among Saudi youth. This program titled 'Saudi Codes' was organized in partnership with Misk Foundation and the Ministry of Education to encourage Saudi youth to learn the basics of coding through Minecraft. During Microsoft Transform 2018, Jamie Wylly, Worldwide Director for Defense and Intelligence at Microsoft, also highlighted the importance of digital transformation in the current security environment. Wylly showcased Microsoft technologies which manage data in a hybrid cloud environment by scaling to meet mission needs and deploying intelligent edge to maneuver forces, while simultaneously upholding security and privacy regulations.

Corning to Supply STC with FTTH Solutions

Saudi Telecom Company (STC) has awarded a contract to US-based Corning Optical Communications to supply it with fiber-to-the-home (FTTH) solutions. The arrangement builds on the existing strategic relationship between STC and

Corning, with the latter having already supplied more than 1.5 million kilometers of optical fiber to STC's domestic network. STC's COO Nasser Sulaiman Al-Nasser said: 'STC is building the largest fiber network in the history of the Kingdom. I

am delighted to see us develop such an initiative with Corning, which will help meeting STC's strategic goals for digital services, and will align with the objectives of the National Transformation Program (NTP 2020) and Vision 2030.'

PTCL Partners with Virtual University for Ignite's DigiSkills Initiative

Ignite, Ministry of IT & Telecom has launched DigiSkills program to impart training of one million workforce comprising of youth, skilled professionals and freelancers. Ignite has awarded DigiSkills training project to Virtual University of Pakistan and PTCL has been selected as partner for this strategic project. PTCL Partners with Virtual University for Ignite's DigiSkills Initiative. DigiSkills program will impart training to one million knowledge resources like youth, freelancers, students, and professionals, who would deliver professionally across the globe and contribute in country's economic growth. The program aims at, not only developing key specialized skills, but also imparting knowledge about various freelancing and other employment & entrepreneurial opportunities available internationally and locally. Due to limited employment opportunities, it is essential for upcoming workforce to have necessary knowledge and abilities to seize such opportunities to become influential participants in global competitive market for capturing international opportunities across multiple industry segments. Dr. Naveed Malik, Rector, Virtual University of Pakistan and Adil Rashid, Chief Digital Services Officer, PTCL signed a Memorandum of Understanding (MoU) at the PM House today. Dr Naveed Malik, Rector, Virtual University of Pakistan and Adil Rashid, Chief Digital Services Officer, PTCL signing Memorandum of Understanding (MoU) at the PM Secretariat today. Honorable Prime Minister of Pakistan, Mr. Shahid Khaqan Abbasi, Minister of State for IT & Telecom, Ms. Anusha Rahman, President & CEO PTCL Dr. Daniel Ritz and CEO Ignite Mr. Yusuf Hussain also graced the occasion. Appreciating and encouraging the initiative, the honorable Prime Minister of Pakistan Mr. Shahid Khaqan Abbasi on the occasion said, "The government is committed to bring economic growth and development of Pakistan, I congratulate Virtual University and thank PTCL for collaborating with VU for this Digital Skills Training Program under the auspices of our government which would train 1 million people of this country all over the world under the umbrella of 'On Demand Economy'. This initiative, would not only create employment opportunities, but also provide the nation to contribute for the vision of prosperous Pakistan". Minister

of State for Information Technology and Telecommunication, Ms. Anusha Rahman, while expressing her satisfaction with this significant initiative, congratulated ministry of IT, Ignite, VU and PTCL for partnering on this major initiative of Ministry that will provide online training to 1 Million youth enabling them to earn using technology by accessing online market places. She further hoped that after successful implementation of this program, Pakistan will be able to achieve number 1 position in global freelancing domain. President and CEO PTCL Dr. Daniel Ritz shared his views on this accomplishment and said. "PTCL always strives hard to contribute and bring Pakistan at par with rest of the world by launching innovative and enterprising initiatives. Taking another step forward, PTCL has joined hands with Virtual University to train 1 million Pakistanis across the world through its broadband footprint and cloud infrastructure (IAAS) representing all walks of life." The key development areas of training include sharing respective strengths, experiences and methodologies for skill development aimed at promoting quality and competitiveness in educational & training sectors of Pakistan and working together on diverse projects of mutual interest to facilitate human resource development initiatives which focus on economic development of the country, especially in implementing innovative projects of mutual interest in the fields of ICT.

98 Percent of People Living in Kuwait Use Internet

A striking 98 per cent of the population living in Kuwait have access to the World Wide Web, revealed a report. The Digital in 2018 report was released by Hootsuite, the most widely used social media management platform. The company, which already allows integration with Twitter and Facebook, surveyed up to 4.1 million internet use social media websites in Kuwait. The annual survey, which covers 239 countries in the world, revealed that 3.1 million people have access to social media websites via smartphones- which represents 74% of the overall number of social media users. Kuwait has 7.4 million lines, which represents up to 178% of the overall population living in Kuwait.

Embracing the All-Digital Future

Ziad Shatara
CEO
Umniah

The world is heading toward an all-digital future. It is a transition that is occurring much faster than anyone had anticipated a decade ago, and one that has and will continue to redefine many of the long-established pillars of countless industries. Today, whether you are a start-up operating from a garage or a multi-billion dollar corporation, it stands truer than ever that you either go digital, or go home.

Change is never easy and comes with its fair share of risks, but the past decade has demonstrated that standing still is perhaps the riskiest approach in this day and age.

Despite the virtually limitless potential offered by this imminent future, many businesses remain reluctant to embrace the modern digital revolution. Change is never easy and comes with its fair share of risks, but the past decade has demonstrated that standing still is perhaps the riskiest approach in this day and age. In 2009, Finnish phone manufacturer Nokia was the world's 5th most valuable brand according to Interbrand, and it had maintained its market share lead for more than a decade, but its failure to embrace the digital age dismantled the entire brand within the span of 18 months. Even a titan such as Microsoft could not keep the brand alive, nor could it keep its own Windows Phone platform viable for much longer simply due to being too slow to adapt.

Over the past few years, the telecoms industry has felt the pinch of this transformation. Increasingly dwindling revenues, ever-shrinking profit margins and the global shift away from voice and SMS services have been clear symptoms of a radical change. We have gotten used to perceiving this transformation as a challenge, when in fact it carries with it a treasure trove of opportunities. In this day and age, innovation is not only inevitable but is a gateway to an even more sustainable profitability.

For decades, operators have stuck to old habits, grasping to a fading business model that is only yielding lower profits and diminished valuations. Meanwhile, over-the-top services

Ideally, the first step operators should take is to transform the customer journey within their existing business models from a conventional to a pure digital one. Such a process takes time but ultimately establishes a solid digital foundation into which other services could be easily integrated.

(OTTs) and other digital platforms are shimmering in the stock market, with low capex business models that draw in investors by the droves and result in ever-growing valuations. This is what operators need to embrace, and fast. According to a survey conducted by Tyntec, a US Inter-Carrier Vendor incorporated in London, 35 percent of operators have successfully generated revenue through OTT partnerships, while around 55 percent have already partnered with OTTs.

We have all heard of the many buzzwords that signify the digital world of tomorrow. Big data, the Internet of Things, cloud computing, and countless others. Even the longstanding foundations of the global economy, national currencies, are today standing speechless before the likes of Bitcoin and other cryptocurrencies, which demonstrates the sweeping nature of the digital shockwave.

Most operators face uncertainty over which direction to take when rethinking their existing business models. For example, in the height of the digital revolution in 2013, 43 percent of operators were considering offering their own messaging platforms to compete with OTTs – a number that has since dropped to 5 percent. This demonstrates the need for a direction that does not force operators to venture into unexplored territories but to leverage on their existing strengths.

Ideally, the first step operators should take is to transform the customer journey within their existing business models from a conventional to a pure digital one. Such a process takes time but ultimately establishes a solid digital foundation into which other services could be easily integrated. And once a healthy and evolving digital foundation is established, leveraging on OTT partnerships to generate revenue becomes a much easier undertaking. The scope of partnerships is consistently expanding, spanning digital communication services like social networks and broadening to include possibilities in content (music, video, books, etc.), utility services, travel, online shopping, gaming and countless others.

In the enterprise market, opportunities also abound for operators in fields such as cloud computing, security and the Internet of Things. An operator leveraging on its expertise in these fields to create viable OTT services within its own business model will have a competitive advantage in the market, particularly if it offers localized services tailored to its operational environment.

As an operator based in one of the most competitive markets in the world - Jordan, Umniah learned long ago that adaptability is its strongest asset when navigating the increasingly complex realities of the digital world. This is why we have been working proactively to adjust our business model to meet the demands of our changing landscape, implementing aggressive and forward-thinking strategies to transform the customer journey into a purely digital experience and creating a versatile platform for mobile payment. We have also reinforced our efforts to establish frameworks to enhance our understanding of our customer data in order to build well-rounded databases for use across multiple expansion strategies. Last but not least, we have been hard at work to develop strategies that specifically govern future partnerships with OTTs, with a focus on both advertising and commissions as potential revenue streams.

Change is in the air, and it is much more exciting than it is threatening, particularly if the telecoms industry meets it with open arms and an open mind. The beauty of the digital market is its reliance on progressive growth, which means that new ideas can quickly evolve to become long-term successes. Unless mobile operators adopt an innovation-first approach, their only avenue will be a wholesaler model, which — while somewhat viable — is ultimately wasted potential.

Unless mobile operators adopt an innovation-first approach, their only avenue will be a wholesaler model, which — while somewhat viable — is ultimately wasted potential.

SATELLITE NEWS

SpaceX Launch Brings Elon Musk's Broadband-Internet Satellite Plan Closer to Reality

SpaceX is one step closer to providing low-cost broadband internet access after launching the first two demonstration satellites for its planned satellite constellation. The two demonstration satellites, known as Microsat-2a and Microsat-2b, were the secondary payload on Falcon 9 mission, which launched from Vandenberg Air Force Base in California. The primary mission of the launch was to take a radar imaging satellite into low-Earth orbit for a Spanish operator. That satellite deployed about 11 minutes after liftoff. The launch used a previously used Falcon 9 first-stage booster. SpaceX intends to create a constellation of satellites known as Starlink that would provide broadband internet access and eventually consist of thousands of satellites. The two demonstration satellites launched are intended to test the spacecrafts' design, structure and subsystems. SpaceX also plans to test

the satellites' communication paths using five stationary ground-based test stations and three mobile test vans, according to past filings with the Federal Communications Commission. Test stations will be located in Hawthorne and Fremont in California; McGregor and Brownsville, Texas; and Redmond, Wash., where SpaceX has an office dedicated to satellite development. The demo satellites' deployment was not shown on SpaceX's webcast of the launch, but about an hour and a half afterward, Musk tweeted that they had deployed and were communicating with ground stations on Earth. A filing with the FCC dated February 1 called the satellites Microsat-2a and Microsat-2b, but Musk referred to them as Tintin A and B, an apparent reference to the young reporter/adventurer character in the famed comics by Hergé. The two satellites will try to deliver the message "Hello, world" when they pass near Los

Angeles Musk said. SpaceX said during the webcast that even if the test satellites are successful, there still will be work ahead to prepare for future deployment of satellites for the constellation. The launch was originally scheduled for last Saturday. It was delayed several times to give SpaceX more time for "prelaunch systems checks," including final checkouts of an upgraded fairing — the clamshell-like covering that protects satellites at the top of the rocket.

Dubai Now to Launch New Data Collection Satellite

According to the statement, Recently Dubai Municipality will launch a new satellite that will help in collecting data and also enabling it to monitor the UAE from space. Dubai Now to Launch New Data Collection Satellite. Although that the Director General of Dubai Municipality, Hussain Nasser Lootah

was speaking at the opening session of the second day of World Government Summit. DG of Dubai Municipality Hussain Nasser Lootah said: The satellite will be capable of determining different environmental aspects from marine conditions to air quality. Meanwhile a specialized team in the Municipality has been working on the directives of the Vice President, Prime Minister and Ruler of Dubai, HH Sheikh Mohammed bin Rashid Al-Maktoum, in this regard. Further he observed that the Dubai has also achieved at lot under the wise leadership of Sheikh Mohammed, who has transformed Dubai into one of the most modern excellent cities in the world. He added: Our future will focus heavily on information and data analysis. This will become the corner stone in creating a more sustainable environment and a happier society. However he spoke on the important role played by data and information in decision making, especially related to the sustainability of economy, Emiratization, women empowerment, green products and technology. Using enhancing and producing renewable energy as well as sustainable waste management.

Satellite Players Back Spectrum Proposal to Speed 5G

SES joined fellow satellite provider Intelsat in backing a proposal to allow mobile operators to use C-band spectrum, in a move designed to spur investment and accelerate 5G rollout in the US. The companies said in a statement they sought to protect "the wide array of established satellite services" in the 3700MHz to 4200MHz C-band downlink spectrum, while opening up a specified portion of the spectrum for terrestrial mobile use. SES' backing for the move follows a move by Intel and Intelsat to approach the Federal Communications Commission (FCC) with the plan in October 2017, which was supported by the US regulator. The companies' proposal sets out a commercial and technical framework enabling mobile operators "to quickly access approximately 100MHz of nationwide C-band downlink spectrum in the US, speeding the deployment of next-generation 5G services". Operators in the US are increasingly jostling for additional spectrum to meet a growing demand for mobile services, and constantly connected devices. The Wall Street Journal (WSJ) reported the plan to share satellite spectrum could, however, face opposition from mobile operators which want satellite providers to be moved off C-band completely. Such demands will undoubtedly face fierce resistance from satellite providers. Specifically, the proposal specifies the creation of a consortium, open to all C-band operators, which would oversee the governance of the initiative, define and implement the methodology of spectrum clearance and "serve as the sole interface for market-based transactions with parties interested in deploying mobile services in specific portions of the C-Band". SES president and CEO Karim Michel Sabbagh said C-band remained a "critical component of US network architecture" and "it is therefore our duty and mission to protect it from any form of disruption and preserve its use". The FCC is now expected to create regulations for new use of the spectrum, and then hold auctions for the airwaves. WSJ added satellite companies could start moving their satellite-based operations to narrow sections of the band two years after the process begins.

ETECSA Signs Satellite Connectivity Agreement with SES Networks

State-owned Cuban telco Empresa de Telecomunicaciones de Cuba (ETECSA) has signed a deal with satellite services provider SES Networks. The agreement means that ETECSA can now diversify internet connectivity across the island, while SES Networks will augment ETECSA's existing terrestrial infrastructure with its high-performance fiber-like medium earth orbit (MEO) capacity. Executive President of ETECSA, Mayra Arevich Marin said: 'By working with SES Networks we are ensuring that our customers across the main island will have a new way to access high-performing internet at all times through this innovative satellite system. Our collaboration with SES Networks highlights ETECSA's mission of providing telecommunications services that meet the current and future needs of Cuban citizens and our customers, as well as contributing to the country's socio-economic growth.'

Chinese Satellite Industry to Disrupt Markets across Eurasia

Northern Sky Research's (NSR) China Satcom Markets (CSM) report finds a Chinese satellite industry primed to take a larger share of the global Satcom market through attractive one-stop-shop offerings, aggressive growth plans and enhanced exports. For Geosynchronous Earth Orbit (GEO) High Throughput Satellites (HTS) alone, NSR forecasts Chinese state-owned companies to manufacture and launch more than 800 Gbps of capacity by 2026, with much of this coming over Southeast Asia, East Asia, and South Asia. According to NSR, since the end of the Cold War, the satellite and space industry has been a duopoly between the United States and European Union (EU), with other players such as Russia, Japan, and now India playing a secondary role. At some point soon, however, it appears likely China will assume a position as a top-tier space nation globally, with significant ramifications for the satellite telecoms industry. "China's most recent five-year plan (2016 to 2020) notes a goal to improve launch and manufacturing capabilities, specifically for new satellite platforms. This translates into more satellites being exported by China to developing countries, with at least three ordered in 2018 thus far," noted Jose Del Rosario, NSR research director. China is primarily targeting turnkey projects, oftentimes including key financing mechanisms, as well as launching and manufacturing arrangements. Over the coming years, NSR expects this to add up to approximately 10 to 15 percent more capacity over regions across Eurasia and, in some instances, Latin America. The capacity added will be significant but will not be catastrophic for the market, according to the report.

Why the Market is Ready for On-Orbit Satellite Servicing

Although the technology driving in-orbit satellite servicing has existed for decades, only now has the market evolved to a point where it is economically feasible as a business. According to a panel of experts at a Washington Space Business Roundtable (WSBR) discussion on Feb. 12, the convergence of lower launch costs and shifting priorities for Geostationary Earth Orbit (GEO) satellite operators has made the idea of in-orbit servicing more commercially viable than in past years. Tim Deaver, Vice president of Development for SES Government Solutions, pointed to the dropping cost of satellite capacity as a critical element of the shift. As the industry experiences a downturn in the price of bandwidth (and thus, the revenue any one satellite generates), operators are brainstorming new ways to make the most out of their aging assets, he said. The panelists agreed this is particularly true for operators that own a limited number of satellites critical to their businesses. Company leaders are seeking new, more creative paths to extend their growth trajectories and, in the process, are softening their traditionally risk-averse postures, said Joe Anderson, Director of mission extension vehicle services at Orbital ATK. This changing mindset coincides with the efforts of new-age launch providers such as SpaceX, which have come a long way in making launch costs cheaper for their customers. "As we see the cost come down for launch, we see the cost coming down for refueling capability. The two points cross and you can make economic sense out of it," Deaver said. The proposition seems to be most valuable and attractive to operators of GEO satellites. Such spacecraft are among the most expensive to manufacture and launch, but the majority are also able to operate well beyond their 15-year design lives. The only reason they are usually decommissioned, said Anderson, is because they run out of fuel. If refueling is an option — and if it's both safe and reasonably priced — then it's

financially sound to squeeze a bit more revenue out of the asset. It's true that NASA has been working on technology relevant to such services for quite some time. Already the International Space Station (ISS) uses robotics operations nearly every day to maintain its external payload attachments. Both Commercial Resupply Missions (CRS) 10 and 13 had

scientific payloads that were unpacked from the Dragon trunk using robotics, said Al Tadros, SSL's Vice President of space infrastructure and civil space. That said, other technological elements have also matured to make on-orbit servicing spacecraft safer, cheaper, faster, and therefore more realistic. One example Tadros highlighted is solar electric propulsion, which is now emerging into mainstream satellite buses and provides improved "efficiency for transferring between satellites." Solar electric propulsion also uses 10 times less propellant than comparable chemical propulsion systems, according to NASA. But because this market is still so nascent, companies that are currently building on-orbit servicing spacecraft are limiting their missions to relatively simple tasks such as refueling. Currently, Orbital ATK's refueling spacecraft is compatible with about 80 percent of satellites operating in GEO, Anderson said. It will take time, though, before the company can do more

than just that. "Satellites that are there today aren't enabled for a whole lot of repair missions," he admitted. But in the future, as manufacturers begin to build their satellites with servicing in mind, a wider variety of missions will arise. "Even [for] simple things like [rescuing] spacecraft launched to the incorrect orbit — there are opportunities there when errors happen," said Todd Master, program master of the Defense Advanced Research Projects Agency's (DARPA) Tactical Technology Office. Tadros predicts that eventually the industry will launch satellites that are "payload agnostic," centered on a standardized form factor. "If you can actually start deploying payloads and adding to on-orbit satellites right now, [there's] huge potential," Tadros said. "It's so attractive it could become one of the … fastest growing parts of satellite servicing." In the meantime, Master recommended that commercial and government entities come together to establish better standards and ensure they aren't "jeopardizing this infant industry." Anderson warned, however, that such regulations should be developed carefully and incrementally. "Just because we can add an extra regulation doesn't mean we should," he said.

UAE Launches Fund to Support Space Research

The UAE has launched a $545,000 (AED2m) seed grant fund to support new and international projects into space settlement and habitation. Established by the Dubai Future Foundation, the Mohammed bin Rashid Space Settlement Challenge will finance the ideas and help develop new business models for living and working in space. The Challenge opened today and will run for a month. It will use scientific collaboration platform Guaana, which reduces time and effort required to fund seed ideas. The UAE has launched a number of projects to help it lead the global space race, such as establishing the first city on Mars, according to the 2117 Mars Project. "Space research

is the logical next step in humanity's search for knowledge and survival, and an advanced means to preserve human cultures, societies and economies. The Mohammed Bin Rashid Space Settlement Challenge we are launching today is designed to provide support for creative minds, unconventional ideas, innovative designs and research," said Dubai Future Foundation CEO Khalfan Belhoul. The competition is the first project of the newly established Mohammed Bin Rashed Centre for Accelerated Research. It is made up of three categories. The first, which revolves around Space Settlement, aims to find and develop locations in space that could support a sustainable

settlement and accommodate at least 100 people. It explores issues such as construction automation, power, food, water and heating and cooling. The second category, Terraforming & Space Ecology, looks into creating live able and long-term environments near the Moon, Mars, asteroids and other orbital habitats. The third category, Economics, Business Model & Governance, seeks to cultivate business plans for economics and identify private-sector partners interested in conducting commercial activities in space. The Challenge will also promote peaceful settlement in space.

SatADSL Enables Satellite Connectivity in Africa from the Cloud

SatADSL, a provider of Very Small Aperture Terminal (VSAT) services via satellite, announced a new service for Mobile Network Operators (MNOs) which will enable them to deliver satellite-based connectivity without investment in physical infrastructure. Using SatADSL's multi-band Cloud-based Service Delivery Platform (C-SDP), the solution allows MNOs to outsource their satellite services by providing a complete Operations and Business Support System (OSS/BSS) platform. Initially, the offering will target MNOs in Africa, where terrestrial infrastructure remains limited due to vast rural areas. Operating on Ka-, Ku- or C-band, the C-SDP includes a network management system that allows IP traffic to be shaped and routed from and to different hubs, and an in-built customer management tool enabling MNOs to manage and monitor their own customers. A hotspot management system allows MNOs to configure, manage and monitor remote hotspot networks through the cloud, while a billing system enables online payments and automatic billing, the company stated. "Satellite is a crucial tool for MNOs looking to serve new markets and launch additional revenue-generating services, such as business-to-business applications," said

Michel Dothey, Chief Commercial Officer (CCO) and co-founder of SatADSL. "While high investment costs, the risk of vendor lock-in and the uncertainty of the satellite market put many MNOs off investing in their own satellite infrastructure in the past, this new innovative solution mitigates these drawbacks."
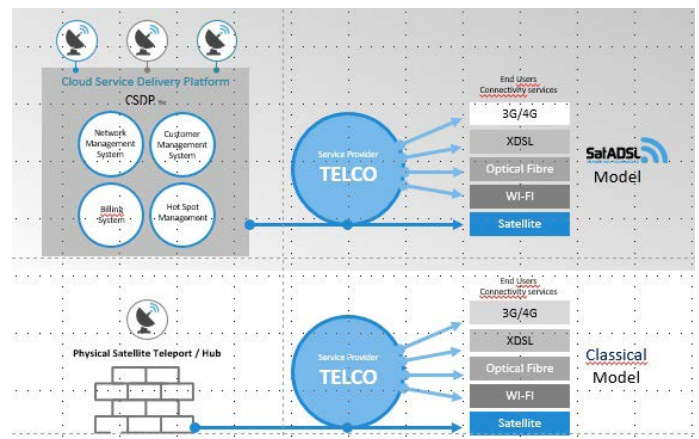
Hispasat to Expand HTS Capacity in Mexico on Gilat Platform

Hispasat has selected Gilat Satellite Network's platform for a multi-million dollar project to provide broadband commercial services in Mexico using Hispasat's Ka-band capacity on the Amazonas 5 High Throughput Satellite (HTS). Gilat's SkyEdge II-c uses HTS resources to deliver cost-efficient bandwidth. Hispasat selected the platform to commercialize the full

capacity of its Amazonas 5 Ka-band beams over Mexico, enabling Hispasat and its customers to offer services such as broadband internet services, Wi-Fi connectivity in semi-urban and rural locations, and mobility applications to government and private sector clients. "Gilat and Hispasat are cooperating in multiple projects around the globe, and we are now pleased to deploy Gilat's

SkyEdge II-c platform to maximize the benefits of our recently launched multi-beam Ka satellite, Amazonas 5," said Ignacio Sanchis, Chief Commercial Officer (CCO) at Hispasat. "Gilat's multi-service cost effective platform is ideal for business development for Hispasat and its clients in Mexico, enabling quick service expansion to a variety of vertical markets."

Satellite Will Play Integral Role in Reaching UN Commission's Goal of Broadband for All; Satellite is Ready to Support Commission's 2025 Targets of "Connecting the Other Half

The fact that nearly four billion persons around the world do not have access to internet connectivity is an oft-cited figure in the telecom industry. Even more noteworthy, nearly three-quarters of those unconnected are concentrated in just 20 countries. The satellite sector is providing a technology solution to address connectivity shortfalls with the launch of high-throughput satellites (HTS) such as the Intelsat EpicNG satellites. The performance of these satellites is delivering unprecedented reach and economics to telecom infrastructure providers around the world. HTS combines increased throughput and higher power with the traditional advantages of satellite that include ubiquitous and near-instant infrastructure. These new satellites are more efficient, delivering more data volume with the same bandwidth. Also, the higher power means the services can be delivered using solar-powered terminals with a reduced footprint – improving the operational profile over the life of the node. Combined with the unmatched reach of satellite technology and improved total cost of ownership, Mobile Network Operators (MNOs) now have a viable business case for delivering affordable broadband telecom services to populations in remote regions. Innovations such as HTS address the lack of broadband infrastructure needed to reach the unconnected. However, that is just one of the barriers to expanding the network. To fully connect the four billion – with benefits such as end-user affordability and user capability – requires a fresh approach and new business models. For example, Intelsat has worked with hardware partners to develop a solution to support MNOs' objectives to expand in hard-to-reach areas. The historical challenge in extending networks to remote regions has been the need to use diesel generators to provide consistent service levels, as power supplies are often either unreliable or non-existent. In those environments, maintaining equipment and securing fuel can be the most difficult and expensive part of network operations. With the higher power and

efficiency provided by Intelsat EpicNG, we are enabling the use of a comprehensive, solar-powered solution that delivers 2G, 3G and 4G solutions targeted to ultra-rural geographies. By solving challenges associated with deployment, cost and operations, MNOs can take advantage of the reach and security provided by satellite with smaller and less power-hungry equipment that can be carried by hand and installed by just a few people. Intelsat is also active in developing solutions that integrate satellite services into 5G solutions, such as planning terminals with integrated chipsets based on core wireless standards (3GPP). One of the other major challenges to reaching the more remote regions of the world is delivering fast, high-quality broadband connectivity that is affordable to the end-user and meets the MNO's business-model objectives. To help solve those issues, Intelsat is pairing our technology improvements with innovations in the ecosystem and developing service models that have the goal of expanding fast, high quality broadband access that is efficient, affordable and can meet the unique needs of the communities it wishes to serve. We are also working with partners to deliver unique and innovative connectivity solutions via Wi-Fi kiosks. One example is our work with Coca-Cola to bring satellite-enabled Wi-Fi services to remote communities. The Coca-Cola Company is already working in developing communities around the world to foster sustainable development activity such as supporting clean water and sanitation services – as well as economic empowerment for women. Under a new partnership with Intelsat, the Coca Cola Company will integrate satellite-based Wi-Fi access into certain retail facilities in rural areas, enabling personal and commercial connectivity

for citizens. The partnership will support both companies' business plans as well as their mutual efforts to promote sustainable development, especially in underserved communities. The kiosks themselves are managed by women entrepreneurs across several African countries. Our technology and business innovation efforts are part of our strategy to work with the entire telecoms sector to deliver broadband for all. In 2017, Intelsat CEO Steve Spengler joined the Broadband Commission for Sustainable Development, which is jointly managed by the International Telecommunication Union (ITU) and UNESCO (United Nations Educational, Scientific and Cultural Organization). The Commission combines the work of the public and private sectors to promote broadband in developing countries and underserved communities. This is a natural evolution for Intelsat, which has a rich history of working with both developed and developing countries to deliver fast, high-quality, reliable and secure broadband infrastructure that supports socio-economic growth and development in the communities it serves. The global broadband connectivity targets that the Commission issued in January are fully achievable by the 2025 goal. However, we realize that no single company or technology can serve as the sole solution. This will require cooperation and the creative thinking of all sectors – including governments, regulators, wireline networks, wireless networks and satellite providers. There could be no greater achievement than to connect the unconnected. As part of the UN Broadband Commission, we are committed to the UN's Sustainable Development Goals and look forward to continuing our work to serve the global community by providing universal access for all.

Iridium Selects First Land-Mobile Service Providers for Certus

Iridium Communications announced the first Iridium Certus service providers for land-mobile applications, planned for commercial availability in mid-2018. This initial group of six service providers will play a pivotal role in bringing Iridium Certus to market, which will deliver global broadband connectivity and voice service to the land-mobile industry. The initial Iridium Certus service providers for land mobile applications include: Applied Satellite Technology (AST), Arion Communication, Kaigai Communication, MVS USA, Network Innovations US, and Spacenet. According to Iridium, Certus will extend the reach of terrestrial and cellular infrastructure to support critical connectivity needs regardless of location, terrain and weather events. The service will feature a range of data speed options and will integrate with the Thales MissionLink terminal, providing a connection for voice, satellite internet, cellular data, Land Mobile Radio (LMR) and location-based applications. With Certus, customers will be able to control costs by eliminating the need to deploy expensive ground-based infrastructure or large, expensive directional terminals that rely upon Geostationary Earth Orbit (GEO) satellites, the company stated. "This flexible solution, when combined with the Thales MissionLink satellite terminal, allows customers to automatically transition between satellite and cellular infrastructure when paired with an LTE terminal," said Josh Miner, executive director for the land-mobile business at Iridium.

Gilat to Provide Satellite Platform for NBN Business in Australia

NBN Co and Speedcast have selected Gilat Satellite Network's satellite platform for its Business and Enterprise Satellite Service (BESS) for businesses in Australia. The BESS network solution will use the NBN Sky Muster Ka-band multi-beam satellites. Gilat technology is part of Speedcast's managed service offering to NBN, responsible for the supply, configuration and specialist operational support of the satellite network. The expected revenue for this project is tens of millions of dollars over a period of several years, Gilat stated. NBN Co's BESS project will assist Australia's regional and rural businesses growth through broadband connectivity to e-commerce and the global economy. This project will meet the demand for broadband bandwidth services for businesses and government customers, throughout regional and rural Australia, according to the company. Gilat's cloud-based distributed X-Architecture has been optimized for High Throughput Satellites (HTS) and will be integrated into NBN Co's 10 satellite-gateway infrastructure. Gilat's underlying multi-service SkyEdge II-c platform supports enterprise, cellular backhaul and mobility services. The platform delivers high spectral efficiency and optimized space segment via Digital Video Broadcasting-Satellite-Second Generation Extension (DVB-S2X) waveform and Gilat's Low-Density Parity-Check (LDPC)-based fast adaptive return access scheme. To increase the network resiliency the platform is deployed with gateway and data center diversity.

Sri Lanka to Launch 2 Communication Satellites

Sri Lanka is all set to launch 2 communication satellites for the very first time. The Arthur C. Clarke Centre stated that one nano-satellite will be launched next year with the assistance of Japan. The Centre further noted that the other satellite will be launched in 2020 with the assistance of Russia. The Arthur C. Clarke Centre is of the opinion that Sri Lanka should make more use of technology for the development of the country's agriculture, communication, irrigation and environment through these initiatives.

KhalifaSat Set for Launch This Year

KhalifaSat, the first satellite to be completely built by Emirati engineers, is set to be launched later this year following a series of rigorous tests. The announcement follows a visit by His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, to the Mohammad Bin Rashid Space Centre (MBRSC) to inspect the progress of the KhalifaSat project. Once in earth's orbit, KhalifaSat will provide detailed, high-quality images of earth for a variety of uses, such as environmental monitoring and urban planning, allowing the UAE to provide competitive services across the world. "Emirati engineers are the first in the Arab world to construct a satellite without foreign assistance. This is a major achievement that signifies the high level of capabilities UAE youth have acquired in space technologies," Shaikh Mohammad said. "The high level of expertise that Emirati scientists and engineers have developed creates a strong foundation for the future scientific and technological development of the UAE," he added. "We are confident that the nation's space industry sector will continue its strong growth, and emerge as a key component of our economy. The development of KhalifaSat is not only a source of pride for Emiratis and Arabs, but also a global achievement that will benefit humanity, and offers scientific solutions for development globally." At MBRSC, Shaikh Mohammad was welcomed by Hamad Obaid Al Mansouri, chairman of MBRSC; Major-General Talal Hamid Bel Houl Al Falasi; and Yousuf Al Shaibani, director-general of MBRSC, along with a number of senior executives of the space Centre. Shaikh Hamdan Bin Mohammad Bin Rashid Al Maktoum, Crown Prince of Dubai, posted a picture of Shaikh Mohammad's visit on his Twitter account. The picture shows Shaikh Mohammad surrounded by Emirati scientists and engineers taking a selfie together. "This picture tells a thousand stories ... The women story in UAE ... the youth empowerment ... the scientific achievements of our country ... the happiness in their eyes ... the leadership of HH ... the fatherly look in his eyes ... the future of UAE ... all in one picture," Shaikh Hamdan tweeted. Shaikh Mohammad toured the center and was briefed about the advanced features of KhalifaSat, which include an enhanced digital camera, satellite positioning system, faster download and communication, automatic satellite control system, and advanced target positioning system. KhalifaSat is the first satellite to be developed in space technology laboratories in the UAE entirely by Emirati engineers. It is the third satellite owned by MBRSC following the launch of Dubai-1 and Dubai-2. Once the manufacture and rigorous testing phases have been completed, the satellite will be transported to Japan for launch aboard the Mitsubishi Heavy Industries rocket, called H-IIA. When placed into a Low Earth Orbit of approximately 613km, the satellite will proceed to capture detailed imagery capable of competing with the highest industry standards. The images beamed back to earth by KhalifaSat will be among the most detailed commercially available, with a Ground Sample Distance (GSD) of 0.7m Panchromatic, and 2.98m GSD in four multispectral bands. The KhalifaSat project, launched by Shaikh Mohammad in 2013, is part of MBRSC's long-term strategy to encourage innovation, stimulate technological progress, promote sustainable development and create a generation of Emirati scientists and engineers who will contribute to a scientific renaissance and lead ambitious space projects over the next decade. The value of existing UAE space-related investments is more than Dh20 billion currently. In 2020, the UAE plans to launch Hope, a probe that will explore Mars atmosphere as part of the Emirates Mars Mission, led by Emiratis. The historic event will mark the first Arab mission to another planet. The mission will be executed by the UAE Space Agency with support from international partners. According to the mission's website, the probe will take nine months to make the journey to Mars, making the UAE to be one of only nine countries with ambitions for Mars. The mission is scheduled to arrive in 2021 to coincide with the 50th anniversary of the establishment of the UAE. The country's investments in the space sector includes the satellite data and TV broadcast company Al Yah Satellite Communications, mobile satellite communication company Thuraya Satellite Telecommunications, and earth mapping and observation system DubaiSat. In earth's orbit, the UAE has already launched four spacecraft: DubaiSat-1 and DubaiSat-2 (imaging satellites) and Yahsat Y1A and Yahsat Y1B (communication satellites).

OmniAccess Begins Testing Telesat's First LEO Satellite

Telesat announced it will cooperate with OmniAccess to conduct live, over-the-air trials on the operator's new Low Earth Orbit (LEO) satellite system. After one failed launch on a Soyuz 2 in November, Telesat successfully launched its Phase 1 LEO satellite in January on a Polar Satellite Launch Vehicle (PLSV). The spacecraft is now undergoing commissioning and orbit-raising. Telesat's LEO constellation, once fully deployed, will

deliver low latency, fiber-like broadband for commercial and government users. The initial constellation will consist of approximately 120 satellites launched by 2021 that will provide full global coverage. The company's Phase 1 testing will demonstrate key features of Telesat's LEO design and enable Telesat to match system performance with the projected requirements of customers like OmniAccess, in terms of both network operations and capacity needs. Telesat has installed ground infrastructure at its teleport in Allan Park, Ontario in Canada to support testing. According to the company, its customers in growing enterprise segments are eager to participate in trials during 2018. Telesat was the first satellite operator to provide bandwidth to OmniAccess. Recently, Marlink acquired OmniAcccess to

improve its position in the maritime Very Small Aperture Terminal (VSAT) market. "Since 2010 Telesat satellite capacity has enabled OmniAccess to deliver a superior broadband experience to our superyacht and cruise ship customers," said Bertrand Hartman, OmniAccess Chief Executive Officer (CEO). "But to keep pace with customer demands, we need fiber-like performance around the world — far more capacity with ultra-low latency at lower costs. This led OmniAccess to undertake a careful review of both existing and planned satellite systems in Geosynchronous Earht Orbit (GEO), Medium Earth Orbit (MEO) and LEO. Based on this evaluation, OmniAccess believes that Telesat's innovative LEO system design can provide an optimal broadband experience for our demanding customer segments."

Thuraya Ups its M2M Game with New T2M-DUAL Terminal

Thuraya Telecommunications Company has announced the launch of its Thuraya Tracking and Monitoring (T2M) service in conjunction with the launch of the first product release of the year, the T2M-DUAL terminal. A mobile, dual-mode device for Machine-to-Machine (M2M) communications and remote asset tracking and monitoring, the T2M-DUAL enables the simultaneous collection of data from multiple points including location information, data from external sensors and peripheral devices, and input gathered from vehicle or heavy equipment CANBus, the company stated. Thuraya has aimed the T2M-DUAL terminal for projects in

sectors such as transportation, logistics, energy, utilities, agriculture and mining. The solution integrates to applications that are traditionally more complex to manage and monitor, according to the company, such as vehicle tracking and fuel consumption, thereby resulting in operational efficiency. The T2M-DUAL terminal has several built-in smart features such as geo-fencing, network selection based on least cost routing, internal battery backup and location and sensor data. With dual-mode capabilities, T2M-DUAL ensures that connectivity is automatically maintained as assets move between regions covered by GSM and those that lie beyond the confines of

cellular networks — under the coverage of Thuraya's satellite network.

ARTICLE

2018: The Middle East Telecom IndustryAdvances into the Digital Era

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strategy&

In the coming year, the Middle East telecom industry must press ahead with digital transformation. Although the Middle East telecom market has reached its peak, and is even contracting in some countries, regional operators are positioned to reverse this trend in 2018 with four key strategies. They must accelerate the building of digital capabilities, scale-up their adjacency ventures through acquisition, push forward efficiency programs, and advance in building partnerships with their regulators.

The dynamics in the regional telecom market throughout 2017 have been challenging. The market is saturated. Mobile penetration has reached 120%. Along with the economic slowdown and reduction in the expatriate population, the growth in mobile subscribers has reached its lowest ever rate, just 1% year-on-year in 2016 compared to around 6% in 2014.

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The only remaining avenue for growth within the current business is the ever-growing thirst to consume content via the Internet, with operators fighting for market share in aggressive price wars. However, the market is also more open. Some regulators have liberalized access to Internet services such as WhatsApp Voice, accelerating customer substitution of apps for operator-run voice

services. This has contributed to cutting blended average revenue per user (ARPU) by approximately 25% since 2014, slowing the revenue growth in large telecom groups to an aggregate 1% year-on-year. Similarly, cash margins have declined to around 16% in 2017 from 25% in 2014, putting strain on the economics for further investments. Middle East operators remain among the most profitable globally, with earnings before interest, taxes, depreciation, and amortization (EBITDA) margins at 37% versus 30% globally. Still, these are below the 41% achieved in 2014, and dropping. Operators must not simply accept this reality. Four responses are essential and expected in 2018.

In Europe, operators have formed large procurement joint ventures to control costs. Although such alliances are still far off in the region, operators will likely form their own subsidiary tower companies to achieve significant efficiencies.

First, accelerate digital transformation. Operators should transform their core business by building a new value proposition and capabilities to differentiate their offering. Successful digital transformations have already enabled telecom operators throughout the world to boost customer loyalty and cost efficiencies.

Regional operators will focus on fundamentally revamping the entire customer journey of their core business. Initiatives will include innovative and simple telecom value propositions, pricing models that engage the customer, and highly capable chatbots (software which talks live with customers). In tandem, they need new pricing models based on data and usage.

Regional operators have some catching up to do. They have contributed a little over 1% of the total activity in mergers and acquisitions by telecom operators globally. Moreover, less than 2% of regional investments to date have focused on scope expansions, versus 35% on a global scale since 2010.

Second, pursue focused adjacency acquisitions. Operators will follow the trend in other regions and seek revenue streams through acquisitions in adjacent and new industries. For example, Verizon acquired Yahoo! for $4.5 billion and Orange purchased a 65% stake in Groupama Banque in France to launch a digital-only bank. Operators will seek opportunities in the growing information and communications technologies sector and look at innovative small and medium-sized technology players in the region and globally. There are limited opportunities available for scale-based expansions—when an operator buys another operator. Instead, we expect scope investments designed to expand the offerings and capabilities of existing operations. Precursors of significant investments to come include the establishment of STC's $500 million technology fund in 2017 and the company's purchase of 10% of ride hailing service Careem for $100 million. Other examples include Zain Group's investment in iflix to launch a regional internet TV service and Etisalat's setting up of a digital arm to expand into the Internet of Things (connected devices and sensors) and other digital services.

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Third, keep getting fit. Enabling digital will lead to cost reduction, as will a simplification of offerings, and an improvement in sales channels operations. Operators must also accelerate efficiency programs so they can finance network investment in 5G (the next faster, higher capacity wireless standard) planned for 2020. In Europe, operators have formed large procurement joint ventures to control costs. Although such alliances are still far off in the region, operators will likely form their own subsidiary tower companies to achieve significant efficiencies.

Fourth, build partnerships with regulators. This means allowing demand and supply to regulate the market rather than an anticipatory approach that limits investments and market development. Operators need permission to expand into adjacent and new industries such as mobile payments, healthcare, and drone operations. A dialogue with regulators can ensure a healthy investment environment and engage outside Internet players to make a commitment to Middle East markets. Government levies on the sector should encourage operators to invest, contribute to economic growth, and advance national development goals.

Telecom operators have reached a crossroads. Rather than endure an inevitable shrinking of the market, they have the opportunity to pursue far-reaching strategies and build a path towards a promising future.

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WHOLESALE NEWS

Bangladesh Revises International Incoming Call Termination Rates

The minimum rate has been re-fixed at $0.0175 and maximum at $0.0250, according to a letter sent the telecom regulators sent to the mobile phone, IGW and ICX operators. It said the new rates go into effect immediately. The minimum international incoming call termination rate was $0.015 and maximum $0.035 until now. The BTRC letter says state-owned BTCL and all other International Gateway or IGW operators will terminate international calls at maximum rates within the fixed rates. Otherwise, the letter says, it will be considered as a move to bring fewer foreign currencies to the country and the BTRC will take help from the Bangladesh Bank. The mobile-phone

operators say the revision of the rates has created more opportunity for the IGW operators to increase their profits. They also fear this will reduce the number of international calls and increase calls made on over-the-top (OTT) apps like Viber and WhatsApp. BTRC Chairman Shahjahan Mahmood, however, told bdnews24.com, "It (revision) is kind of an experiment. BTRC can revise the rates anytime it wants." The IGW operators were getting $0.005 extra from every international call after the IGW Operators' Forum raised the rate to $0.02 in 2015. The government, Interconnection Exchange or ICX operators and mobile-phone operators were getting their share as per the $0.015

rate. The government in a report last year said number of daily calls dropped from 110 million to 75 million, causing nearly Tk 20 million in lost revenues. Currently, the BTRC gets 40 percent of the revenue from international call termination, IGW operators 20 percent, ICX operators 17.5 percent ANS receive 22.5 percent. Several top officials of mobile-phone operators, requesting anonymity, told bdnews24.com it may appear from the revision that their and ICX operators' shares in revenue will rise, but that is not case. They say the IGW operators will now hike the incoming call termination rate to $0.025, which will hit the number of calls and amount of revenue.

CNMC Confirms Plans to Slash MTRs by 40% by 2020

Spain's National Commission for Markets and Competition (Comision Nacional de los Mercados y la Competencia, CNMC) has confirmed that mobile termination rates (MTRs) will be cut from EUR0.0109 (USD0.0130) per minute to EUR0.0064 per minute by 1 January 2020. The

current MTR has been in place since July 1, 2013. As per the glide path set out by the regulator, MTRs will decrease to EUR0.0070 on 1 February 2018 – equivalent to an immediate reduction of 36%, before dropping to EUR0.0067 on 1 January 2019, and then EUR0.0064 on

1 January 2020. The CNMC notes that MTRs in Spain will be among the lowest in the EU, which it says presents an average price of around EUR0.0088 per minute. Over the last decade, the price of mobile voice calls in Spain has dropped by about 80%, the watchdog adds.

Mobile Termination Fees Plummet 42% in OECD Countries

Mobile termination rates plummeted by an average of 42 percent in the 35 OECD countries between end-2014 and end-2017 as a result of increased regulation and competition, according to a new report from the Organization for Economic Cooperation and Development. The prices operators charge each other to connect calls fell across the board in the OECD area, led by Mexico (-84%), Hungary (-80%) and Ireland (-73%). Termination rates are currently highest in Switzerland, whereas in the US a new system known as "bill-and-keep" has resulted in Operators rates being reduced to zero, said the report.

>> Mobile termination rates have dropped 42% in three years in OECD countries
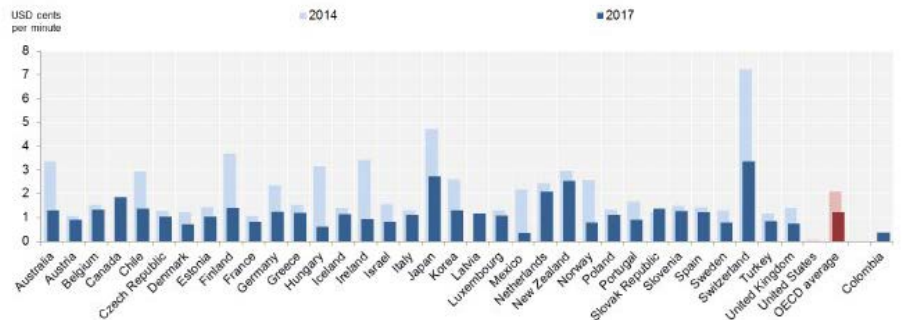
Get the latest OECD broadband statistics at
oe.cd/broadband

VIVA Launches Free Internet Roaming Offer during February

VIVA Kuwait launched new internet roaming offer during February, celebrating the National and Liberation Days. This new offer allows all VIVA's customers to enjoy "free" internet roaming 500 MB in the GCC, Egypt, Turkey, Iraq and Jordan, by simply sending "f" to 102.bIt's worthy to note that VIVA's roaming internet plans give customers unlimited internet in the GCC, Egypt, Turkey, Iraq and Jordan for 3 Days, 7 Days and 30 Days successively for KD 5, KD 7 and KD 18. For the rest of the world, 500 MB, 1 GB and 2 GB internet plans for the same prices. Customers can benefit from add-on service for discounted rates once they consume their quota for KD 5 and 7 plans. These new plans offer postpaid, prepaid and data customers, ease and flexibility during their travels outside Kuwait to meet their roaming needs. Customers can subscribe to any of these plans

by sending an SMS "i" to 102. To find out more about the new roaming plans, customers can visit one of VIVA's 89 branches, or VIVA's official website at www.viva.com.kw , or access round the clock assistance from team of specialists available on the VIVA's customer care line 102.

NBN Co Partners with Speedcast to Deliver Satellite-Based Wholesale Business Services

NBN Co, the company overseeing the construction of Australia's National Broadband Network (NBN), has struck a deal with Speedcast International Limited with a view to delivering wholesale business and enterprise satellite services to regional and remote Australia. Announcing the partnership, NBN Co said it had enlisted Speedcast's wholly owned subsidiary, Speedcast Managed Services, to develop wholesale business-grade

satellite broadband services using its Sky Muster satellite platform under a ten-year contract valued at AUD184 million (USD146 million). The deal will reportedly involve the design, build and management of the network and service operation of the new platform. NBN Co's two Sky Muster satellites – which launched in October 2015 and October 2016, respectively – have been designed to provide access to 240,000 active services in regional and

remote Australia. The company noted that there are currently around 84,000 active customers using its satellite-based services, with around 1,000 new accesses being added each month. According to NBN Co, the provision of wholesale business-grade services over its satellites will be complementary to its existing retail offering, and its enterprise-level services are expected to be available by early 2019.

TDSAT Orders TRAI to Clarify Pricing Rules

India's Telecom Dispute Settlement and Appellate Tribunal (TDSAT) has issued a judgement directing the telecom watch-dog to clarify and update regulations regarding tariff setting to ensure that pricing is sustainable and fair. TDSAT's judgement bundled several appeals from Bharti Airtel and Idea Cellular against the Telecom Regulatory Authority of India (TRAI) regarding the agency's handling of the launch of Reliance Jio Infocomm (Jio), in particular its controversial 'Welcome Offer' and 'Happy New Year Offer', which provided customers with unlimited free services. TDSAT supported the TRAI's decisions – although Jio was found to have failed to comply with certain reporting requirements – but acknowledged that the current 'open-ended' provisions regarding tariff setting are potentially problematic. To amend the issues, the TDSAT has ordered a temporary

halt to 'all services free' plans without prior approval from the TRAI. In addition, the TRAI was ordered to establish clear guidelines for performing a self-check regarding compliance with interconnection usage cost (IUC) rules – i.e. that the proposed tariff does not create a substantial expenses gap during the planned period – alongside the development of clearer regulations regarding predatory pricing. At present, tariff setting is 'under forbearance' and requires operators to self-check for consistency with the regulatory principle of compliance with IUC rules. The tribunal noted that whilst Jio's offers were extreme cases of 'below-cost' tariffs, the comparatively short duration of the promotions meant that they were still consistent with the principle of IUC compliance. However, TDSAT added that it wished to 'red flag' the issue, pointing out that the current provisions make ver-

ification with IUC compliance 'difficult, if not impossible.' Regarding predatory pricing TDSAT noted that the existing rules are ambiguous, relying on the operator to hold a dominant position for a plan to be classified as predatory. Jio's VoLTE-based voice services muddied the water somewhat in relation to significant market power (SMP) designations, however, and at the time of making its decisions the TRAI did not have the necessary data to determine whether Jio had SMP. Regardless of the SMP complication, however, TDSAT's judgement pointed out that the TRAI has not set a benchmark or guideline to determine when a below-cost tariff would become predatory and thus require action. Consequently, the TRAI was directed to issue a suitable direction or regulation regarding guidelines for ascertaining consistency with principles of non-predation.

FAS Drops National Roaming Case against Beeline

Russia's Federal Antimonopoly Service (FAS) has terminated a case against cellco Beeline regarding domestic mobile roaming charges, as the operator voluntarily eliminated violations of antimonopoly legislation, TelecomDaily reports. Beeline may still be liable for a fine, the level of which will be established after the completion of administrative proceedings. FAS' similar cases against Mobile TeleSystems (MTS) and Tele2 Russia will be considered on 22 February, whilst the case against MegaFon has been postponed until 6 March. As previously reported by TeleGeography's CommsUpdate, the FAS extended a deadline for mobile network operators to cease charging their users additional fees for on-net 'roaming' between regions of the Federation, from 15 August to December 15, 2017.

Peru Watchdog Approves Single Mobile Termination Rate

Peru's telecommunications regulator Osiptel has approved the application of a single mobile termination rate for the year 2018. The watchdog said all operators will have to pay USD 0.00661 (before taxes) a minute for connecting to a rival network, with the interconnection rate to be revised on an annual basis rather than every three or four years. The new rate is significantly less than the previous asymmetric fee of USD 0.0176 a minute (after taxes) payable by Claro and Movistar and USD 0.0199 a minute payable by Entel and Bitel. Osiptel said it expected the new rate to have a favorable impact on mobile tariffs and ultimately benefit users.

NCC Holds Forum on Mobile Voice Termination Rates

The Nigerian Communications Commission has said it will host a stakeholders' session for the presentation of findings on the cost-based study for the determination of mobile voice termination rates in Nigeria. The NCC said in a statement that the stakeholders' forum had been scheduled to hold on February 1. The statement said the cost-based study conducted by PricewaterhouseCoopers would be unveiled to stakeholders at the forum in Lagos. The forum will avail stakeholders the opportunity to listen to the findings of PwC in the study and discuss issues of concern to all parties, the statement said. The statement added that the forum would serve as a prelude to the release of the study report and the determination of the mobile termination rates by the commission. According to the commission, the Executive Vice Chairman of the NCC, Prof. Umar Danbatta, and other directors of the commission will host stakeholders at the forum.

For illustration purposes only

Proving scientific predictions can take centuries of trial and error

Exploration
never stops at failure

Perseverance enables the commitment to build
the foundation for future technology

HUAWEI

ARTICLE

5G will Unleash the Power of New Technology

Lan Yun
CNBG President
Huawei ME Region

The revolutionary potential of 5G is not yet fully understood by the public. While the switch from 3G to 4G was mostly a matter of increased speed, the rise of 5G will unlock the potential of a flood of new technologies. From self-driving cars to virtual reality, from Internet of Things to drones, 5G has the power to propel the Middle East forward on its path to digitalization.

The potential of 5G is huge, but there remain obstacles to its widespread implementation. Telecom operators need to strengthen network performance and management. Future networks need to be application-centric, data-driven – and eventually, intelligent.

All industries are now adopting digital technology and artificial intelligence. Not just manufacturing and agriculture, but also service industries like livestock management, logistics, and public safety. Mobile is the enabler of this process – the foundation of digital transformation. The telecom industry is the pillar on which the intelligent world will be built.

Today, there are 20 million shipping containers in the world, and 300 million LED streetlamps. There will be 1.8 billion water meters by 2025, and every year, 100 million new bicycles roll off the factory floor. "Each of these is a potential new subscriber," remarked Hu Houkun, Huawei's rotating CEO, at the 2017 Mobile Broadband Forum in London. The day when all machines are constantly connected and communicating is near. And the development of 5G will play a key role in ushering in this day.

5G is necessary for Middle East to progress in digital transformation. Already the development of 4.5G is making an impact in key regional initiatives: 4.5G Narrow Band-M2M is enabling the development of smart cities. The technology can provide smart intelligence within the city to optimize the daily use of energy (for example through

remote control of public transport systems), guarantee better public safety (through video surveillance in streets) or leverage an efficient smart metering system.

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4.5G is transition stage to reach 5G, which will truly revolutionize the world. Huawei identifies 15 typical services scenarios in which will 5G closely impact our daily lives. These include: ultra HD video, virtual reality, self-driving cars, and the deployment of drones. These are not futuristic fantasies: 5G might be commercialized by 2020. It is estimated that by then, 6.5 billion people worldwide will use mobile networks for data communications and that 100 billion additional 'things', such as vehicles, home appliances, and medical devices, will also be connected via mobile networks.

The potential of 5G is huge, but there remain obstacles to its widespread implementation. Telecom operators need to strengthen network performance and management. Future networks need to be application-centric, data-driven – and eventually, intelligent.

Experience is becoming a bottleneck that plagues broadband development and operators need to provide better experience to meet the needs of individuals, households, enterprises, and the future intelligent world. By increasing the efficiency of broadband investment and shortening its payback period, operators can achieve sustainable development. Huawei will work with global operators and partners across the broadband industry to build a new industry ecosystem based on quality broadband.

Governments in the Middle East can also take steps to promote widespread implementation of 5G. They must set in place a regulatory framework that enables telcos to pursue a "scale-out and scale-up" approach. First, telcos must scale out to provide more connections. This will generate revenue, and pave the way for scaling up. Next, they can work with partners to develop value-added services based on the specific needs of industrial applications. This is the "scale-up."

Telcos can begin now by accelerating deployment of 4.5G and NB-IoT to boost network performance and pave the way for 5G. Then they need to take a look at how to improve their Operations & Management. From O&M to service provisioning, Huawei wants to build networks that are automated, self-optimizing, and self-healing, with the ultimate goal to reach full autonomy. This will drive an exponential increase in efficiency and resource allocation across the board. Huawei is already developing predictive maintenance systems for network sites. With operational data and A.I., we can predict up to 50% of network faults, helping our customers reduce network failure rates by 20%.

Huawei Wireless X Labs recently released a white paper on the Top Ten 5G Use Cases. By analyzing multiple dimensions like industry reliance on 5G, business value, and service maturity, the white paper identifies ten of the most promising 5G use cases, leading the future direction of the 5G industry. The white paper focuses its analysis on industry reliance on 5G and

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industry value in the 5G era. According to the white paper, industries requires higher bandwidth and lower latency will be more reliant on 5G; and the larger the market space is, the more commercial value a service can deliver. For example, as the computing and storage resources of cloud VR/AR are located on the cloud, we need a network that can provide the 5ms latency and 9.5Gbps bandwidth to guarantee a high-quality experience. The white paper also predicts that by 2025, the market volume of cloud VR/AR will be USD 292 billion. Carriers can benefit from this huge commercial value.

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These opportunities are real. But to seize them, we need a new model. The global broadband industry used to benefit from its large user base, but now, the industry has moved into an era in which it can monetize experience and data. According to statistics from the International Telecommunication Union, global broadband penetration increased from 18% in 2006 to 52% by the end of 2016. Leading global operators are actively accelerating their deployment of high-speed broadband networks. So far, more than 350 operators have launched gigabit services, further consolidating their leadership positions in broadband services. As we enter an intelligent world, broadband will be more than network connections; it will become a cornerstone of the intelligent world.

Vision to reality: what Huawei is already doing in 4.5-5G
Huawei is already taking an active role worldwide to bring 5G from vision into reality. By the end of August 2017, Huawei has deployed 105 4.5G networks worldwide, accounting for nearly 70% of the global total. Here are some highlights

of our 5G achievements across the globe:

- For the first time in the industry, Huawei has proposed the five stages of cloud-based VR/AR applications and joined hands with partners to develop 5G cloud-based VR prototypes.
- Huawei has become the first in the industry to complete 5G-based Tele-operated driving (ToD), fleet driving test and LTE-V based autonomous driving test.
- Large-scale business deployment has begun as Huawei forges ahead with NB-IoT application incubation with more than 600 manufacturers in more than 40 industries: bike sharing (ofo, Mobike), home appliances (Haier, Little Swan), logistics (DHL), dairy testing (AOTOSO), smoke detection (HOTHINK), smart door locks (Dessmann), fuel gas (Fiorentini, GoldCard), water meters (Ningshui, Huizhong, Sanchuan), street lamps (Philips, Telchina, Towins), ammeters (Janz, Holley Metering), parking (Fangle, InnoTek), and wristbands (Oviphone).
- Huawei achieved the best air interface test result to secure industry-leading dominance. Using 200 MHz bandwidth on the C-band, the downlink cell peak rate exceeded 32 Gbps. Huawei

assumed the initiative to integrate all key 5G New Radio (NR) technologies. These include f-OFDM, new frame structure, new codes (such as Polar Code), new parameter sets, Massive MIMO, and SCMA.

One of the immeasurable values of the birth of 4.5G is that it gives clear direction to operators and businesses as they grow their digital footprint. It's one standard that builds on existing investments and paves the way for future innovations. It helps that current 4G networks are widely deployed in the Middle East with LTE-Advanced even being commercialized this year. Leading operators in the UAE, KSA and Kuwait have already announced plans for 4.5G networks to be commercialized as soon as the standards are released by industry regulators. At Huawei, was have been working with these regulators and local operators on a 4.5G vision that leverages experiences in LTE systems and which taps the $600 million that we've already allocated for 5G research by 2018.

Beyond developing the technology itself, the telecom industry needs to ensure the mobile ecosystem is able to nurture the implementation of 5G. In the past,

we focused on connecting people. That was like planting a single tree. Now we're connecting things. That's like planting an entire forest. We have to integrate with the ecosystem, and build it out together. Huawei will work with partners and governments in the Middle East to achieve widespread 5G connectivity and Build a Better Connected World.

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HUAWEI 5G THE ROAD TO A SUPER CONNECTED WORLD
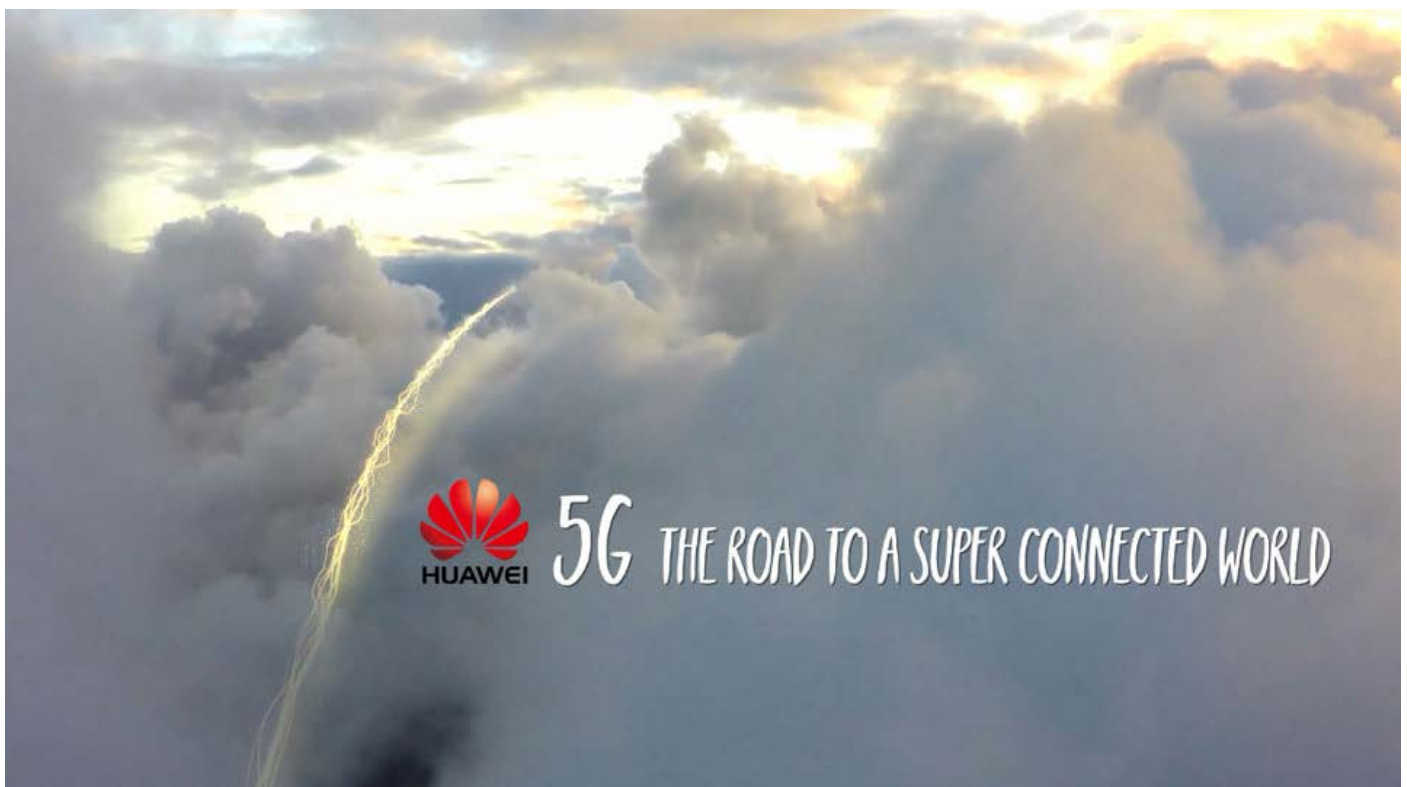
TECHNOLOGY NEWS

Vodafone and Huawei Test Viability of IP Microwave Link for 5G Backhaul

UK-based Vodafone Group and Chinese vendor Huawei have completed lab tests which the pair claim indicate that traditional IP microwave links could be a viable technology for 5G backhaul. In a blog post regarding the development, it was revealed that a trial conducted by the two companies had tested both the capacity and latency that could be achieved using a traditional IP microwave link. The tests reportedly showed that it was possible to deliver up to 2.7Gbps capacity from a single IP microwave link, aggregating 2×112MHz channels in a single vertical or horizontal polarization. According to the pair, the development marks the first time that a single radio frequency (RF) outdoor unit had been capable of reaching over 2Gbps in a single polarization. Commenting on the development, Eva Rossi, Head of Transport Product at Vodafone Group, said: 'These tests demonstrate the feasibility of

utilizing microwave technology, as well as fiber, for effective 5G backhaul. As such, the results of this test are extremely positive for Vodafone as we prepare for the launch of commercial 5G services in the years ahead.' In terms of next steps, meanwhile, Vodafone and Huawei plan

to test whether it is possible to achieve 4Gbps total capacity in one box with the support of dual polarization, while the duo will 'also continue to innovate in microwave technology with the target to further improve the distance that Multi-Band and E-band links can transmit'.

AT&T Reveals First 5G Launch Cities

AT&T aims to bring mobile 5G services to parts of Dallas; Atlanta; and Waco, Texas by the end of this year, as the operator updated on its goal to launch the technology in a dozen cities across the US in 2018. In a statement, AT&T said the three cities will be among the first to launch mobile 5G services, a plan first announced in January, and added it will

announce additional launch cities in the coming months. As part of the planned rollout, the company also revealed it is opening a new 5G lab in Austin, Texas, "to help us meet this aggressive timeline for mobile 5G deployment". One of the first in-house projects at the lab is the "Advanced 5G NR Testbed System (ANTS), a 5G testbed system that is proprietary

to AT&T". The operator said ANTS will allow it to test features on a simulated 5G network "for eventual standardization and use on our commercial networks". "By re-creating a physical 5G radio environment in our labs, we have greater control over what is deployed to customers," AT&T added. AT&T said its initial mobile 5G deployments will be based on 3GPP standards and operate over mmWave spectrum to provide mobile 5G in some areas, and then deploy the technology on additional spectrum bands. Up until AT&T's announcement in January, it had appeared US operators were focused on fixed-wireless 5G launches for 2018 rather than mobile. Indeed, questions still remain about AT&T's planned launch. It is, at this stage, unknown which devices will support mobile 5G this year, while rival T-Mobile US blasted the plan, highlighting unanswered questions around device availability, spectrum and footprint.

AT&T to Launch **Mobile 5G in 2018**

Mobile IoT Hits 41 Networks; NB-IoT Leads LTE-M

Momentum behind low power wide area technologies (LPWA) continues to grow, with more than 40 LTE-M and NB-IoT networks deployed globally and the latter standard chalking up the most number of rollouts, industry association GSMA announced. In a statement, the association revealed 23 mobile operators have commercially launched 41 licensed LPWA networks across 26 countries to-date, less than two years after the low power IoT technologies were standardized by 3GPP in June 2016. Providing a breakdown of deployments, GSMA said 32 NB-IoT networks have been launched and nine LTE-M networks. Among some of the major worldwide deployments, US operators AT&T and Verizon have rolled out LTE-M networks nationwide, while NB-IoT proved more popular with European operators. China's big three – China Mobile, China Unicom and China Mobile – are also seeing rapid growth in IoT connections through NB-IoT. GSMA CTO Alex Sinclair tipped 2018 to be the year "that mobile IoT networks will scale". "We have seen huge growth in the availability of commercial networks by licensed spectrum and anticipate seeing many more launches this year," he said. Sinclair also appeared to shrug off the competition the market continues to face from non-standardized offerings, such as those developed by proprietary IoT player Sigfox and the France-based LoRA alliance. "Mobile IoT networks are fast becoming the de facto global IoT solution, as only licensed, managed

mobile services can provide the secure low power connection that can meet future demand," he added. GSMA Intelligence forecast there will be 3.1 billion cellular IoT connections by 2025, including 1.8 billion licensed LPWA connections. The GSMA added mobile IoT growth is being supported by its IoT lab initiative, and an expanding community of more than 800 organizations participating in the association's Mobile IoT Innovators Community. There are now 34 IoT Labs in operation around the world, which are available to any operator, module vendor or application provider to develop LPWA devices and applications for a wide variety of different verticals.

# Vodafone Spain, Huawei Claim 'First 5G Call in the World'

Vodafone Spain has teamed up with Chinese vendor Huawei to stage what the two parties claim is 'the first 5G call in the world'. The call – between Castelldefels in Barcelona and Madrid – adhered to

the standard commercial specifications approved by industry standards body 3GPP in December 2017, and utilized spectrum in the 3.7GHz band. The test also demonstrated a 'dual 4G-to-5G

connection', which the companies say will be an important facet of 5G network technology, assisting with the control and management of data traffic.

DT, Intel, Huawei Achieve 5G Interoperability in Operator Environment

Deutsche Telekom (DT), Intel and Huawei have achieved what they claim to be the world's first 5G interoperability and development testing based on the 3GPP R15 Standard with a commercial base station in an operator lab environment. The test involved Huawei's 5G commercial base station and Intel's third generation 5G NR Mobile Trial Platform (MTP), and is said to be a critical step towards the early development of full commercial 5G equipment in 2019. The test configuration is based on the largest C-band cell bandwidth defined by the 5G NR standard and also incorporates the latest Massive MIMO multi-antenna and beamforming technology enabled by the standard framework. 'The success of this
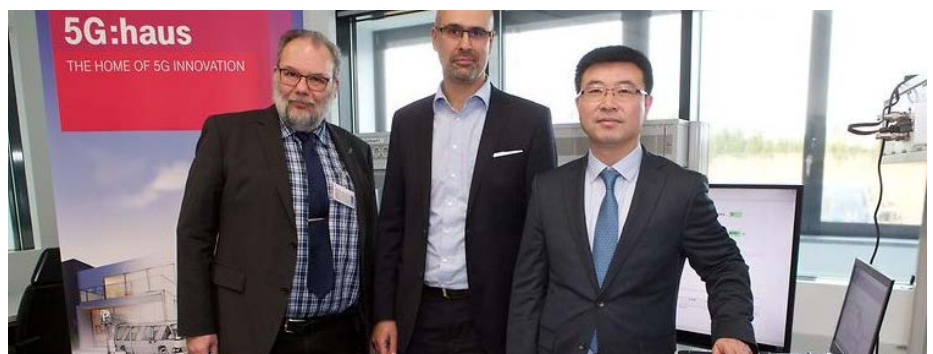
testing in Bonn shows that DT, Intel and Huawei continue to work closely to drive the commercial readiness of 5G NR,' said Yang Chaobin, President of Huawei's 5G product line, adding: 'As the standard continues to be updated, Huawei will

continue to work with all parties to step up additional interoperability tests and promote the 5G industry maturity process and to welcome the arrival of the entire industry digitization.'

Operators Must Sharpen Their Focus on 5G Security

With 5G opening the door to a whole host of new, ambitious technologies, network operators must ensure that they invest sufficiently in securing their 5G infrastructure or risk catastrophic consequences. Operators must do more to ensure the security of their networks in the run up to the launch of 5G, according to industry experts. Speaking exclusively to journalists at a pre-Mobile World Congress briefing in London this week, Steve Buck, product director at Evolved Intelligence, said that the industry needed to open its eyes to the potential disaster that unsecured 5G networks could bring. "For 5G, security is even more fundamental [than it was for previous generations]. You simply can't be talking about driverless cars, smart surgery and IoT technology, without talking about the security side of things," he said. The 3GPP and the GSMA are currently in the process of defining the standards for its SEPP box – a device that will act as a gatekeeper for 5G networks, providing a bedrock upon which network security is built. The technology is still 12-18 months from being finalized, but Buck emphasized the importance of waiting for SEPP before 5G networks are connected. "It's essential. We need to plan now because security cannot be retrofitted," he said. Despite this warning, Buck believes that operators will rush out 5G services before SEPP is available, leaving their networks open to a whole host of pernicious attacks. "Unfortunately, bragging rights and commercials overcome security every time – or at least they have done with the launch of every other generation we've witnessed,"

said Buck. Buck argues that security for 5G networks needs to be that much higher than previous generations because of the scale of the applications that will be being used. For example, an unsecured 4G network means that someone could potentially steal your private information or extort money from your bank account. Unsecured 5G networks could open the door for malicious interference on a new scale, with driverless cars and medical advances such as remotely monitored smart kidneys and bio implants, ripe for attack. "If someone hacks into your bank account that's bad enough, but consider the implications if someone could hack into your smart kidney," he added. Steve Buck will be taking part in the "5G reality check" conference session at Mobile World Congress, in Barcelona.

2Gbps Speeds Achieved in Live Demo by Telstra and Partners

Telstra, Ericsson, NETGEAR and Qualcomm Technologies claim to have achieved 'record-breaking' 4G speeds of up to 2Gbps in lab testing by using a new commercially announced chipset. Detailing the development, the companies involved noted that such speeds had been made possible by aggregating five 20MHz LTE carriers across three different frequency bands, with each carrier using 4×4 MIMO and 256 QAM technologies,

and by using Ericsson's Baseband 6630, Radio 4415, and latest Gigabit LTE network software. According to a press release regarding the test, the technology demonstration aggregated 100MHz of spectrum across bands 1 (2100MHz), 3 (1800MHz) and 7 (2600MHz), using a NETGEAR Nighthawk mobile router equipped with Qualcomm Snapdragon X24 LTE modem. Commenting on the matter, Joakim Sorelius, Head of Product

Area Network Systems at Ericsson, said: 'We're pushing the boundaries of technology and providing unprecedented advances in LTE evolution by breaking the 2Gbps-barrier with our partners. This technology advancement will enable faster mobile broadband speeds and greater network capacity for all subscribers.'

T-Mobile Trials 5G Standard in Innsbruck

T-Mobile Austria has installed two tower sites in Innsbruck to stage a live trial of a pre-version of the final 5G standard, achieving transmission rates of 2Gbps and a latency of three milliseconds. For the trial, T-Mobile used frequencies in the 3.7GHz band, with the 5G end-to-end network system provided by technology partner Huawei and 640km of fiber-optic infrastructure operated by the Innsbruck municipal utilities.

Gunther Platter, governor of the Tyrol province, said: 'I am very proud that Tyrol is a pioneer in digitization. With our broadband initiative, we have laid the foundation for the future expansion of the 5G network. I am particularly pleased that Innsbruck is becoming a first pilot region. In the future, the state of Tyrol would like to launch a task force with all operators in order to accelerate the 5G rollout.'

Singtel, Ericsson Achieve 1Gbp Speeds on Quad-Band FDD/TDD CA Network

Singapore operator Singtel reports it has achieved 1Gbps mobile peak speed using Ericsson's quad-band FDD/TDD Carrier Aggregation (CA) service. Following the successful trial, Singtel plans to progressively roll out this service at key high traffic locations such as Orchard Road, Raffles Place, Tanjong Pagar and Clarke Quay. Handsets supporting the 1 Gbps speeds offered by quad-band FDD/TDD CA are expected to be available from the second half of this year. According to Singtel, its existing smartphone users can access, up to 20 percent faster mobile broadband speeds on average, as Singtel deploys Ericsson's Bandwidth-Aware CA feature, which aims to help operators to manage spectrum more efficiently, as well as support customers' smartphones to automatically select the best spectrum band combination available.

Orange Announces Europe 5G Test Plans

France-based Orange Group has announced that it will carry out tests of 5G technology in Europe this year, including Romania. Orange has based its 5G strategy on three components: improved high-speed mobile broadband, high-speed fixed broadband access, and new applications to support the digital transformation of businesses. The group stated that in Romania it will test 5G technology as an alternative to fiber-optic broadband networks and will conduct a real-world test in the country in the second half of 2018 in collaboration with Samsung and Cisco. Orange is the leading mobile network operator (MNO) in Romania, with 9.266 million wireless subscribers at September 30, 2017.

AI and 5G to Lead Huawei MWC Push

Huawei used its annual pre-Mobile World Congress briefing to provide an update on its focus areas, including the role of artificial intelligence (AI) in networks and – unsurprisingly – 5G. Ryan Ding, president of the vendor's Carrier Business Group (pictured), said the company believes there is a need to embed AI "into our services, into our networks, to provide more flexible services, and also improve our operations experience". He talked-up the company's new AI platform, called Atlas, which he described as "Huawei's heterogeneous computing solution". AI, he said, had become a "general purpose technology" which was integrated into Huawei's products and solutions and "greatly improved the efficiency of live networks". Returning to one of the main themes of Huawei's 2017 Global Mobile Broadband Forum, the executive highlighted the role of AI in network management. In a 4G network, there are 200 parameters which need to be configured end-to-end, but when 5G comes this will increase 50 times: "so we believe we have to introduce AI into our 5G networks" to reduce configuration time. Peter Zhou, CMO of Huawei's wireless network product line, said Huawei "has been working for more than ten years for 5G", and at MWC will "announce end-to-end 5G products, from core network, transmission, radio and terminal – we are getting ready to turn on 5G". "Today, we have started to build 5G networks in ten cities, so this year you will see a lot of commercial 5G news from those cities and even more. 5G is now: we just opened a door from enhanced mobile broadband, to a fully digitally connected society." Huawei has pledged to invest CNY5 billion ($790 million) in 5G research and development this year. The vendor also identified new business models around IoT and the shift of video to become a basic service for operators as a $2.5 trillion revenue opportunity by 2025. "This year, we will deliver around 100 NB-IoT networks, and for Huawei we will continue to invest in the narrowband IoT ecosystem," Ding said. A forecast of 150 million connections this year was given. In 2017, more than 100 operators around the world made video a basic service, which is expected to increase to "at least 150" in 2018: "This will become a new engine for business growth." "Carriers are serving more and more industries, and the requirements are becoming more and more diversified. A much broader ecosystem has already become a must. So Huawei's goal is to build a multi-level ecosystem that integrates business solutions and infrastructure. This will enable the telecom industry to continue to grow and succeed," he said. "Huawei focuses on ICT infrastructure and smart devices to provide a plot of rich soil for the development of information, automation and intelligence technologies. In this soil, partners can grow their content, applications and cloud," he observed.

Ericsson Ready For 5G Launches in 2018

Ericsson unveiled upgrades to its 5G RAN and core network platforms which it claimed would allow operators to launch 5G by the end of the year. The company revealed software for commercial 5G core and RAN networks alongside improvements to its distributed cloud platform aimed at optimizing access, improving latency and enhancing security for 5G use cases. Ericsson's upgrades bolster its '5G' platform announced in February 2017, which was originally based on pre-standard technology. Its upgrade makes the platform compatible with the non-standalone 5G New Radio standard released by the 3GPP in December 2017 and currently in use in a range of trials across the world. While many operators

have committed to 5G launches in 2019 and 2020, a small number have confirmed plans for commercial availability by the end of this year. Most have cited fixed-wireless as the most likely release, while some – including AT&T – are aiming for mobile 5G. The vendor separately launched its Street Macro radio, designed to improve coverage in urban areas with high demand and limited locations for infrastructure, and added 5G NR compatibility to existing kit. Ericsson was keen to point out that radio equipment shipped since 2015 can be upgraded to 5G NR through a remote software installation. It added the upgrade could be used in 150 variants of its radios used in 190 networks around the world.

In a statement, it added it would enable operators to run 4G and 5G in the same band through "dynamic spectrum sharing". The troubled vendor has high hopes for 5G technology, but faces an almighty fight from rivals also ploughing funds into research, tests and launches. Infrastructure companies making major announcements include Nokia, Huawei and ZTE. Ericsson forecasts there will be 1 billion 5G subscriptions by the end of 2023 and is focusing its R&D efforts on supporting the new technology. In December 2017, it signed $370 million in credit agreements to help accelerate its R&D efforts.

Qualcomm Secures Broad Backing for 5G Modem

Qualcomm revealed more than 35 operators and equipment manufacturers from around the globe have committed to use its X50 modem for 5G trials and product launches in the coming two years. A total of 18 operators, including AT&T, China Mobile, Deutsche Telekom, Orange, SK Telecom, Sprint, Verizon and Vodafone will use the X50 chipset and mobile reference design in sub-6GHz and mmWave 5G trials due to begin this year. The live tests in 2018 and early 2019 will set the stage for standards-based commercial 5G deployments in 2019, Qualcomm said. The company also locked in partnerships with 19 OEMs, which have pledged to use the X50 modem for 5G New Radio (NR) product launches starting in 2019. At a media and analyst event, Qualcomm president Cristiano Amon said "virtually all" OEMs are designing their products around X50, including Asus, HMD Global, HTC, Inseego (the holding company of Novatel Wireless), LG Electronics, Netgear, Oppo,

Sharp, Sierra Wireless, Sony Mobile Communications, Vivo, Xiaomi and ZTE. In a statement, Izumi Kawanishi, EVP and director of Sony Mobile Communication's product business group, said the company is aiming to use Qualcomm's 5G chip technology to help deliver enhanced communication and entertainment experiences in its Xperia product line "in the coming years". HMD Global, HTC, LG, Oppo and Vivo expressed similar goals. While the list of vendors is comprehensive, big names Samsung, Apple and Huawei were notable by their absence. Apple's omission is likely no surprise given an ongoing patent spat between Qualcomm and the vendor. Samsung, meanwhile, announced a deal covering a wide range of technologies earlier this week (albeit the X50 was not specifically mentioned in the agreement). Amon said all manufacturers around the world have "decisions to make" about whether to bet on the value of 5G in the short term or wait for the ecosystem

to further mature. "The choices for multi-sourcing becomes a secondary choice where technology leadership and the stability of the solution become a primary choice," he said. With operators, manufacturers and the chipset vendor aligned, Qualcomm SVP and GM of 4G/5G, smart cities and industrial IoT Serge Willenegger said "all the key elements" are in place "for perfect assembly of 5G in 2019". Amon noted the activity Qualcomm expects this year gives it "100 per cent confidence" 5G rollouts will become a reality in 2019. Durga Malladi, Qualcomm's SVP of engineering and corporate R&D, added mobile broadband will drive initial adoption, but said many more use cases will begin to pop up as the technology matures in the 2020 timeframe. By 2020, Amon said volumes will ramp to make 5G a significant contributor to business for Qualcomm and other ecosystem partners.

Nokia, Qualcomm Complete 5G Interoperability in 3.5, 28 GHz Bands

Nokia and Qualcomm Technologies have successfully completed interoperability testing in the 3.5GHz and 28GHz spectrum

bands using the 3GPP 5G NR Release 15 standard confirmed in December. The tests used the commercially available

Nokia AirScale base station and device prototypes from Qualcomm.

OTT Players will be the Key to Financing Future Subsea Projects

The subsea cabling sector is increasingly looking for investment from OTT players, as it attempts to meet spiraling demand for additional capacity, according to industry experts. "The subsea industry is facing a dramatic increase in capacity demand, driven by content providers (OTTs), due to internet penetration and broadband access networks (4G and Fiber to the Home) and the improved capability of mobile devices. Multiple new projects are coming into force mainly financed by OTTs with a private model (with a carrier as project manager). The traffic carried is moving from the carrier's backbone traffic to the OTTs backbone traffic," said Giuseppe Sini, head of international business unit, at Italian telecoms firm, Retelit. Sini believes that the industry is

in the process of refining a new business model that will allow it to source revenues from new markets. "The Industry is now looking at OTTs as investors more than financial institutions or infrastructure oriented funds," he explained. There will also be a fundamental shift in the dynamics that influence the market, as the Internet of Things and cloud based technologies start to drive exponential growth in demand for subsea capacity. "The next 18 months will see a lot of new projects driven by the factors stated above (content) but a new trend will start to emerge in around an 18-month time frame: IoT and Cloud driven traffic will increase dramatically with a completely different dynamic and patterns from the current content driven model. New

players will appear in the marketplace with completely different business drivers. Technology evolution will enable this new generation of players to emerge and the Industry will face a period of change again," added Sini. Retelit owns and operates 25,000km of ultra-fast subsea cabling linking Europe and Asia via the ports of Marseille and Hong Kong. Giuseppe Sini, will be speaking at this year's Submarine Networks Europe event. Sini will be sharing his expertise during a panel session focusing on the emergence and evolution of new business models in the subsea sector. Held from the February 20–21, Submarine Networks Europe will bring together the key players from the international subsea cabling sector.

Qualcomm Applies for License Modification for 802.11P DSRC Prototype Tests

The San Diego vendor filed paperwork with the FCC on Jan. 25 requesting a license modification to increase the transmit power to some evaluation test units and said operation typically occurs at transmit power levels lower than what has been requested. The experiments use 5850-5925 MHz. That Qualcomm is using DSRC prototypes is not surprising given that it has been involved in Vehicle-to-Everything (V2X) tests for several years, starting with its IEEE 802.11P-based products. But more recently it has been on the cellular-based bandwagon, promoting C-V2X to connect vehicles to one another and everything else, including roads and public infrastructure, as opposed to using Dedicated Short Range Communications, or DSRC, which some auto companies are pushing for in the U.S. Turns out, part of the reason Qualcomm continues to evaluate DSRC has to do with comparison purposes. "The experimental license will be used to test prototype equipment that operates in the 5850-5925 MHz band," Qualcomm said in a statement provided to FierceWirelessTech. "We will be testing the performance of C-V2X on its own for V-2-everything direct communication and evaluating DSRC under similar conditions. We expect to validate the performance advantages of C-V2X."

Qualcomm was granted authorization last year for a nationwide license to test commercial and prototype DSRC devices and new technology using a 10 or 20 MHz transmission bandwidth. The focus of the testing is with vehicle-mounted systems, but temporary fixed sites occasionally are used, according to the latest application. The goal is to study the applications and services for the vehicle-to-vehicle and V2X market. The low-power testing predominantly operates at Qualcomm's engineering facilities in San Diego and Bridgewater, New Jersey, but testing and demonstrations can also occur elsewhere in the United States. Earlier this month, Qualcomm announced extended field trials with Ford for C-V2X in 2018, and both companies are expected to ramp up lobbying efforts for C-V2X this year. That's in opposition to folks like GM, which announced last year that its new 2017 Cadillac CTS sedans would come equipped with DSRC. Qualcomm's first C-V2X commercial solution, the Qualcomm 9150 C-V2X chipset, is due to be commercially available in the second half of 2018, with plans for it to be featured in production vehicles by 2019. The 9150 C-V2X solution is being used in C-V2X trials underway in San Diego, as well as additional trials in Detroit. Patrick

Little, senior vice president and general manager of automotive at Qualcomm, told FierceWirelessTech earlier this month that while DSRC has been floating around for years, it hasn't been firmly mandated and there's a lot of enthusiasm around C-V2X and its ability to save lives. Qualcomm is a founding member of the 5G Automotive Association, part of whose charter is to drive the C-V2X standard globally. It starts with C-V2X 4G LTE Release 14, but a big part of the value proposition of C-V2X is being able to leverage the 3GPP road map and the mobile operators' footprint. "There are a lot of things about infrastructure and standards that we think will go toward longevity and ease of adoption if we go the Cellular V2X route," in addition to its technical superiority, he said.

Telkom to Introduce Massive MIMO in 2018

Telkom South Africa has concluded a demonstration of Massive MIMO technology, using 20MHz of TDD spectrum in the 2.3GHz band, in partnership with equipment vendor Huawei. The company achieved peak rates of 909Mbps in the trial, showing improved spectrum efficiency and network coverage. 'Massive MIMO will enable Telkom's mobile customers to achieve data at a rate up to five times faster than current 4G technology … This will result in better throughput speeds and improved coverage, leading to a better overall experience for consumers,' the company said in a press release. Telkom – which has introduced LTE, LTE-A and 4×4 MIMO to offer speeds of up to 600Mbps – is aiming to commercially introduce the Massive MIMO technology this year.

Orange Reveals European 5G Testing Plan

Orange unveiled plans for a series of 5G trials in France and Romania, in preparation for what its executives described as the "technological quantum leap" of 5G. Unveiling its plans at an event in Paris, the operator highlighted details of a year-long 5G trial in France, fixed pilot in Romania, development of a new smart antenna and provisioning of a racetrack for testing automated cars. Orange's largest consumer end-to-end 5G trial is slated to begin in Lille and nearby Douai in mid-2018. The operator said preparations were already underway and would begin as soon as regulator Arcep gave final approval to the scheme. The technology is eventually expected to enable augmented reality services, support increased use of multimedia content and offer companies a backbone for local wireless network deployments. In the second half of 2018, Orange will test high-speed broadband based on 5G in Romania in partnership with Samsung and Cisco, with a view to enhancing fixed broadband in the country. It hopes 5G will eventually also be used to support connectivity for temporary industrial deployments, including construction sites. To accelerate automated vehicle deployment, the company is set to install 4G+ at the Autodrome de Linas-Montlhery motor racing track for a wide-scale test of vehicle to everything (V2X) technology. The trial is in association with vehicle testing company UTAC CERAM with a target of making advanced connected car technology available in 2030. As part of its preparation for wide-scale commercial 5G rollout in 2020, Orange is also developing new smart antenna technology with Nokia, which it said would enhance consumer experience of the technology. The new antennas will support 4G and 5G and will be designed for use on existing tower sites. While other operators have previously questioned the business case for 5G, Orange said it was already working with several corporate customers to identify use cases in industry and offer 4G-based trial versions. These include industrial automation and innovations including the use of drone technology for incident and fire investigation. During the event, Mari-Noelle Jego-Laveissiere, executive director for innovation, marketing and technologies at Orange (pictured) highlighted the importance of thorough testing of 5G prior to launch given the nature of use cases it will be expected to enable. She added when 4G was developed, it was with an eye on achieving the maximum speed with "less thought on what happened around the edges" whereas with 5G "homogeneity of coverage is vital." Jego-Laveissiere added transport, manufacturing, health and entertainment sectors were likely to be among the primary targets for the technology.

ARTICLE

Global Digital Services

Global companies often attribute the term Digital Services to the electronic delivery of information, including data and content across multiple platforms and devices like web or mobile. The term is more widely used in government circles in terms of making the overall interaction of citizens with the public sector a more pleasant and efficient experience. It is also widely used in the Information and Communication Technology sector, in particular, in the telecommunications industry, where mobile operators provide connectivity and data services to their subscribers. However, this is equally important in the private sector in terms of improving the customer experience while boosting productivity. Making the transition to digital services by replacing the reliance on paper forms and physical products and improving the overall user experience has benefits to both organizations as well as customers/end users. These benefits include reduced costs and time to market, improved efficiency, higher transparency and full traceability along with high levels of customer service.

Mobile network operators can avail their charging, billing and support platforms and channels for service providers and simplify the monetization of their services.

The global digital services can be split into six categories, based on content. These categories are governmental and non-governmental utilities, information, communications, business services, sharing platforms and entertainment. Ensuring the sustainability of this ecosystem requires a continuous supply of relevant digital content, which creates incentives and reasons for subscribers to get online; such content is imperative for driving digital transformation and connecting the 60% of the global population that is currently not connected. Beyond expanding the availability of digital services, key players need to ensure the sustainability of this digital ecosystem since provisioning and supporting global digital services is an expansive proposition.

Three major dependencies should be fulfilled before achieving a digital ecosystem in which digital services can be provided; a supporting network infrastructure, devices and local-language

support. A strong content ecosystem cannot be developed without the availability of strong fixed and mobile infrastructures. Additionally, the devices and hardware components that are available have a significant impact on the type and nature of the content being consumed, and even on usage frequency. Finally, support for local languages and character rendering by major operating systems and platform vendors plays a critical role in driving local content ecosystems.

Digital ecosystems include four main stakeholders; the governments, global and local content providers, mobile network operators and subscribers. The government has a dual role to play in boosting the digital ecosystem in a country, on the one hand by creating an optimal environment in which content ecosystem can flourish and on the other hand by providing essential digital services within the country. Global and local content providers range from small startup to large global companies. In the presence of strong global content developers and providers, and despite its critical contribution, a local digital ecosystem will be difficult without a path to monetization or funding from the government or other parties. Both global and local content and service providers require up-front investments to build before they start monetizing their services. Telecommunication operators are crucial to enabling the monetization of content, especially in the early stages of evolution. Most start-ups and small to medium companies providing digital services do not have access to payment platforms or advertising revenue during the early stage. Mobile network operators can avail their charging, billing and support platforms and channels for service providers and simplify the monetization of their services.

To understand how stakeholders can best drive the digital services ecosystems, it is necessary to be able to define and assess the maturity of a country's ecosystem, to identify the models that can ensure economic sustainability and the role and contribution of both public and private sectors. Within an individual country, the digital ecosystem maturity is defined as a function of both the depth and the diversity of the different services' categories. The greater the depth of available, relevant services and the more diverse the type of services, the higher the maturity ranking of the ecosystem.

The key success factor for sustaining platforms and ecosystem that provides digital services is to create a large base of online users, generate deep and varied content, support mechanisms for online advertisement and payments, and build a solid case for businesses to invest in online commerce and capabilities. Once these elements are in place, all the conditions are set for the digital services ecosystem to become self-sustaining.

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REGULATORY NEWS

Brazil Operators Tipped for Regulatory Boost

Rule changes in Brazil could allow converged operators to abandon underused assets to free-up cash to invest in improving 4G, Reuters reported. Under current regulations the country's operators are required to support loss-making fixed assets in a number of areas of Brazil. However, regulator ANATEL is currently mulling a rule change to remove some obligations. Should ANATEL decide to amend laws Reuters' sources said operators would make significant savings, which could then be used to invest in other infrastructure including improvements in 4G. The sources noted Oi and Telefonica's Vivo unit were the two companies with the largest underused fixed liabilities, with both forced to maintain rarely accessed public telephones and retain abandoned real estate. These obligations, the sources added, were one of the issues preventing overseas investment in troubled operator Oi. Both China Telecom and China Mobile were linked with moves for Oi in late 2017 ahead of the Brazilian

operator agreeing a debt restructuring plan with some of its creditors. The report comes just after rumors emerged US operator AT&T was considering launching mobile services in Brazil to go alongside its existing Sky Brazil TV service.

DICT Philippines Publishes Draft Guidelines for Selecting Third Telco

The Department of Information and Communications Technology (DICT) of the Philippines published its draft proposal on how it intends to select a third 'major' telecoms player to compete with the de facto duopoly of PLDT Inc. and Globe Telecom. The Inquirer Business daily notes that the DICT's initial terms are structured to ensure that the newcomer can secure the valuable radio frequencies currently unassigned by the state to cement its position as a credible challenger to the status quo. Among the key requirements laid down by the Department is the stipulation that the new licensee must have a valid congressional franchise to install and operate nationwide telecommunications facilities and services. Further, that franchise should be valid at least until 31 December 2023, it confirmed. In addition, the bidding consortia for the third license must be at least 60% Filipino-owned and must have no connection to any group currently enjoying at least a 40% share in the mobile and/or broadband wireless segments (i.e. by definition, that means PLDT and Globe). Moreover, the guidelines suggest that there should be 'no bidder's liabilities,' and the new major player should have a debt to equity ratio of 70:30. Participants should also have

a 'net worth' of at least PHP10 billion (USD191 million) or 'provide evidence that it could raise the amount', and at least one member of the consortium should possess the necessary technical expertise and experience of operating a telecommunications network, the DICT said. Per the Department's proposal, the winning bidder will be selected based on the 'highest calculated and responsive bid' – which the paper confirmed is defined as 'the net present value of committed investment for five years plus the net book value of existing telco facilities, in case this applied.' The DICT also clarified that the proposed investment level only covers the installation, operations, and maintenance of telecommunications facilities and services. Meanwhile, it has also ruled (as had been expected) that a new player would be 'barred from merging with a company with a market share of at least 40%, noting that the penalty for so doing is the 'automatic' return of all assigned radio frequencies. A provisional deadline date for the submission of bids has been set as 18 May 2018, with the hope that the successful bidder can be named before the end of the month. Last week, CommsUpdate reported the acting chief of the DICT, Eliseo Rio Jr, as saying that it had decided to move the deadline

for the auction of the Philippines' third telco position: 'If we force the [previously proposed] end-of-March deadline, there might not be any bidders,' he is quoted as saying in a text message to reporters, noting that the request to delay actually comes from the groups wishing to participate themselves. The DICT has reportedly outlined the following 3G, 4G and potential 5G frequencies in its guidelines: 700MHz band (20MHz), 850MHz (10MHz), 2100MHz (40MHz – portions of which are tied up in the Supreme Court), 2010MHz (15MHz), 2.5GHz (20MHz), 3.3GHz (100MHz), 3.5GHz (40MHz) and 10.5GHz (182MHz). It notes too that all 2G-suitable frequencies have been exhausted and are all held by and being used, by PLDT and Globe. The Department wants the third telco to launch commercial services within twelve months of receiving its frequencies and cover at least 80% of provincial capital cities, towns, and chartered cities within five years of receiving its award. A number of groups are interested in bidding, including Now Corp, Philippine Telegraph & Telephone Corp, Converge ICT Solutions Inc. and G.Telecoms.

US Considers Nationalizing its 5G Infrastructure

The US government is said to be considering a move to nationalize America's future 5G infrastructure, according to reports in the US press. The move would see the US government take control of huge swathes of telecoms infrastructure, in the interests of protecting national security. The US has repeatedly accused a number of Chinese firms of committing acts of espionage via telecommunications networks. Documents released by Axios, appear to show a Powerpoint presentation highlighting the national security benefits of nationalizing the US' future telecoms infrastructure. Exactly how seriously the US government is considering this move remains unclear, with the White House yet to comment on the story. Regardless of

whether the current administration would be in favor of nationalizing its future infrastructure, the logistics involved with such a move would require unprecedented levels of restructuring and bilateral collaboration. The proposal has drawn criticism from FCC Chairman Ajit Pai, who resolutely rejected the idea of government intervention in the US' national telecoms infrastructure. "I oppose any proposal for the federal government to build and operate a nationwide 5G network. The main lesson to draw from the wireless sector's development over the past three decades—including American leadership in 4G—is that the market, not government, is best positioned to drive innovation and investment," Pai said in a statement. "What government can and should do is

to push spectrum into the commercial marketplace and set rules that encourage the private sector to develop and deploy next-generation infrastructure. Any federal effort to construct a nationalized 5G network would be a costly and counterproductive distraction from the policies we need to help the United States win the 5G future," he added.

Maltese Incumbents Apply for Extra Spectrum

The Malta Communications Authority (MCA) has confirmed that the country's three incumbent cellcos – Vodafone Malta, GO and Melita – have submitted applications to acquire additional wireless spectrum in the 800MHz, 1800MHz and 2.5GHz bands. Start-up firm mob5G.net Malta, which had been

rumored to be interested in bidding, was not named among the applicants. 800MHz spectrum was scheduled to be allocated last year, but the assignment process was postponed when Vodafone and Melita unveiled plans for a merger; their tie-up has since been called off due to competition concerns. The MCA

will now assess the eligibility of the applications and expects to proceed to the qualification phase by June 2018. It says the allocation of additional spectrum should eventually lead to 'lower prices, greater innovation, new investment and better coverage'.

Barbados PM Says Number Portability to Become Reality by Year-End

The people of Barbados should finally be able to take advantage of number portability by the end of 2018, some three years after the Fair Trading Commission (FTC) originally envisioned it. Prime Minister Freundel Stuart told

Parliament on 6 February 2018 that 'we confidently expect that by the end of this year, by December 2018, the Local Number Portability Project [launched by the Division of Telecommunications in September 2017] would have been completed,' BarbadosToday reported. Back in 2015 the FTC approved the merger of full-service operator C&W (then branded LIME) and rival Columbus International (trading as Flow), as a condition of which it ruled that the merged entity must meet the deadline

for technical readiness for Local Number Portability (LNP) in its fixed network by 30 September 2015, and for Mobile Number Portability (MNP) by 30 November 2015. Those dates came and went, however. Stuart added in his latest address to MPs: 'The objective of this project is to give Barbadians the ability to change their telecommunications service provider without having to change their number … at minimal cost'.

EC Sends SMP Reform Proposal to BEREC for Comment

The European Commission has released the latest draft of its proposed reform of the significant market power guidelines

for national telecom regulators in the EU. The draft has been set to BEREC, the assembly of national regulators, for its

opinion before the EC finalizes the new rules.

China Removes Telecom from List of 'Sensitive Sectors' for Outbound Investment

Beijing has updated its list of 'sensitive sectors' for outbound investment, removing – amongst others – telecoms operations from the list. Xinhua reports that investment in overseas telecoms projects will no longer require official approvals, and can go ahead with investors needing only complete filings with the relevant authorities. Telecoms and energy sectors were removed from the list, whilst the arms industry, property, hotels, cinemas and others were added, as the government looks to 'curb irrational overseas investment,' the state news agency writes, citing the National Development and Reform Commission (NDRC). The new measures come into effect from March 1.

Sprint Presses FCC to Eliminate Barriers to 4G, 5G Deployments

Sprint CEO Marcelo Claure paid a visit to the office of FCC Chairman Ajit Pai and others to talk about eliminating barriers to Sprint's 4G and 5G deployments, among other topics. Sprint referenced barriers that Sprint and others in the industry face as part of their efforts to deploy 4G and 5G services, according to an ex parte filing (PDF). Sprint urged the commission to quickly address the regulatory obstacles that make the densification of wireless networks so difficult. "Sprint noted the significant costs and delays it faces in deployment of both macro cells and small cells that are essential to providing more coverage and capacity to America's mobile broadband customers," the carrier said. By way of example, Sprint said it had received tribal review fee demands totaling $90,000 to review antenna modifications at six sites in Chicago. Claure said during Sprint's fourth-quarter earnings call that it's working with Qualcomm as well as network and device manufacturers on 5G in order to launch the "first truly mobile network" in the United States by the first half of 2019. Sprint plans to deploy antennas on its cell towers that support massive MIMO transmissions and upgrade that hardware to the 5G NR standard via a software update. Claure and Sprint CTO John Saw were among a group of tech industry executives that visited President Donald Trump at the White House last year, where Claure described some of the hassles of small cell siting. Claure showed Trump a small cell that can be installed on a utility pole and said the problem is it takes a year to get approval to deploy and an hour to install it. He warned that unless the industry can install them faster, the U.S. is going to lose the leadership that it has in 5G. During its meetings with the FCC this past week, which included other commissioners as well, Sprint thanked the commission for its ongoing efforts to complete the 800 MHz band reconfiguration initiative along the U.S.-Mexico border and stressed the need for continued involvement by the commission with its counterparts in Mexico to bring the project to a conclusion.

FCC Chief Opposes Nationalized 5G Plan

US Federal Communications Commission (FCC) Chairman Ajit Pai came out firmly against the prospect of a government-run 5G network, calling the idea a "costly and counterproductive distraction". In a statement, Pai insisted "the market, not government, is best positioned to drive innovation and investment". He added the government should focus instead on making more spectrum available and setting rules encouraging development and deployment of next generation networks. Pai's comments followed a report President Trump's administration is weighing a plan to build a centralized 5G network within the next three years to fend off growing competition from China. In a research note, BTIG analyst Walter Piecyk noted such a plan could prove to be a job creator for the construction industry and could benefit companies including American Tower, Crown Castle, CommScope, Dycom, Zayo and Corning. But he also pointed to significant hurdles the government would face, including the time it takes to free up and deploy new spectrum, restrictions on the location of cell sites and availability of labor. Industry association USTelecom blasted the plan, noting in a statement a government attempt to take over construction of 5G networks would "slam the brakes" on the country's "hard-won momentum" to be a leader in 5G. CTIA CEO Meredith Attwell Baker echoed Pai's sentiment the government should pursue "free market

policies". An AT&T representative told Mobile World Live the operator couldn't comment on a plan it hasn't seen, but said work to launch 5G service in the country "is already well down the road," and the operator is in no doubt "America will lead the 5G revolution."

Burkina Faso to Offer Technology Neutral Licenses to Pave the Way for 4G

The government of Burkina Faso has announced plans to introduce technology neutral licenses, in an effort to boost broadband connectivity. According to local news site Burkina 24, the Council of Ministers met in Ouagadougou on 7 February, and set out a plan – on behalf of the Ministry of Digital Economy Development and Posts (MDENP) – to simplify the licensing process. The authorities seek to give operators 'greater flexibility in implementing their networks and services, including 4G'. The move will also serve to promote competition in the sector. Going forward, the MDENP will engage in discussions with mobile trio Onatel, Orange and Telecel and ensure that the licensing transition is transparent.

Bouygues Reassigns Spectrum in 1800MHz, 2100MHz Bands for 4G

Bouygues Telecom has published an update to its spectrum refarming project, with frequencies previously used for 2G now being utilized for additional LTE capacity in urban areas and the rollout of LTE-A upgrades. Bouygues is currently reassigning 5MHz of GSM-1800 spectrum for 4G, bringing the total used for 4G to 20MHz, with no 2G services to be offered in the band going forward. The refarming project (which commenced in 2016) involves 35 cities, and has been finalized in around 20, including Paris and Ile-de-France, Lyon, Grenoble, Bordeaux, Clermont-Ferrand, Nice, Brest, Montpellier, Le Havre, Reims and Rouen. Work will commence shortly in Toulouse, Nantes and Lille, with Bayonne, Mulhouse and Strasbourg to follow in mid-2018. In addition, the operator is refarming a portion of its 2100MHz spectrum holding for 4G, with 10MHz in the band to be used for LTE-A (marketed as '4G+') via carrier aggregation (CA) in the 1800MHz and 2100MHz bands, providing downlink speeds of 225Mbps. With the first tests having been conducted in Grenoble, Avignon and Brest, the spectrum changeover has reportedly been completed in Bordeaux. In the Ile-de-France region, meanwhile, nearly half of the 4G base stations have been modified, with a quarter of LTE sites already active in the 2100MHz band.

FCC Seizes mmWave Licenses from AT&T's FiberTower Unit

The Federal Communications Commission (FCC) has announced a settlement with FiberTower – the millimeter wave (mmWave) company acquired by AT&T Inc last year – which involves the company returning hundreds of sought-after spectrum licenses to the watchdog. Fierce Wireless reports that FiberTower has been forced to relinquish all of its 24GHz concessions (around 121 in total) and roughly the same number of 39GHz permits. The settlement means that AT&T will only get around 479 of FiberTower's 39GHz licenses and none of its 24GHz licenses, putting a significant dent in its 5G plans. Further, the FCC is now in a position to re-auction the vacant licenses at some point in the future, with T-Mobile US a likely bidder. According to the FCC paperwork, the issue dates back to July 2012, when FiberTower filed a petition for relief under Chapter 11 of the Bankruptcy Code. That decision prompted the regulator to declare that FiberTower had not demonstrated that it had deployed a service substantial enough to meet FCC buildout requirements, and the company has now forfeited a large number of concessions as a result. As previously reported by TeleGeography's CommsUpdate, in January 2017 AT&T entered into an agreement to acquire San Francisco-based FiberTower, and its mmWave spectrum rights. The company was founded in March 2014 and currently offers spectrum leases and backhaul services to wireless carriers.

South Sudan Raises Tax on Telecoms Services

The government of South Sudan has implemented an increase in excise duty on telecoms services from 10% to 15%. APA News cites Ladu Wani, Director General of the National Communication Authority (NCA), as saying that the change came into force on February 1, following the enactment of the Financial Act of 2017/2018.

EC to Review Apple Shazam Deal

The European Commission (EC) announced it will scrutinize an Apple move to acquire music app Shazam, amid concerns the deal will adversely affect competition in the European Economic Area (EEA). While the proposed transaction does not meet the turnover thresholds set by EU Merger Regulation, meaning the companies are not required to notify the EC about the deal, the commission said in a statement it is taking action following receipt of referral requests from seven countries within the EEA. EU Merger Regulation allows member states to request an investigation of deals which do "not have an EU dimension", but affect trade within the "Single Market and threatens to significantly affect competition", the EC explained. Austria submitted the request and was then joined by France, Spain, Italy, Iceland, Norway and Sweden. The commission said it is "the best placed authority to deal with the potential cross-border effects of the transaction". Apple lined up the acquisition in a bid to bolster its music streaming proposition and step up competition with major rivals Spotify and Google. While Apple did not reveal financial terms of the deal, the price tag is reported to be $400 million, which would make Shazam the company's largest acquisition since it bought headphone maker Beats Electronics for $3 billion in 2014. It also represents a sharp cut on a $1 billion valuation Shazam hit in 2015 after its last funding round. A report by The Wall Street Journal recently revealed Apple Music could soon overtake Spotify in the US in terms of paying subscribers.

Oman to Mark Safe Internet Day

Oman, represented by the Information Technology Authority (ITA), joins the rest of the world in celebrating the Safer Internet Day, which is marked on the first Tuesday of February every year. More than 100 countries are celebrating this day. This year it is being celebrated under the theme 'Create, Connect and Share Respect: A Better Internet Starts with You'. To mark this occasion, ITA, represented by Oman CERT, is organizing an event

at Muscat Grand Mall on Tuesday from 5-10pm. It will have a number of activities and workshops, targeting parents, adults and children. In addition, messages will be shared through ITA's social media accounts under the hashtag #SID2018 to raise awareness on cybersecurity and promote the culture of proper use of Internet among adults. The campaign will also address the risks for children and youngsters and the best ways to deal with them, as well as highlighting the legal aspects in the use of Internet particularly social media channels. The Safer Internet Day (SID) has become a landmark event in the online safety calendar. It started as an initiative of the EU SafeBorders project in 2004 and was taken up by the Insafe network as one of its earliest actions in 2005. From cyberbullying to social networking, every year Safer Internet Day aims to raise awareness of emerging online issues and chooses a topic reflecting current concerns. According to the 2017 Norton Cyber Security Insights Report, consumers are confident they're safe online, but hackers have proven otherwise, stealing US$172bn from 978mn consumers in 20 countries in the past year. In UAE, they stole AED3.86bn from 3.72mn consumers over the past year, according to the Norton Cyber Report. More than half (52 per cent) of the 1,059 UAE respondents experienced cybercrime, with every victim losing an average of AED669 and 47.9 hours (about six working days) dealing with the aftermath of a cybercrime. Globally, 21,549 individuals over the age of 18 were surveyed across 20 markets. Globally, cybercrime victims share a similar profile: They are everyday consumers who use multiple devices whether at home or on the go, but have a blind spot when it comes to cybersecurity basics. This group tends to use the same password across multiple accounts or share it with others. Equally concerning, 39 per cent of global cybercrime victims despite their experience, gained trust in their ability to protect their data and personal information from future attacks and 33 per cent believe they had a low risk of becoming a cybercrime victim.

HT Calls on Croatian Government to Help Telecoms Sector

Croatian fixed and mobile operator Hrvatski Telekom (HT) has called on the country's government to do more to promote electronic communications. A report from Reuters cites HT CEO Davor Tomaskovic as saying that the authorities should reduce radio spectrum license fees, which he believes are among the highest in Europe. The executive also wants lower charges for using public spaces to deploy network infrastructure. HT, which is 51%-owned by Deutsche Telekom of Germany, has said it aims to continue with annual capital investments of at least HRK1.6 billion (USD263 million).

Migration to +383 Code on Track Says ARKEP

Kosovo is on track to complete the migration to its international dialing code of 383 by the end of June this year, chairman of the Regulatory Authority for Post and Electronic Communications (Autoriteti Rregullator i Komunikimeve Elektronike dhe Postare, ARKEP) Kreshnik Gashi confirmed in an interview with Telegrafi. All of the nation's telecom service providers will be obliged to use the code from 1 July this year, with the official suggesting that Serbian state-owned MTS – which serves the north of the country along with several Serb-dominated areas – may have resisted or encountered difficulties with the conversion. '383 will be the only code, all operators will use this code for calls', Mr. Gashi said, adding: 'we are working [to ensure] that the provider operating in the northern and some other settlements switches to the 383 code by the end of June this year.' As noted by TeleGeography's GlobalComms Database, Kosovo secured the rights to its own international dialing code in December 2016 as part of an EU-brokered agreement with Serbia. The code was used for the first time in February 2017, the nation's providers having previously used a mixture of codes, including those for Serbia (381), Slovenia (386) and Monaco (377).

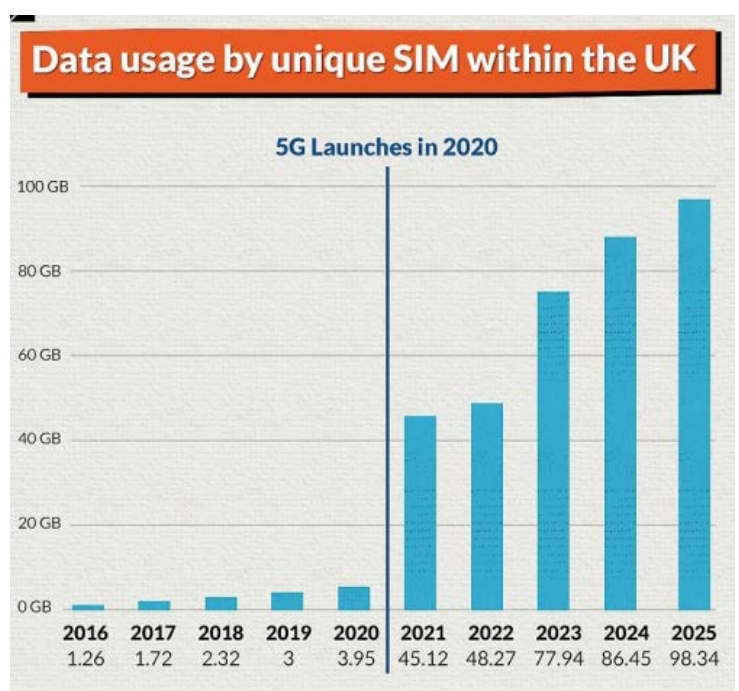# ICCC to Restart Assessment of Proposed Telikom, PNG DataCo Merger

Papua New Guinea's Independent Consumer and Competition Commission (ICCC) has confirmed it is set to begin reassessing the proposed merger of Telikom PNG and PNG DataCo. According to the Post Courier, ICCC chief executive Paulus Ain confirmed that the examination of the proposed tie-up had been put on hold in August last year, after Kumul Consolidated Holding Limited (KCHL) – the statutory corporation that holds several state-owned enterprises, including both Telikom and PNG DataCo – withdrew its application. Now, with KCHL said to have asked the ICCC to recommence its examination of the deal, the watchdog has confirmed it will do so, with Mr. Ain cited as saying: 'We welcome the request by KCHL for ICCC to recommence the review of the pending authorization application.' The executive noted that the competition body will now work with KCHL and other relevant stakeholders to expedite the assessment, with a decision expected within the timeframe required as per the ICCC Act.

UK Mobile Data Consumption will Approach 100Gb Per Month by 2025

Monthly mobile data consumption in the UK will average almost 100 Gb per user by 2025, according to mobile network provider, giffgaff. Average data consumption will hit 98.34 Gb per month by 2025, as ultra-high definition mobile tv and streaming services cause exponential growth in consumption. Unsurprisingly, giffgaff predicts that the commercial rollout of 5G services in 2020/2021 will be the catalyst for this growth, with average data consumption set to jump from 3.95 Gb per month in 2020 to 45.12GB in 2021. giffgaff's research suggests that the biggest driver in this rise in data consumption will be ultra-high definition video streaming. giffgaff estimates that 4k UHDTV streaming will be responsible for 73.87 Gb of the average customer's monthly data consumption. "5G will undoubtedly facilitate a huge uptick in data consumption once it is rolled out across the UK. Key drivers like high-definition video streaming and advances in social media will dramatically increase demand for network capacity and operators need to make sure they are ready for that," said Simon Carey, telecoms analyst at TGT consulting. Currently the average user in the UK consumes 2.32 Gb of data per month.

Data usage by unique SIM within the UK

5G Launches in 2020

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	1.26	1.72	2.32	3	3.95	45.12	48.27	77.94	86.45	98.34

Competition Commission of Namibia Rejects MTC Merger

Namibia's Competition Commission has rejected the proposed merger between state-owned Namibia Post and Telecom Holdings (NPTH) and Luxembourg-based Samba, writes New Era. Between them the two companies own Namibia's largest mobile network operator (MNO) by subscribers, Mobile Telecommunications (MTC), with NPTH holding a 66% share and Samba 34%. NPTH also owns MTC's competitor Telecom Namibia and the Commission said that any merger of NPTH and Samba would harm competition in the Namibian mobile market: 'Common ownership is unlikely to result in NPTH suffering financial losses when competition between Telecom Namibia and MTC, its two wholly-owned subsidiaries, is eliminated. NPTH is therefore unlikely to have an incentive to push Telecom Namibia and MTC to compete vigorously post-merger.' The government is now giving the public two weeks to put forward their opinions on

make the connection
mtc

the proposed merger, before the Ministry of Industrialization, Trade and SMS Development decides whether to uphold the Competition Commission's decision.

EU Telecoms Regulator Warns US Proposal on 5G Would 'End in Disaster'

The top EU telecoms regulator said "Europe should definitely care about global competition" over introducing superfast 5G networks. A proposal from the Trump administration to build public-funded 5G networks will "end in disaster", the EU's top telecoms regulator has warned, urging Europe to speed up plans for its own fast internet networks. An official in the Trump administration recently floated a bombshell proposal to build government-funded networks for 5G within three years as a way to minimize security threats from China, the US news website Axios reported on Sunday (28 January). Fast next generation 5G mobile networks are not yet commercially available, and the EU is racing against the US, China, Japan, South Korea and other countries to introduce the technology. Axios also published a PowerPoint presentation from the US official that described the plan to "leap ahead of global competitors" and partner with "allies" to expand 5G in developing countries and shield them from Chinese tech giants like phone manufacturer Huawei. Johannes Gungl, the chair of BEREC, the umbrella group of telecoms regulators from EU countries, told EURACTIV.com that the US plan is unrealistic. He predicted that it would likely lead to a price war if the government bankrolls a nationalized network and competes with another one funded by private telecoms operators. Gungl insisted that the EU should move faster to make 5G networks available before other countries. "Europe should definitely care about global competition,"

he said. His comments highlight the fierce competition raging between different countries as they race to make 5G available to consumers within the next few years. Telecoms ministers from EU countries agreed on a plan to set up fast 5G internet networks by 2025, five years after the European Commission's original proposal, and snubbed a proposal to reform rules for selling off radio spectrum. Gungl took on the rotating one-year chairmanship of BEREC at the beginning of this month. He also serves as Austria's telecoms regulator. His US counterpart, Federal Communications Commission Chair Ajit Pai, announced on Monday that he opposes the plan for a nationalized 5G network, arguing that private telecoms companies should pay for infrastructure, not government. Gungl has a similar goal for the EU, which he said should focus on creating a "positive climate for investment in 5G and make every effort to be at the forefront of 5G deployment". The European Commission wants 5G to be available by 2020, and has estimated that it will cost €56 billion to build the networks. Ministers from EU national governments agreed on their own goal in December: they want 5G up and running in at least one city in each member state by 2020, and plan to deploy the technology across the bloc by 2025. The race to introduce 5G will be uphill for European telecoms firms. The EU previously lagged behind the US in making 4G connections available. Fast 5G networks have become a catchphrase for the Commission, member states and telecoms firms,

which have touted the technology as a way to support the growth of internet-connected devices and machines that process massive amounts of data. Gungl said in an interview that he thinks 5G could become "the access technology in the future" connecting the majority of internet users. He also criticized the US FCC's decision last month to repeal net neutrality rules, which prevent internet providers from slowing down, blocking or charging higher rates for certain traffic. EU lawmakers approved net neutrality legislation in 2015. Gungl called the US repeal of net neutrality a "step back" and said Europe's legislation is more stable because it cannot be repealed by an agency decision like in the US. The Commission will publish a report in spring 2019 assessing the effects that net neutrality has had across the EU, and could change the legislation based on those results. Gungl predicted the rules will pass that first major test. "I'm quite sure that the principles will stay in place. There will be no overhaul of the whole regime, but maybe some minor adjustments. For instance when it comes to 5G maybe there is a little bit to fine tune on the rules," he said. BEREC is collecting evidence to analyses, as Gungl said, whether net neutrality is a "hurdle" for 5G. The group will send the Commission its findings by next year. That report could open sore wounds for the telecoms industry: a group of operators signed a "5G manifesto" document in 2016 that warned against "restrictive" net neutrality rules that might threaten 5G.

A SNAPSHOT OF REGULATORY ACTIVITIES IN SAMENA REGION

Afghanistan

ATRA senior officials had a meeting with representatives of the telecom companies on applying SIMs registration procedure through a new mechanism. Comprehensive discussions were made on applying the procedure in the meeting. Supporting this process, telecom companies' representatives shared their suggestions and problems with ATRA senior officials and the senior officials stressed on implementing proper process for SIMs registration in addition to giving instructions regarding raised issues. (February 21, 2018) atra.gov.af

ATRA leadership organized a joint meeting with representatives of the telecom companies regarding provision of 4G services and awareness on the indicators for quality of the mentioned services. Exchange of views and comprehensive speeches were made on a number of technical issues and 4G services, also seeking solutions for problems and defining and determining those in the meeting. An understanding, in the meeting, was made on determining a number of KPIs and it was greed that joint discussions would be continued and carried out on defining and setting other indicators in future meetings.

(February 20, 2018) atra.gov.af

ATRA signed a memorandum of understanding for joint cooperation with Afghanistan IT Competence Center. Based on this MoU signed by Dr. Mohammad Najeeb Azizi, ATRA Chairman and Dr. Nazeer Feroz, Afghanistan IT Competence Center Director, ATRA shall equip the center with information technology service equipment and provide it with internet bandwidth so as to be able to do further in regard with scientific and research fields. Dr. Mohammad Najeeb Azizi said regarding this MoU, "ATRA strengthens scientific and academic centers through TDF for universal access and it is also to mention in this respect connectivity of country universities with world universities, connectivity of Ministry of Education schools and connectivity of public library of Ministry of Culture and Information and other public organization having been equipped with information technology equipment and providing them with internet services". He also added, "Research activities are needed for better solution of telecom sector service provision problems so that effective and scientific solutions could be provided, and further Afghanistan IT Competence Center shall help ATRA on a multilateral basis for cohering and sharing research results on the basis of this MoU". Appreciating ATRA, Dr. Nazeer Feroz later on spoke about establishment, history of this center and need for transparency and effectiveness of services through information technology and promised future cooperation.

(February 14, 2018) atra.gov.af

Bahrain

Telecommunications Regulatory Authority (TRA) Bahrain informed the general public the process for biometric scans for SIM Card registration was introduced by the Authority in order to safeguard the consumers from the risks of identity theft that could subsequently result in financial liability and legal accountability. Over the past few years. TRA has observed significant increase in the cases of Identity thefts through the exploitation of registration process for SIM Card. This includes over a hundred cases of travel bans being issued for individuals who fell victim to identity theft, and over 80 cases of fraud reported by consumers who were completely unaware of SIM cards that were registered on their name. In order to prevent such issues along with other identity theft related crimes, and to provide the consumers with additional safeguards during SIM-Card registration, TRA requires all Mobile Operators in the Kingdom of Bahrain to carry out biometric scans for every SIM card owner. TRA has been continuously monitoring the process of registration and has been addressing any issues as a matter of priority. TRA reminds all consumers of the upcoming deadline to register their SIM cards with their service providers. Postpaid SIM card owners have until the June 2, 2018 to complete registration before their lines are suspended temporarily after which will be deactivated permanently on September 2, 2018 if consumers fail to register. While Prepaid Sim Card owners have until March 2, 2019 to complete registration before their lines are suspended temporarily later permanent deactivation on the June 2, 2019 if not registered. Physical appearance of consumers is required to confirm registration along with verification documents such as a Passport or Smart ID, and CR for business owners. Consumers only have to register their SIM cards once and the process takes minutes to complete. Furthermore, TRA has ensured that all operators provide consumers with all the necessary support in order to accommodate the elderly as well as those with disabilities who are unable to provide fingerprints

for identification. It should be noted that TRA did not impose any fees for registration. Consumers who are over 60 years old, or with disabilities, or whose fingerprint impressions cannot be detected by the fingerprint scanner which prevent them from completing the verification scan are considered exempt from the

verification scanning process and only require documentation to prove their identity. Consumers whose fingerprint doesn't match with the fingerprint impression on their smart card, are requested to update their fingerprint scan at the Information & eGovernment Authority's outlets. (February 18, 2018) tra.org.bh

Bangladesh

The government has raised a total of BDT52.89 billion (USD1.68 billion) from its 4G spectrum auction, far below the expected BDT110 billion figure, with less than 30% of the 46.4MHz of spectrum put up for sale bought in the tender, The Daily Star writes. Shahjahan Mahmood, Chairman of the BTRC, said the regulator was 'not happy' with the results of the auction, adding that the operators will have another opportunity to acquire spectrum at the same price within the next six months. Market leader GrameenPhone will pay USD408 billion for 5MHz in the 1800MHz band, in addition to a fee to convert its current holdings in the 900MHz and 1800MHz bands so as to make it technology neutral. Banglalink was awarded 2×5.6MHz in the 1800MHz band and 5MHz of paired spectrum in the 2100MHz band for a total fee of USD308.6 million (excluding VAT), while it will pay a further USD35 million to convert its existing spectrum holding in the 900MHz and 1800MHz bands to technology neutral and USD1.2 million to acquire an LTE license. Robi Axiata, which did not secure new airwaves, applied for tech neutrality for its

entire 2G spectrum holding in the 900MHz and 1800MHz bands, and will pay fees of USD40 million for the concession upgrade. Citycell also qualified to participate in the auction but did not acquire any spectrum rights. (February 15, 2018) telegeography.com

The Bangladesh Telecommunication Regulatory Commission (BTRC) has given mobile operator Robi Axiata the go-ahead to use its entire 2G spectrum holding in the 900MHz and 1800MHz bands for 2G/3G/4G services, the Daily Star writes. Robi – the sole operator to apply for tech neutrality in the two bands so far – will pay fees of USD40 million for the concession upgrade. Shahjahan Mahmood, chairman of the BTRC, said that the authority expects to earn over USD100 million by offering tech neutrality to the operators; market leader GrameenPhone has to pay USD47 million to use its 22MHz spectrum holding in the 900MHz/1800MHz bands for 2G/3G/4G services, Banglalink USD32 million (15MHz) and Teletalk USD32 million (15MHz). (February 5, 2018) telegeography.com

Egypt

A high-level delegation from the ICT sector, headed by the ICT Minister Yasser ElKady, is participating in the Mobile World Congress (MWC) 2018, organized by GSMA, in Barcelona, Spain, under the theme "Creating a Better Future". The event is attended by ministers and executive officials from governmental entities and major ICT companies. The Egyptian delegation includes officials from the National Telecom Regulatory Authority (NTRA) and Telecom Egypt (TE). MWC is one of the most important international events in communications areas. MWC 2018 will discuss the most important technologies and services presented in the coming years, including the Fifth Generation (5G) of mobile networks and the Internet of Things (IoT), which will provide many services and applications to all users of telecommunications services. The event is being attended by around 108 thousand participants, in addition to 2300 exhibitors and 320 speakers from around the world. During the Conference, ElKady will meet with CEOs of major international ICT companies to discuss major investment projects in the Egyptian telecommunications sector and the readiness of the Egyptian market to receive the 5G mobile networks and manufacture communications devices. This is in addition to discussing how to enhance their investments in Egypt and learning about the latest technologies offered by these

companies. He also will meet with senior ITU officials, heads of international organizations such as GSMA and ICANN, and a number of ministers and senior officials. During the Conference, the nominations of Egypt for the membership of the Board of Directors of the International Telecommunication Union (ITU) and membership of the Radio Regulations Board (RRB) will be promoted. The elections will be held in the Plenipotentiary Conference in Dubai, UAE, in October. (February 25, 2018) mcit.gov.eg

Within the framework of NTRA's effective participation in the activities of the Euro-Mediterranean Regulators Group (EMERG) and the Egyptian regulator's active role in establishing the Group's self-administration system, NTRA shall participate in EMERG' Benchmarking Conference/ Contact Network meeting that will be held in Sarajevo (Bosnia and Herzegovina). This meeting is the preparatory meeting for EMERG's main meeting that will be held in Cairo in March 2018 as it aims to propose an action plan to the Commission at the Plenary in Cairo (Egypt) heading to a solution that can guarantee the future of the platform after 2019. This meeting comes as an implementation of the previous year's Action Plan which has been adopted at EMERG's annual general meeting that was held in Rome, Italy in 2017. The members will discuss many issues in this year's

meeting, according to EMERG Charter. Chief among them are, the yearly benchmarking report, as the draft to be presented to the Plenary Assembly will be approved, and the tasks and rules of procedures of the Secretariat. Moreover, during this important event, comments will be made on the reports prepared for the working groups in Portugal, Jordan, Germany and Italy in 2017. The meeting will discuss the development of various cooperation ways with the Body of European Regulators for Electronic Communications (BEREC), knowing that BEREC invited NTRA's experts to make a presentation on "Next Generation Networks" (NGN) in the meeting that was held in Munich, Germany in November 2017. It should be noted that Egypt, represented by NTRA, chaired EMERG in 2013 and became a member of EMERG Secretariat in 2014. Egypt is, also, nominated for the second time by the member states to chair the Group this year 2018.
(February 15, 2018) tra.gov.eg

Jordan

According to a World Bank report Jordan is one of only two states in the region where the telecom sector is fully liberalized, and the mobile broadband penetration in the Kingdom is high and prices are low. The report showed that the country's fixed and mobile broadband have reached a developing stage, compared to an emerging state in Algeria, Egypt and Morocco, and a mature stage in Bahrain. Jordan — as well as Qatar and Saudi Arabia — were classified among the countries with high mobile broadband penetration and low prices, said the report titled "Broadband Networks in the Middle East and North Africa: Accelerating High-Speed Internet Access". Kuwait, the UAE and Egypt were classified as countries with high penetration and high prices. "Prices of mobile broadband in Jordan are one of the lowest in the region due to the strong competition between existing operators," Jawad Abbassi, founder and general manager of the Arab Advisers Group, said. "Usage of mobile broadband in Jordan is much higher than fixed broadband because mobile broadband is more personal and users have access to the Internet wherever they are, as they either have an Internet subscription on their mobile or simply carry an Internet dongle," Abbassi told The Jordan Times on Saturday. In the Middle East and North Africa (MENA) region, only Bahrain and Jordan have implemented a policy of full liberalization in telecommunications. All other countries have a limit on the number of licensed operators which increased competition in the market, the report said. Fixed broadband prices constitute about 3.6 per cent of the average monthly income per capita in the MENA region, while mobile broadband prices stand at about 7.7 per cent, according to the report. It also indicated that while Djibouti, Syria and Yemen are significantly above the 5 per cent threshold; Jordan, Algeria, Egypt, Libya, Morocco, and Tunisia have just reached the level that makes rapid broadband take-off possible. Of the 147 per cent mobile subscriptions in Jordan, about 35.9 per cent are mobile broadband users, while in Kuwait around 32.4 per cent of the total mobile subscriptions of about 209 per cent are mobile broadband users, the World Bank report said. In Saudi Arabia, where mobile penetration stands at 203 per cent, 27.5 per cent of mobile holders are mobile broadband subscribers. In terms of fixed broadband, 25.4 per cent of households in Jordan have fixed broadband connections compared to 88 per cent in Bahrain, 69 per cent in the UAE, 66 per cent in Qatar, 51.7 per cent in Saudi Arabia, 32 per cent in Kuwait and 14 per cent in Egypt. The low penetration growth of fixed broadband in the Kingdom could be explained by a strong fixed-to-mobile substitution effect. "After the launch of commercial 3G services in Jordan in September 2010, the annual growth of fixed broadband penetration dropped to −0.5 per cent and between 2011 and 2013 was only 2.5 percent," the report said.
(February 8, 2018) jordantimes.com

Kuwait

Vice Chairman of the Communications and Information Technology Regulatory Authority Khalid Al-Kandari and the Director of the Legal Department of the Iraqi Ministry of Communications Emad Al-Shammari signed an agreement on the regional communications corridor project. "The project is to link the international maritime cables between the East and West regions, through the Arabian Gulf and from Kuwait, Iraq, and Turkey," Khaled AlKandari told a news conference on Wednesday morning 14th of February 2018 on the sidelines of the Kuwait International Conference for the Reconstruction of Iraq. "The project will develop the infrastructure of Kuwait and establish a global headquarters in the field of communications," Al-Kandari added, adding that many jobs and investments are available for international companies. (February 15, 2018) citra.gov.kw

His Highness the Amir Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah received at Bayan Palace on Tuesday January 30th 2018 Deputy Prime Minister and Minister of State for Cabinet Affairs Anas Al-Saleh and the Chairman of the Communications and Information Technology Regulatory Authority Salem Al-Ozainah, who presented to His Highness detailed information on a planned communication project. The project aims to shed light on Kuwait's role in the information technology transfer field in line with international standards. It will also turn Kuwait into a global destination for data transfer between the east and west. Moreover, the project will attract foreign investors and provide job opportunities for Kuwaitis.
(February 1, 2018) citra.gov.kw

Morocco

Morocco has 69.34 percent distribution of mobile networking capability, according to the 2018 OpenSignal report, The State of LTE. Launched in Morocco in June 2015, three operators make 4G mobile broadband available, positioning the country at the forefront of African telecommunications and 60th in the world in terms of coverage, as 69.34 percent of users have access to the 4G network. At the continental level, Morocco is followed by Côte d'Ivoire at 69.30 percent, South Africa at 68.3 percent, Tunisia 61.38 percent, Egypt at 45 percent, and Algeria at 40.95 percent. Globally, South Korea came in first with 97.49 percent of 4G users, followed by Japan, with an estimated coverage rate of 94.70 percent, and Norway at 92.16. In terms of average connection speed, Morocco maintains an estimated speed of 15.8 megabits/second (mbps), ranking 4th in Africa and 63rd in the world. The kingdom trails South Africa, Tunisia, and Egypt on the continent, and surpasses speeds in Côte d'Ivoire and Algeria. Worldwide, Singapore leads the ranking, with an average speed estimated at 44.31 mbps, followed by the Netherlands at 42.12 Mbps and Norway at 41.20 Mbps. "That technological diffusion will cross state borders as it has always done," the report concludes, recalling that just two years ago an average speed of 30 mbps was unheard of except for in a handful of the advanced telecommunications countries. To date, 40 mbps "will likely become an achievable goal" in some regions, the report added. "In the meantime, global operators are keeping plenty busy expanding the reach of their 4G networks. That means when those faster connections finally come, far more people will have access to them far more often."
(February 25, 2018) moroccoworldnews.com

Mobile internet connections in Morocco continued to grow strongly year-on-year in the three months to December, increasing by 31.7 percent to 20.8 million, according to national regulator ANRT. While this represents over 5 million net additions in twelve months, the total installed base dropped by 2.0 percent quarter-on-quarter, as the number of connections declined by 416,000 since September. This could be a seasonal decline, after the growth linked to users arriving in Morocco during the summer period. The ADSL market, dominated by Maroc Telecom (IAM), added 37,000 subscribers in the quarter and 96,000 over the course of 2017, for a total of 1.3 million at end-December. Meanwhile, fiber-to-the home (FTTH) connections experienced a three-fold increase, growing to 36,347 from 10,657 a year earlier. Including fixed and mobile internet users, the country's internet penetration rate stood at 63.7 percent, up by 13 percentage points since the end of 2016. Overall mobile connections increased by 5.8 percent year-on-year to stand at 43.9 million in December. Of the total, LTE subscriptions more than doubled to reach 6.8 million, from 2.8 million at the end of 2016. Postpaid subscriptions rose to 3.3 million, up by 10.4 percent from a year earlier and 2.7 percent quarter-on-quarter. Market leader Maroc Telecom continued to lose ground, as its mobile market share dropped by half a percentage since September to 42.1 percent. Orange Morocco was roughly stable at 34.8 percent, while Inwi progressed to 23.1 percent.
(February 20, 2018) telecompaper.com

Nepal

Nepal Telecommunications Authority is collecting two percent of Gross Adjusted Revenue as a Rural Telecommunication Development Fund (RTDF) every year from the Service providers in telecommunications sector as per the Telecommunication Act, 2053 B.S. and intends to apply a part of RTDF to cover eligible financial subsidy to the selected (based on this RFA) Internet service provider (ISP) licensee(s) to build broadband Network (Optical Fiber & Microwave technology) and provide Internet Access connectivity services in 5 districts of Province viz Panchthar, Khotang, Bhojpur, Terhathum and Dhankuta. The NTA invites Requests for Applications (RFA) for the award of the

contract from existing NTA Internet service provider licensees to build broadband hybrid (Optical Fiber & Microwave) network and provide Internet Access connectivity services in the above 5 districts within 12 months. NTA will provide subsidy to the successful Applicant from RTDF to establish broadband hybrid network and provide Internet/data access connectivity in all Munciplity, Rural Muncipality (Gaun Palika), Ward offices, health centers/health posts and public educational institutions (higher secondary schools and secondary schools). The contract (subsidy) shall be provided to the qualified and successful applicant that has applied for lowest subsidy.
(February 20, 2018) nta.gov.np

Oman

The first online auction for VIP (diamond and gold) numbers will be held and the money raised will go to charity, the

Telecommunication Regulatory Authority (TRA) has said. TRA will oversee the implementation of the number allocation

process by two telecom operators, Omantel and Ooredoo. "Specific procedures will be put in place to prevent potential manipulation, and payment will have to be made within three days," Mohammed Al Kindi, Executive Manager of TRA's Regulatory and Compliance Unit, said. Eng. Babker Othman, Manager of the Technical Standards and Numbering Department at the Regulatory and Compliance Unit, said: "Allocating special numbers through auctioning ensures they reach the largest possible number of interested users. Telecom services users value the transparency in offering the special numbers by auction and donating the money generated to charity. The bidding will be conducted through websites of the two telecom operators and those interested in registering for the auction will get updates by these companies. "Through this auction, TRA continues to spread and instill transparency in allocating special numbers to beneficiaries. The other objective is to limit the illegal trade in allocation of special numbers, noting that revenues from such bidding will go to charitable organizations in the Sultanate, in accordance with the Telecommunications Regulatory Act," Eng. Mohammed Al Kindi added. To respond to some social media inquiries regarding the bidding process, Eng. Babker said: "The diamond and gold numbers are the most popular among telecom services users. The silver numbers have not been included in the auction and have a fixed price of OMR 50." Al Kindi remarked that TRA had recently issued a regulation to organize the allocation of telecommunications numbers pursuant to Decision (No. 1/2018) that was published in the Gazette. As per this decision, allocation of diamond and gold numbers will be by auction in accordance with the procedures set forth in the decision. This would allow greater transparency in the allocation of telecommunications numbers to beneficiaries. He added that the regulation further defined five types of diamond numbers: numbers containing the same digit repeated consecutively at least five times; numbers containing the same two-digit combination repeated four times;

numbers containing the same digit consecutively four times at end between two same digits, numbers containing the same digit consecutively four times at end or next to end and a digit repeated consecutively two times; and numbers containing the same two-digit combination repeated consecutively three times. Also, gold numbers are of seven types: numbers containing the same digit consecutively at least five times at the end or next to the end and a different digit separating the first and second or third and fourth repetition; numbers containing the same digit consecutively four times at end or next to end; numbers containing the same digit consecutively four times between two same digits after the first digit; numbers containing two digits each repeated three consecutive times and the repetition separated by another different digit; numbers containing same first four and last four digits; numbers containing same two-digit combination repeated three times at the end of a number or a combination of two digits repeated twice and the repetition separated by another combination; and numbers containing ascending order of at least six consecutive digits.
(February 4, 2018) timesofoman.com

The Telecommunications Regulatory Authority (TRA), in cooperation with a consultancy firm, is conducting a technical field survey to measure the coverage and quality of mobile telecommunications services in all governorates of the sultanate. The survey covers all populated villages and towns as per the population and housing census data. The project aims to create an updated and approved database on the level of coverage and quality of mobile services in villages and governorates through field visits. The database will serve as a reference for expansion of communication networks for current and future plans. The project will also ensure the availability of comparable information on network coverage and quality of mobile services for each telecom operator, which will assist consumers in making, informed purchasing decisions.
(January 30, 2018) muscatdaily.com

Pakistan

The telecom sector of Pakistan has undergone transformation after the arrival of 3G and 4G services in the country. From the increase in mobile phone penetration to the launch of various m-Services; Pakistan's telecom sector has become a success story for some regional countries who are left behind in technological race. PTA has released latest statistics of cellular subscribers which have witnessed huge growth when compared to previous statistics. Mobile phone subscribers have reached to 145 million marking the teledensity of 71.42 %. The 3G/ 4G subscribers have also witnessed growth and 48 billion out of 145 million are 3G/4G subscribers. The Teledensity of 3G/4G subscribers is 23.81 %. Last year 3G/4G subscribers were 37.576 million which shows that our telecom industry has

flourished a lot. The broadband subscribers reaches to 51 billion with teledensity of 24.96 percent. The Ufone 3G users reached 5.7 million, Telenor 3G users reached 10.63 million, Mobilink 3G users reached 14.29 million and Zong 3G users reached 9.5 million till December 2017. Telenor 4G users reached 1.5 million, Mobilink 4G users reached 1.9 million and Zong 4G users reached 4.9 million. MOIT has always ensured to provide high internet in Pakistan by taking several steps. Other government organizations are also striving hard to provide internet to people. Such as PTA initiated three rounds spectrum auction for Next Generation Mobile Services (NGMS) 3G/4G (PTA) to meet ever increasing demand for broadband connectivity since 2014.
(February 19, 2018) phoneworld.com.pk

Saudi Arabia

The Communication and Information Technology Commission (CITC) is planning to issue temporary licenses to mobile operators to trial 5G technologies, the CITC's Director of Frequencies Majid Al Qahtani said. The CITC will grant spectrum in the 3.4GHz-3.8GHz and 3.8GHz-4.2GHz bands for the trials. Meanwhile, in related news Etihad Atheeb (GO Telecom) has revealed that a court has rejected its appeal to suspend the CITC's decision to retrieve the spectrum awarded to the telco in June 2017, after GO failed to pay the first instalment of the total value of allocated spectrum. Riyadh's administrative court will now hear the company's legal challenge which aims to revoke the CITC's decision on March 13, GO added. The company secured 2×10MHz in the 700MHz band, in addition to a paired 10MHz block in the 1800MHz band, for SAR2.1 billion (USD560 million), with 15-year validity (from January 1, 2018). The first instalment represented 30% of the total value of the concession, or SAR619 million.(February 23, 2018) Argaam

The Communications and Information Technology Commission (CITC) has awarded a total of 80MHz of spectrum across the 700MHz, 800MHz and 1800MHz bands to Saudi Telecom Company (STC), Zain Saudi and Etihad Etisalat (Mobily) in an auction held on February 11, 2018. Mobily won 2×10MHz in the 800MHz band for a license fee of SAR100 million (USD26.6 million) payable in equal annual instalments over 14 years, starting from January 1, 2019, in addition to an annual usage fee of SAR54 million. The spectrum will be available for use from the second half of 2018. Moreover, Mobily also secured an additional 2×5MHz of spectrum in the 1800MHz band for a total license fee of SAR30 million, again payable in equal annual instalments over 14 years from January 1, 2019, with an annual usage fee of SAR19.3 million. This spectrum will be available for Mobily use starting from March 1, 2019. For its part, STC said it had purchased additional spectrum in the 700MHz and 1800MHz bands for a total value of SAR1.56 billion.

(February 12, 2018) telegeography.com

Sri Lanka

Mobitel, a wholly owned subsidiary of Sri Lanka Telecom (SLT), says it is gearing up to roll out '4.5G' commercially in its network, offering end users even more bandwidth and improved data speeds to those already delivered by regular 4G networks. The company added that its Enterprise clients signed up to Mobitel Enterprise Solutions will soon be able to use the next generation network. The network will use upgraded 4×4 MIMO, 256QAM and carrier aggregation (CA) using the 900MHz, 1800MHz and 2100MHz bands. The unit continues to invest in its infrastructure development and claims: '4.5G will act as a bridge for the

eventual adoption of the 5G standard, while bringing significant improvements to Mobitel's existing 4G networks by allowing them to handle more data-intensive applications. Since Mobitel demonstrated 4.5G speeds at the 2017 Techno Exhibition, its loyal customer base has been eagerly awaiting the launch of its 4.5G network to enjoy a one-of-a-kind user experience.' In June 2017 SLT and Huawei Technologies carried out successful field trials of pre-5G LTE-A Pro technology in the country, laying the groundwork for the implementation of the next generation of broadband technologies. (February 7, 2018) telegeography.com

Turkey

Turkey joined the world in marking Safer Internet Day, an occasion to raise awareness about the dangers children and the youth face online, from falling victim to child pornography to cyberbullying. In Turkey, 60 percent of the population is now connected to the internet, with 71 million mobile phone users and 42 million social media users in a population of over 80 million. Users spend an average of seven hours a day on the computer, three hours on their smartphones. The country introduced a free option to switch to Safer Internet Service seven years ago, enabling families to protect their children from inappropriate content online. According to data released by the Turkish Statistical Institute (TurkStat), children are starting to use computers as young as 8 years old. Speaking at an event in Ankara on Safer Internet Day, Ömer Fatih Sayan, head of

Information Technologies and Communications Agency (BTK), the top state-run internet watchdog, said this year's theme for the day was "a better internet starts with you". He noted that some 6 million users have opted for Safer Internet Service since its introduction and they reached out to thousands of students, educators, and families for educating them about a safer use of the internet, through mobile units visiting cities and towns. Another area of focus for Turkey is to curb cyberbullying, a threat to youth around the world, pushing some to as far as committing suicide. BTK and Samsung recently started an initiative called, "Don't be a cyberbully," which raises awareness and provides training to children, young people, families, and teachers on the protection of their personal rights online. (February 7, 2018) dailysabah.com

United Arab Emirates

A total of 34 cyberattacks against government and private sector entities in the UAE were foiled by the Telecommunications Regulations Authority (TRA) during January 2018, against 136 in the same month last year. The attacks stymied by the TRA's Computer Emergency Readiness Team during the monitored month were carried out from outside the country, 16 of which were classified as fraudulent offensives, eight as data breaches, three aimed at defacing and blocking websites, while the rest was carried out for other purposes, reported Emirates news agency Wam. TRA has been launching awareness campaigns, including lectures, seminars and workshops to promote cyber safety and best practices in this field, calling upon all departments to have backup data bases independent of the internet. Ransomware-type viruses such as Zyklon were among the most rampant during January. Cyber-attacks seek to deface and block government websites, including denial of service, hacking, deception, fraud, and identity and document theft. (February 19, 2018) tradearabia.com

The Telecommunications Regulatory Authority (TRA) signed a cooperation agreement with Mohammed Bin Rashid Space Centre (MBRSC). According to agreement, the TRA will fund the Emirates Mars Mission 2117 launched by Sheikh Mohammed bin Rashid Al Maktoum, the UAE Vice President, Prime Minister and Ruler of Dubai. Majed Al Mesmar, ICT Fund Chairman of the Board of Trustees, and Yousuf Al Shaibani, MBRSC director general signed this agreement. Furthermore, the agreement signed to grow and build national capacities and to enhance the UAE's leading role. Al Mesmar said: We are pleased with the level of integration and coordination between TRA and MBRSC, which is a model that represents the wise leadership's directives regarding collaboration between government entities, in order to achieve the national vision of reaching the first position in various areas and fields. He further added that: A few days ago, we have celebrated in the UAE the launch of KhalifaSat, the first Satellite fully manufactured by Emirati Engineers. This step constitutes a great incentive for us to develop and support young national talents and cadres, who are able to seize the momentum and continue the work in high spirits, to preserve and build upon these gains, in order to enhance the UAE's scientific position, and its contributions in building the civilization of humanity. Al Mesmar added. This agreement is part of a series of agreements and steps that the ICT Fund in TRA is undertaking to train and prepare young national cadres. We assure that this cooperation with MBRSC will have a significant impact in pushing space research and development efforts to new horizons. Al Shaibani said: We are extremely proud of our cooperation with TRA, a step that supports the long-term strategy of MBRSC. Al Shaibani added that: The UAE's entry into the space world and technology field, constitutes a major development in its journey. (February 12, 2018) 3gca.org

The Telecommunications Regulatory Authority (TRA) announced that 13 national competition projects for the World Summit on the Information Society (WSIS) will be announced at a special ceremony held by the International Telecommunication Union (ITU) in Geneva, Switzerland, next March. The announcement of the names of the candidate projects will be accompanied by the opening of electronic voting for the public to select 5 projects in each of the 18 categories of the prize. The voting process will start from January 29 to February 18. The winning project will be determined in the second stage after counting all the votes. The national projects include Mabrouk Maak and Future, presented by the Telecommunications Regulatory Authority (TRA), the Mohammed bin Rashid Intelligent Learning Program (MoEHE), the National Initiative for e-Learning Awareness from the Khalifa Program for Empowerment, The Digital Kids from the General Women's Union, the Secure Block Secure Real Estate Platform of the Dubai Land Department, the application of Dubai Plus, the Dubai Smart Government Foundation, and a suite of applications using the Microsoft Hololens glasses for six sectors of the brain , The Salama project, the eHealth Initiative of the Dubai Health Authority, the Ajman Digital Transformation Program submitted by Ajman's Digital Government, HE Hamad Obaid Al Mansouri, Director General of TRA, said: "The number of projects and the diversity of the candidates for the awards reflects the maturity and development of the smart service delivery process in the UAE. This is a practical reflection of the leadership vision of achieving the transformation. "These figures are a practical indicator of qualitative leapfrogging in building a knowledge-based economy and achieving sustainable development based on national talent and human resources." "Over the past few years, we have been able to win several awards and we look forward to continuing this year's excellence and enhancing the UAE's effective presence in all international forums and competitions related to the telecommunications sector and smart governments. On this occasion, I would like to pay tribute to the efforts of all federal and local government agencies, which have provided many initiatives and smart solutions that all serve the customers and their happiness." (February 6, 2018) tra.gov.ae

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Angola

The state-owned fixed network operator Angola Telecom (AT) is undergoing formal evaluation of its financial condition and assets as a pre-requisite for its upcoming part-privatization. Recall that in November 2017 the Angolan government disclosed a plan to privatize a 45% stake in AT, with a target date of March 2018. Jornal de Angola indicates that the plan remains on course, and that the government intends to publicly float part of the telco's share capital on the local stock market to broaden its investment base whilst ensuring greater transparency in monitoring the company's performance. Up to around 30 state enterprises are being evaluated on a case-by-case basis for potential privatization by a multi-sector commission, with AT jumping to the front of the queue as a priority. (February 5, 2018) Jornal de Angola

Australia

The Australian Government will this year introduce legislation aimed at modernizing spectrum management in the nation, including by moving towards a single spectrum licensing framework. The government recently announced the results of two reviews into Australia's spectrum landscape, which include a series of recommendations that will be implemented by the telecoms ministry and regulator ACMA. Key recommendations include developing pricing mechanisms aimed at ensuring optimal efficiency of spectrum markets and allowing spectrum to be put to its highest value use, and consolidating tax legislation to support the move to a single spectrum licensing framework. Other recommendations cover creating a whole-of-government approach to managing government spectrum holdings and establishing an advisory committee made up of members of relevant government agencies to oversee this approach. Announcing the findings, communications minister Mitch Fifield said the reports will help the government fulfill its goal of overseeing the most significant reforms to Australia's spectrum management in the past 25 years. A package of reforms will be introduced to parliament this year following further consultation with industry, he said. (February 5, 2018) telecomasia.net

Austria

The Regulatory Authority for Broadcasting and Telecommunications (RTR) has opened the final consultation on the award of 5G-suitable frequencies in the 3.4GHz-3.8GHz range, which is planned to take place in autumn this year. A total of 390MHz of spectrum is planned for allocation on a regional basis, comprising 190MHz within the 3410MHz-3600MHz range and 200MHz in the 3600MHz-3800MHz band. The consultation involves the framework for the allocation process, including tender documents, auction conditions, spectrum caps, minimum bids and rollout obligations. A spectrum cap of between 140MHz-160MHz per operator, depending on the region, has been proposed to ensure fair competition. Interested parties have been invited to submit comments on the auction conditions by March 15. (February 23, 2018) telegeography.com

Brazil

The National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) is set to consider increasing the spectrum caps currently applied to each operator, potentially paving the way for a large-scale merger. According to local news site TeleSintese, the proposal – which was presented by Anatel board member Otavio Rodrigues – would see the spectrum cap for sub-1GHz bands increase from 29% of the overall spectrum in circulation (per operator) to 35%, while the cap for spectrum in the 1GHz-3GHz range would rise from 21% to 30%. A public consultation is now anticipated, the report notes. Anatel is set to stage a tender for previously unsold 700MHz spectrum in the second half of 2018. The watchdog initially auctioned the 700MHz band in September 2014, generating a total of BRL5.85 billion (USD2.39 billion) – well below its BRL7.71 billion target. While Vivo, TIM Brasil and Claro all picked up nationwide spectrum blocks, Oi did not participate in the auction. Likewise, regional operator Algar Telecom acquired spectrum within its own footprint, but Sercomtel opted not to. Another concession – nationwide barring the Algar/Sercomtel operating regions – also went unsold.mGoing forward, Anatel is also set to free up spectrum in the 2300MHz-2400MHz band for mobile use – revoking the frequencies from Auxiliary Broadcasting and Related Services (Servicos Auxiliar de Radiodifusao e Correlatos, SARC) and replay TV (Repeticao de Televisao, RpTV) license holders. No date for that tender has been set, however. (February 26, 2018) telegeography.com

The National Telecommunications Agency (Anatel) is set to stage a tender for previously unsold 700MHz spectrum in the second half of 2018. According to local press reports, the plans were revealed by Juarez Quadros, the President of Anatel, following a meeting with Eduardo Guardia, the Executive Secretary of the Ministry of Finance. The spectrum will be available to new or existing operators, the official noted. Anatel auctioned the 700MHz band in September 2014, generating a total of BRL5.85 billion (USD2.39 billion) – well below its BRL7.71 billion target. While Vivo, TIM Brasil and Claro all picked up nationwide spectrum blocks, Oi did not participate in the auction. Likewise, regional operator Algar Telecom acquired spectrum within its own footprint, but Sercomtel opted not to. Another concession – nationwide barring the Algar/Sercomtel operating regions – also went unsold. Previously, in November last year, it was reported that Anatel was also set to free up spectrum in the 2300MHz-2400MHz band for mobile use – revoking the frequencies from Auxiliary Broadcasting and Related Services (Servicos Auxiliar de Radiodifusao e Correlatos, SARC) and replay TV (Repeticao de Televisao, RpTV) license holders. No date for that tender has been set, however.
(February 16, 2018) telegeography.com

Costa Rica

The Comptroller General (La Contraloria General de la Republica, CGR) has approved the results of last year's spectrum auction, which saw Movistar and Claro each secure additional frequencies in the 1800MHz and 2100MHz band, El Financiero writes. The approval will allow the cellcos to begin using the airwaves, both operators having previously said they intend to use the frequencies to enhance their existing 3G and 4G networks. A total of 70MHz was awarded to the pair in July 2017. Movistar submitted a bid of USD24 million for 2×20MHz in each of the two bands, whilst Claro's offer of USD19 million secured it 2×5MHz in the 2100MHz range, alongside 2×10MHz in the 1800MHz band. (February 8, 2018) telegeography.com

Germany

The Federal Network Agency (FNA, known locally as the Bundesnetzagentur or BNetzA) has published a draft decision on its plans for the allocation of 5G-suitable frequencies, as it seeks to encourage the nationwide rollout of next generation wireless networks as early as possible. The draft proposes that 2×60MHz of paired spectrum in the 1920MHz-1980MHz/2110MHz-2170MHz range will be auctioned off for nationwide use alongside 300MHz of unpaired spectrum in the 3400MHz-3700MHz range. The regulator plans to sell off the frequencies this year, with the first commercial 5G services set to launch by the end of 2020. Interested parties have been invited to submit comments on the draft consultation by February 28, 2018.
(January 31, 2018) telegeography.com

Greece

The government has launched an international tender to sell a 5% stake in former monopoly telco OTE (Cosmote), a move in line with Greece's international economic bailout terms. Privatization agency Hellenic Republic Asset Development Fund (HRADF, or locally TAIPED) announced on its website the start of the process for the acquisition of 24.51 million common registered shares in OTE SA, 'to be conducted in one phase', requesting that interested investors submit their binding offers, in accordance with the Request For Proposal posted on the HRADF website, no later than March 15, 2018 (with a March 7 deadline to request clarifications). Germany's Deutsche Telekom (DT) owns a 40% stake in OTE and has pre-emptive rights on the 5% stake to be tendered, although it has not yet indicated whether it will place an offer. The Greek state shares joint management control with DT, whilst retaining a 10% stake, half of which was transferred to the HRADF in November 2016 for subsequent sale. Greece has earmarked EUR250 million (USD307 million) from the OTE stake sale in this year's budget plan, adding that OTE has a market value of EUR5.7 billion, ranking it Greece's second biggest listed company by stock value after Coca-Cola HBC. Greece has raised about EUR4.7 billion from privatizations since it signed its first bailout in 2010 and aims to raise another EUR3 billion by 2019, a year after its current rescue program expires. OTE provides quadruple-play fixed voice/broadband, mobile and TV services in Greece under the Cosmote banner, and also operates in Romania (fixed and mobile services) and Albania (mobile).
(February 15, 2018) reuters.com

Hong Kong

The Office of the Communications Authority (OFCA) has opened a consultation into the proposed use of 5GHz spectrum for Licensed Assisted Access (LAA) 4G services. The watchdog says that 580MHz of spectrum is currently allocated for shared access in the 5GHz range, covering technologies such as Wi-Fi. It adds that the use of the unlicensed spectrum for 4G services would be a 'significant addition' to the 522MHz of licensed spectrum which is in use by the territory's mobile network operators (MNOs).
(February 5, 2018) telegeography.com

India

India is planning to auction more than 3,000MHz of frequencies at the upcoming sale, with spectrum in the 700MHz, 800MHz, 900MHz, 1800MHz, 2100MHz, 2300MHz, 2500MHz, 3300MHz-3400MHz and 3400MHz-3600MHz all scheduled to go under the hammer Telecom Minister Manoj Sinha said. The ministry has requested recommendations on pricing for the airwaves from the Telecom Regulatory Authority of India (TRAI). The auction will be the nation's largest spectrum sale with the previous mass tender in 2016 – which featured more than 2,300MHz of airwaves – having left more than half of the available frequencies unsold. Regarding spectrum for 5G services, the minister confirmed that the frequencies will be usable with the new technology once the standardization process is completed, in 2020: 'The standardization is expected to be completed around the year 2020 after which the frequency bands already auctioned and proposed to be auctioned, can be used for the deployment of 5G technology.'

(February 9, 2018) The Economic Times

Sector watchdog the Telecom Regulatory Authority of India (TRAI) has criticized Reliance Communications (RCOM) for attempting to seize unspent pre-paid balances and security deposits of its customers following the closure of its wireless services, threatening to take action if the company continues to refuse to refund its former subscribers. TRAI Chairman RS Sharma was quoted by the Economic Times as saying that the company does not have any 'moral, ethical or legal basis to say that they can't refund the money'. RCOM was directed by the regulator to refund its customers' unused credit by January 31, 2018, but the cellco has challenged the order, saying that under mobile number portability (MNP) rules, it is not required to give any money back to the users. The operator added that there was no precedent of customer refunds from other cases of operators closing down. Responding to the claims, Mr. Sharma explained: 'We have given directions under the relevant provisions of the TRAI Act. We have the powers to give directions to RCOM … What is happening today is a very exceptional situation. In a normal MNP case, I typically exhaust all my balance before I port out because I know I won't get a refund. But in this situation, the operator has shut down services, so the consumer doesn't have the opportunity to exhaust the balance. Therefore, this is a very abnormal situation.' (February 7, 2018) telegeography.com

The Indian government has unveiled plans to allocate funds of around INR145 billion (USD2.27 billion) for telecom infrastructure projects in its budget for the 2018/19 fiscal year (which runs from April 1, 2018 to March 31, 2019), the Economic Times reports. Finance Minister Arun Jaitley announced that INR100 billion would be set aside for infrastructure projects managed by the Department of Telecommunications (DoT) whilst the other INR45 billion would be used for the 'Network for Spectrum' project: a program overseen by state-owned telco Bharat Sanchar Nigam Limited (BSNL) that will see the construction of an alternative communication network for the defence ministry in exchange for the release of spectrum previously used by the ministry. Of the INR100 billion figure, INR80 billion will be used for the government's ongoing Bharat Net project, which aims to connect 250,000 gram panchayats (GPs, village-level administrative divisions) to broadband networks by March 2019; 100,000 GPs were connected by the end of 2017. Also covered by the budget are programmes for: the deployment of 156 additional mobile towers in naxalite-affected areas; upgrade work at 302 VSAT sites; the deployment of 25,000 Wi-Fi hotspots in rural areas; the construction of fiber-optic links to the Andaman and Nicobar and Lakshadweep island groups; and the erection of 2,817 new towers to cover 4,119 unserved villages in the North East region.

(February 2, 2018) telegeography.com

The Telecom Regulatory Authority of India (TRAI) has amended regulations on mobile number portability (MNP), lowering the charge for moving a mobile number to a different carrier from INR19 to INR4 (USD0.298 to USD0.063). The fee – known as the 'per port transaction charge' – is paid by the recipient operator to the relevant MNP service provider (MNPSP). The ceiling price was set at INR19 by the TRAI in 2009 using financial data submitted by the two MNPSPs at the time, based on the estimated cost of offering the service over a five-year period. The TRAI reviewed the costs associated with MNP in 2017 and found that the charge was too high and in December that year published a draft resolution to lower the fee. The regulator notes that most stakeholders argued that the TRAI's proposed rate of INR4 was still too high, arguing in favor of lowering the rate further still, to INR2. However, the MNPSPs countered that the rate of INR19 was reasonable, and should not be revised, pointing out that the current move towards consolidation in the wireless market will lead to a decline in porting volumes due to the reduction in the number of potential mobile service providers.

(February 1, 2018) telegeography.com

Kenya

The Communications Authority of Kenya (CA) has confirmed that mobile operator Airtel Kenya has paid USD25 million for a license to provide 4G LTE services in the 800MHz frequency band, reports Business Daily. 'We are in the process of (officially) rolling out 4G and we expect to officially launch soon. We are driving towards the fastest speeds at the most affordable rates in the Kenyan market with Airtel 4G.

Customers with 4G-enabled phones together with 4G SIM cards are now able to experience our 4G network in various parts of Nairobi,' Airtel said in a statement. Airtel has been testing a 4G network since April 2017, while Telkom Kenya and Jamii Telecom are also providing LTE services under trial licenses, which are set to expire in March and June 2018, respectively. (February 8, 2018) telegeography.com

Mexico

Mexico's Federal Telecommunications Institute (IFT) has announced additional details regarding its long-planned auction of spectrum in the 2500MHz-2690MHz ('2.5GHz') band. 120MHz of radio spectrum will be made available in six national 20MHz blocks: four paired 2×10MHz FDD blocks and two unpaired 20MHz TDD blocks. The remaining 10MHz will be reserved as 'guard band' spectrum. The 'tender submission procedure' will commence on July 31, 2018, and the licenses should be distributed in November or December this year. All concessions will be made available for a 20-year period; the minimum reference value (valor minimo de referencia, VMR) for each 20MHz license has been set at MXN350 million (USD18.7 million). Preference will be given to companies not currently in possession of AWS, PCS or 2.5GHz spectrum, while license winners will be obliged to provide service in at least 200 of the 557 localities with a population between 1,000 and 5,000 inhabitants, which currently lack a mobile service. In addition, they must deliver connectivity to at least ten of the 13 metropolitan areas with more than one million inhabitants. (February 12, 2018) telegeography.com

Following this tender, Mexico will have 575MHz of radio spectrum available for international mobile telecommunications (IMT), which compares favorably with the 222MHz that was available prior to

2013's constitutional reform of the telecoms sector. The telecommunications regulator said any operator can take part in a spectrum auction to be held this year, although it will set caps. The news means America Movil is free to bid. Competitors had called for limits to be placed on the operator's participation after it acquired a chunk of spectrum in 2017. In a statement, Instituto Federal de Telecomunicaciones (IFT) said it is set to auction 120MHz of spectrum in the 2500MHz to 2690MHz range which can be used for wireless services. This includes broadband, 5G and IoT. "In reality nobody, no operator is restricted from participating, but we have determined spectrum caps," Alejandro Navarrete, the head of spectrum at IFT, said on local radio. The caps will depend on the amount of spectrum operators already have, he stated. In its statement IFT also said participants "must present a guarantee of seriousness of MXN700 million [$37.1 million], which may increase during the bidding process" and set aside certain obligations the winners must meet. One of these is to provide mobile services to at least 200 localities which currently lack access. The auction process will run from February 13 to the end of the year. In terms of market share, America Movil leads the way by a big margin (63 per cent) in Q4 2017, GSMA Intelligence figures showed. Telefonica is at number two with 24 per cent and AT&T follows with 14 per cent. (February 9, 2018) reuters.com

Malaysia

Following on from recent reports that Malaysian mobile operator Celcom has agreed to the terms for the reissuance of its 2100MHz spectrum, its rivals Maxis and DiGi have now done likewise. In a filing with the Bursa Malaysia, Maxis noted that it had accepted the Malaysian Communications and Multimedia Commission's (MCMC's) offer to renew its holdings in the aforementioned band, which comprise a 2×15MHz FDD block and 1×5MHz TDD block. Having paid the price component fee of MYR118.4 million (USD30 million), Maxis will retain its 2100MHz frequencies for a further 16 years starting 2 April 2018, with it required to make an annual fixed fee payment of MYR50 million for the spectrum. Meanwhile, in its own filing DiGi said it too had accepted the regulator's spectrum renewal offer for its 2×15MHz of 2100MHz frequencies – on the same financial terms, and for the same duration, as its rivals – while confirming it has now made the initial lump sum payment required. (January 31, 2018) telegeography.com

Axiata Group has announced that its local subsidiary Celcom has received an offer from the Malaysian Communications and Multimedia Commission (MCMC) with regards to the reissuance of its existing spectrum assignment in the 2100MHz band. In a filing with the Bursa Malaysia, Axiata confirmed that to retain the 2×15MHz block it currently holds (1950MHz-1965MHz/2140MHz-2155MHz) for a 16-year period from 2 April 2018 it would be required to pay a 'price component payment' of MYR118.4 million (USD30.5 million) by 1 February 2018, as well as an annual fixed fee payment of MYR50 million, with the latter due by 15 December each year throughout the assignment period. In line with this, it was noted that Celcom has already submitted the price component fee in one lump sum, with this payment having been acknowledge by the MCMC.
(January 30, 2018) telegeography.com

Moldova

The National Regulatory Agency for Electronic Communications and Information Technology (ANRCETI) has revealed that its Decision No.54 on the general authorization regime for electronic communications has entered into force. Under the new legislation, the ANRCETI simplified and updated the notification form and the nomenclature of the types of electronic communications networks and services subject to general authorization. In addition, the regulator also approved the standard forms of the applications for obtaining or extending licenses for the use of radio frequencies and of similar applications for the use of numbering resources for providing electronic communications networks/ services. Following the adoption of Decision No.54, the Electronic Communications Law No. 241-XVI of November 15, 2017 was also amended (to be known as Law No.241/2007). (January 28, 2018) telegeography.com

Nigeria

The Nigerian Communications Commission (NCC) has awarded two of 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. Local newspaper The Guardian reports that Zinox Technologies was licensed for the South East region, while Brinks Integrated Solutions won the bid for the North West zone. A total of seven InfraCo licenses are being offered by the NCC; MainOne Cable and IHS secured the first two concessions – for Lagos State and the North Central region, respectively – back in January 2015, and the remaining three permits are expected to be awarded by the end of this month. (February 6, 2018) telegeography.com

Norway

The regulator Nkom has confirmed plans to auction high-band spectrum this autumn. The sale will include frequencies in the 6 GHz, 8 GHz, low 10 GHz, high 10 GHz, 13 GHz, 18 GHz, 23 GHz, 28 GHz and 38 GHz band. Nkom started a public consultation on the proposed rules for the auction, including reserve prices, auction format and spectrum divisions. This is open for comment until April 5. On March 14, the regulator will hold a webinar on the two options for the auction format - clock or combined multi-round. The detailed rules will be subject to an additional consultation this summer, before being finalized. (February 21, 2018) telecompaper.com

The National Communications Authority (Nkom) has called for applications from parties interested in acquiring spectrum in the 700MHz band for offshore use. With the frequencies expected to become available for use from June 3, 2021 – the spectrum in question currently being utilized for digital television broadcasting by Norges Televisie (NTV) – the Nkom did note that it may be freed up sooner, should an agreement be reached on releasing 700MHz frequencies for mobile communications use on the mainland at an earlier date. A total of 2×30MHz (703MHz-733MHz/758MHz-788MHz) is set to be assigned to mobile communications services, it has been confirmed. Meanwhile, with the Nkom having previously called for expressions of interest in 900MHz spectrum for offshore use late last year, it subsequently confirmed plans to award licenses in this band via auction as a result of surplus demand. In line with this, the regulator has now said that should it find there to be excess demand for 700MHz spectrum for use offshore, then it believes it would be 'advantageous' to allocate such frequencies at the same time as those in the 900MHz band. The Nkom has set an application deadline of March 19, 2018 for companies to express their interest in applying for offshore 700MHz spectrum. (February 20, 2018) telegeography.com

The telecoms regulator the National Communications Authority (Nkom) claims to have received information which suggests that Telenor Norge has broken rules relating to the contact allowed with customers moving to a rival provider. The announcement relates to a decision passed in December 2016, when the Nkom introduced new regulations with a view to limiting what it terms 'winback' opportunities. As per the rules, mobile network operators (MNOs) are not allowed to contact customers with a view to retaining them from the day they request to port their number to until 14 days after their move has been completed. Now, in the wake of receiving information which indicated Telenor had breached these rules, the Nkom has said that the MNO will be required to change its practices with regards to customers that switch to a competing provider. These changes will reportedly also apply to the cellco's 'Talkmore' branded services. Telenor has been given until February 21 to comment on the matter by the regulator. (February 6, 2018) telegeography.com

Panama

The National Public Services Authority (ASEP) has confirmed that Digicel Panama has been awarded 2×10MHz blocks of 700MHz spectrum in the 738MHz-748MHz/793MHz-803MHz bands. The decision was approved by Cabinet Resolution No. 142 (dated November 13, 2017) and green-lit by the regulator late last month. The spectrum price has been set at USD22.571 million, while the frequencies must be put into use within twelve months (i.e. by January 2019). (February 6, 2018) telegeography.com

Philippines

The Acting Chief of the Department of Information and Communications Technology (DICT), Eliseo Rio Jr, said that it has decided to move the deadline for the auction of the Philippines' third telco position. 'If we force the end-of-March deadline, there might not be any bidders,' he is quoted as saying in a text message to reporters, noting that the request to delay actually comes from the groups wishing to participate themselves. The news is a blow to controversial president Rodrigo Duterte who had previously dismissed the DICT's request to extend the deadline, tasking the agency to select the winner of the auction by March this year. To facilitate this, the DICT had announced its intention to conduct a reverse bidding auction, allowing it to grant provisional authority and award the available 3G and 4G mobile frequencies to the winning concessionaire. Here, the department could base its decision on the highest-ranked criterion: the group proposing the most comprehensive (i.e. highest) five-year financial rollout plan to best utilize the spectrum on offer. In the wake of the latest delay, however, Rio has said that the DICT now intends to post the initial memorandum circular (MC) for the third telco auction on February 19, following which a public forum will take place (February 27) and an open hearing on the MC (March 6). The deadline for the submission of position papers will follow on 12 March, he added, with April 5 set as the tentative effective date for the memorandum and May 18 for bid submissions.
(February 16, 2018) telegeography.com

According to local press reports, Philippine giant PLDT Inc. has reportedly agreed to hand back to the government mobile spectrum held by its former Connectivity Unlimited Resources Enterprise (CURE) unit 'at no cost', frequencies that will soon be made available to the country's new third operator. Presidential spokesperson Harry Roque is quoted as saying that President Rodrigo Duterte has expressed his displeasure that the government would have to find frequencies to assign to the new telecom services provider. Although PLDT had previously set out its stall to recoup up to PHP3 billion (USD58.3 million) as compensation for surrendering the frequencies, in a radio interview, Department of Information and Communications Technology Officer-in-Charge Eliseo Rio Jr said that PLDT chairman, president and CEO Manuel Pangilinan had agreed to return the former CURE frequencies to the government without recompense. PLDT surrendered CURE's spectrum assets to the National Telecommunications Commission (NTC) back in 2012 as one of the conditions set by the government for its acquisition of rival mobile operator Digital (Sun Cellular) from the Gokongwei Group. The NTC had hoped to auction off the frequencies but its efforts failed amid problems relating to establishing and agreeing PLDT's compensation for recovering the spectrum.
(February 7, 2018) telegeography.com

Spain

The Ministry of Energy, Tourism and Digital Agenda (Ministerio de Energia, Turismo y Agenda Digital, MINETAD) has taken another step towards the auction of 5G-suitable wireless spectrum, by publishing additional information relating to its 'Plan Nacional 5G'. The government agency will seek to auction spectrum in the 3400MHz-3800MHz band, with a limit of 120MHz per operator. Bidding will take place 'under competitive conditions', the Ministry notes. Interested parties have until March 14 to provide feedback. In other Spanish news, Telefonica and Orange Espana have announced that they have signed a new commercial wholesale deal, giving the latter access to Telefonica's fiber-to-the-home (FTTH) network in areas where it does not intend to roll out its own infrastructure. The new agreement represents an extension of the current 2016 agreement, and will see Orange continue to access Telefonica's network in non-regulated areas (as defined by April 2016 legislation). As such, Orange will ensure wholesale revenues across Telefonica's footprint (either in non-regulated or regulated areas) in exchange for competitive prices in non-regulated areas. A similar agreement with Vodafone Spain was reached last year, and Telefonica says that it is open to negotiations with other players.
(February 23, 2018) telegeography.com

Somalia

The Somali Cabinet has approved the appointment of Abdi Sheikh Ahmed as the director-general of the country's fledgling telecoms regulator, the National Communications Authority (NCA), reports Garowe Online. The development follows the passing into law of the landmark Communications Act in October last year. The country's first telecoms law aims to establish the legal, regulatory and institutional frameworks for the sector and calls for the establishment of an independent regulatory authority. 'This is another milestone by the ministry to have the director endorsed in due course because it will bring us closer to the establishment of the regulator,' said Minister for Posts, Telecommunications and Technology, Abdi Ashur Hassan, adding: 'When the law was passed in 2017 we promised our commitment to its implementation, and the establishment of the NCA is the first step towards that goal.'
(February 20, 2018) telegeography.com

Sweden

The Swedish Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a public consultation on its plans to allocate spectrum in the 3.4GHz-3.8GHz and 26.5GHz-27.5GHz bands for 5G services from 2020, with comments invited until 14 March 2018. In so doing, the regulator noted that while some of the spectrum is currently free, other blocks are being used at present for wireless broadband services. Regarding the 3.5GHz-3.8GHz band, the PTS is planning to award frequencies in two types of areas: in predefined geographical areas with high population density and/or high demand, allocation is proposed through a selection procedure, while in smaller geographical areas outside the predefined areas, allocation is proposed without a selection procedure. In the smaller areas outside the predefined regions the regulator will also award spectrum in the 3.4GHz-3.5GHz band, without a selection procedure. Further, the PTS is planning to award the 26.5GHz-27.5GHz band without a selection procedure in smaller areas; the frequencies in this band will be assigned later, when the technical specifications of the 5G standard have been established. The PTS expects that the spectrum distribution will take place in 2019, although the permits are expected to enter into force at different times. (February 19, 2018) telegeography.com

Swedish postal and telecoms regulator PTS said it has suggested a number of changes to the law on electronic communications (LEK) in order to improve access to secure and well-function telephony and broadband services. Among other things, it is proposing changes to the way penalties are imposed when providers breach regulations, and more options for PTS to gather information from operators. PTS said following regulations can be costly and time-consuming for operators, with the result they do not always fulfil them. Currently, the watchdog has the power to issue an injunction, which potentially can have a fine attached. Only after a protracted period of supervision does the operator risk a financial consequence. Now, to encourage providers to stick to the rules from the start, PTS proposes that it should have the right to impose charges. Such charges could depend on factors such as the duration of a breach. Dan Sjoblom, director-general of PTS, said the watchdog also needs a stronger mandate to gather information from operators, to support its role as a supervisory agency that also has a responsibility for contingency preparations. For this reason, the regulator is recommending that the law should be complemented by an obligation for operators to submit data enabling PTS to judge their ability to withstand stresses, risks, vulnerabilities and security breaches. Providers must also have a greater obligation to supply details of events that could affect telecoms security, PTS said. In addition, PTS recommends that operators leasing capacity on another provider's network should give notification of problems that could cause a shut-down if they do not make their lease payment in time. Such closures can affect operations necessary to operations necessary to society, it said. (February 13, 2018) telecompaper.com

Telecoms regulator the Swedish Post and Telecom Agency (PTS) has announced that Netett Sverige (Net 1 Sweden) has won the auction for spectrum in the 450MHz band. The company placed a bid of SEK91.3 million (USD11.4 million), but as per the PTS' auction rules it will pay the price offered by the second-highest bidder (Telia with SEK40.2 million). The company will be awarded 2×5MHz (452.5MHz-457.5MHz/462.5MHz-467.5MHz) in the band, for use from March 5, 2020 until December 31, 2044. The PTS has stipulated that Net 1 will now be required to cover 80% of the area in each Swedish county with mobile broadband services, offering minimum download speeds of 5Mbps and upload speeds of 128kbps. (February 7, 2018) telegeography.com

The Swedish Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a consultation on its updated proposals for the allocation of spectrum in the 700MHz band. All interested parties are invited to submit their comments on the new proposal by February 23. Under the revised plan, the regulator will award the following frequencies:
- Two blocks of 2×5MHz for FDD use: 713MHz-718MHz/768MHz-773MHz and 718MHz-723MHz/773MHz-778MHz
- One 2×10MHz FDD block (with coverage obligation): 723MHz-733MHz/778MHz-788MHz
- Four 1×5MHz supplementary downlink (SDL) frequency blocks: 738MHz-743MHz, 743MHz-748MHz, 748MHz-753MHz and 753MHz-758MHz.

The regulator has also decided not to introduce a cap on the amount of spectrum that can be acquired by any single operator. Following the completion of the consultation, the PTS will publish a general invitation for participation in the tender in April 2018, with the spectrum auction scheduled to be held on December 4, 2018. The awarded licenses will come into effect on January 1, 2019 and will be valid until December 31, 2040. The 2×10MHz block of spectrum will come with an obligation to provide minimum download speeds of 10Mbps to subscribers in unserved areas.
(February 1, 2018) telegeography.com

Switzerland

The Swiss parliament's Commission for Transport and Telecommunications (Kommissionen Fur Verkehr Fernmeldewesen, KVF) has called for a revision of the nation's regulations regarding non-ionizing radiation, claiming that the existing rules hinder necessary mobile network expansion works, particularly with regards to 5G. In its statement, the KVF claimed that Switzerland's wireless networks are 'on the verge of collapse,' as the systems are close to reaching the upper limits of their permitted transmission power, but the volume of data being transmitted is roughly doubling each year. Consequently, the KVF says that the implementation of 5G technology will be necessary to cope with the rising demand for data and to continue with the 'digitization of the economy and society'. However, the deployment of 5G would require the installation of large numbers of new antenna sites, an option that is not currently available due to the existing regulations. 'The Federal Council must make every effort to ensure the future of digitization,' the KVF argued, adding: 'Otherwise, there is a risk that Switzerland will lag behind the EU, which has already adopted a 5G Action Plan, which envisages introducing 5G in all countries by 2020.'
(February 1, 2018) telegeography.com

Thailand

The National Broadcasting and Telecommunications Commission (NBTC) has decided to put its planned auction for spectrum in the 1800MHz and 900MHz bands on hold, pending the Council of State's position on whether it has authority to call for bids as an acting regulator. The six-year term of the existing commissioners ended on 7 October 2017, but the new NBTC law allows them to continue in the same capacity until they are replaced. The process of selecting new commissioners began last month and is expected to be finalized in April. The watchdog had initially planned to open the bidding for one license in the 900MHz band and three 1800MHz concessions in May. NBTC secretary general Takorn Tantasith said in January that there was an option to suspend the 900MHz spectrum auction altogether over a possible interference in signals between the blocks to be auctioned and the 900MHz band that the NRTC planned to use for high-speed train services. Regarding the 1800MHz auction, Takorn said that the 45MHz of available spectrum in the band will be divided into nine blocks of 5MHz, at a price of THB12.485 billion (USD390 million) each. The original starting price for the three 15MHz blocks of 1800MHz spectrum was THB37.457 billion.
(February 15, 2018) telegeography.com

Uganda

President Museveni has ordered the government to write off debts of UGX200 billion (USD91.3 million) owed by the state-owned fixed line operator Uganda Telecom Ltd (UTL). The company entered receivership last year after accruing debts of around UGX900 billion, though this has since been brought down to around UGX533 billion. The Ugandan state assumed control of UTL in March 2017 after ousting 69% shareholder LAP GreenN of Libya. UTL is thought to owe UGX58 billion to the Uganda Revenue Authority, UGX22 billion to Uganda Communications and UGX16 billion to the National Social Security Fund, with other creditors including shareholder loans, equipment vendors and rival telcos. Meanwhile, President Museveni says that all government offices and agencies should switch to using UTL internet services in an effort to support the state-run telco. Government services are currently provided by the National Information Technology Authority, Uganda (NITA-U) – a body which operates as part of the Ministry of ICT. (January 31, 2018) The Monitor

Ukraine

The National Commission for State Regulation of Communications & Informatization (NCCIR) approved the 1800MHz 4G license bid applications of the country's three largest mobile operators Kyivstar, Vodafone Ukraine and Lifecell, it disclosed on its website, with no other bidders coming forward for the 1800MHz auction scheduled to be completed in 'early March' 2018. Bidders must submit a deposit fee by February 20 and initial bids will be placed on February 26. Note that the same three operators are the sole bidders in Ukraine's 2600MHz 4G license auction.
(January 30, 2018) telegeography.com

United Kingdom

The UK government claims that 95% of the UK is now able to receive superfast broadband, thereby delivering on its manifesto pledge. Figures published by Think Broadband show that 95% of the UK population now has the opportunity to access broadband services with speeds of at least 24 Mbps. A £1.7 billion government initiative to roll out superfast broadband connectivity to deemed "not commercially viable" by the industry has so far reached 4.5 million premises across the country. "We've delivered on our commitment to reach 95% of homes and businesses in the UK, but there's still more to do in our work building a Britain that's fit for the future. We're reaching thousands more premises every single week, and the next commitment is to making affordable, reliable, high speed broadband a legal right to everyone by 2020," said the UK's Secretary of State for communications, Matt Hancock. Whilst the news will undoubtedly be welcomed by British industry, there remains a significant minority of businesses who are still unable to access adequate broadband services. "The UK's broadband roll-out is having a direct impact on local economies, driving the growth of jobs and creating opportunities in the digital economy. It's very encouraging to see the government investing in and delivering results in an area which is critical for the country's future. However, the digital divide goes beyond access to the internet. We have known for a long time that many people still lack the basic digital skills and support networks to make the most of online opportunities. The pace of tech-driven change is now creating a further challenge if we want everyone, no matter where they live, to work and thrive in our digital world throughout their lives," said Rachel Neaman, CEO, of the not-for-profit organization, The Corsham Institute. Despite a government initiative to boost the rollout of fiber broadband, the UK still lags behind its European neighbors in fiber to the home (FTTH) penetration, which allows speeds of up to 1 Gbps. It is believed that currently only 3% of the UK has access to FTTH services. Boosting connectivity across the UK will be a key focus at this year's Connected Britain event. Don't miss your opportunity to hear from the industry's key players and thought leaders. Click here for a full agenda and to find out how you can be part of the discussion.
(January 29, 2018) totaltele.com

United States

Nearly 17,500 rural homes and businesses in Nevada that are currently unserved by high-speed Internet service could get connectivity in the near future. These homes and businesses are eligible for financial support from the next phase of FCC's Connect America Fund, which helps offset the high cost of extending broadband service into rural areas. The FCC will be distributing these funds through an innovative "reverse auction," which is scheduled to launch on July 24. "Connecting the unconnected in rural America is my top priority," said FCC Chairman Ajit Pai. "I'm excited that our CAF auction will provide opportunities for innovative companies and cooperatives to bridge the digital divide for the Nevada consumers and small businesses that lack high-speed access today." Nationwide, providers will compete for up to $2 billion in support to expand access to broadband to nearly 1 million homes and locations in unserved rural areas over the next decade. The auction will provide opportunities for new entrants to the marketplace, regardless of technology, including phone companies, fixed wireless service providers, satellite providers, cable companies and electric utility broadband providers. By harnessing market forces, the auction is designed to provide consumers with high-quality, broadband service in an efficient, cost-effective way. The application period for providers seeking to participate in the auction runs from March 19-30. The FCC has targeted more than $9 billion in support for rural broadband expansion to over 4 million homes and small businesses through its Connect America Fund. (February 21, 2018) elkodaily.com

Uzbekistan

According to the report, Uzbekistan's telecom subscribers increased 1.4 million in 2017. Number of telecom users in Uzbekistan made up 22.8 million people in 2017. The telecom subscriber's strength grew by 1.4 million compared to 2016. Uzbekistan Mobile Subscribers Increases 1.4 Million. The report showing increase in subscribers demonstrated by statistics of the Ministry for Development of Information Technologies and Communications of Uzbekistan. The total number of new installed base station exceeded 22,170 units in the country. While more than 3,980 base stations were installed in 2017. The report given by Uzbek ICT Ministry demonstrated that the total number of Internet users in Uzbekistan in 2017 amounted to 20 million, which is 5.3 million more than in 2016. At the same place, the speed of Internet access increased from 65.7 Mbps in January 2017 to 104 Mbps in January 2018. The fiber-optic communication lines were laid in Uzbekistan that were more than 2 thousand km in 2017. The total length of fiber-optic communication lines reached 22.35 thousand km by the end of the year.
(January 29, 2018) 3gca.org

Zimbabwe

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) says there is not enough free wireless spectrum to support a fourth player in the country's mobile market. The sector is currently served by privately-owned Econet Wireless and government-backed cellcos NetOne and Telecel. POTRAZ Technical Services Director Nicholas Muzhuzha also told that the fixed line market – a monopoly for state-owned TelOne – could be expanded to accommodate a second operator. TelOne was granted a mobile license several years ago but opted not to deploy a network.
(January 29, 2018) The Herald

The Postal and Telecommunications Regulatory Authority of Zimbabwe (Potraz) has given telecommunication firms a reprieve to settle their outstanding operational licence fees in instalments in light of the macro-economic conditions prevailing in the country. Speaking at a media forum in Kadoma recently, Potraz Director General Dr. Gift Machengete told journalists that virtually all telecommunication companies operating in the country were in arrears with regards to the payment of their license fees. He, however, could not be drawn to disclose the amount the telecommunication providers owed but said it ran into millions of dollars and has been accumulating over years. "Telecommunication operators are not up to date with their licenses, partly because they blame or claim it is because of the current economic situation and this has led us as the regulator to seek authority to have them pay in instalments. Initially we would not allow them to pay in instalments because they had to pay everything up front but because of the current difficulties we had to go to the law and now we have a Statutory Instrument that allows us to negotiate with them," said Dr. Machengete. He said the telecommunications regulator decided to be "lenient" after realization that most of the operators were indigenous that were making efforts to grow their businesses. He said the law also empowers the telecommunications regulator to audit the service providers' financial statements.
(January 28, 2018) sundaynews.co.zw

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