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BUILDING DIGITAL ECONOMIES



Unleashing the Power
of Digital Health

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Building an Open and
Diverse Ecosystem for
Shared Success...

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Exclusive Interview

Eng. Saleh Al Abdooli

Chief Executive Officer

Etisalat Group

DRIVING THE DIGITAL FUTURE



Exploration

lights the way forward

Huawei Middle East Innovation Day
October 8, 2017 · Dubai, UAE

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It is with great pleasure that we invite you to attend the second annual Huawei Middle East Innovation Day – Exploration lights the way forward.

Date & Time: 16:00pm Sunday, October 8, 2017 (Day 01 GITEX)

Location: GITEX Conference Zone B, Sheikh Maktoum Hall, DWTC



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Eng. Saleh Al Abdooli
Chief Executive Officer
Etisalat Group

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Imperatives for Achieving Clarity in Spectrum Policies

How we use spectrum today has been greatly influenced by digital transformation. Advanced digital technologies, which have appeared since the use of spectrum became a commonplace among individuals, have radically changed the manner in which radio communication takes place and how radios operate. This is the age of flexible and broadband systems, which can use and re-use available spectrum resources, allowing multiple users to conduct their communications in more diverse ways and with greater efficiency than would have been possible earlier.

In order to benefit from this potential that new technologies offer, particularly from the viewpoint of economies of scale, static spectrum policies should be declared archaic. It is time to obtain and provide greater clarity in how spectrum needs to be viewed, priced, allocated, used, farmed, and accessed. Existing legal and policy, even commercial, frameworks for spectrum management have not kept pace with the changes in digital technologies, the spectrum needs of those technologies, and the evolving behaviors of the digital users, who are increasingly using more WiFi (unlicensed spectrum) than ever before. (For instance, approximately 90 percent of the smart phone data traffic is carried over WiFi networks.)

It is time to implement dynamic spectrum policies and approach the subject of spectrum in new light, with a new mindset, and far-reaching visions than has been the practice to date.

For the sake of argument, with specific attention on spectrum auction given in view of dynamic spectrum policies, it begs to be reiterated on behalf of telecom operators that spectrum prices and auctions presently are designed to maximize short-term revenues for governments and do not necessarily

evaluate long-term benefits for the emerging socio-economic dynamics. This needs to be changed; spectrum fees must come down and allocation methods and duration should be improved in accordance with the needs of the industry and in alignment with the evolution of spectrum usage patterns. In this regard, spectrum policies and regulation need to be drafted in much closer and transparent collaboration with the private sector. Such collaboration would categorically add more clarity to policy framing and policy implementation processes, and could have a decisively positive impact on the sustainability and timely creation of the digital society.

In the age of cognitive radio, AI, M2M, and given a myriad of digital communication technologies and digital services that are in existence now, obtaining clarity in spectrum policies also demands taking into consideration multiple factors. These include but are not limited to how much spectrum can be made available; the minimum price of the spectrum; extended duration of the spectrum allotted to a telecom operator; creation of a level-playing field, especially from the same-service-same-rules perspective, and long-term digital visions as a part of a much larger national objective of transforming national socio-economics.

Once spectrum policies will start to take on a new form after having considered the aforementioned factors, the industry will find itself motivated to demand more of itself. This also includes telecom operators — which are undergoing a larger realization to adapt to the OTT environment and re-define their own roles as enablers of the digital economy — to work more collaboratively among themselves; and to proactively define common positions on matters that include but span beyond frequency bands. 📶



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Eng. Saleh Al Abdooli
Chief Executive Officer
Etisalat Group



Driving the Digital Future

Q. Etisalat GITEX Presence this year

A. UAE today is at the forefront of a digital driven economy with serious efforts focused on digitalisation and globalisation maintaining an ecosystem that is interconnected by digital platforms aided by a seamless flow of information and ideas.

This has changed the way we conduct our business and live our lives. Etisalat is playing an instrumental role in making this digital dream a reality enabled by its robust network and infrastructure. 'Driving the Digital Future' is the theme this year at GITEX Technology Week that signifies the company's mission to participate in creating a connected future in UAE. Today we are transitioning to a digital future with our offering of digitized solutions and services.

UAE today is at the forefront of a digital driven economy with serious efforts focused on digitalisation and globalisation maintaining an ecosystem that is interconnected by digital platforms aided by a seamless flow of information and ideas.

Our demonstrations this year will enable visitors to witness innovative ideas, concepts and solutions showcased on Etisalat's digital platforms and infrastructure. At Etisalat, we believe that creating a digital future is enabling a connected lifestyle for our customers as well as governments and businesses in the country.

The showcase of demonstrations and solutions at the Etisalat stand will offer a spectacular fusion of art and innovation. These digital technologies and solutions of the future enabled by our robust network are in line with the changing requirements of consumer lifestyle and the needs of corporate businesses across verticals.

When we say that innovation is at the core of Etisalat's operations, we do not only mean it in terms of telecom technologies. We are also paving the way for smarter digital solutions and applications that will mobilise people, businesses and the government sector for a better tomorrow.

Undoubtedly, GITEX is an established and important platform that has become the cornerstone of showcasing the prowess of IT, digital services and telecom providers from world over. For Etisalat, it brings an immense responsibility in fulfilling our role in joining this digital journey and supporting the country's 'Smart Vision'. Reflective of this commitment, our demonstrations this year aims to create an unprecedented experience.

Q. Etisalat Digital launch last year at GITEX, an insight into Etisalat journey so far and the future

A. The launch of Etisalat Digital last year was to actively contribute to the digital transformation market, which has a huge opportunity, especially in the UAE, for digital services. The government's push for innovation makes UAE an incredible destination for everything digital. The combination of Etisalat's vast experience in the field of connectivity with enhanced agility for digital innovation led to the formation of Etisalat Digital. The prime aim of the unit is to enable digital transformation of enterprise and government customers.

Today we are working on several important projects in digital health, security and smart cities. Dubai Expo 2020 is one of these projects that supports the UAE's long-term strategy in becoming the most sought-after global destination for trade, business and development.

As the premier digital and telecommunications partner of Dubai Expo2020, we are currently working to deliver one of the fastest, smartest and best-connected places on earth during the global mega event. We are involved in creating the infrastructure for the Expo site – enabling Expo 2020 Dubai to provide visitors and participants with a cutting edge, immersive digital experience that

brings the Expo themes to life for the 25 million expected visitors.

Another project that has set a benchmark as one of the most successful projects in the entertainment space in the region is the delivery of the digital infrastructure for Dubai Parks and Resorts. This included digital channels, different smart services (such as smart parking, smart ticketing, connected transportation and connected food and beverage), in addition to other smart solutions around the park such as video surveillance-as-a-service, real time marketing and analytics.

Etisalat Digital will help in the transformation from a connectivity provider to a digital player, this business unit is an agent of change driving our own digital transformation focusing on three main factors.

Etisalat Digital is also actively working on several interesting projects and has engaged with industry experts as well as acquired digital assets and platforms including data centres, cloud, digital and mobile payment, Internet of Things, big data and analytics engines. By providing platforms to its customers, Etisalat Digital enables businesses to get access to several technologies through a service model, instead of having to invest in the whole platform. This accelerates the digital transformation of the businesses. The unit is further strengthened with 24X7 security operations centres and IoT command and control centres in Abu Dhabi and Dubai for fully managed solutions and proactive monitoring.

In the next 12 months, our focus will be to continue growing our digital business by tapping into potential market opportunities and securing key wins in various digital domains. In parallel with that, we will be enriching and expanding our digital solutions portfolio by introducing new digital propositions such as Video-Surveillance-As-A-

Service (VSaaS), Mobile Cashier and Digital Signage solutions. We will also complement our digital offerings with Artificial Intelligence (AI) and Analytics capabilities presenting an extra value to our customers.

Etisalat Digital will help in the transformation from a connectivity provider to a digital player, this business unit is an agent of change driving our own digital transformation focusing on three main factors.

First is using what we offer to our customers by using Etisalat Digital assets, platforms and solutions to cater for Etisalat internal needs such as moving to the cloud, digitalization of customer touch points, and applying AI, automation and IoT to optimize our own operating model.

Second, as we have adopted some new agile processes in Etisalat Digital, which have proved successful and have helped us dramatically enhance the way we do things, exporting such processes and know-how to the rest of the company is essential to propagate the success.

Finally, as with any transformation, culture is key. Changing the company culture to be digital is a responsibility that we have taken starting from Etisalat Digital.

Q. Etisalat's role in bringing digital innovation and contributing to the digital value chain in the country and regional/international markets

A. Growth, innovation and disruption are at its peak in the telecom industry. The sector has undergone immense change with the internet transforming the way we communicate, share information and the mobile phone setting the path for the digital future. The massive increase of connected devices will impact telecommunications with IoT expected to add billions if not trillions of new connected data sources globally by 2020. The upsurge of all these devices will witness an astronomical growth in data volumes.

We are at a crossing point where digital becomes the norm and the age of connectivity is in our near vision. IoT is set to overtake mobile phones as the largest category of connected device by 2018. Between 2015 and 2021, the

number of IoT connected devices is expected to grow 23 percent annually and of the 28 billion total devices that will be connected by 2021, close to 16 billion will be IoT devices.*

These trends have made the digital mobile consumer a critical audience segment pushing the telecom sector to make significant decisions. It is essential for the industry to understand these customers as greater functionality is driven through mobile devices. The mobile platform today is an enabler of digital transformation having the flexibility of bringing different technologies together to deliver unique services to customers and businesses of all sizes.

Etisalat's network is its biggest asset and the large customer base is a competitive edge which we can capitalize with the right partnerships and re-engineer business processes in the digital world.

Today we have the flexibility to create new products and services which reflect these in-demand technologies and will be a determining factor in success within the industry. As consumers harness smart technologies it has radically impacted their interactions, lifestyles and workplaces creating a global community.

This connectivity will be enabled by IoT, which is a mega-trend, connecting billions of everyday devices. These new technologies also present an attractive opportunity for telcos to offer B2B services especially in sectors like healthcare, retail, banking and automotive. Big data analytics will bring in a metamorphic effect as well across industries as it improves targeting and increases profitability.

Q. Insight into your strategy to implement digital initiatives and bringing it closer to reality

A. Etisalat's network is its biggest asset and the large customer base an added value, our great opportunity is to capitalise with the right partnerships and

re-engineer business processes in the digital world.

To develop innovative new business models and generate incremental revenues from the mobile ecosystem, we have devised a clear strategy for digital transformation. Innovation and new business development are key and will add to our existing core strengths to compete effectively. Digital transformation will have to start from within Etisalat enabling us to tap into the market opportunity and increase revenues. Etisalat Digital established last year will help outline and address customer requirements in today's digital age.

Expansion in machine-to-machine (M2M) capabilities is an important area and one that Etisalat has a strong presence. Furthermore, Etisalat has formed strategic partnerships on sustainable development applications to support businesses and government entities in the UAE.

We are also well on track with our ambitious 5G mobile broadband plan by 2020, which will open the door for applications and uses that we cannot imagine today, and the new network will help us cope with the massive digital content explosion we anticipate in the next few years.

Q. Etisalat roadmap on improving capabilities on the network with investments to provide high-speed network and setting global benchmarks

A. Today, we cannot be perceived only as a company leading in providing best-in-class networks and connectivity but solutions and services that change and impact the lives of our customers. Telecommunications and the Internet are now vital platforms, underpinning trade, industry, finance, and personal communications worldwide. Therefore we need to look beyond telecom. Etisalat today has a plethora of services addressing requirements of various customer groups. However with changing market environments demand for smart services and networks will keep growing. To remain relevant we need to be faster, better and offer more, in essence agility is the key to success. New revenue opportunities are there for those to respond and those prepared to look for the partnerships that deliver added value.

In line with our journey, Etisalat is already playing in the arenas where it matters. At GITEX 2016, Etisalat demonstrated the region's fastest trial of 5G reaching speeds of 36Gbps. This contributed towards the design and standardisation of 5G, enabling the acceleration of its deployment. This year, Etisalat will be setting yet another benchmark with a live demo reaching double the speed and giving visitors 4K and virtual reality experience in 5G.

Etisalat has continued its investments in deploying its fibre network. As a result, Fibre-to-the-Home (FTTH) coverage has reached 93.28% of homes and 1.81m home Pass Coverage across the UAE, thus maintaining the UAE's position as a global leader in FTTH.

Etisalat is on a growth path for the future, addressing demands and network requirements in the short as well as the long term. We have made investments to develop infrastructure and expand mobile and fiber optic networks across UAE. These investments will improve coverage across the country as well as prepare the network towards the deployment and requirements of 5G technologies.

Our network today is one of the widest, fastest and most advanced networks in the region. This is mainly due to the continuous investments made in the last few years amounting to more than AED 31 billion. Etisalat has made more than 3 billion investments this year in infrastructure. Due to these continuous investments, the 3G network coverage has reached 99.58 percent while 4G LTE has covered 97.78 percent. Fiber to the home (FTTH) penetration has grown over the last year to reach 93.28 percent. This has helped position UAE with the highest FTTH coverage in the world last year among all its global counterparts.

Q. Etisalat roadmap for 5G

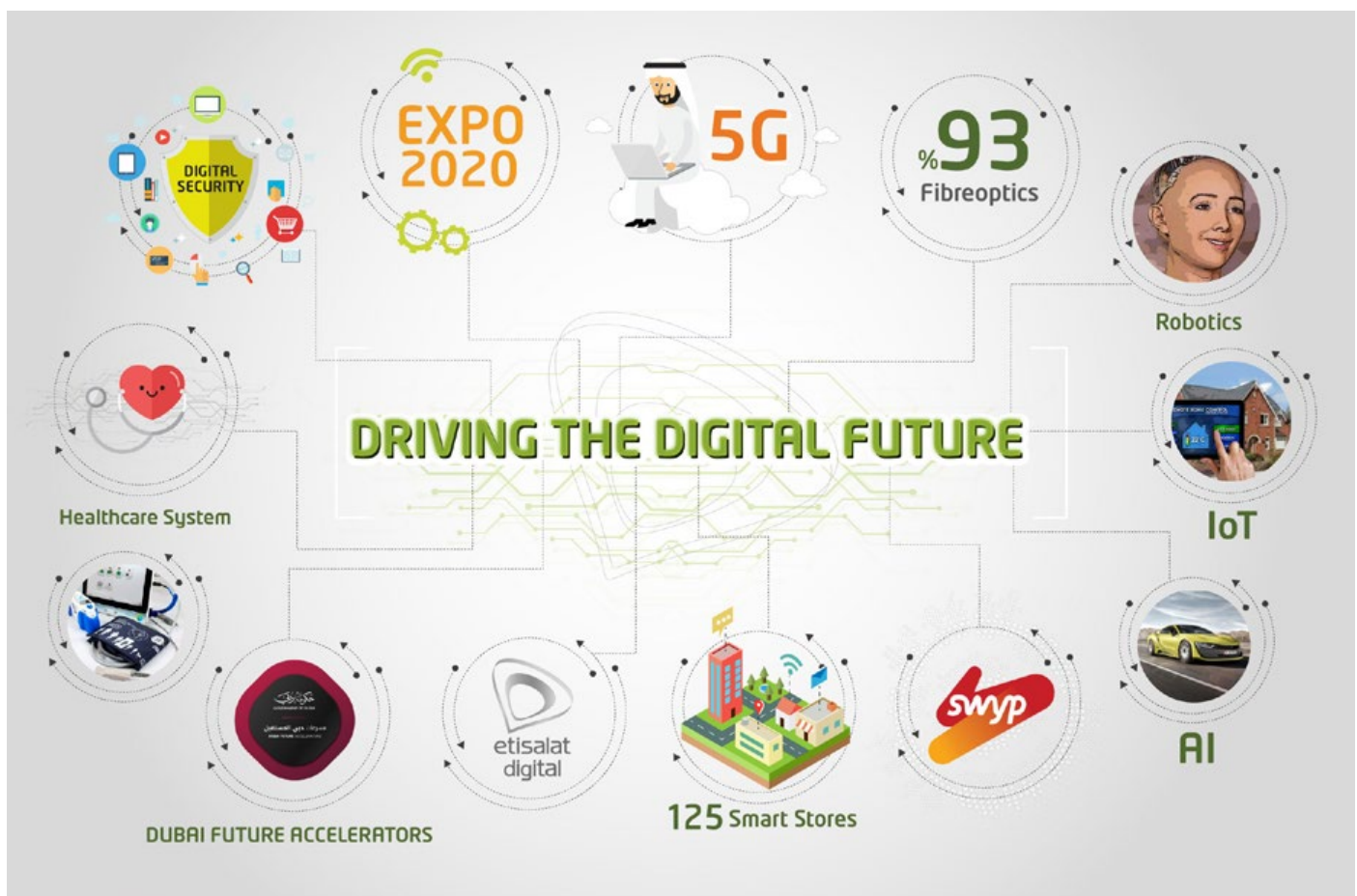
A. The next generation of connectivity will play a huge role in laying the foundation for smart city development by enhancing mobile network performance capabilities. 5G technologies and network have gained relevance largely due to the surging adoption of internet enabled devices connected globally via Internet of Things. With its implementation, 5G will provide opportunities for economic growth, education, employment, transportation and more.

Etisalat plans to make advanced field tests this year in partnership with leading technology providers to achieve higher efficiency in addition to the highest possible speed.

Etisalat's investments in the future have led to growth and given the lead in network and the first to launch every new technology service to customers in the telecom industry. Today, we intend to continue this success by investing in 5G technologies to deploy in the network across the country.

These investments in the infrastructure have led to the implementation of the latest cloud computing technologies and solutions, setting the path for 5G network development.

Etisalat also established the ecosystem for futuristic technologies like Internet of Things (IoT) that will help manage all smart services and applications and are



integral to create smart cities on the 5G network in the country.

There are advanced standards and technologies being added to the existing networks paving the way towards the development of 5G network. New technologies will be based on 5G and for any new technology to go live and be used mainstream; it must go through a series of trials and tests to determine its validity. For 5G, it's undergoing the trial stage currently, with operators and technology companies making aggressive investments in this space.

Etisalat plans to make advanced field tests this year in partnership with leading technology providers to achieve higher efficiency in addition to the highest possible speed.

Both parties have to work together during this trial process to help evolve the current network architecture and minimize the risk of rolling out a new technology, particularly one as new, complex and different as 5G.

There is no final 5G specification yet, therefore operators like Etisalat will have to base these 5G tests on their own definitions of 5G. We will learn from these trials and contribute to the final 5G standard that the 3GPP standards organization is developing.

With technologies supporting IoT gaining popularity, there is a tremendous growth expected in devices being connected on this platform. The overall strategy of the government to focus on building smart cities will also build a momentum to introduce new services on these technology platforms. This will require an advanced network and infrastructure to support in terms of speed, latency and build efficiency in the entire network. There is an expected growth in the volume of data that will be processed on these networks.

Q. Supporting Innovation in UAE Vision 2021

A. With the global economy to face significant economic changes in the coming years, the UAE Vision 2021's national agenda is to position the country on a global platform as an economic, tourist and commercial capital by

transitioning to a knowledge-based economy promoting innovation, research and development. The national agenda also focuses on the country becoming the best in the world for entrepreneurship unlocking the potential of nationals and becoming driving force for change in the country.

Etisalat's efforts in the past few years in the development of smart cities was by providing smart and innovative solutions that will help the smart government initiative trigger a quantum leap towards the transformation of the economy. The significant investments made in the past few years support these long-term initiatives and in translating this vision into a reality.

One of the key objectives of the business unit Etisalat Digital is giving young companies a platform to engage with our experts, have access to our robust network and utilise our digital technologies to build viable products and new revenue streams. Etisalat Digital's partnership with Dubai Future Accelerators, the world's largest government supported accelerator, pairs top start-ups with the Dubai government entities allowing them to build, test and deploy solutions for 21st-century challenges.

Etisalat joined the programme in its second round and have already launched different challenges. Selected start-ups get the chance to be on board in the Etisalat Scaleups program where they will be given access to Etisalat Digital resources and experts, office space, and support to deliver pilot projects to effectively demonstrate the value and potential of the partnership and technology.

Additionally, Etisalat Digital has partnered with Emirates, General Electronics (GE) and Dubai Silicon Oasis Authority (DSOA) to launch Intelak, the first travel, tourism and aviation incubator in the region to nurture local talent, redefine the travel experience and contribute to the growth of the aviation and travel sectors.

This is in line with the national agenda that believes innovation is the future of human investment emphasizing its importance across sectors where innovation, research, science and technology will form the pillars of a highly productive

and competitive economy driven by entrepreneurs in a business friendly environment enabling public and private sectors form effective partnerships.

Q. swyp and Etisalat

A. UAE today is a youth driven country with the world's youngest government minister and the most sought after destination for most millennials from the region and global markets. A majority of these millennials are financially independent and contributing to the economic transformation in the UAE.

UAE today is a youth driven country with the world's youngest government minister and the most sought after destination for most millennials from the region and global markets. A majority of these millennials are financially independent and contributing to the economic transformation in the UAE.

The country's current youth population mainly 15-34 year olds make up over 40 percent of the UAE national population. UAE is also one of the most attractive emerging countries for young people who like to live abroad in order to further their careers and ranks 16th in the list of countries that are most feasible for entrepreneurs. In addition, UAE is also ranked the most desired country to live in out of 20 global countries including UK, USA and Germany.

swyp focuses mainly on these millennials between 15-29 years with a completely new customised digital platform that will focus on providing complex free solutions that are wholly app-based. All these efforts directed at giving them a digital customer experience is enabled by Etisalat's robust and wide network across the country. This business model will be unique and create a benchmark in consumer products and customer service in the country. It does not anyway compete with Etisalat as a brand as it

targets the youth segment aiming to provide a completely different experience on a new platform.

The objective of creating this innovative service was to become a lifestyle partner than only a telecom provider. Targeted at youth these customised prepaid mobile plans come with free unlimited wifi, value add-ons, multiple discounts and vouchers from preferred outlets. The young customer can expect 'swyp' to meet all his or her changing requirements completely on a digital platform.

For businesses, Etisalat has an extensive portfolio of integrated services targeting various sectors, providing basic equipment and connectivity to networking services and managed business solutions.

Q. International Operations and Etisalat roadmap ahead

A. Etisalat group's geographic footprint across the Middle East, Africa and Asia presenting their unique opportunities and challenges in today's market scenario governed by specific economic and regulation conditions.

This has led to changes in the market environment requiring a reassessment in business strategy and investments. Some of these markets witnessed macroeconomic challenges that imposed limitations on investments and future growth. Etisalat responded with confidence and showcased agility by overcoming these challenges while maintaining a sustainable business portfolio and our strong position by dynamically managing these challenges in some international markets.

The strategic decisions for each market are also dependent on the growth potential of that market and the value added to the overall positive growth of the company.

Today we have established this solid foundation driven by Etisalat Group's ability to adapt its operations to maintain business sustainability. Our focus will be to continue investing in futuristic solutions and next generation technologies to deliver the best-in-class services and solutions to our customers while ensuring that shareholders gain long-term value from businesses.

Q. Customer Experience

A. Customer experience this year has seen revolutionary changes by creating value using digital platforms to interact and enhance the overall experience. Currently there are 8.4 billion devices connected to the Internet of Things, with this number projected to rise to 20.4 billion by 2020. This trend has brought in internal collaboration efforts in creating an omnichannel approach to engage with all customers. As a company, our goal is to deliver the right experience to the right customer at the right time.

In this scenario amidst intense competition, we have launched a variety of innovative offers and services in UAE keeping in mind the best for customer experience. Etisalat has maintained a diverse and effective business model offering value to the customer to meet their expectations, dynamic needs and evolving aspirations.

These customer platforms enabled by Etisalat's robust network aim to deliver quality, high speed and advanced technologies. Etisalat has made huge investments in the network, which participated in positioning UAE as the leading country in the Arab world in network readiness, according to the World Economic Forum's Global Information Technology Report last year.

These efforts are to improve overall customer experience by offering value and savings with competitive data and voice bundles. This is possible by understanding their requirements to create products and offerings to meet their changing needs and requirements. Etisalat has always appreciated its customer's loyalty and therefore will continue to innovate and strive to serve them better.

For businesses, Etisalat has an extensive portfolio of integrated services targeting various sectors, providing basic equipment and connectivity to networking services and managed business solutions. Etisalat provides small and medium businesses with customized packages designed to give the best value for money.

Q. Etisalat CSR strategy

A. Etisalat CSR strategy mainly focuses on giving back to the community in the country by enhancing the daily lives of consumers and contributing to UAE's humanitarian efforts on a local, regional and global level. Our technology infrastructure plays a critical role in creating this collaborative framework focused on the values of giving, empowerment and actively participating in community initiatives.

As part of the overall strategy, Etisalat has made the right partnerships, especially with the government sector to enable sustainable development across verticals mainly education, health, sports and environment.

Etisalat's CSR activities has consumed more than AED 2.6 billion in the past ten years including our contribution of 1 percent (towards the ICT Fund) from its revenues generated from providing licensed telecom services within the country of UAE only.

The 'Year of Giving' initiative launched this year by the government was significant as it gave us new opportunities and allowed us to play an integral role in society. A few of the successful initiatives was participation in the 'Nation Fund', 'For your sake Somalia', official partner for 'Dubai Cares Walk for Education', 'Sheikha Fatima International Women's Shooting Championship', 'Medicine Drop Box ' across Etisalat buildings in UAE collected unused medicines to donate to the needy.

With the year 2018 being announced as the 'Year of Zayed', we are currently working on a strategy that will support this unique approach adopted by the late Sheikh Zayed bin Sultan Al Nahyan and the first to include social responsibility as part of the long term company strategy for business sectors in the country.

SAMENA COUNCIL ACTIVITY



SAMENA Council Reflects on Public Policy Considerations for OTTs on behalf of Telecom Operators

SAMENA Telecommunications Council presented telecom operators' perspectives on Public Policy Considerations for OTTs at the fifth Open Consultation Meeting of the ITU Council Working Group on Developmental Aspects of the Internet (CWG-Internet). The Meeting was held at ITU headquarters in Geneva in September 2017, with more than 100 participants from Member States in attendance.

SAMENA Council was invited to moderate the scene-setting Panel Discussion and to present a summary statement of its contribution to the Open Online Consultation.

SAMENA Council, represented by its Chief Economist, Imme Philbeck, presented operator members' viewpoints, emphasizing that balanced convergence of OTTs and network operators can only

be achieved in an environment that is forward-looking and which establishes a level-playing field based on the principle of "same services, same rules". To enable such an environment, OTTs should be effectively integrated into the fabric of national policy- and regulatory frameworks – where relevant. This can only be achieved based on new, forward-looking policies, rules, and regulatory frameworks that support innovation, investment, competition, and new business models. These policies, rules, and frameworks may not be the rules, policies or frameworks that exist today. New regulations should be light-touch, outdated regulations should be removed, and key principles should be transferred to the entire digital ecosystem, including principles of pluralism, proportionality, openness, non-discrimination, neutrality, public interest, standardization, security and consumer protection.

Key messages from the Open Consultation viewpoints as well as the Panel Discussion were divergent. OTT providers expressed their wish to continue to operate as they do at present, with little or no regulation. Telecommunication network operators (and some Member States, considering they do not obtain tax revenues from OTT providers), expressed their wish to limit the impact of OTT on their business, stating that there is a need for a level-playing field ("similar services, similar rules"). Civil society highlighted their concerns with human rights, including privacy, data protection, and access (network neutrality).

While no consensus was achieved, the stakeholders present at the meeting agreed on the following key summary of the discussion:

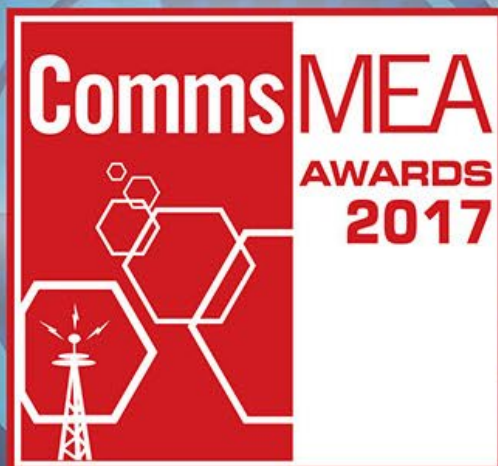
- It was noted that OTTs bring considerable socioeconomic benefits, contributing inter alia to increasing digital inclusion and promoting communication, providing innovative services and e-applications and enabling entrepreneurship and economic growth. In this regard, it was noted that OTTs can play a role in the implementation of the 2030 Development Agenda.
- Differing views were expressed with regard to OTT's potential effect on the telecommunications/ICT sector. Some expressed the view that the use of OTT has led to a decrease in operator revenues and this could have an impact on the expansion of infrastructure and connecting the unconnected, especially in developing countries. Others expressed the view that there was a "virtuous circle" between OTT service providers and telecom operators, as increased demand for OTT services can stimulate greater demand for broadband connections.
- Some were of the view that regulatory intervention could be considered with regard to OTTs, while some others were of the view that regulatory interventions could hinder digital innovation, and impede the creation of an enabling and competitive ecosystem for innovation and investment.
- A number of policy issues on OTTs were suggested, such as competition, taxation, security, harmful content, privacy and data, consumer protection, and Net Neutrality.
- In view of a converging digital ecosystem, the potential benefits of a closer cooperation between the different actors involved were discussed and suggestions were made by some on potential partnerships.
- It was noted that human rights must be respected, including access to information, freedom of expression and privacy.
- Some were of the view that OTT-related policy issues should be developed in Intergovernmental bodies, in particular in the ITU. Some were of the view that such discussions should take place in multi-stakeholder forums.
- Some were of the view that the inputs to this consultation demonstrated some of the limitations of multi-stakeholder models. Some were of the view that this consultation demonstrated the many benefits and advantages of multi-stakeholder models.

SAMENA Council believes that the OTT issue is highly important to both its operator members as well as to industry players that are a part of its membership.

The significance of this issue will continue to raise attention and demand solutions, given the impact of OTTs on the entire digital ecosystem and the economy in general, and on operators' business and future investment plans. In this regard, SAMENA Council shall play its role to further investigate the needs and elevate perspectives of its members. The Council will also contribute to the understanding of developmental aspects of the Internet in the OTT environment and the digital ecosystem, with telecom operators as its key enablers.

CWG-Internet was established as a separate group by Council Resolution 1336, in accordance with Resolutions 102 and 140 of the 2010 Plenipotentiary Conference. CWG-Internet is limited to Member States, with open consultation to all stakeholders. After the Plenipotentiary Conference, which was held in Busan in 2014, CWG-Internet started to hold a physical open consultation meetings after each online consultation. Communication and Information Technology Commission of Saudi Arabia (CITC), represented by Eng. Majed Al-Mazyed, CITC's General Manager of International Affairs and as Chairman of CWG-Internet, played an important role in allowing for this opportunity for telecom operators' viewpoints to be expressed through SAMENA Council.





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ARTICLE

ITU: m-Powering Development Initiative

Connecting individuals and empowering development by harnessing mobile technologies

In the past decade, mobile communications have seen enormous growth worldwide. The mobile phone now offers the potential of becoming a universal communications tool and going well beyond voice and data to deliver new, sophisticated ICT services to improve people's lives.

What is the m-Powering Development Initiative?

The m-Powering Development Initiative was launched in 2012 by Mr. Brahima Sanou, Director of the ITU Telecommunication Development Bureau, during the ITU TELECOM World to create a resource and action plan to deploy ICT services. Through the identification of different approaches and real-life examples from around the world that could prospectively be adopted elsewhere, the Initiative was designed to harness mobile communications for sustainable development, increase the uptake and usage of mobile services in

rural and remote areas, create an enabling environment to foster mobile services, particularly where there is a social need, create synergies with existing initiatives and avoid duplication between initiatives, optimize the use of scarce resources, and encourage partnerships between different stakeholders, and on as large a scale as possible.

What is the structure of the m-Powering Development Initiative and what is its working mechanism?

The Telecommunication Development Bureau is coordinating the Initiative with an Advisory Board of senior experts drawn from the public and private sectors. The Advisory Board is advised by three Working Groups, including the Working Group on Partnerships, the Working Group on Advocacy and the Working Group on Access and Affordability. The first cycle of the m-Powering Advisory Board ended in 2015. The first meeting of the second cycle of the m-Powering Advisory

...the Initiative was designed to harness mobile communications for sustainable development, increase the uptake and usage of mobile services in rural and remote areas, create an enabling environment to foster mobile services, particularly where there is a social need, create synergies with existing initiatives and avoid duplication between initiatives...

Board took place on 13 November 2016 in Bangkok, Thailand at ITU Telecom World 2016. The second Advisory Board Meeting of the second cycle took place on 8-9 June 2017 in Geneva. The next Advisory Board meeting will take place in November 2017 in London.

What are the m-Powering Development Initiative's core efforts?

- supporting an enabling regulatory environment for m-Powering initiatives wherein no citizen is excluded by affordability, accessibility or availability issues is of vital importance. ICT policymakers, regulators and stakeholders at large need to have a global overview and practical understanding of the regulatory tools required to achieve sustainable social and economic development by m-Powering citizens



in a connected and globalized world. A concerted effort must be made to examine current sectoral policies and regulatory frameworks in order to identify gaps in moving towards platform markets; address the cross-sectoral nature of m-applications and services; analyze various regulatory models and the role of the different regulators and entities in charge; and to learn from the success and pitfalls of existing measures.

- Identifying policy and regulatory best practices in areas dealing with all aspects of modern life will foster innovation and digital inclusion for sustainable social and economic development.
- Approaching mobile initiatives in a holistic manner to avoid vertical "siloed" interventions and to identify where new apps can "plug-in" in an integrated and interoperable manner with already existing systems and solutions.
- Embracing an integrated and a platform approach will avoid fragmentation and duplication of effort. It will also maximize investment return on ICT infrastructure which can be considered as a "utility" to be leveraged by all sectors e.g., health, education, agriculture, commerce and payments. This would significantly accelerate the deployment of mobile for development innovations.
- A high dependency on scalability



for the success of any m-Powering initiative. To make any application sustainable and widely scalable, it should be affordable and easy to use. Possible innovative models facilitating affordable mobile-based Internet access to the unconnected, particularly in underserved areas, as well as ways to upscale them at a global level, should be further explored.

- Developing clear measurement of results and outcomes for any mobile development initiative. There is still insufficient clear evidence of the benefits of m-Powering outcomes in areas such as m-Health, m-Learning, etc. The development of clear success measurements and metrics should be agreed upon at the early stages of any intervention. Further advocacy

efforts are required to emphasise the fundamental importance of appropriate monitoring and evaluation of m-Powering initiatives and to agree on appropriate related frameworks.

The Working Groups

The Working Group on Partnerships is a sub-group of the m-Powering Development Initiative Advisory Board tasked with partnerships to mobilize resources and support the implementation of the m-Powering action plan. The objective of the Working Group is to provide input to the work of the Advisory Board. The Working Group on Partnerships is chaired by Bocar Ba, CEO of SAMENA Telecommunications Council. It is currently working on identifying concrete partnership- and delivery proposals for e-Applications, and developing a set of model "contractual and institutional arrangements" between governments (or other organizations) and telecom operators that can cover many of the needs that are relevant to the SDGs.

The Working Group on Advocacy is a sub-group of the m-Powering Development Initiative Advisory Board tasked with advocating the role mobile ICTs play as enablers for sustainable development by engaging, extending and bringing together all stakeholders of the ICT for SDGs ecosystem around the issues related to the m-Powering Initiative. The objective of the working group is to provide input to the work of the Advisory Board.



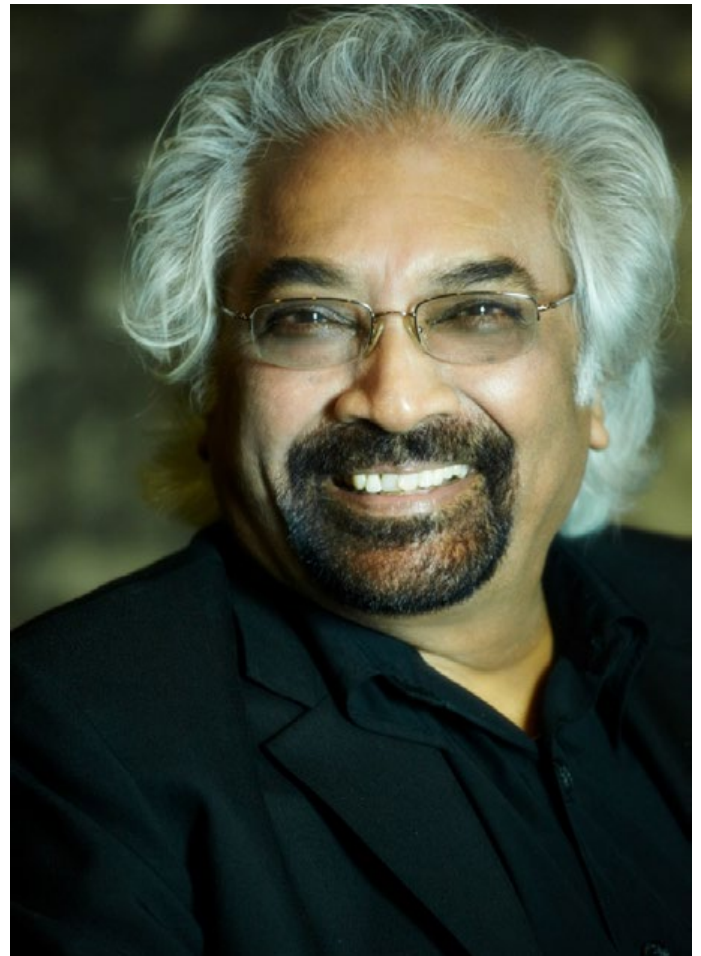
The **Working Group on Access and Affordability** is a sub-group of the m-Powering Development Initiative Advisory Board tasked with focusing on means to advance access (connectivity) and affordability through mobile technology and devices, taking into consideration the need for relevant content, apps and services. The Group will focus on how ICTs can empower the poorest and most marginalized population groups. The objective of the working group is to provide input to the work of the Advisory Board.

Findings of the Working Groups and Open Invitation to Collaborate

Notably, the work of the Working Groups revealed that while there is evidence that smart, innovative solutions that leverage mobile technologies can make a real difference to people around the world and can improve healthcare, education, commerce, etc., current efforts are still duplicative and fragmented. The need to embrace an integrated and holistic approach to deploy scalable, sustainable and affordable m-Powering initiatives through inter-sectoral dialogue and collaboration was stressed as a key enabler for addressing barriers to scale.

It is in pursuance of addressing this need that SAMENA Council feels it a privilege to contribute its efforts and support to the cause of m-Powering Development. SAMENA Council's contributions will be in alignment with the imperative to pursue advocacy to increase awareness among governments of the potential of m-Powering initiatives and of the essential need to approach them in a holistic manner. This necessarily entails the involvement of all stakeholders and partners. Moreover advocacy efforts need to target key influencers and actors to move the m-Powering Development Initiatives forward.

The Advisory Board of the m-Powering Development Initiative, which includes Mr. Bocar BA, CEO of SAMENA Telecommunications Council, invites all stakeholders to take note of the findings of the Working Groups and, more importantly, to devise actions to unlock the full potential of mobile technology for the benefit of all worldwide.



MEMBERS NEWS



Saudi Telecom Company Collaborates with ELM and the National Information Centre to Launch Cloud Company

Saudi Telecom Company (STC) has partnered with state-owned IT company ELM and the National Information Centre to create the Saudi Cloud Computing Company, which will drive the transformation of government services. By grouping resources and focusing on one objective through the Saudi Cloud Computing Company, the joint venture aims to provide all government services under one roof and provide users with a unified experience. STC, ELM and the National Information Centre are addressing this with the alliance launching the Saudi Cloud Computing Company, said Tarig Enaya, senior vice-president of enterprise at STC. "The Saudi Cloud Computing Company leverages the reach of STC's networks, fixed and mobile, its interconnected datacenters, its experience in building cloud ecosystems, and its huge network of technology partners and suppliers," he said. STC said the deal is aimed at helping to power the Kingdom of Saudi Arabia's digitalization strategy and is in line with the country's

National Transformation Program 2020 and Vision 2030. Enaya said by having all government services under one roof, hosted locally, ICT infrastructure management is more secure and cost efficient. "It is more secure because of the governance framework enforced by the National Information Centre, the physical security at the datacenters, the physical and information security enforced on the network interconnecting these datacenters, and how the cloud environment is spread out across several different locations with redundancy," he said. He added that there are two aspects to executing both the National Transformation Program 2020 and Vision 2030. One is management based and involves restructuring and re-engineering processes inside the public sector, and the second relates to business automation and service digitization. "For us, our contribution is to the service digitization part, which involves adapting all the business rules inherent in government policies and processes into e-services,"

he said. The majority of government services are already online, but not all of these services are integrated. There is some integration between services, especially sensitive ones, but more can and should be done, said Enaya. He added that the new company will be involved in every element of the digitization value chain, starting from connectivity, IT infrastructure and systems integration. "In the past, we worked with government agencies and treated them as separate entities," he said. According to Enaya, ELM provides the venture with experience of addressing public sector digitization projects. He believes the patronage of the National Information Centre is important because with it comes the required governance framework and integration with the Ministry of Interior's identity management databases of citizen and resident data. "It is these databases, which provide the trust and validation needed to guarantee the security of transactions run through government e-services," he added.



Dr. Biyari Reviews Digitization in an International Conference in Dubai



Dr. Khaled Biyari, STC Group CEO reviewed the recent developments in telecommunications and the role of telecom providers in conforming to Digitization, Which has become a new reality for developed societies all around the world. After launching (Telecoms World Middle East 2017) which takes place in Dubai on 18-19/9/2017, with an official sponsorship from STC, Dr. Biyari stressed that STC works steadily side by side with public and private sector in the Kingdom to establish a contemporary environment for the digital transformation, for its great role in different aspects of life in our time. The conference is one of the most important international events that embrace the decision makers and communications technology experts. It is, also, one of the biggest occasions to meet with telecom providers from Middle East and around the world to work mutually and exchange expertise in different domains through holding meetings with key customers and partners. The conference is characterized this year by holding a conference of wholesale with the participation of senior executives from the world.



STC Collaborates with Comptel to Fulfill Saudi Vision 2030

STC has launched a joint initiative with Comptel Corporation to help the Kingdom of Saudi Arabia (KSA) capitalise on the new digital era and deliver on its vision for 2030. As an aspiring ICT leader with robust technology infrastructure and a deep market footprint, STC is a key driver for vision 2030. Supported by Comptel's thought leadership in innovation, and its digital service orchestration and application-embedded intelligence capabilities, the partnership is well-positioned to execute on KSA's vision. At the very heart of vision 2030 lies innovation, youth enablement, cost optimization and economic growth through new revenue sources. The "Hunt a Shark" contest will unlock these objectives by inviting university students from Riyadh to share their ideas about emerging digital platform and artificial intelligence-driven economies. Finalists

will compete to secure – or 'hunt' – seed funding, training and mentorship to support their ideas, based on business rationale, uniqueness, viability, relevancy and alignment of their idea with vision 2030. "STC and Comptel have been partners for nearly two decades and ushered KSA into the era of GSM. This memorandum of understanding marks another chapter in our strategic partnership, as we join hands to step into the new digital era and make strides toward vision 2030," said Mr. Nasser Al Nasser, Senior Vice President of Technology and Operations, STC. "The future that vision 2030 promises will be shaped by youth - they will make it a reality. Therefore, it is of the utmost importance that we instill the spirit of innovation and entrepreneurship in this generation. This initiative will go beyond FUEDEX to international forums and serve

as a flagship platform to make all of us - the people of KSA, STC and Comptel - proud." "As a strategic partner of STC, we are delighted to join them in supporting local initiatives and nurturing the talented youth who will play a major role in realizing the future of KSA," said Juhani Hintikka, CEO, Comptel. "Digital platforms and artificial intelligence are two areas that are ripe for innovation on a global scale, and we look forward to seeing what Riyadh's budding entrepreneurs will bring to the table." "Hunt a Shark" is the latest collaborative initiative in a 20-year-old partnership between Comptel and STC. It builds on a program launched in 2014 to develop the skills of KSA's young IT professionals, educating them on telecommunications networks and Comptel's product suite, while enabling them for future leadership positions within STC.



Batelco Wins the Innovation Award and Best Emerging Market Initiative Award at the Telecom World Awards 2017

Batelco, Bahrain's leading digital solutions provider has been presented with the Best Emerging and Frontier Market Initiative Award and The Innovation Award at the 11th annual Telecoms World Awards ceremony, held at the Ritz Carlton in Dubai on September 18. The prestigious ceremony and dinner was held as part of the Telecoms World Middle East conference, which is among the region's largest conferences dedicated to examining the future of telecoms in the Middle East, North Africa, South and Central Asia and across the globe. The Telecom World Awards, judged by an esteemed panel of industry judges, are designed to recognize the telecoms industry operators that have demonstrated outstanding performance, major achievement and innovation during the year. The prestigious Best Emerging and Frontier Market Initiative Award recognizes the operator that has invested time, effort and money to transform its networks and operation to ensure it has the necessary ecosystem in place to meet the challenges that prevail in the communications industry as the world goes digital. As part of its evolution, Batelco's is deploying a nationwide Superfast Fiber Network which positions Bahrain at the forefront of technological innovation in the region. The significant Innovation Award recognizes the operator

that is investing towards the delivery of innovative new products and services for its customers. Among Batelco's initiatives during the past year was the launch of its Cloud based IPTV service, Batelco TV, a first of its kind in the region. Batelco TV is a fully fledged OTT based IPTV service which comes with a unique business model that is aligned with the future trend of everything cloud, providing dynamic content blended with a world class high

"Batelco recognizes that excellence in ensuring innovative products and services underpins the success of any telecom operator and accordingly Batelco has invested heavily in areas such as its superfast fiber network and value added services such as a cloud based TV offering." The winners were awarded at the Gala dinner attended by senior executives, personalities and VIP's from the region's leading establishment.



definition TV experience. Batelco Bahrain CEO Eng. Muna Al Hashemi said that she was really delighted with Batelco's success at the Telecoms World Awards in winning two prestigious awards.

Batelco Group Chief Digital Officer Karan Ponnudurai and Batelco Group Chief Wholesale Officer Ahmed Abdellatif who were speakers at the event collected the awards for Batelco.



Etisalat Launches First IPX Exchange Platform in MEA

Etisalat announced the official launch of the first IPX Exchange platform in the Middle East and Africa (MEA) region to support IPX traffic exchange; an integral part of Smart Hub services. The official launch of the first IPX Exchange platform will be made in the presence of senior Etisalat executives at the 13th Telecoms World Middle East, an industry event that gathers experts from across global markets. Telecoms World Middle East is among the biggest and most influential telecom events in the region dedicated to examining the future of telecoms in the Middle East, North Africa, South

and Central Asia and across the globe attracting over 800 attendees from the full spectrum of the industry. IPX Exchange is a platform through which Mobile Carriers, CDN, Cloud players and ISP's can interconnect and exchange Ethernet traffic and roaming traffic, using MPLS (Layer2 and Layer3) among their networks. Ali Amiri, Etisalat Group Chief Carrier and Wholesale Officer said: "The launch of the first IPX Exchange is an achievement as it sets a benchmark for Etisalat and the industry. The exchange will give our customers a high quality service in terms of flexibility of speed

and accessibility. The IPX exchange will add value to the SmartHub data center's services and to our customers by providing them better connectivity and a reliable platform, also adding new facility to the existing platforms at United States, Europe and Singapore. SmartHub have been powered by many platforms including submarine systems, Capacity structuring, IX etc. all of which serves carriers and ISPs for carrier grade services. The latest IPX/GRX exchange platform will power SmartHub also to serve Mobile Carrier Operators.

Etisalat Focuses on Digitization of Next Generation Networks

Etisalat today participated in key CEO panel discussions at the ongoing 'Telecoms World Middle East and Carriers World Middle East' highlighting its efforts in building and delivering a futureproof network in 2020 and providing a platform for the new generation. The 13th Telecoms World Middle East and Carriers World Middle East' is ongoing at Ritz-Carlton DIFC in Dubai on 18-19 September. The event is among the biggest and most influential telecom events in the region dedicated to examining the future of telecoms in the Middle East, North Africa, South and Central Asia and across the globe and attracting over 800 attendees from the full spectrum of the industry. Etisalat senior executives were part of panel discussions and roundtables moderated by global and regional experts in the region. Hatem Dowidar, CEO International, Etisalat Group was a key panelist in the opening CEO panel 'Delivering on the 2020 promise' among other key participants from the telecom

industry. He highlighted that connectivity is key for tomorrow's technology and pointed out that technologies like IoT play a critical role in bringing this automation into our lives. Telcos today are looking at new business models to be able to monetize from this connected ecosystem and deliver these services to customers. Ali Amiri, Group Chief Carrier & Wholesale Officer participated in panel discussion focusing on 'Developing the next generation network with 5G and LTE'. Amiri pointed out that it is imperative even in the wholesale business to understand the changing requirements and challenges of both enterprise and consumer business. As customers get more sophisticated, the platforms for interaction have to get smarter and adaptable. He also highlighted that Etisalat's wholesale business has continuously invested in the latest technologies and its infrastructure to meet these changing market requirements. The other speakers from Etisalat were Hesham Herzalla,



Director Digital Transformation & Technology Innovation, Etisalat Digital highlighted Etisalat role in virtualization on its efforts in the country. Abeer Nijmeh, Senior Director Business Strategy & Open Innovation, Etisalat Digital participated in the panel discussion 'The Internet of Everything' focusing on the digital opportunity for enabling digital transformation of enterprise and government customers.

Etisalat Wins 'Best Operator' Award at Telecoms World 2017

This award recognized the telecom operator that has achieved unparalleled growth in its operation, has innovated its service portfolio, has improved customer

service and has developed its network capabilities since April 2016. Etisalat was shortlisted with Ooredoo Oman, Reliance Jio and Zain Group in the same category.

Commenting on the event, Dr. Ahmed Bin Ali Group SVP Corporate Communications Etisalat said: "We proud to have won this award as it shows Etisalat's role as a pioneer among telecom operators in the region and globally. This award is a testimony to Etisalat's excellence and achievement due to our continuous investments made in infrastructure and services portfolio to deliver best-in-class technologies and solutions to customers across all verticals. I want to take this opportunity to thank our dedicated team and partners who have contributed to this success." The 11th annual Telecoms World Awards recognizes telecom operators from across the globe. The awards ceremony was held at the Telecoms World Middle East and Carriers World Middle, one of the biggest and most influential telecom events in the region dedicated to examining the future of telecoms in the Middle East, North Africa, South and Central Asia and across the globe and attracting over 800 attendees from the full spectrum of the industry.





Omantel Spearheads MECA Digital Transformation

Omantel has signed a Memorandum of Understanding with the Ministry of Environment and Climate Affairs (MECA) to modernize ICT technologies currently in-use or required by the ministry, and also develop a shared framework to enable faster delivery of MECA's comprehensive e-Services to the Sultanate. The transformation initiative entails developing and operating e-Services, cloud computing, IT infrastructure, Big Data and applications as and when required by the Ministry. Sayyid Nasr bin Badr bin Hamad Albusaidi, director of Quality, MECA, said, "MECA is actively expanding and enhancing its partnerships with the private sector on a number of fronts. Omantel holds the status of a large scale service provider with existing service frameworks and skilled ICT capacity. Our partnership with Omantel will contribute towards enhancing the quality and efficiency of

public services and provide a superior experience for our customers. We look forward to working with Omantel to insure the highest level of service quality and customer satisfaction." Omantel ICT, the business unit that looks after the end-to-end technology solutions and services will be spearheading this initiative. Fadi Nasser, general manager for ICT, Omantel said, "The signing of the MoU marks yet another step in Omantel ICT's journey to help government entities expedite their digital transformation. IT infrastructure scaling and e-Services are capital intensive large scale undertakings that require sizeable upfront investments with a substantial delivery risk downside. Taking the Public-private partnerships (PPP) route to implement these services in collaboration with an already established technology service provider reduces the barrier to entry and expediting delivery." In 2014, Omantel's Board of

Directors approved the company's new corporate strategy – Omantel 3.0, which is based on four pillars – digital inclusion, exceeding customer expectations, innovation in offerings and agile business management. The framework, according to the telco firm, identifies the main areas in which a business can make a difference for the good of Omanis and residents of the country, the environment and the country as a whole by enabling digital access, developing Omantel employees and running the business. "The right application of ICT is a proven enabler of economic growth and social development," said Nasser. "Powered by 3.0, Omantel is in a unique position to deliver end-to-end ICT solutions given its mature leading technology partner ecosystem, existing subsidiaries as well as massive investments in ICT assets and infrastructure."





Türk Telekom Teams Up with Open Networking Foundation

Turkish telecommunication giant Türk Telekom has become a partner-member of the international Open Networking Foundation (ONF), said Turkey's transport, maritime affairs and communication minister on Monday, Anadolu reported. The ONF calls itself a nonprofit, operator-led global consortium driving the transformation of network infrastructure and carrier business models. "This membership is an international step to contribute to the government's targets of developing national and domestic technologies," Ahmet Arslan told Anadolu Agency. "A Turkish company will give direction to technology projects and set standards in this field by taking its place among decision-makers," he said. Türk Telekom, the country's oldest telecommunication company, is owned by Oger Telecom (55 percent), the Turkish Treasury (25 percent) and the Türkiye Wealth Fund (5 percent), while the remaining 15 percent of its shares are publicly traded in Turkey's stock exchange market, Borsa

Istanbul. According to the company's financial reports, Türk Telekom's revenues reached 8.8 billion Turkish liras (around 2.41 billion) in the first six months of this year. With over 33,000 employees, the company is providing nationwide integrated telecommunication services to its 39.6 million subscribers in the fixed voice, broadband, mobile, and pay TV markets. This June Brand Finance, a London-based independent consultancy, named Türk Telekom Turkey's top brand with a value of 2.62 billion. Noting Turkey's efforts to become a tech producer and exporter country, Arslan said that over the past 15 years the government has made a lot of successful moves in the fields of defense industry, transportation, and communication. "These actions are not enough. Indeed, we have a lot of work to do," he added. "Therefore, the government supports strongly the private sector's efforts in local tech production." "In this respect, it is very important for Türk Telekom to take a place among partner-members of the

ONF, which can be called the world's heart of 5G technology and telecommunication infrastructure developments," Arslan said. He also said that Türk Telekom will be aware of the latest issues and contribute to the ONF's projects with its own know-how. Since 2011, the ONF consortium has been working with around 150 organizations among universities, equipment vendors, chip manufacturers, and software suppliers. According to its mission, the ONF serves as the umbrella for a number of projects building solutions by leveraging network disaggregation, white box economics, open-source software and software-defined standards to revolutionize the carrier industry. Partner-members -- including AT&T, #China Unicom, Cisco, Deutsche Telekom, Google, Samsung, Huawei, Ericsson, and Verizon -- have the most extensive rights in the ONF and provide major contributions to the community.



Viva Bahrain Partners Capital Club

VIVA Bahrain has entered into a strategic business relationship with the Capital Club, Bahrain's premier private city club as its exclusive telecom partner, offering its members world-class and latest connectivity solutions. The two-year alliance was formalized at a signing ceremony at the premises of Capital Club Bahrain, attended by VIVA chief executive Ulaayan Al Wetaid and Capital Club Bahrain General Manager Sumeet Jhingan along with other management members from both organizations. By partnering with VIVA Bahrain, Capital Club members will have access to high-speed and advanced 4G+ LTE data network solutions allowing its members to experience seamless, superfast connectivity and VIVA's business mobility services that the Capital Club's business clientele demand. Moreover, one of the club's members room will be powered by VIVA – a platform

to highlight its latest ICT solutions to help organizations increase their efficiency and productivity with latest connectivity solutions. This will be leveraged by the telecom operator through an exclusive series of key speaking opportunities, business-networking forums and other club-sponsored programmes. "Today, technology is crucial to realizing business productivity and success. Organizations are keen to accept technological solutions for enhanced business growth and engagement with their customers. Our alliance with the Capital Club will help boost technology business requirements of the corporate sector and most importantly members of the club, with greater connectivity to help them achieve higher levels of efficiency and effectiveness," said Mr. Al Wetaid. Mr. Jhingan said: "We are honored to have collaborated with one of the

largest telecommunications operators in the region offering latest connectivity solutions for the club's elite members in Bahrain and Saudi Arabia. "We are confident that our relationship grows stronger over the period and we look forward to working with VIVA for various other exciting projects regionally." This partnership reiterates VIVA's strategic commitment to empowering Bahrain's business sector with an array of ICT-enabled enterprise products and services, while contributing to sustainable growth of the local economy. For the Capital Club, as Bahrain's premier private business club, alliance with VIVA will be an added value to its offerings, enabling a more secure and business networking environment, and supported with high-quality and efficient communications experience.

Viva Bahrain Won Asia's Best Employer Brand Award 2017

Telecom provider Viva Bahrain won Asia's Best Employer Brand Award 2017 in Le Meridien, Singapore. Its HR planning becomes the reason for this award. This award follows "GCC Best Employer Brand" Award 2016 and "GCC Excellence in Talent Management" Award. Additionally, it succeeds Viva for the World HR Employer Brand Awards 2018. The Asia Best Employer Brand Awards planned by Employer Branding Institute and Stars of the Industry Group. Mohammed Al Khushail, Chief Human Resource Officer at Viva Bahrain said: It's a great honor to receive this award which will only strengthen our resolve to work with more dedication towards our HR value proposition. We will continue to focus on serving great employee value, investing in the right areas and creating the perfect nurturing and motivating workplace for talent." Furthermore, the award thanks Viva's employee empowerment strategy that raises goals, fears and interests of its talent at the same time as offering chances for development of abilities for its employees. It also highlight



Viva's support for the growth of the local talent pool through several creativities, events, trainings and programs.



Zain and Omantel Complete Treasury Share Sale on Bursa Kuwait for USD 846.1 Million

Mobile Telecommunications Company ("Zain") and Oman Telecommunications ("Omantel") are pleased to announce that Omantel has won the bid to acquire 425.7 million treasury shares representing 9.84% of Zain's fully paid in and issued share capital at an offer price of KWD 0.600 per share, representing a total cash consideration of USD 846.1 million (KWD 255.4 million / OMR 325.6 million). This announcement comes after an auction process managed by the Bursa Kuwait. As announced on August 10, 2017, Zain and Omantel entered into a share purchase agreement ("SPA") for Zain's treasury shares. This announcement triggered a formal block trade auction process under Bursa Kuwait rules, which completed this afternoon and culminated in a ceremony hosted by Bursa Kuwait to mark the successful closing of the transaction. The ceremony was held in the presence of the Zain Vice-Chairman and Group CEO, Bader Nasser Al-Kharafi; CEO of Omantel, Mr. Talal Said Al Mamari; and CEO of Bursa Kuwait, Khaled Al Khaled. Participating parties lauded the smooth operations and processes in Bursa Kuwait. Bader Al-Kharafi, Zain Vice Chairman and Group CEO, said: "We appreciate the professionalism and efforts of Bursa Kuwait and Omantel in this transaction, reflecting the confidence

and strength of both the Kuwait equity market and in Zain's business and digital growth strategy. We welcome Omantel's investment in Zain, and we look forward to exploring mutually beneficial synergies and business enhancing opportunities across the region. The strategic visions of both Zain and Omantel complement each other as do our cultures, and we are confident that this deal is value-enhancing to all our stakeholders on multiple fronts. The liquidity from this transaction brings many immediate and significant benefits to Zain as it enhances our financial flexibility as we continue to seek opportunities in the digital space and invest in upgrading our modern networks to enhance the mobile experience for our customers. Additionally, the deal allows us to reduce our debt levels as well as increasing our shareholders' equity." Talal Said Marhoon Al Mamari, Chief Executive Officer, Omantel, said: "The global telecoms market is changing fast, and our region has not escaped this trend. Data and content is where growth lies and investing in innovative digital products is critical to building a stronger company. In this competitive environment, our acquisition of a minority stake in Zain Group is a strategic move for Omantel as we continue to deliver against our Corporate Strategy 3.0, create value for

shareholders, diversify our revenue, raise our regional profile, and mitigate the risk of operating in a single market. Omantel is the incumbent player in Oman, with expertise in fixed, mobile and broadband networks and wholesale operations. We have long admired Zain for their deep digital expertise and regional footprint which is highly complementary to ours. Building on our respective strengths, we believe that together we can accelerate collaboration and innovation to ultimately deliver better services and content for our customers in Oman and the region, now and for the future." Khaled Al-Khaled, CEO of Bursa Kuwait, said: "We congratulate the parties involved in this major investment that was completed on Bursa Kuwait in such a short period of time. Bursa Kuwait's expertise in managing the auction was key to ensure a smooth, transparent and swift process. Today, this deal stands as an important indicator of the growing trust and confidence investors have in the Kuwait market. Bursa Kuwait will continue to develop the operations of this exchange in line with its three main pillars of efficiency, transparency and accessibility". The sale of treasury shares of Zain was approved by its shareholders and the Capital Markets Authority of Kuwait earlier this year and the current transaction has

been approved by the Board of Directors of both Zain and Omantel. The sale will now be executed and the treasury shares converted into common stock. Following this conversion, Omantel will hold 9.84% of Zain Group, with the corresponding voting rights and dividends attached

to common stock. The transaction will be fully debt financed by Omantel. S&P and Moody's have retained Omantel's ratings of "BB+ / Negative / B" and "Baa2 negative," respectively, following the announcement of the transaction on 10 August 2017. Citigroup Global

Markets Limited served as exclusive financial advisor and Meysan Partners as legal advisor to Zain. Credit Suisse acted as exclusive financial adviser and Freshfields Bruckhaus Deringer LLP as legal adviser to Omantel.

Zain crowned 'Best Brand' at Telecom World Middle East Awards 2017

The honor of the 'Best Brand' was bestowed on Zain Group by a panel of expert judges assembled by Terrapinn, the organizers of the annual Telecoms World Middle East Conference and Awards. The awards recognize outstanding performance in key areas throughout the Middle East telecom industry and shine a spotlight on key players that have contributed to making the sector one of the most dynamic globally. Since the introduction of its inspiring brand in 2007, Zain has been a recipient of numerous brand related awards over the years. This year's success has been driven by many developments occurring within the company, where digital innovation is positively impacting customer experience. Additionally, Zain's Corporate Sustainability programs and eye-catching marketing and widespread social media campaigns have captured the imagination of the whole region. Commenting on the award of the latest accolades, Head of The Executive Team, Vice Chairman & CEO's Office, Zain Group, Malik Marafie said, "The Zain brand is embedded in the core of all our initiatives. It paves the path for our mission, defines our vision and drives our focus within the organization." Mr. Marafie continued, "This recognition



as the best brand is an acknowledgement of the Zain workforce passion for making a difference to the community we serve and in the positive manner we deal with all of our stakeholders – aiming to put the customer at the center of everything we do." Today, Zain Group and its local operations now boast more than 9 million fans on Facebook, more than 6 million followers on Twitter, and over 1.2 million on Instagram. Over the past 4 years,

Zain Group's and operations' numerous YouTube channels across the region have had more than 200 million views. Zain is also very active on the most exciting new social media channel, i.e. Snapchat, attracting thousands of young followers as well as on LinkedIn with a more senior and professional audience attracting over 100,000 followers, all relevant and indicative factors of the brand power of Zain.



DE-CIX in Frankfurt Cracks New World Record for Data Exchange

Never before has so much data per second been exchanged at an Internet Exchange: On 12 September, the data traffic rate of the DE-CIX in Frankfurt reached a new record high - 5.88 Terabits per second. "Here we even managed to break our own record. Up until now, DE-CIX's highest value for data exchange at peak times was 5.6 Terabits per second. With that value, we already ranked at first place worldwide," says Harald A. Summa, CEO of DE-CIX Management GmbH. "We

assume that it was the introduction of the new Apple devices which caused the data traffic to go through the roof, and are already curious to see how the roll-out of iOS 11 will affect the traffic. I believe that, by then, at the latest, we will succeed in cracking 6 Terabits per second," concludes Summa. Data traffic at Internet Exchanges generally moves along wave movements and reflects the daily rhythm of Internet use, starting at 6 a.m. and reaching its peak at around 9 p.m.

Seasonal variations – whereby people are less online in summer than in the autumn/winter months - can also be registered. At DE-CIX's eleven locations around the globe, Internet service providers, network operators, content delivery networks, and companies exchange their data traffic through peering on a cost-neutral basis, and thus transmit their data packets to the recipient in the cheapest and fastest way.



Huawei Cloud and Microsoft Apps Embark on New Strategic Cooperation

Huawei and Microsoft signed a strategic memorandum of understanding (MOU) on Cloud Service under which Microsoft applications will be released on HUAWEI CLOUD. The two companies will initiate in-depth cooperation on the public cloud to provide the optimal experience of cloud services for enterprises and help enterprises implement digital transformation. Huawei and Microsoft already enjoy a time-honored and deepening cooperation in the field of cloud computing as the HUAWEI CLOUD has provided Windows Server and RDS for SQL Server. In this new strategic cooperation,

Huawei and Microsoft will bring more Microsoft enterprise-level products online. Joint innovation by the two parties provide customers with trusted hosting and various enterprise applications as a service. Facing promising prospects in the global market, both companies will jointly carry out market expansion and marketing activities on schedule. ZhengYelai, President of Huawei's Cloud BU and IT Product Line, said in the MOU signing ceremony, "Adhering to a customer-centered philosophy, Huawei is dedicated to enabling and promoting the development of a smart

society. As a world-leading provider of software, services, and solutions Microsoft has played an important part in the enterprise market all along. HUAWEI CLOUD looks forward to cooperating with Microsoft to build an open and win-win ecosystem. The signing of this MOU marks the start of strategic cooperation between the two companies." Alain Crozier, CEO of Microsoft China said, "The fourth industrial revolution, driven by technology innovation, is creating opportunities for customers to achieve more across nearly every industry. As a global leader in enterprise IT, Huawei is a strategic partner for Microsoft in the mission to empower organizations as they transform. Our increased collaboration will drive innovation as we build a seamless platform to benefit customers through industry-leading technology. Together, we are confident that we will lead, and win, in the era of digital transformation by focusing on what our customers need." HUAWEI CONNECT 2017, Huawei's flagship event for the global ICT industry, is held at the Shanghai New International Exhibition Centre from September 5-7. The theme is Grow with the Cloud. Huawei will be exploring how to realize new growth through digital transformation together with its customers and partners at this global platform for open collaboration.



Huawei Embraces Digital Transformation in Jordan

The Jordanian government has an opportunity to lead the country towards a high-value ICT services economy through the development of advanced technology infrastructure, Huawei's General Manager in #Jordan and Palestine, Andy Wu said. In an interview with Petra, Wu said despite region-wide political and social issues that have been weighing heavily on Jordan's circumstances, the Jordanian leadership has demonstrated initiative to develop the country's infrastructure. The Kingdom, he added, is currently ranked 93 in the World Economic Forum's e-readiness index. "According to the #Jordan Economic Growth Plan 2018 – 2022, the Government of #Jordan is

heavily investing in integrating different technologies into Jordan's leading economic sectors, such as health, education, energy, transport, finance, and communications. This is part of the government's ambitious REACH2025 action plan, a 2016 mandate to digitize the nation and ensure Jordan's relevance in the global digital economy. #Jordan enjoys a unique opportunity to lay down the foundations for the Kingdom's future prosperity, Wu said, adding that Huawei wants to combine its global expertise with the local insight of Jordanian partners to help the country achieve a better economy, industries produce higher revenue, and citizens attain a

better life. "In the future, a successful economy will be a digital economy. Digital Transformation will have a profound effect on how businesses operate," Wu said. "Huawei forecasts that by the year 2025, enterprises will conduct over 85 percent of applications on the cloud. There will be over 100 billion connections across the world, and industrial intelligence will have reached penetration of over 20 percent. Digitalization will improve efficiency, reach, and profitability across nearly every vertical. And adequate ICT infrastructure is the foundation on which the Digital Age will be built. The purpose of broadband is not limited to high-speed internet it allows businesses to conduct

operations over the cloud, paving the way for widespread adoption of big data and IoT". Huawei is collaborating with local partners to help #Jordan become part of a Better Connected World. We are cooperating with #Jordan Ministry of Information and Communication Technology (MOICT) on mapping the best path forward to develop the 'Internet of All' and achieve widespread digitalization across various industries and the society as a whole, the official said. Huawei is also working on research and development with local telecom operators to build an IoT ecosystem across the Kingdom, and developing a strategy and technical standard for 4.5G and 5G in Jordan. Our aim is to assist the public and private sectors to improve operational efficiency and innovation and complete the process of digital transformation. Breakthroughs in ICT are revolutionizing the global economy similarly to how the

internal combustion engine sparked the Industrial Revolution, propelling the world into modernity. As economies shift away from goods manufacturing, and towards knowledge dissemination, nations with high levels of connectivity will hold a competitive advantage. The benefits of ICT developments will reach across government and industry and down to all citizens. Telecom operators have the power to drive connectivity to maximize network assets and improve home broadband to enhance user experience, Wu said. "We believe that video will drive the digital transformation by 2020, video will comprise over 50 percent of operator revenue, and increase total data-revenue generation by 70 percent. Telecoms operators must adapt into digital content players in order to meet the needs of future consumers. Huawei's support for telecom operators will also include assisting them in developing indoor digitalization and

expanding home broadband penetration to more than two-thirds by 2020. This will ensure that technological transformation will uplift every Jordanian into the Digital Age," he added. Huawei, he affirmed, recognizes its social responsibility towards its partner countries. "In addition to collaborating with telecoms operators to develop the country's infrastructure, we will fulfill our responsibilities outlined in the Memorandum of Understanding signed with MOICT. We have already begun our Seeds for the Future program which is enabling government IT directors to gain experience in ICT with Huawei Global." "Additionally, we will offer another 50-100 internships to graduates and local technicians. We will also support Jordan's future growth by donating Video Conference systems to the Ministry of Education, and setting up Wireless Labs & training program for local universities," he noted.

Huawei and DHL Supply Chain Opt for IoT to Boost Automotive Manufacturing Efficiency

DHL Supply Chain has teamed up with Chinese tech giant Huawei Technologies to launch an Internet of Things (IoT) trial project at an automotive manufacturing facility in Liuzhou, China. The narrowband (NB) IoT investment will look to



"facilitate and streamline yard management for inbound-to-manufacturing logistics, leading to significant improvements in inbound processing time at the site" and will run until the end of September, involving 100 DHL drivers at 30 loading docks. DHL Supply Chain Greater China chief executive Yin Zou said: "In leveraging Huawei's and China Mobile's NB-IoT technology, we were able to design and develop this unique solution. Supported by a range of industrial, multimedia IoT protocols and interfaces, it offers connectivity, smart operations and device management functions." He explained that inbound automotive manufacturing processes can be subject to time-consuming inefficiencies at sites that have a high turnover of

deliveries which are crucial to the manufacturing process. Lager facilities can have a large turnover of trucks and delays occur when shipments need to be handled at a different dock at the manufacturing site – such as when tires arrive at the beginning of the assembly line rather than the end. It is essential trucks are directed to the right locations so docks are used efficiently and shipments are unloaded at the right places. In response, DHL and Huawei are integrating NB-IoT chipsets that use normal cellular telecommunications bands and are simple and cheap to implement. Vehicle detectors are embedded with these chipsets and the data transmitted using existing public base stations which have been upgraded to support NB-IoT. Within each terminal, DHL Supply Chain will automatically collect clear dock availability, providing visibility to dispatchers and drivers – on arrival the truck driver checks in via a mobile app which sends a queue number and an estimated waiting time. The yard management system automatically screens docks for availability and as soon as a dock becomes free, the driver is directed accordingly, resulting in inbound trucks being prioritized to the site's needs and shipments unloaded at the most appropriate dock. The aim is to halve truck waiting times from an average of 40 minutes, "significantly reducing the risks of manufacturing delays as materials arrive in time and resources are optimized appropriately". Markus Voss, chief information officer and chief operating officer of DHL Supply Chain, said: "By 2025, IoT will have the potential to generate up to €1.77trn in additional value for the international logistics industry. Together with Huawei, we want to pursue this path in developing cellular-based IoT technology able to connect to multiple devices across long distances."

Huawei Redefines Channel Leadership with Appointment of New Vice President

Huawei - a leading global information and communications technology (ICT) solutions provider announced the appointment of Hazem Bazan as the Vice President of Channels and Commercial Sales, Huawei Middle East, redefining its' Channel leadership. Based in Dubai, Hazem will be responsible for driving the Middle East's Channel sales operations. Working closely with Huawei's senior management team, Hazem will take up the responsibility of driving Huawei Middle East Channel ecosystem across all its verticals. Additionally, Hazem will look to strengthen Huawei's channel partner network, develop its Partner Incentive and Certificate Program and ultimately help to grow Huawei's presence in the Middle

East and Pakistan. Alaa Elshimy, Managing Director of Huawei Enterprise Middle East said: "Hazem's unmatched wealth of experience is a great asset for Huawei and the industry as a whole, and we are very delighted to welcome him to the team. We feel extremely hopeful for our channel strategy, and with Hazem's guidance we look forward to reaching new heights by expanding our solution offerings in the Middle East and Pakistan." Hazem is an industry veteran in the region who has previously served in multiple roles in Dell Technologies, HP, and Compaq. At Dell Technologies, he served as the Regional Sales Director for the Gulf region where he redefined and executed growth plans for the region and developed sales strate-

gies for new acquisitions for security and data management practices. In addition, he also redefined Dell's 'go-to market' strategy in increase their market share in solution in and services across various verticals such as banking, oil & gas and government. His previous positions include Commercial Sales Manager at HP, Channel Sales Manager at Compaq, and IBM Regional Sales Account Manager at IBM. Hazem stated: "It is a great honor to be a part of Huawei and contribute to its growth. The organization has great potential in its offerings, and I look forward to using my skills and experience to build on our existing partner network and increase our presence in the region."

Huawei Plans to Launch 5G Mobile Internet in Oman

Chinese technology firm Huawei is in the process of launching 5G in Oman, according to an official at Huawei Oman. 5G stands for fifth generation telecommunications standard that will succeed 4G services for faster mobile communications. Speaking to the Times of Oman, Huawei's chief executive officer for the Sultanate Leo Hong said although the technology will take time to be implemented, Huawei aims to start the process soon. "We are also planning to hold a live test in collaboration with TRA or other operators for 5G. 5G is not standardized so far, but we have the solution and the product so we'd like to bring this cutting edge technology to this country in advance so people will have

awareness of what the new technology is in the coming years." 5G services will have a broader bandwidth and will be significantly faster than 4G with a theoretical speed of 10 Gbps. This will allow higher productivity and ability to run more complex mobile apps. However, 5G will cost more to implement and while the newest mobile phones will probably have it integrated, other handsets could be rendered outdated. "In the coming two to three years, telecom and ICT will be in a transition period. 5G is coming, but may take two to three years. These years will be challenging for both vendors and operators. So for this transformation to digitization, we would like to build digital communities and make ICT a driving force

for the economy. This is one initiative," CEO Hong said, pointing out to the launch of Huawei's ICT competition. According to experts, 5G technologies still have a long way to go, especially in Oman, but Huawei testing these technologies are crucial to early implementation. "5G is excellent. We all are waiting for it in the telecom industry, but it's not happening soon. If Huawei is able to begin testing it with TRA, I believe it's going to be a perfect start for 5G in the markets," an official at an IT firm in Oman, said. Currently, users in Oman are acquainted with 4G services, which are mainly an upgrade from 3G in terms of faster download speeds.



Cisco and Dimension Data Join Forces to Fight against Ransomware

Cisco has joined forces with Dimension Data and published a white paper to help organizations stay ahead of ransomware threats. Called Ransomware: The Pervasive Business Disruptor the paper looks at ransomware trends and impacts, and how to respond before a threat becomes a business disruptor. According to a Cisco 2017 Mid-Year Cyber Security

Report, ransomware is one of the main threats to digital business. Globally, around 49% of businesses experienced at least one cyber ransom attack in 2016, and of those, 39% were ransomware attacks. In the US alone, the number of attacks rose 300% from 2015 to 2016. This trend can be attributed to the growth of ransomware-as-a-service

(RaaS) in the first half of 2017, where cyber criminals pay the operators of RaaS platforms to launch attacks. "The escalation in ransomware attacks in the digital economy makes every organization a target," says Matthew Gyde, Group Executive – Security. "This risk escalated when cryptocurrency and bitcoin became a common avenue for ransom payment.

That's because cybercriminals cannot be traced. And as more employees work remotely on personal devices, the risk is further compounded." "Deep threat Intelligence and research are key to outsmarting cybercriminals, and a critical success factor is to disrupt the attack before it becomes the business disruptor," Gyde explains. "But security controls alone are not sufficient to address a ransomware threat, and organizations need to adopt a multi-layered approach to stop the cyber kill chain. This means identifying emerging threats before an attack, quick detection, a swift response to an attack, all the way through to the backup and recovery process." "Middle East organizations need to be aware of the rapid growth of ransomware-as-a-service in the first half of 2017, where threat actors with malicious intent pay operators of ransomware-as-a-service platforms to launch such attacks. The growth of digitally connected global enterprises means that no single country can remain isolated. It also means that enterprises in the Middle East can expect more sophisticated attacks, more frequently, and with more unpredictability

going forward. The only protection for them is to follow more rigorous security protection measures," adds Mechelle Buys Du Plessis, Managing Director, Dimension Data Middle East. The ransomware white paper includes a six-point framework for organizations to adopt to defend against a ransomware attack:

- Predict and be informed before the attack occurs: Proactively research what's discussed on the dark web, new exploits that will be used, and industries or companies that will be targeted.
- Protect: Identity and access management (IAM) tools are essential to protecting enterprise devices and computing assets. Network access control (NAC) ensures that only devices that have the adequate security settings and adhere to IT security policies are able to access corporate systems.
- Detect: Technologies should be in place to detect anomalies in the infrastructure, in the event that malware has infiltrated the endpoints or network. The network must be

monitored to check for indicators of compromise. Turning on AI-enabled malicious traffic detection, can also help automate detection swiftly before the attack worsens.

- Respond: When a ransomware incident has been detected, security experts must work fast to block malicious communication channels at the firewall or IPS, and quarantine infected machines.
- Recover: Backup is a critical part of the strategy for fast recovery. In addition, the backup system needs to prevent the replication of files that were maliciously encrypted by ransomware. This can be achieved with dynamic segmentation and inherent security features.

"Recent ransomware attacks have highlighted the fact that improvements are needed in any industry or any size of the organization. With the right framework, tools and processes, companies will become better equipped to disrupt the ransomware attack before it becomes the business' disruptor," says Gyde.



Sudatel to Boost Investment in Domestic and Pan-African Operations

The Sudatel Telecom Group today issued its latest financial statement and outlined plans for continued expansion of its telecom infrastructure across West Africa. The Company reported an increase in revenues to USD 252 million in H1 2017 - up 8% from H1-2016. Gross Profit also increased, by 22% from USD 87 million in H1 2016 to USD 106 million in H1 2017.



These increases were achieved despite increasing competition in the North African telecom market; a drop in the disposable incomes of the Sudanese; and foreign exchange rate fluctuation experienced in some countries where it operates. The negative effect is however lessened by a steady and reasonable share of its revenues denominated in local currencies; meanwhile it is expected that economic instability will lessen in Sudan future due to the easing of US sanctions. Given Sudan's geographic location, Sudatel plays a major strategic role in connecting Africa and the Middle East to the rest of the world. Over the past year, the company has continued to heavily invest in its domestic and pan-African operations as demand for high-quality telecom services across the region continues to grow. It has expanded and upgraded its fiber network and launched a number of new products and services targeted at specific market segments. Tarig Hamza Zain El Abdein, CEO of The Sudatel Telecom Group, said "We have a well thought through long-term investment plan that will enable us to maintain growth. We will continue to work hard to ensure that we maintain our position as one of the most reliable ICT providers in North Africa."



PCCW Global Launches Restoration on Demand Service

PCCW Global, the international operating division of HKT, Hong Kong's premier telecommunications service provider, has launched its Restoration On Demand service, an innovative Network-as-a-Service offering that enables its customers to rapidly re-route their connections to an alternate network path in the event of an undersea cable failure, thereby restoring their international connectivity at the click of a button. Globally, companies have become increasingly reliant on high-performance international fiber links to support business-critical applications. While submarine cables form an essential component of an international network, they are vulnerable to lengthy service outages in the event of a cable cut - putting both business revenue and reputation at risk. The PCCW Global Restoration On Demand service leverages the company's Software Defined Network (SDN) capabilities to enhance network resilience and service performance in order to meet the needs of global enterprises. The service complements PCCW Global's existing premium always-on protected International Private Lease Circuit (IPLC) service by offering customers a quick-to-deploy and cost-effective business continuity service alternative. Link setup, traffic restoration and billing are automatically activated, ensuring the customer's traffic is safely protected until the original fiber service is restored. Once the primary circuit has been repaired, the customer can elect when to revert to the original service. Customers can place orders directly via the PCCW Global Service Portal and the service is activated in minutes. The service is charged on a daily-usage basis. The service brings important key benefits to customers, including:

- A quick-to-deploy and cost-effective alternative for improved network reliability
- Improved business continuity protection
- Employee and end-user productivity protection

- Improved revenue earning protection

Mr. Jordick Wong, Senior Vice President, Product and Vendor Management, PCCW Global, said, "Our Restoration On Demand service represents a massive step forward for our enterprise customers, providing them with peace-of-mind via a cost-effective and reliable business continuity alternative. Leveraging PCCW Global's extensive fiber network, we have designed an online portal which allows our customers to restore their international connectivity with one click of a button. It is a backup capability that, once activated online, allows capacity to be provisioned automatically by our systems in near real-time and with no human intervention required." Mr. Wong added, "Restoration On Demand is the latest service innovation launched as part of our on-going program to provide dynamic and flexible network and cloud-based services which can be activated by our customers to address their individual demands, service level requirements and rapidly changing network conditions."



Accenture to Deliver Video-Enabled Justice to Sussex Police

Sussex Police has chosen Accenture as its IT services partner for its pioneering project to improve how people to give evidence by video. The £11m video-enabled justice (VEJ) project will eventually be rolled out in London and the South East region. In Sussex, the project involves installing live links into 14 police estates across the county to create virtual courts. The first links will be installed in police operations in Bognor Regis, Brighton, Worthing Centenary House, Chichester, Crawley, Eastbourne, Hastings, Haywards Heath, Horsham,

Lewes, Littlehampton, Rye and Uckfield. The technology will provide prison to court video link, bail application virtual court appearance, police witness live link court appearance, and victim and witness live link court appearance. Katy Bourne, Sussex police and crime commissioner, said conventional routes and processes into courts are not as effective or user-friendly as they could be. "This funding will allow us to embed video-enabled justice across the system and will deliver greater flexibility and access to court time, saving police officers and

witnesses up to five hours waiting for court slots, and does not require police to drive some defendants across the county for a five-minute hearing," she said. There will be a scheduling service which matches up to 300 available video end points to participants, including the police, the defense, prison service staff, judges or magistrates and defendants. "If businesses and government can operate digitally by default, we should aim for the criminal justice system to do the same where possible. We owe it to victims and witnesses to get this right," said Bourne.



Mobily Business Offers the Latest Solutions for Small and Medium Enterprises

Etihaad Etisalat (Mobily) represented by its Business unit offers the latest solutions for small and medium enterprises, such as small offices such as network, communication, mobility and cloud computing services at low costs, which These confirms Mobily's leadership role in the ICT market. Mobily Business offers a wide range of ICT services that support the digital transformation of the facilities in line with the vision of the Kingdom 2030. Mobily Business is also working in the coming period to launch a number of new services to strengthen the company's leadership in the provision of ICT. Chief Business officer Eng. Ismail AlGhamdi commented "Mobily Business

has recently introduced new telecom packages that suits business needs. The monthly fees for these packages are designed to meet all market requirements (40, 80, 200 and 400 SR), In addition, these packages offer free calls between employees within the network". "The company offers Mobily business packages that enable customers to experience high-speed Internet with the latest 4G technology and customers can choose from the latest 4G devices offered by Mobily that suit their business needs, In addition Mobily Business offers fixed Internet and telecom services such as IP VPN and DIA, as well as hosting and cloud services, Mobily offers e-mail

and Microsoft 365 packages, and cloud computing packages for small and medium enterprises that help them to manage their business all the time at the lowest cost and effectiveness in a very secure environment." Al Ghamdi added. Mobily's support for small and medium enterprises is in line with the Kingdom's 2030 vision to support small and medium enterprises. In addition, these services help reduce operational and capital costs of enterprises, thereby enhancing their financial efficiency by providing high-quality servers within Mobily Business data centers.

Mobily Brings Huawei, Ericsson and Nokia on Board for Network Upgrade

Saudi Arabia's Mobily has recruited three of the world's biggest network equipment vendors to implement upgrades to its network over the next three years. Ericsson, Huawei and Nokia will all contribute to the upgrade, although the exact nature of each vendor's work has not been disclosed. Mobily – also known as Etihaad Etisalat – is planning on investing SAR 2.4 billion (around USD650 million) into the upgrade, and does not expect to

require any fresh debt. Mobily CEO Ahmed Aboudoma said: "This agreement comes in line with 2030 Kingdom Vision and its objectives that focus on developing telecom & IT sector. Moreover, it will allow Mobily to provide the best services to its customers that comply with its new strategy 'RISE' in which its objectives revolve around boosting up the level of provided services by using the latest telecom technologies." "Mobily's current

network has a competitive performance among the sector. The new agreement will contribute in raising network performance significantly to allow Mobily customers enjoy unprecedented services. The agreement discussions lasted more than 6 months to ensure adding plans comply with telecom technology rapid developments, in addition to adapting future technologies within an efficient contractual framework."



Apple Pay to Be Launched in UAE by the End of Year

Apple has announced that its contactless system, which allows shoppers to make 'tap-and-go payments' at the cashier, will go live in the UAE soon with the support from a number of local banks. The American tech giant confirmed that Apple Pay is scheduled to roll out in the UAE before the end of the year and will be made available to debit and credit card customers of Emirates NBD, Mashreq, HSBC, RakBank, Standard Chartered and Emirates Islamic. "We know our customers in the UAE will love the added convenience and security Apple Pay brings, and we can't wait for them to start making easier and more private payments soon," said Jennifer Bailey, vice president

of Apple Pay. Tapping phones instead of cards onto payment machines is the latest big thing in the cashless world, but unlike in other markets, it has yet to gain traction in the UAE. "As digitization picks up in banking, and customers' demand more convenient and secure solutions for their everyday payment needs, the launch of Apple Pay in the UAE will help encourage usage and acceptance of contactless payments," said Matthew Colebrook, head of retail banking and wealth management at HSBC Middle East and North Africa (Mena) and Turkey. "HSBC is excited to soon bring to its UAE customers Apple Pay, which is transforming mobile payments with

an easy, secure and private way to pay." Apple Pay is now available in a number of countries, including the United States, United Kingdom, Canada, Australia, China, Singapore, Switzerland, France, Hong Kong, Russia, New Zealand, Japan, Spain, Ireland, Taiwan and Italy. It will go live before the end of the year in UAE, along with Denmark, Finland and Sweden. The following devices can be used in store when making tap and go payments: iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus and iPhone SE, Apple Watch Series 2, Apple Watch Series 1, Apple Watch (1st generation).



Nokia Puts Operators on Path to 5G by Boosting 4G Performance

Nokia is extending its comprehensive portfolio of ultra-broadband product and technology solutions to give operators new flexibility to meet consumer demand and enhance mobile network performance as they evolve towards 5G. As mobile broadband traffic continues to grow, operators want to enhance network performance where they see the greatest demand - with first deployments traditionally in busy city centers. More capacity, higher speeds and varying network latency are needed to meet the needs of individuals, businesses and IoT, as well as to ensure a smooth transition to 5G. As such, Nokia has defined a sustainable network evolution path that will allow operators to leverage existing investments and maximize assets such as spectrum, to implement higher performance where and when it is needed in the network. To do this, Nokia is adding to the Nokia AirScale Remote Radio Head portfolio, enabling operators to increase peak performance and cell capacity while reducing space requirements at cell sites via new dual- and single-band FDD-LTE and TD-LTE radios. These leverage carrier aggregation techniques, 4x4 MIMO and 8x4 Beamforming, while addressing demand for higher output power, extending frequency band support and simplifying network rollouts. To augment heterogeneous network deployments and boost coverage and capacity in the busiest hotspots - especially in dense urban environments - operators will need to deploy the next wave of small cells. The Nokia Ultra Dense self-organizing network features on Flexi Zone small cells will simplify these deployments, solving issues caused by reducing the distance between new and existing small cells and ensuring continuous optimization even as further densification occurs. Nokia has extended the self-organizing network features on its Femtocell portfolio to ensure smoother integration and higher performance in heterogeneous networks as traffic is offloaded from the macro network. New features on the industry-first Nokia Flexi Zone Citizen Band Radio



Service small cells, supporting Spectrum Access Server and Citizen Broadband Radio Service Device Proxy connectivity, will offer operators new options for boosting coverage and capacity, particularly inside buildings. CBRS Flexi Zone small cells can be used to deploy neutral host capabilities, allowing operators to lease capacity to other providers inside malls, hotels and office blocks, where space is at a premium. In compliance with FCC requirements, small cells will be able to efficiently communicate with the Spectrum Access Server to ensure the network uses only available shared CBRS* spectrum. To provide backhaul flexibility for ultra-dense heterogeneous city networks - where microwave transport is used to link small cells to fiber access points - Nokia Wavence microwave now supports Carrier SDN. Operators will benefit from new intelligence and automation, including rapid power-up of virtual network functions and adaptable parameters to support changes on the radio access network, such as when people move from work to home. Anchoring this multi-technology access is the Nokia Cloud Packet Core. Its cloud-native capabilities and operations deliver the performance to support increasing capacity, massive scalability required for densification, and deployment flexibility necessary to deliver low latency, in order to realize

the economics of delivering diverse and demanding services and applications. Nokia continues to help operators plan and optimize their path to 5G using its 5G Acceleration Services and is now expanding the portfolio to include the operator 'anyhaul' end-to-end transport network. Nokia will work with operators to assess the readiness of the network and design and implement their 5G strategies and services. Stéphane Téral, IHS Markit Executive Director of Research and Analysis, Mobile Infrastructure & Carrier Economics, said: "Nokia continues to deliver a sustainable path to 5G that allows operators to implement new capabilities in their network where and when they need them, ensuring the most efficient use of resources. A challenge for operators is to meet the ever-growing demands in busy cities and Nokia is providing a comprehensive approach to solving this." Harold Graham, head of the 5G business line at Nokia, said: "Nokia is committed to providing the most effective and cost-efficient path to 5G for our customers through evolutionary enhancements to their networks. We truly understand how changes in each area of a network will affect the network as a whole, and as we evolve our end-to-end portfolio of technologies and services we are working closely with customers to ensure they are always ahead of their customers' needs and expectations."

Nokia Eases IoT Market Entry for Mobile Operators

Espoo, Finland - Nokia is expanding its Internet of Things (IoT) services offering to help mobile operators enter new IoT market segments or expand their footprint geographically. In addition, the company has complemented its end-to-end validation and testing services with Nokia TestHub, designed to accelerate new technology launches, for example in IoT and the cloud. WING market entry services is a consultative offering for operators that identifies the best vertical market opportunities in a region, and provides the related IoT applications and go-to-market model to help operators scale fast to take advantage of the rapidly growing IoT market. It determines opportunities in nine IoT market segments: connected car, healthcare, logistics and transport, smart cities, utilities, agriculture, retail, smart homes and buildings, as well as connected industry. Once a service is up and running, the Nokia WING managed service model can provide provisioning,

device management, operations, security, customer care and billing for all connected applications. WING market entry services' hands-on approach of designing the right proposition and go-to-market strategy ensures operators can capture new revenue streams in IoT. Besides market entry services under the WING solution, Nokia is expanding its capabilities in multivendor testing services with Nokia TestHub to help operators to test their solutions and devices extensively across domains and technologies before roll-out. Validation testing of solutions and services both in the lab and in the field is essential to accelerating not only commercial IoT launches, but also cloud and eventually 5G launches. Automation in testing is critical to keeping pace with accelerating service launches, and frees up critical resources in a DevOps environment. As part of the Nokia TestHub, Nokia will provide "Lab as a Service", which gives

customers early access to state-of-the-art infrastructure and expertise from Nokia for self-testing of devices, network elements, applications and services. Friedrich Trawoeger, head of Managed Services at Nokia, said: "IoT deployments are complex, but with our help operators will be able to fast-track their entry into the market as we provide them not only with a ready-to-go-market and business model, but also with a pre-integrated IoT infrastructure, complete service model and go-to-market support services. With our testing services we can ensure smooth launches for our customers, which are critical to maintaining great experience for their customers." If you are attending the GSMA Global Mobile IoT Summit of the Mobile World Congress Americas in San Francisco, please come listen to the keynote speech of Ankur Bhan, global head of Nokia WING at Nokia, today, September 11, at 14:10 PDT.



du Wins Gold and Silver at the WARC Prize for Mena Strategy

du has been awarded for its strategic thinking at the WARC Prize for MENA Strategy, where the telecom took home a Gold award for its 'Tropa for Life' campaign, which promoted its new Kabayan bundle, and a Silver in WARC's 'Global Content Strategy' for du's 'Post Wisely' campaign. The latest du Kabayan

campaign created by Leo Burnett was also given a special award for research excellence and du was the only telecom provider to be awarded a gold in the region. "Being awarded a gold and a silver WARC Prize for MENA Strategy is an extremely honorable win for du, and a proud moment for the organization. These are great wins considering it is the first year of the WARC Prize for MENA Strategy Awards," said Abdulwahed Juma, Executive Vice President of Brand and Corporate Communications. "At du, we go above and beyond, and we wanted to provide our Filipino customers with a plan that is catered to their particular needs, so that they can stay in touch with their family and friends. We are pleased that our 'Tropa for Life' campaign was a great success amongst the Filipino community and recognized for its strategic thinking. With both our 'Post Wisely' campaign and 'Tropa for Life' campaign we conducted extensive research to create both campaigns in order for them to be impactful." The telecommunications provider successfully tapped into the elusive Filipino segment in the UAE, using a culturally relevant campaign, 'Tropa for Life'. The campaign was recognized by the new award scheme – WARC Prize for MENA Strategy because it truly focused on strategy. du's #PostWisely campaign was created to inspire the online community in the UAE to think before they post. A study conducted by du in light of the campaign found that 75% of respondents have been befriended or followed on social media by people they don't normally interact with, nearly half (49%) accepted 50% or more of these unfamiliar requests.



ARTICLE

Building an Open and Diverse Ecosystem for Shared Success in the Middle East

The integration of IT and telecommunications is creating a wave of innovative new technologies that are revolutionizing organizations across all sectors and fueling the digital transformation. At Huawei, we aim to be an enabler of technological progress worldwide. We believe that the key to successful digitalization is to have a community of collaborative partners bringing together their unique strengths to develop products and solutions that meet the needs of customers.

As the digital transformation sweeps across the Middle East, it is vital for organizations in the region to have the necessary infrastructure to successfully navigate the road to digitalization or risk being left behind. This is why we strive to act as the sun and soil to nurture a diverse and thriving ecosystem of partners and vendors in the Middle East.

As the digital transformation sweeps across the Middle East, it is vital for organizations in the region to have the necessary infrastructure to successfully navigate the road to digitalization or risk being left behind.

On the developer side, Huawei wants to build an environment where all our partners can contribute to technological progress and succeed together. We are collaborating with local industry leaders, taking advantage of their expertise to build products and solutions with distinct differentiated advantages.

To further this aim, Huawei has established 13 OpenLabs worldwide over the last year to act as the bridge between vendors and customers. OpenLabs enable vendors and partners to work together to tailor solutions in order to precisely target their industry needs.



Charles Yang
President,
Huawei Middle East



In May 2017, we opened the first OpenLab in the Middle East in Dubai. This is yet another example of Huawei's desire to foster a community of shared success in the region. OpenLab Dubai provides our regional partners with a platform to test and customize a variety of technologies ranging from Cloud Computing to Big Data Analytics to eLTE and Converged Communications. We have designed the OpenLab to target the vertical sectors most relevant to the Middle East, particularly Public Safety, Smart Cities, Transportation, Education and Oil & Gas.

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A fast, secure and agile cloud is a prerequisite for digitalization, and an all-cloud strategy is a key element of

regional digital transformation. Huawei focuses on unifying standards for scheduling management of the All-Cloud systems. One of the ways we do this is by contributing more manpower and open source code to establish unified standards to promote improved scheduling and management of the All-Cloud system.

Across the globe, our commitment to contributing to the ICT ecosystem is demonstrated by our leadership positions and activities in a number of international alliances:

- Huawei serves as a co-chairman of the European Telecommunications Standards Institute (ETSI) and has had 240 proposals accepted, the highest number of any member.
- As a founding and platinum VIP member of the Open Platform for NFV (OPNFV), Huawei occupies key seats, such as secretary general of the Board of Directors, and has initiated 12 community projects, the highest number of any member.
- Huawei is a platinum director of the OpenStack open source community and has been an exceptional contributor

to the community, particularly in the aspects of service reliability, security, and system maintainability.

- We are also a Platinum member in the Open Network Automation Platform (ONAP) which aims to establish unified standards for scheduling & management of all-cloud systems.

...our commitment to contributing to the ICT ecosystem is demonstrated by our leadership positions and activities in a number of international alliances....

By combining Huawei's global expertise with partners' local insight through the OpenLab platform, we can create an ecosystem of symbiotic relationships and foster an atmosphere of openness and collaboration in the Middle East. This brings us closer to achieving our goal of Building A Better Connected World. 🌐



REGIONAL NEWS

AREGNET Holds Its 15th Meeting in Abu Dhabi, UAE

The 15th Meeting of the Arab Regulators Network (AREGNET) will be held under the umbrella of its Permanent Secretariat and the Telecommunications Regulatory Authority (TRA) in Abu Dhabi, United Arab Emirates in the period from September 18 to 20, 2017. The meeting is preceded by a specialized workshop on the challenges and opportunities arising from the increasing usage of IoT applications and the position of the Arab region in this regard. NTRA is currently chairing two of the Network's projects: "Enhancing Broadband Services" and the "Impacts of OTT Services". The event will be preceded by the experts' preparatory meeting on the evaluation of the current projects of the regulatory bodies in Egypt, Mauritania, Morocco, Jordan, the UAE and Bahrain. In addition, the new projects will be discussed in addition to a high-level meeting that will bring together the heads of the Arab regulatory

bodies, then the new developments in the International Telecom Unit (ITU). In addition, an extensive meeting will be held on the second day, bringing together the executives and heads of regulatory bodies and accompanying delegations as the basic rules will be reviewed and experts' recommendations on the current and new projects will be discussed, in addition to the workshop's outcomes. This meeting will set the date and venue of AREGNET's 16th meeting. AREGNET is one of the prominent Arab entities in the ICT sector established under the umbrella of the League of Arab States on the occasion of the first seminar of the Telecom Regulators in the Arab Region held that was held in Algeria in 2003 as it embraced all telecom regulators in the Arab region. It aims primarily to provide an Arab platform for dialogue and exchange of expertise among the Arab bodies, attaining

harmonization of regulatory policies in order to achieve synchronization in the regulatory practices within the Arab countries on the developed policies, and the fair and transparent procedures in order to encourage the development and modernization of telecom and information technology services in the Arab world, as well as the deploy the digital and electronic knowledge in the Arab world. The National Telecommunications Regulatory Authority (NTRA) of Egypt has distributed and circulated the results of the study conducted on the enhancement of broadband services in the Arab region, which provided a detailed portrait of these services in practice in this region and the challenges and ambitions associated with them. It is intended that, during the discussions, the viewpoints of the member states will be determined and any feedback or remarks on the report will be submitted.

Digitization to Boost Mideast GDP

Digital payments will dethrone "cash as king" in the Middle East, and boost regional GDP by nearly USD100 billion, industry experts announced ahead of GITEX Technology Week. As Middle East countries accelerate their digital transformation agendas with nationwide high-speed technology connectivity, one of the biggest benefits will be quick and easy mobile payments. In the near future, Middle East residents will be able to pay for parking tickets and in-store purchases, top up mobile phone minutes and data, and send remittances via mobile apps. Paolo Gagliardi, Chief Business Officer of the UAE-based financial technology startup Trriple, said: "Once fast, secure, and easy-to-use digital payments become mainstream that means 'cash is king' no more in the

Middle East. Using digital payments, consumers and merchants can save time and money, and gain real-time insights on transaction history and spending trends." Trriple estimates that about 80 percent of the UAE's transactions are done in cash, which can be expensive to produce and secure, and often inconvenient to use. However, if the Middle East captured its full digital potential, and made digital payments widespread, then the region could add USD95 billion in GDP by 2020, according to a recent report by the consultancy McKinsey. Experts agree that the UAE is a global leader in supporting digital payments. Already in 2017, the UAE Central Bank has issued regulations for digital payments, supporting UAE Vision 2021 goals of smart government, financial inclusion, innovation, and market

competition. "The UAE government has set the stage for digital payments to transform transactions across every industry vertical, across public sector, to transport, tourism and healthcare. Trriple aims to leverage GITEX to fuel our growth and expansion, by showcasing the latest solutions, meeting with investors, growing our partner ecosystem, and networking with fintech leaders," added Gagliardi. Trriple's mobile wallet provides a secure and convenient open source payment platform, which can securely connect with any government, organization, or banking network in the world. At GITEX Technology Week 2017, experience the future of digital payments at the Trriple stand at the Dubai World Trade Centre.

PTA Has Taken Concrete Measures to Provide Broadband Connectivity at Affordable Prices. Chairman PTA

Addressing the ITCN Asia 2017, the Chairman of Pakistan Telecommunication Authority – Dr. Ismail Shah stated that: "ITCN Asia provides a collaborative environment to find better solutions and facilitate public/private partnerships. PTA has taken concrete measures to provide Broadband connectivity at affordable prices for the masses. Hence, the number of internet users and consumption of broadband in Pakistan has increased tremendously over the past 3 years. The internet promises easier access to modern education across our vast rural communities, while revolutionizing global businesses and social-connectivity. The youth must make positive use of this technology to ensure faster national progress." The 17th ITCN Asia 2017, Pakistan's biggest international exhibition and conference on Information Technology (IT) & Telecommunications, is now being organized for the 17th consecutive year on September 19 to 21, 2017 at Karachi Expo Centre. The concurrent events of this year's insightful forum are; Security Asia, Fire & Safety Asia, Lights & LED Asia and Consumer Electronics Asia. The event promises great enrichment to this dynamic and valuable industry. This year, the 17th ITCN Asia's scope is expected to be greater than all its previous annual events, with numerous new features added to it. It is occupying over 150,000 sq feet of exhibition area, and expects more than 600 international & domestic brands with 150+ foreign delegates and participants from more than 25 countries. Well over 50 startup companies and experts along with 100,000+ visitors are expected to grace the event. It is designed to create major opportunities for business-to-business alliances, leveraging their mutual strengths for capacity-building in this fast-evolving industry. ITCN Asia is supported by the Government of Pakistan, Ministry of IT & Telecom and Pakistan Telecom Authority (PTA). Addressing the ITCN Asia 2017, the Chairman of PTA – Dr. Ismail Shah stated that: "ITCN Asia provides a collaborative environment to find better solutions and facilitate public/private partnerships. PTA has taken concrete measures to provide Broadband connectivity at affordable prices for the masses. Hence, the number of internet users and consumption of broadband in Pakistan has increased tremendously over the past 3 years. The internet promises easier access to modern education across our vast rural communities, while revolutionizing global businesses and social-connectivity. The youth must make positive use of this technology to ensure faster national progress." The Platinum

Sponsor of this vibrant conference is HIKVISION, whereas prestigious brands and enterprises like; JAZZ, NAFFCO and Megaplan are the Gold-Sponsors. The Silver Sponsors include successful companies like; Samsung, Microtech, Optimum Technology, SFFECO GLOBAL, Dahua Technology, Haseen Habib Trading (Pvt.) Ltd, Emirates Firefighting Equipment Factory LLC (Firex), Xclusive Solutions and KEDACOM, whereas the Bronze Sponsors are; 3M, Minerva, Vivanco, ABM Data Systems (Pvt.) Ltd, Fakhri Brothers, Tech Smart IOT and Americom Technology.



The Strategic Partners of ITCN Asia include; PTA, PSEB, P@SHA, KPITB, ICT FORUM PAKISTAN, THE NEST I/O, ISACA – Karachi Chapter, TECH PAKISTAN, IEEE- KARACHI Section, Department of IT-Government of Sindh, Usman Institute of Technology and Mehran University of Engineering & Technology, whereas IBA is the knowledge-partner and the official Web-Partner is A2Z Creatorz. The three-day event is featuring numerous conferences, including a Telecom Summit and a PSEB CEO Forum, besides a moot on 'Digital Security for Media' and another on the 'Role & Importance of ICT in HEIs'. It also features exclusive conferences on 'Information-Security' and Financial technologies (FinTech) to analyze the evolving trends & challenges in these fields. Nearly 70 leading experts and international speakers will make insightful speeches and presentations to explore new verticals and provide extensive information on the latest innovations in the digital world. These conferences are attracting an audience of more than 700 delegates, including CEOs, CIOs, CISOs and other senior officials.

Telecom Egypt Presents Country's 4th Mobile Network WE

Telecom Egypt officially launched "WE", the country's long-awaited fourth mobile network. The fourth mobile network is available with the technologies of 2G and 3G, and 4G experimentally. The SIM cards for the new mobile network were available for purchase. The pre-paid cards for the fourth mobile network will be available for distribution by October 15. There are

three other mobile service providers in Egypt: Orange, Vodafone and Etisalat. Telecom Egypt has a monopoly on landlines in the country. The high-speed 4G service is set to be officially activated for all four mobile services by the National Telecommunications Regulatory Authority within weeks. The mobile internet service provided by WE will cost

EGP 10 for 1GB, EGP 20 for 2.5GB, EGP 40 for 6GB, EGP 100 for 18GB, and EGP 200 for 40GB. The company has a fixed-line subscriber base in excess of 6 million subscribers. In 2001, Telecom Egypt acquired TEData (formerly GegaNet) to act as its data communications and internet service provider.

Pakistan's Telecom Sector Sees Robust Investment

Pakistan's telecom sector is strengthening by leaps and bounds and the recent figure for the Foreign Direct Investment (FDI) in the sector is further proof of that. Pakistan's 2017-2018 fiscal year is off to a good start as the total inflows to Pakistan more than doubled to USD457.2 million in the first two months i.e. July and August. This figure is very impressive as it is up by 154.9% compared to USD179.4 million total FDI in the same period last year. According to statistics released by State Bank of Pakistan, the telecom sector received an FDI of USD92.5 million between July and August. A major chunk of this investment figure came from Zong for expanding its 3G and 4G services. This makes



the telecom the third highest contributor in terms of FDI behind the Power and Construction sectors, which have an FDI of USD210 million and USD171 million respectively. Speaking

on the increase in Pakistan's FDI, Khurram Schehzad, a Chief Commercial Officer at JS Global Capital Limited, stated, "The cross-border investments into the country are expected to go up with most [flows] going into power and telecommunications firms. The technology start-up companies can generate ample interest in times to come." The State Bank also revealed that Pakistan received large amounts of its FDI from China, the US, and Malaysia. Without a surprise, China was the biggest contributor with a USD258.3 million FDI in July and August. The US largely made portfolio investments among others which rounded up to USD202 million while the Malaysian FDI was recorded at USD110 million. This figure is strongly reflective of a recent deal between a Malaysian telco and Jazz. Last month, edotco Group S, owned by Axiata – Malaysia's biggest mobile operator, signed a near USD1 billion deal to acquire Jazz's tower business in Pakistan. Overall, Pakistan's telecom sector has been doing pretty well so far with the government also putting in an effort. IT Minister, Anusha Rahman, on several occasions, has stressed the importance of digitizing Pakistan and aims to take Software and Telecom exports to USD6 billion by 2020. Pakistan's close ties with China have also been a contributing factor in uplifting the telecom sector. Earlier this year, PTCL and China Telecom Global signed a MoU to bring fiber optic cables to Pakistan's underserved areas. Apart from the telecom sector, figures released by the State Bank of Pakistan reveal that other top performers in terms of FDI included the power sector which attracted USD210.8 million, the communications brought in an FDI of USD94.5 million. Oil and gas exploration companies also drew USD30.6 million in FDI.

Pakistan Sees Boost in Import of Telecom Equipment by 50%

The import of telecom equipment has seen quite a rise due to an increased demand for the services. Now almost every network in Pakistan is offering 3G/4G services for the customers. As tax incentives were given in Budget 2017-18, therefore, it was easier for companies to import tech equipment. Currently, the import of telecommunication tools increased by 50%. Tax facilities and rise in demand of 4G technology offers are the main reasons of increase in import. In July 2017 Pakistan imported tech gears worth USD114.01 million which is 54% more than USD74.26 million import in July 2016. Custom duty tax was reduced by the government from Rs1000 to Rs650 per set, moreover, income tax

was also minimized from 14% to 12.5% and excise duty on calls reduced from 18.5% to 17%. Also the fact that around 60% of smartphones are smuggled in the country, these incentives have reduced the illegal business. As we said earlier that telecom companies are upgrading to 3G and 4G networks, recently Jazz was the company to acquire a 4G license. The first company that started 4G services in Pakistan was Zong. Then Telenor received a 4G license and Ufone CEO has also made an announcement that the company is completely turning its Lahore network to 3G technology. As the CEO said, "Some of the operators may be importing the equipment to upgrade and expand their networks under the PTA

(Pakistan Telecommunication Authority) Rollout Obligations while others may be doing it to meet consumer demand." Phone operators are investing via two strategies front loaded and rear loaded. In front loaded all investments are made as the fiscal year starts. As for in the rear loaded the operators are bound to invest in the middle or towards the end of the year. Pakistan is gradually turning in to the digitalized nation. IT and telecom sector are booming and further investments are being made to boost the economic activities in the country. The statistics show that import of telecom equipment last year was USD28.05 million in July, which in July 2017 the imports have surged by 62% to USD45.44 million.

NTC Inks a Deal with VMWare to Accelerate Pakistan's Digital Initiative

National Telecom Corporation and VMWare signed an MoU to modernize the public sector IT infrastructure for the benefit of all Government Departments and to provide complete public cloud services like IaaS (Infrastructure as a Service) & DaaS (desktop as a service) to support in ICT / Telecom solutions and Data connectivity requirement of the Public Sector. The signing ceremony was attended by Brig (Retd) Viqar Rashid Khan, MD NTC and Mr. Adrian Hia, General Manager, Nascent Markets & Vietnam, VMware. The MoU was signed by the respective delegates of both organizations. This partnership will deliver rapid market-ready capabilities while reducing operational and ownership costs significantly and simplify IT management. NTC is able to hone its competitive edge and deliver enhanced solutions and services to Government of Pakistan Departments and Ministries, driving tangibles business benefits and support continued innovations by NTC. With the modernized IT infrastructure enabled by a suite of VMware solutions including VCAN (vmware cloud air network) encompassing public cloud with VMware vSphere® with Operations Management™, VMware vCloud Director® and VMware Site Recovery Manager™, NTC will be able to scale rapidly based on needs, responding faster to demand spikes from its government customers. Speaking on the occasion, Brig (Retd) Viqar Rashid Khan, MD NTC expressed that NTC adopted technology and system for most innovative and reliable ICT services to its subscribers. He added that the secure ICT infrastructure provided by NTC will facilitate the subscribers in automating and thereby improving operations and processes. He also thanked General

Manager VMware for reposing his trust in NTC. General Manager, Nascent Markets & Vietnam, VMware, Mr. Mr. Adrian Hia, commented that NTC is a key stakeholder in Pakistan's breathtaking pace of digital transformation especially in Government Sector. NTC recognizes that a consumer simple and enterprise secure approach is key to better serve customers and business goals, and this progressive mindset is an example of how businesses here can leverage IT to offer new solutions and services, tap into new consumer segments and

has signed an agreement with Microsoft for enabling SaaS through its National Data Center. NTC is pursuing partnership with private sector telecom operators to provide new services, as evident from roll out of Go-Smart and 3G/4G data connectivity. Also NTC is the first to use M2M (Machine2Machine) and P2P (Point2Point) networks for extending fixed lines and data connectivity. MD NTC further briefed about the future plans and projects of NTC. These include establishment of strategically vital submarine cable landing station at



unlock additional markets. MD NTC Brig (Retd) Viqar Rashid Khan enlightened the audience of the achievements made by NTC during the past four years. NTC is the first operator in Pakistan to establish a Data Center to modernize the public sector IT infrastructure. NTC has witnessed unprecedented financial growth of 359% during 2015-16. NTC is lending its network and expertise to extend IT/networking services to CDNS, Election Commission, State Bank, AGP and other strategic organizations. NTC

Gawadar as an alternate route to existing Submarine Cable Networks. NTC further envisions expanding its network to all districts of Pakistan within the next 3 to 4 years. NTC is also managing Country Code Top Level Domain (CCTLD), Pakistan dot, for Urdu and local languages. NTC will Insha'Allah continue to serve the Government and Public Sector through reliable and secure telecom infrastructure to safeguard against cyber threats. NTC is committed to achieving 'Digital Pakistan' — a vision of Govt. of Pakistan.

Government Approves Rs 14 Billion Budget to USF for the FY 2017-18

The USF Policy Committee meeting was organized in Ministry of Information Technology and Telecom, Islamabad. The meeting was attended by the MoITT officials to grant the FY 2017-2018 budget to the organization. Government Approves Rs 14 Billion Budget to USF Co for the FY 2017-18. The Minister of State for IT & Telecom; Anusha Rahman

also chaired the meeting. This budget is primarily allocated for the Broadband for Sustainable development Project for the provision of broadband and telephony services to the majority of un-served/underserved areas in FATA, KPK and Baluchistan. The budget also included allocation for other USF programs like ICTs for Girls, the promotion of e-commerce

for MSMEs across Pakistan etc. During the meeting the Minister Anusha Rahman stated that: "The government attaches highest priority to this project and she also directed CEO USF Co to complete this project within stipulated time period and to also complete hiring of 200 teachers on merit."

Middle East e-Commerce Market to Double to USD69 Billion by 2020

By 2020, the Middle East's e-commerce market is set to more than double to USD69 billion, according to a recent report by PayFort. The UAE, at USD27 billion, and the Kingdom of Saudi Arabia, at USD22 billion, will be the two largest markets by 2020. In anticipation, the region's Chief Marketing Officers are investing in digital marketing initiatives for real-time customer interaction. The USD2 billion Saudi engineering and construction firm alfanar uses e-commerce for its 3,000 wholesalers, reducing servicing time by 40 per cent and increasing customer satisfaction. "Real-time customer insights have been a game-changer for alfanar's business and customers. We can now send technicians with tablets instantly following customer notifications, who have greater insights on our resource planning and management, and can better predict product demand," said Raed Suhil Aleid, Vice President of Marketing and Sales, alfanar Electrical Division. Marketers agree social media is vital. Hootsuite shows the UAE has the world's highest social media penetration and the Kingdom of Saudi Arabia has the

world's fastest-growing social media users. MODUL University Dubai has used digital marketing solutions to transform the student and faculty experience. MODUL University is now looking to integrate SAP Hybris into its educational curriculum. "Middle East universities are in competition to attract the top student and faculty, and enhance the educational and alumni experience. For a newer university such as MODUL, digital marketing and social media analytics have been the game-changer to easily target and attract the best talent, and connect them with our expanding partner ecosystem," said Zaid Maleh, CEO of DACH Advisory and Managing Partner of MODUL University Dubai. SAP Hybris solutions enable organizations to rapidly transform across all channels, helping them get closer to their customers and delivering a great experience at every main touch point. With SAP Hybris solutions across commerce, marketing, revenue, sales, and service, CMOs can cut costs and complexity, optimize time, and have the real-time insights to make informed business decisions.

"Middle East market businesses are racing towards the most meaningful and rewarding customer experience. Combining omni-channel commerce with digital marketing, sales, service and revenue management is no longer a luxury. Organizations can compete effectively by meeting their customer needs in a mobile, personalized, and intelligent interaction, anywhere, anytime, and at any touch point in their journey," said Sam Alkharrat, Global Chief Operating Officer for SAP Hybris. Attendees buzzed about artificial intelligence, machine learning, blockchain, and the internet of Things can transform the customer experience, and experienced prototypes from the SAP Hybris Labs. "SAP Hybris delivers an innovative and integrated end to end, flexible, and scalable front office suite. Using SAP Hybris, marketers, digital officers, and sales leaders can have the same 360-degree rich view of their customers, and compete for their business, while delivering a unique and inspiring set of experiences," added Sam Alkharrat.

Jazz sells Pakistan tower business to Edotco for USD 940 million

Pakistan operator Jazz has signed an agreement for the sale of its tower business for USD 940 million to Tanzanite Tower, a company owned by Edotco Group and Dawood Hercules. According to Edotco, with its existing portfolio of over 26,000

98,700 million (approximately USD 940 million). The enterprise value represents a high single digit multiple of contributed annual EBITDA, according to Veon and Global Telecom, the parent companies of Jazz. According to Edotco, at closing, the acquisition will lead to an enhanced portfolio of 40,000 towers operated by the company across the region, comprising 32,000 owned and operated and a further 8,000 managed through a range of services provided. At completion of the sale, Deodar will enter into a master services agreement with Jazz, to continue providing tower services to Jazz. The initial term of this MSA is twelve years and is renewable at Jazz's discretion for three consecutive periods of five years each. Jazz will use the proceeds from the transaction for general corporate purposes, the funding of recently awarded spectrum and repayment of part of its outstanding debt. A total PKR 69,930 million of the PKR 79,800 million cash consideration is expected to be received at closing, while the remainder will be paid in the next 12 months. Completion of the transaction is subject to the satisfaction or waiver of certain conditions including receipt of customary regulatory approvals. Completion of the transaction is expected to occur by end-2017. As a result of the terms of the Jazz/Warid earn-out agreement, following the completion of the transaction, Global Telecom's stake in Jazz will be 83 percent.



towers owned and operated across six countries, this acquisition will place Edotco as the eighth largest independent tower company and second largest multi-country tower operator globally. As part of the transaction, Dawood Hercules will buy a 45 percent equity stake in Edotco Pakistan, with the remaining 55 percent held by Edotco. The towers transaction will be on a cash- and debt-free basis, for a total consideration of PKR

Artificial Intelligence set to be Game Changer in GCC Telecom Sector

Nuance Communications, Inc. stated that the latest artificial intelligence (AI) framework could serve as a game changer for the #UAE and GCC telecom industry. The Middle Eastern region is now witnessing an accelerating technology migration to higher speed networks and smartphones, facilitated by operator investments to extend network coverage. Telecom operators need to transform their revenue opportunity through data and voice services that are high quality, while managing capital allocation, and investing in new technologies and innovations. 'By addressing customer needs in real time, innovative solutions will open new possibilities and increase value. Nuance Loop is specially designed to fit with the framework of #UAE and GCC telecom operators as it engages mobile subscribers at virtually any touch point from voice to text to browser, said Rajesh Razdan, VP and GM, APAC, CSP Business, Nuance. 'It's time for #UAE and GCC

operators to transform technology into intelligent solutions. We've been working globally with leading communications providers for over 20 years, and these companies are showing considerable interest in the potential of AI. They are evaluating AI both at the front end, customer service part of the chain as well as considering how AI can help improve service delivery through better network performance, added Rajesh. With a rapidly expanding population across the GCC and Africa region, including the fast youth and urban markets, the region is set to touch 100 million subscribers by 2020. Furthermore, there is a massive explosion of social media platforms in the region, thus further contributing to the growth of the industry. Telecom companies in the #UAE and GCC region are entering this new phase with access to millions of connected customers that can generate high cash flows. However, this growth can be further propelled and sustained when

operators in the region will adopt and migrate towards the latest technologies, analytics and invest in businesses in separate ventures outside their core business. 'The telecom operators should anticipate their subscribers' unique needs at the right time, through the right channel. After years of research, Nuance Loop, our data analytics marketing platform, today harnesses the powerful AI technology that enables mobile operators to offer a better experience to everyone on the network. It cuts time-to-market for the latest services, enables new levels of personalization, drives subscriber loyalty, and ensures revenue opportunities are never missed, added Rajesh. Nuance Loop is now available globally and is currently deployed across North America, Latin and Central America, India, Southeast Asia, EMEA, and Australia, generating hundreds of millions of dollars a year in incremental, high margin revenue for its customers.

Pakistan's First Mobile Based Bio-Metric Solution Set to be Launched

JS Bank signed an agreement with Paysys Labs to launch the first ever mobile based biometric solution in Pakistan, Instascan. The signing ceremony between JS Bank and Paysys Labs was attended by JS Bank Chief Information Officer Imran Soomro, Chief Digital Officer Khurram Shaikh, and Paysys CEO Karim Jindani. The mobile based, a touchless biometric solution has been integrated with JS Bank's branchless

banking mobile application, JCash to biometrically verify customers for over the counter (OTC) transactions. JCash customers can now avail higher limits of Rs 50,000 for domestic remittances. This breakthrough solution is powered by Diamond Fortress Technologies, Inc. which converts standard smartphone cameras into high-quality fingerprint sensors without any additional hardware.

The solution enables financial service providers to easily incorporate biometric authentication through open APIs, without having to incur the expense of developing purpose-built hardware and concerning themselves with form factor redesigns. This reduces cost and integration time so that they can get the solution in the hands of end-users faster as compared to typical hardware based touch sensors. Speaking on the occasion, Khurram Shaikh said, "JS Bank is pleased to be the first bank in Pakistan to introduce the mobile-based biometric authentication technology which will cater to our banking customers' needs by providing a much more convenient way to authenticate themselves." Karim Jindani commented: "We strongly believe that secure and friction-less identity verification is one of the major challenges in digital financial services space in Pakistan. The biometric ID verification solution, Instascan, will provide financial service providers a seamless and purely digital onboarding process that can be used to authenticate and verify potential customers anywhere and at any time."



Wireless Operator Delivers Record Breaking Speeds

Wi-tribe, Pakistan's leading Home & Business Broadband Internet provider confirmed that it had breached the magical 200Mbps internet speed record following testing on its soon to be released LTE-Advanced (LTE-A) technology network. Wi-tribe's network will be the first service in Pakistan to deliver 4.5G speeds and quality. The huge technology upgrade is part of a USD100m million three year investment program into the company designed to focus on speed challenges faced by customers across Pakistan. The investment effectively future-proofs Wi-tribe's technology and will be followed by a number of value added services. It will mean Pakistan becomes the first country in South Asia and the Middle East to deploy LTE-A technology delivering 4.5G speeds and that for example, end users will be able to watch ultra HD without buffering and businesses won't suffer due to poor speed related challenges.

Insiders also confirm that Wi-tribe, who have partnered with top Chinese telecoms giant Huawei, will complete the full roll-out of its 4.5G LTE-A network by the end

of this month and is awaiting approval from the Pakistan Telecom Authority for its commercial launch.



UAE Cloud Services Set for Quick Growth

Government and telecom operators' infrastructure improvements are driving the UAE cloud market; with software-as-a-service (SaaS), and business-process-as-a-service (BPaaS) set to experience the fastest growth in the next three years, a report said. The UAE cloud market is still in early stages of adoption with the implementation of private Infrastructure-as-a-service (IaaS) viewed by many as a critical first step towards broader cloud adoption, added the report titled "UAE Cloud Computing Market—Macro Outlook and Opportunity Assessment" from growth partnership company

Frost & Sullivan. The report evaluates macroeconomic and socio-political developments, and analyses existing and upcoming government policies and their impact on the sector's growth. Key end-user industry drivers, business challenges, market size, competitive scenarios, and a short-term investment outlook are also provided. "Hybrid cloud is expected to grow at a compound annual growth rate of 30.5 per cent, mainly due to enterprises looking to leverage blended cloud models to meet changing customer requirements," said digital transformation consultant Gowtham

Bandi. "Organizations are exploring the viability of capitalizing on public cloud services offered by international giants such as Google, Amazon, Rackspace and Salesforce as well." According to the report, strategic imperatives for cloud service providers' growth in the UAE cloud sector include:

- Expanding product portfolios;
- Developing new business models to create revenue opportunities through the cloud;
- Identifying partnerships and initiating dialogues;
- Developing and implementing multi-pronged marketing campaigns; and
- Embracing web services, customer relationship management software, and data management-based solutions.

"The biggest challenges to cloud adoption are data privacy concerns, compliance, regulatory issues and infrastructure integration problems," noted Bandi. "Hence, standalone security services companies like Qualys are partnering with cloud service providers to boost customer value and supply innovative security packages."



NTC Links Deal with Supernet-A Subsidiary of Telecard Group for ICT Services

National Telecom Corporation of Pakistan and Supernet signed an Agreement to cooperate in developing Business and support in ICT/Telecom solutions and Data connectivity requirement of the Public Sector. NTC Signs Agreement with Supernet. The signing ceremony was attended by Brig (Retd) Viqar Rashid Khan, MD NTC and Mr. Shams ul Arfeen, CEO Supernet & Telecard Group. The Agreement was signed by the respective delegates of both organizations. NTC is the official IT & Telecom service Provider for the Government of Pakistan and has been granted integrated license to provide Telecom / ICT services to Armed Forces, Defense Projects, Federal Government, and Provincial Governments or as the Federal Government may determine. NTC is committed to providing secure, efficient and state-of-the-art ICT services to its valued subscribers. Speaking on the occasion, Brig (Retd) Viqar Rashid Khan, MD NTC expressed that NTC adopted technology and system for most innovative and reliable ICT services to its subscribers. He added that the secure ICT infrastructure provided by NTC will facilitate the subscribers in automating and thereby improving operations and processes. He also thanked CEO Supernet for reposing his trust in NTC. CEO Supernet & Telecard Group, Mr. Shams ul Arfeen, commented that ICT plays the role in improving efficiency, transparency and help management to enhance productivity. He added that we anticipate bright future while shaking hands with NTC to facilitate the customers as we maintain a strong presence across the country. MD NTC Brig (Retd) Viqar Rashid Khan enlightened the audience of the achievements of NTC during the past four years. NTC is the first operator in Pakistan to establish a Cloud Based National

Data Center for the Public Sector. NTC has witnessed unprecedented financial growth of 359% during 2015-16 and an increase in broadband subscriber base by 36%. NTC has extended its services from 54 districts/cities to 87 including underdeveloped districts in Sindh and Baluchistan. The number of exchanges increased from 139 (in 2012-13) to 260 in 2016, thereby overall 87% increase. NTC utilized 99% of its ADP budget in FY 2016-17. Also NTC is the first to use M2M (Machine2Machine) and P2P

Telecom industry to provide new services for its subscribers. NTC is the first in the country to introduce new apps like Go-Smart for its customers and have extended 3G/4G Mobile data connectivity to its subscribers under Public Private Partnership. MD NTC further briefed about the future plans and projects of NTC. These include establishment of strategically vital submarine cable landing station at Gawadar as an alternate route to existing Submarine Cable Networks. NTC further envisions



(Point2Point) networks for extending fixed lines and data connectivity. Large scale Wide Area Networks of CDNS, Election Commission, State Bank, AGP and other strategic organizations have been established. Pertinent to mention that, NTC has also signed a Service Provider License Agreement (SPLA) with Microsoft to provide SaaS in the country through its cloud based National Data Centre. NTC under Public Private Partnership is pursuing strategic partnership with private operators in the

expanding its network to all districts of Pakistan within the next 3 to 4 years. NTC is also managing Country Code Top Level Domain (CCTLD), Pakistan dot, for Urdu and local languages. NTC will continue to serve the Government and Public Sector through reliable and secure telecom infrastructure to safeguard against cyber threats. NTC is committed to achieving 'Digital Pakistan' – a vision of Govt. of Pakistan.

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SATELLITE NEWS

Inmarsat to Demo SwiftBroadband-Safety with Flyht

Inmarsat will demonstrate its new SwiftBroadband-Safety (SB-S) solution in a flight trial with Flyht. The evaluation will commence later this year using an experimental trial aircraft that enables a range of conditions to be assessed. The evaluation will test the capabilities of Inmarsat's SB-S solution to provide secure, high-speed global connectivity to enhance airline safety, security and operations. Flyht will provide equipment and software, including its Automated Flight Information Reporting System

(AFIRS) product and UpTime Cloud flight management server, together with technical support for the flight trial. "This important flight trial will showcase the advanced capabilities of SwiftBroadband-Safety, together with Flyht's powerful platforms, to provide operational benefits to airlines in the form of real-time aircraft diagnostics, performance monitoring, detection of exceedance-critical parameters and improved operational efficiency," said Cpt. Mary McMillan, vice president of aviation safety and

operations at Inmarsat. McMillan added that the evaluation will demonstrate how Inmarsat technology can address emerging safety requirements, such as the International Civil Aviation Organization (ICAO)'s imminent new requirements on aircraft flight tracking. SB-S is currently in use with Hawaiian Airlines, Shenzhen Airlines and United Airlines. Airbus has also opted to implement SB-S on its popular A320 and A330 families.

Low-Cost Bandwidth Opens New Opportunities for Globecom

The influx of High Throughput Satellites (HTS) and new Low Earth Orbit (LEO) constellations is changing the economics of capacity in the satellite industry, drastically cutting the cost of bandwidth and driving newfound demand for broadband IP networks. To take advantage of the better pricing and new applications

now made feasible by satellite, Globecom will continue to emphasize services that target bandwidth management, Paul Scardino, senior vice president of sales operations/engineering and marketing, told Via Satellite. "There is more innovation happening on the space segment side of the satellite industry today than at any time during my 25 plus years in the industry," Scardino said. "Communication systems have taken the largest leaps in trying to keep up with the demands new use cases are placing on the network at large ... The challenge is to support new connectivity requirements and uses of spectrum, while at the same time not diminishing the capacities or services that are currently in place — for example, video, voice, and IP data." Globecom operates across a gamut of verticals including government, broadcast, energy, and maritime — all of which will provide opportunity for growth, Scardino said. On the broadcast side, Globecom is focusing its efforts on Over-the-Top (OTT) content services as that pocket of the market explodes in regions across the globe.



SSL to Validate Payload Cybersecurity for US Air Force

Innoflight has selected SSL to provide a high fidelity simulation environment for testing the security of hosted payloads on commercial satellites. The capability, which is being developed for the U.S. Air Force Space and Missile Systems Center (SMC) as part of its Secure IP Payload Accommodation Demonstration Project, will enable SMC to demonstrate cybersecure payload hosting scenarios, concepts of operation, and cybersecurity controls. The capability will also demonstrate secure IP connections between a government payload operations center

and the hosted payload using the existing satellite operator's networking infrastructure, eliminating the high cost of specialized space to ground communication systems. The hosted payload interface is expected to play a key role in enabling resilient, next-generation space architectures. "This work will become an integral part of SSL's secure interface for hosted payloads, and will make the benefits of the hosted payload model more readily accessible to both government and commercial customers," said Richard White, president of SSL government systems.

Lockheed Martin to Expand Customer Base with New Satellite Buses

Lockheed Martin has invested USD300 million to develop a new family of satellite buses that incorporate a range of manufacturing and design enhancements, as well as hundreds of common components to speed production times and reduce costs. According to Kay Sears, Lockheed Martin vice president of strategy and business development, the new buses are a response to growing customer demand for more powerful, versatile and compact assets in orbit. "Customers want a choice," Sears said at a press briefing during the Air Force Association's (AFA) Air, Space and Cyber Conference on September 19. "They want a variety of buses; they want to go to a variety of orbits; they want to handle missions in different ways. Low Earth Orbit (LEO), Geosynchronous Earth Orbit (GEO) and other orbits in between are becoming more important." Satellite technology is evolving at a breakneck pace, opening up new missions, applications and use cases in both the government and commercial spheres. "All of that is driving technology to get smaller, faster and more cost effective," said Sears. This is particularly true for military end users such as the U.S. Air Force, which Sears said is seeking

faster production lines and more capable payloads as it works to improve military operations in the space domain. "I think the future Air Force architecture will need to have a mix of these buses and orbits," Sears said.



Intelsat and Etisalat Expand Relationship, Creating Gateway to Intelsat EpicNG Services for the Middle East

Intelsat S.A. operator of the world's first Globalized Network and leader in integrated satellite communications, and Etisalat UAE, a leading telecommunications services provider in the Middle East & Africa, today detailed their plan to expand the distribution of Intelsat EpicNG services in the Middle East region. Under a multiyear expansion, Etisalat will upgrade its network to deliver higher performance to customers in the region using the Intelsat 33e high-throughput satellite. Concurrently, Intelsat will leverage Etisalat's teleport in Dubai as an expansion node of the IntelsatOne Flex service. The teleport acts as an extension to Etisalat's Smart

Hub services. Equipped with the latest technologies and platforms, it serves as one of the globe's major satellite hubs, hosting more than 40 antennas. This will expand options in the region to benefit from award-winning Intelsat EpicNG high-throughput services. "This agreement with Intelsat will introduce a new level of cooperation to our long-term relationship," said Ali Amiri, Group Chief Carrier & Wholesale Officer, Etisalat. "Leveraging the innovative Intelsat EpicNG platform and IntelsatOne Flex managed services, we will be able to deliver new, more powerful applications to our current customers as well as address new verticals." "Intelsat sought to build

upon its already strong relationship with Etisalat as we developed our global footprint for the IntelsatOneFlex managed broadband service," said Kurt Riegelman, Intelsat's Senior Vice President, Sales and Marketing. "Etisalat will be an important distributor of Intelsat EpicNG services and capabilities for customers throughout the Middle East and into Africa and Asia. Intelsat's innovations, including Intelsat EpicNG, are unlocking new opportunities for our customers and distributors. Our expanded relationship with Etisalat will result in new applications as well as better services for customers throughout the region."

HiSky to Offer MSS, IOT Services Using Hispasat Capacity

Hispasat and hiSky signed a cooperation agreement to provide low-capacity voice, data Mobile Satellite Services (MSS) and Internet of Things (IoT) services in Spain, Portugal, Latin America, and North Africa using Hispasat's Ka-band satellites and a new satellite terminal developed by hiSky. The operations will begin with a pilot phase in which both companies will test

and evaluate hiSky's Smartellite terminal in combination with Hispasat's Ka-band satellites. After this first phase, Hispasat and hiSky will together provide low bit rate services in remote areas for various applications — including the maritime sector, connected cars, trains, the energy sector and the agricultural sector. The lightweight Smartellite terminal will use a

built-in antenna with electronic pointing to automatically locate Hispasat's Ka-band satellites. The integrated modem is designed for low and medium speeds and includes management tools for the user. HiSky expects the new services to become available in 2018.

Kymeta to Develop Ka-Band Terminals for NASA

NASA has awarded Kymeta's government solutions division two grants via the Small Business Innovation Research (SBIR) program to develop small, space-based, low Size, Weight And Power (SWaP) flat panel Ka-band terminals for CubeSats and other Low Earth Orbit (LEO) satellites. "These grants will allow Kymeta government solutions to supply NASA with our proprietary metamaterials-based low SWaP flat panel solutions for satellite-to-satellite and

satellite-to-ground/ground-to-satellite communications, starting with CubeSats, which are about the size of a loaf of bread," said David Kervin, general manager and vice president of Kymeta government solutions. Organizations receiving SBIR grants are required to develop solutions with practical significance that have both commercial and non-commercial applications. They also must provide the potential to fulfill NASA needs. Kymeta's announcement comes days after the

grand finale of the Cassini Mission, noted for its groundbreaking discoveries using 20th century technology. "The Cassini Mission launched in Oct. 1997 with the best technology of the time," said Kervin. "These NASA grants will further our ability to develop solutions to hard problems for government, military and commercial applications, wherever that technology may travel."

Data 61, RadiantEarth Partner to Improve Disaster Resilience

CSIRO's Data61 and Radiant.Earth have announced that they will partner to develop joint research into satellite imagery and Earth Observation (EO) data for disaster resilience, in areas such as human disaster management, health, climate change and sustainable water management. The partnership will see Data61 and Radiant. Earth leverage their existing resources, networks and facilities in real-time modeling, machine learning and visualization technologies for mutual benefits. One planned activity will include hosting of open data on Radiant.Earth's platform, and demonstration of Data61's mapping products and tools on that platform, such as TerriaJS, for the purpose of supporting mission critical programs, primarily in the Asia-Pacific region. A recent report by the United Nations found 41 percent of all disasters caused by natural hazards reported over the past two decades have occurred in the Asia-Pacific region. "The world is awash in EO data, but most of the low and middle income countries are still poorly mapped and served by geospatial technologies," said Radiant. Earth Chief Executive Officer (CEO) Anne Hale Miglarese. "Partnering with

Data61 to drive open remote sensing science will help us serve this community better, including non-profits working in global development, as well as national and regional government entities."



SK Telecom, Bharti Airtel to Build Telecom Network in India

SK Telecom and Bharti Airtel have announced a strategic partnership under which Airtel will leverage SK Telecom's expertise to build an advanced telecom network in India. The partnership will work across several areas including developing bespoke software to dramatically improve network experience, leveraging advanced

digital tools including machine learning, Big Data and building customized tools to improve network planning based on every customer's device experience. According to Airtel, the capacity to identify, monitor and deliver improvements to the network experience on an individual device basis will be a first in India. The two companies

will also collaborate on an on-going basis to evolve standards for 5G, Network Functions Virtualization (NFV), Software-defined Networking (SDN) and Internet of Things (IoT), and jointly work toward building an enabling ecosystem for the introduction of these technologies in the Indian context.

Ukraine's First Telecoms Satellite Launching 'Early 2018'

Ukraine's first telecommunications satellite, 'Lybid', is expected to be launched in early 2018, according to Interfax, delayed from a previous projection of '2017'. The Canadian-built satellite, being launched from Kazakhstan, will have a service lifetime of 15 years.

Uganda to Supplement Optical Fiber Using Satellite Internet

The Uganda Communications Commission (UCC) plans to expand internet access by leveraging satellite to supplement optical fiber. Authorities have confirmed that testing will begin in November. UCC Director General Godfrey Mutabazi said the government has been working on the satellite Internet access project for several months in conjunction with the International Telecommunication Satellite Organization (ITSO) and several private companies. Mutabazi said the

project is now ready to be tested and this will be carried out in several territories across the country starting with the city of Karamoja. "The objective of this operation is to evaluate the effectiveness of this solution, which could then be adopted to supplement optical fiber access, which is still poorly available throughout the country. The test will begin next November," Mutabazi said. The DG said the test would allow the government and its partners to determine whether satellite

internet can be adopted for commercial public usage in the country, a decision that is heavily dependent on cost. "If the cost of the solution is good, the industry will adopt Internet via satellite and this will be the end of the problem of internet access in Uganda because, unlike satellites, optic fiber cables suffer a lot of damage, require routine maintenance and there is the risk of multiple duplicates," Mutabazi added.

Cobham Satcom Releases New Antenna for Inmarsat Global Xpress



Cobham Satcom has announced that an Inmarsat Global Xpress (GX) variant of its Explorer 8100 stabilized, auto-acquire, drive-away antenna system will be available for broadcast users before the end of this year. The new Explorer 8100GX expands Cobham Satcom's Explorer 8000 series, which already includes 1 and 1.2 meter antennas for global Ku-band satellite services and Eutelsat's Ka-band NewsSpotter solution. Currently undergoing Inmarsat Type Approval testing, Explorer 8100GX features dynamic pointing correction technology, which enables a high degree of pointing accuracy. According to Cobham, it can adjust in

milliseconds to compensate for the vehicle it is installed on rocking on its suspension, giving broadcasters the ability to transmit live, High Definition (HD) multimedia without interruption from anywhere in the world and in almost any weather conditions. The system enables a stable link to the Global Xpress network in winds up to 112 km/h or when people enter and exit the vehicle. The stabilization technology is even more important on the High Throughput Satellite (HTS) Ka-band frequencies used by Global Xpress, which require better pointing accuracy than Ku-band services to maintain a stable, high-bandwidth link to the satellite.

Northwestel Building Nunavut Backbone Satellite Network with Government Funding

Innovation, Science and Economic Development Canada (ISED) announced yesterday that CAD50 million (USD41 million) of government funding has been allocated to a project to deploy a backbone satellite network supporting higher-speed internet for all 25 communities across Nunavut, the far northern region governed by indigenous peoples. The funding – part of the CAD500 million 'Connect to Innovate' federal program for delivering high speed internet access to underserved communities – has been allocated to Northwestel, the far northern subsidiary

of Bell Canada Enterprises (BCE), which is also investing CAD73 million of its own funds to build the backbone satellite network by the end of 2019. Northwestel's COO Curtis Shaw, quoted by the Financial Post, confirmed that Northwestel's new backbone will be based on Telesat's Ka-band high-throughput satellite set for launch in 2018, and will multiply available bandwidth for local government, business, health and education institutions approximately 20-fold, whilst tripling residential broadband users' maximum speeds to around 15Mbps. Northwestel will enable open wholesale

access to the backbone capacity for ISPs such as QINIQ, which operates a hybrid satellite/4G wireless network delivering broadband internet services to all 25 communities across Nunavut, servicing a population of approximately 36,000 people spread across two million square kilometers. QINIQ was established by SSi Micro, Nunavut Broadband Development Corporation and other partners, and is managed by SSi Micro, itself an ISP covering the Northwest Territories/ Nunavut.

Eutelsat, Globecast Renew Partnership at Hotbird Video Neighborhood

Eutelsat and Globecast have renewed capacity on a multi-year basis at the Hotbird video position. According to the two companies, the agreement will stimulate growth for satellite TV in Europe, Western Russia and the Middle East and will also accelerate the transition to High Definition (HD) for channels broadcasting within the footprint of Eutelsat's video hub. Within the framework of the agreement, Globecast has signed a first contract for HD delivery of Turkish TRT World from the Hotbird neighborhood. TRT World belongs to TRT Group, Turkey's national public broadcaster. Launched in November 2016 and featuring an exclusively English-speaking line-up, the international news channel is leveraging Hotbird's distribution capabilities to reach millions of satellite homes in Europe, Western Russia and the Middle East. Its launch underlines the HD dynamic, particularly at the Hotbird neighborhood where one

channel in four (275 channels) is now in HD, and where HD has grown by 30 percent over 12 months.



Aireon to Support Space-Based ADS-B over Turkish Airspace

Aireon has signed a Memorandum of Understanding (MoU) with Turkey's Air Navigation Service Provider (ANSP), The General Directorate of State Airports Authority (DHMI). The two parties are set to collaborate on space-based Automatic Dependent Surveillance-Broadcast (ADS-B) in Turkish airspace. According to Aireon, Turkey intends to utilize space-based ADS-B to augment its current surveillance capabilities, as well as a contingency layer, in the event of an outage. DHMI will work with Aireon

to develop a concept of operations for the implementation of space-based ADS-B in its airspace. DHMI also regulates and controls the airspace over the high seas within the Ankara and Istanbul Flight Information Regions (FIRs). Aireon said it provided terminal and passenger service to more than 35 million domestic and international passengers across 55 airports in Turkey in the first three months of 2017. According to the company, DHMI controls one of the fastest growing airspaces on the European continent,

with passenger traffic at an all-time high. In June, Iridium announced the successful launch and deployment of the second batch of 10 Next satellites, carrying ADS-B payloads for Aireon. The third launch is scheduled for Oct. 4, and will increase the total number of Aireon payloads in orbit to 30. Another 45 are being prepared for space in a series of five additional launches planned over the next year.

Talia Offers New C-Band Services in the Americas

Talia International has announced new C-band services covering Latin America, the Caribbean and the United States.



This additional service uses capacity on the SES 4 satellite at 22 degrees west and connects to the Talia Multiprotocol Label Switching (MPLS) network via the recently acquired iDirect hub located at Comsat's teleport in Southbury, Connecticut. In addition, the new partnership with Comsat will provide teleport facilities to Talia's existing Ku-band services running on the Eutelsat 113 West A satellite. Talia also recently announced a new partnership with Arabsat for a new 10-channel video uplink to Arabsat's Badr 7 satellite at 26 degrees east. The service will offer both Standard Definition (SD) and High Definition (HD) channel uplinks and will form the basis of a new high-power Ku-band neighborhood over Iraq. Content will be uplinked from the Talia teleport in Raisting, Germany and monitored for quality in the Talia Network Operations Center (NOC) in Erbil, Iraq. "This service will start with 10 channels but we believe this will expand as more broadcasters reach the growing number of viewers in the region," said Talia Chief Executive Officer (CEO) and President Alan Afrasiab.

Virgin Orbit to Launch First Set of Satellites for Cloud Constellation

Virgin Orbit announced that Cloud Constellation has selected its LauncherOne service to deploy the SpaceBelt constellation of space-based cloud storage data centers. In an agreement signed by the Chief Executive Officers (CEOs) of the two companies at the World Satellite Business Week event in Paris, Cloud Constellation selected Virgin Orbit as its launch partner for a dozen satellites that will become the communications backbone of the SpaceBelt system. SpaceBelt is a space-based secure and global data storage network. Users of the system will be able to transport and/or store large blocks of data without exposure to any terrestrial communications infrastructure, protecting their data from unauthorized access while supporting global communications at reduced latency of today's multi-hop networks. The initial deployment of the SpaceBelt network will be powered by a dozen 400kg satellites placed into low inclination orbits. Taking advantage of LauncherOne as a dedicated launch service for small satellites, the SpaceBelt constellation will be deployed using single-manifested launches occurring in rapid sequence. The initial launch is expected to occur as early as 2019. Virgin Orbit is currently in the process of qualification and test flight for the LauncherOne service, which includes both a two-stage expendable rocket and a fully

reusable air-launch platform. The company recently completed assembly of a complete pathfinder rocket at its factory in Long Beach, California; and the system's 747-400 flying launch pad has begun its flight test campaign. The system is designed to provide highly responsive, reliable, and affordable flights to Low Earth Orbit (LEO) to small satellites. The initial flight of the LauncherOne system is targeted for the first half of 2018.



Supernet to Develop New Enterprise Solutions with LeoSat Capacity

LeoSat Enterprises, which is launching a constellation of up to 108 Low Earth Orbit (LEO) communications satellites, has entered into a strategic agreement with Supernet, based in Pakistan. Through this agreement, LeoSat will provide Supernet with more than 3 Gbps of capacity on its LEO network infrastructure. LeoSat's network combines the speed of fiber with the ubiquity of satellite ideal for cellular and enterprise networks, enabling

Supernet to offer a portfolio of local to global integrated communications solutions targeting corporate, Small and Medium-Sized Enterprises (SMEs) and individual customers. As cellular protocols become more sophisticated and cellular use accelerates, there is an ever-increasing need to transport cellular signals for long distances, at high speeds, in high volume and native form. According to LeoSat, for existing

and emerging market telecom operators, its network offers latency, timing and transport compliant with the network standards of the newer 4G, 5G and LTE cellular systems. LeoSat achieved the low latency of its system using an architecture based on inter-satellite laser links. It also offers a high level of security as the data is encrypted from end-to-end across the network with no terrestrial touchpoints, the company has stated.

Morocco Set to Launch its 1st Pleiade Satellite

Morocco will launch next November 8th its first Pleiade satellite from the European space port of Kourou in French Guiana, according to some Moroccan web sites. Built by Airbus defense & Space Company, this Moroccan satellite will be launched with an Italian Vega rocket. Designed as a dual civil/military system, Pleiades deliver very-high-resolution optical data products in record time and offer a daily revisit capability to any point on the globe. They are able

to obtain data in double-quick time. These types of satellites operate as a constellation in the same orbit, phased 180° apart. Pleiades can also provide imagery anywhere in the world in less than 24 hours in response to a crisis or natural disaster. These satellites offer a wide coverage, fine detail, intensive monitoring, extensive archives and 50 cm resolution imagery. This satellite system was born under the French-Italian ORFEO program (Optical & Radar Federated

Earth Observation) between 2001 and 2003. Equipped with innovative latest-generation space technologies like fiber-optic gyros and control moment gyros, Pleiades-HR 1A and 1B offer exceptional roll, pitch and yaw (slew) agility, enabling the system to maximize the number of acquisitions above a given area. This agility coupled with particularly dynamic image acquisition programming make the Pleiades system very responsive to specific user requirements.

Boeing to Manufacture 7 MEO Satellites for SES' New Network

SES has contracted Boeing to build seven Medium Earth Orbit (MEO) satellites for its new network system, O3b mPower. According to SES, O3b mPower will deliver fully managed services in the dynamic mobility, fixed data and government markets, using multiple terabits of throughput globally. The constellation will have 30,000 shapeable and steerable beams that can be shifted and switched in real time to align with customers' quickly changing growth opportunities, SES stated. O3b mPower will provide coverage to an area of nearly 400 million sq. km,

four-fifths of the Earth's surface. Together with SES, O3b mPower partners will also invest in significant ground infrastructure innovations that converge storage, computing and routing resources with software intelligence and application-specific antennas and will introduce a new concept for the network endpoint: the small O3b mPower Customer Edge Terminal. The MEO satellites will carry a Boeing-built digital payload and will use electronics from the company's flight-proven 702 satellite platform. Boeing has designed the satellites to

be launched up to four at a time in a stacked configuration, depending on the selected launch vehicle. SES already operates the only Non-Geostationary Orbit (NGSO) broadband system with 12 MEO satellites, which deliver high-throughput low latency connectivity, and will be launching another eight MEO satellites in 2018 and 2019. O3b mPower leverages the same building blocks with dramatically increased throughput, coverage and flexibility, SES stated.

ILS Successfully Launches Amazonas 5 for Hispasat

International Launch Services (ILS) successfully orbited Hispasat's 11th satellite, Amazonas 5, on Sept. 11 from the Baikonur Cosmodrome in Kazakhstan. The satellite flew aboard a Proton Breeze M rocket and has begun maneuvering to the Geostationary Earth Orbit (GEO) point where Hispasat will carry out the test phase over the next several weeks. Once the tests are completed, the satellite will be placed in its definitive orbital position at 61 degrees west. Amazonas 5 is based on Space Systems Loral's (SSL) 1300 platform and has a power of 9.9 kilowatts with an estimated useful life of 15 years. Its 24 Ku-band transponders, with coverage of Central and South America, will provide Direct-to-Home television (DTH) services for Hispasat. According to the company, the satellite will enable the television service providers that operate with Hispasat to transmit 500 new channels. This satellite will also be key for promoting 4K TV in the region, Hispasat stated. Additionally, Amazonas 5 has 34 Ka-band spot beams to provide connectivity services to more than a half a million people in Central and South

America. Hispasat intends to offer competitive satellite internet services to the operators in the region, as well as transportation or backhaul services to support their 3G, LTE and potentially 5G cellular networks.



Iridium Is Pursuing Opportunities in NewSpace Satellite IoT

Iridium Communications has signed a Memorandum of Understanding (MoU) with Magnitude Space, an emerging small satellite company. According to Iridium, the MoU reflects the company's interest in exploring collaborative partnerships with complementary NewSpace players, particularly those in the SmallSat low-power arena. As part of this MoU, the companies will begin discussions on how to collaboratively expand opportunities for space-based Internet of Things (IoT) services with the development of reliable, Low Power Global Area Network (LPGAN) technologies. Magnitude

Space, headquartered in Amsterdam, is planning to build a network of 18 to 24 small satellites that will deliver LPGAN connectivity to remote areas of the world. From monitoring plantation soil moisture levels to tracking livestock, Magnitude Space aims to be a low-cost option for companies in need of low-power monitoring and tracking options that require longer life battery and infrequent non-real-time messaging solutions. "Lower power initiatives are a key aspect of Iridium's IoT business strategy," said Tim Last, vice president and general manager of Iridium's IoT business.

"Magnitude Space has a solid business proposition with a collaborative approach, which is ideal for this exploratory phase of our relationship. The industry needs both medium-to-high power satellite-based IoT solutions, as well as LPGAN offerings, and we can now discuss ways to best leverage both our network, and their offerings to expand our portfolio of premium IoT solutions." Iridium's IoT business is currently the company's fastest growing line of business and saw commercial IoT data subscribers increase 20 percent year-over-year in the second quarter of 2017.

Researchers Successfully Perform First 4D Quantum Encryption

For the first time, researchers have sent a quantum-secured message containing more than one bit of information per photon through the air above a city. The demonstration showed that it could one day be practical to use high-capacity, free-space quantum communication to create a highly secure link between ground-based networks and satellites, a requirement for creating a global quantum encryption network. Quantum encryption uses photons to encode information in the form of quantum bits. In its simplest form, known as 2D encryption, each photon encodes one bit: either a one or a zero. Scientists have shown that a single photon can encode even more information — a concept known as high-dimensional quantum encryption — but until now this has never been demonstrated with free-space optical communication in real-world conditions. With eight bits necessary to encode just one letter, for example, packing more information into each photon would significantly speed

up data transmission. “Our work is the first to send messages in a secure manner using high-dimensional quantum encryption in realistic city conditions, including turbulence,” said research team lead Ebrahim Karimi from the University of Ottawa in Canada. “The secure, free-space communication scheme we demonstrated could potentially link Earth with satellites, securely connect places where it is too expensive to install fiber, or be used for encrypted communication with a moving object, such as an airplane.” The researchers demonstrated 4D quantum encryption over a free-space optical network spanning two buildings 0.3 kilometers apart at the University of Ottawa. This high-dimensional encryption scheme is referred to as 4D because each photon encodes two bits of information, which provides the four possibilities of 01, 10, 00 or 11. In addition to sending more information per photon, high-dimensional quantum encryption can also tolerate more signal-obscuring

noise before the transmission becomes unsecure. Noise can arise from turbulent air, failed electronics, detectors that don't work properly and from attempts to intercept the data. “This higher noise threshold means that when 2D quantum encryption fails, you can try to implement 4D because it, in principle, is more secure and more noise resistant,” said Karimi. As a next step, the researchers are planning to implement their scheme into a network that includes three links that are about 5.6 kilometers apart and that uses a technology known as adaptive optics to compensate for the turbulence. Eventually, they want to link this network to one that exists now in the city. “Our long-term goal is to implement a quantum communication network with multiple links but using more than four dimensions while trying to get around the turbulence,” said Alicia Sit, an undergraduate student in Karimi's lab.



Two Satellite Start-Ups to Track Soldiers from LEO

The Australian Department of Defense has awarded two tech start-ups — Myriota in South Australia and New Zealand's IMeasureU — a grant to develop

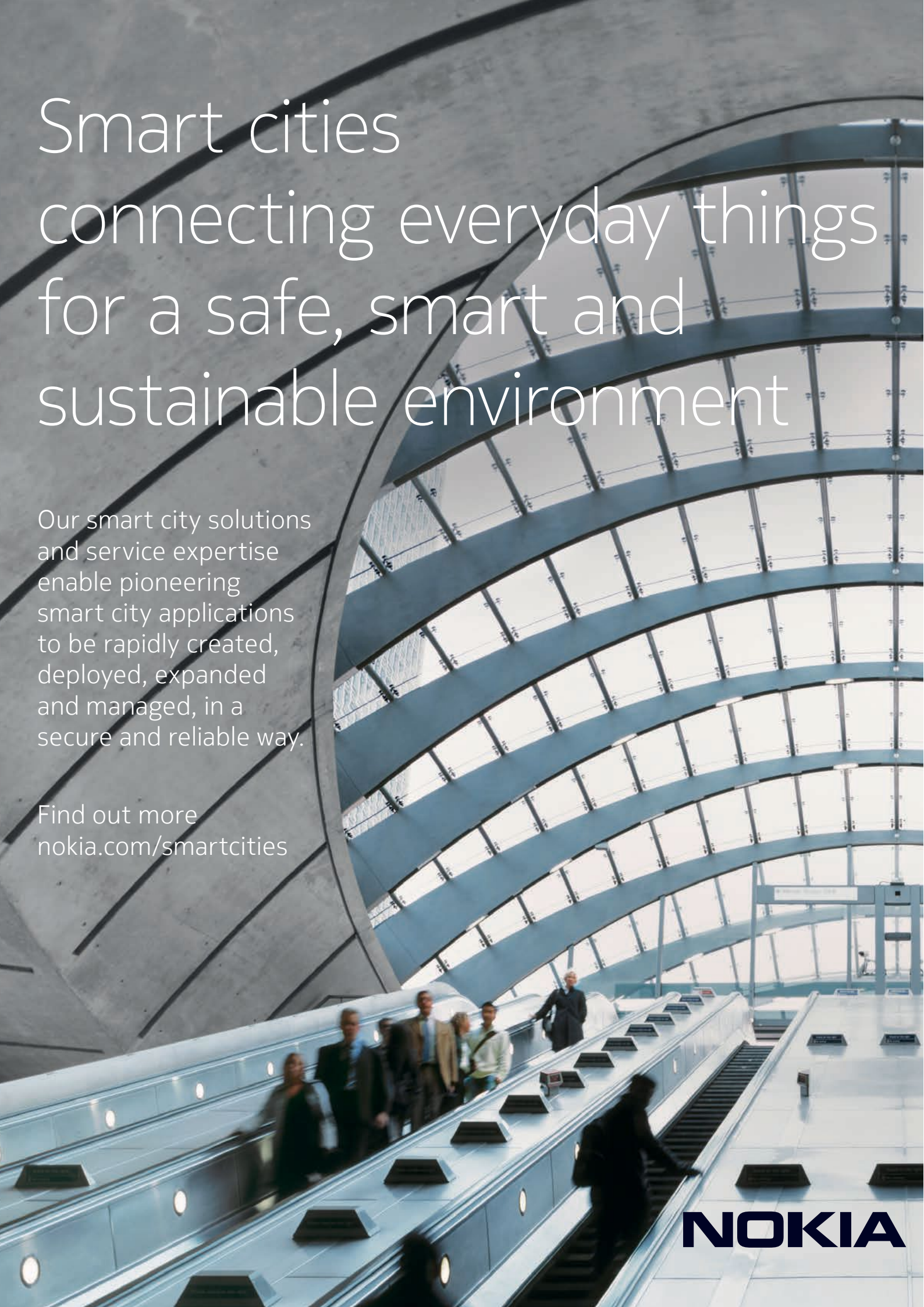
a black box-esque sensor to track defense forces. Myriota Chief Executive Officer (CEO) Alex Grant compared the technology to athletic wearable devices,

and noted it will be lightweight and very low power with a long battery life.

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ARTICLE

Unleashing the Power of Digital Health

1. Driving better outcomes in healthcare: a global objective

It is widely recognized today that the global health and healthcare system is ill-equipped to deal with the demographic transformation (by 2050, the world's population is expected to rise to 9.7 billion, with 2 billion over the age of 60). The United Nations 2030 agenda for Sustainable Development has defined 17 Sustainable Development Goals (SDGs) including SDG 3 for health which aims to ensure healthy lives and promote well-being for all at all ages. To keep populations healthy, treat patients

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more effectively, and attain the SDG targets, the traditional healthcare requires a profound transformation to move to value based care, drive better outcomes, lower cost, and enhance the delivery of healthcare globally.

2. The value of digital health

Nokia believes that digital health will revolutionize the concept of health care, from a technological and social standpoint and beyond, and will transform the 'doctor-hospital' model. Healthcare professionals will continue to monitor patients, but patients will be empowered to take their healthcare needs into their own hands. Advanced digital technologies such as connected health and well-being devices and sensors, IOT (Internet Of Things), Ultra-broadband connectivity networks, and the Cloud can help healthcare organizations work more efficiently, reach more patients, and gain deeper insight into both individual and population health trends and patterns. Digital health is a horizontal enabler for many global initiatives such as advancing the NCD (non-communicable diseases) agenda, containing global disease outbreaks and future epidemics, etc. As the digital health care ecosystem matures and solutions scale up, preventive care, early intervention, and personalized predictive care will take



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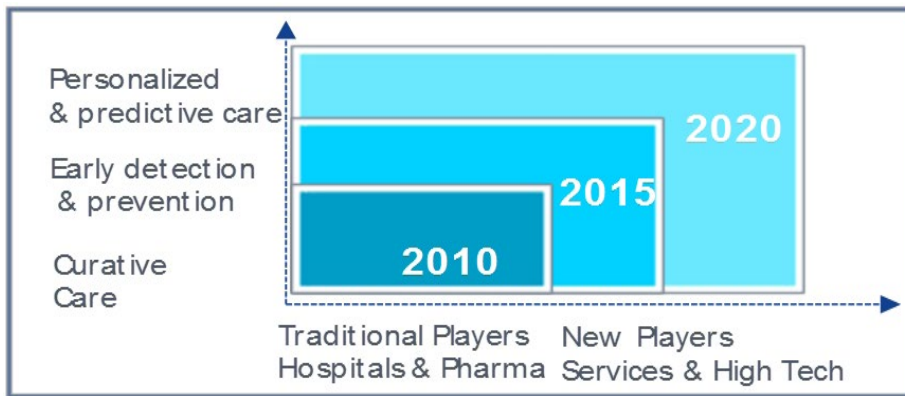


Figure 1. Evolution of healthcare

a center stage, reducing spending on chronic conditions and on high-cost emergency room visits, bringing efficiency and quality of health care to all. As a matter of fact, remote monitoring can now be done cost-effectively, because devices benefit from industrial volumes, connectivity is becoming more accessible, and artificial intelligence tells the clinician exactly where to look. From a modest 60 patients per nurse at the time hypertension was followed by phone, care coordinators can now follow hundreds of patients each digitally, a ten-fold productivity increase. This is not a futuristic vision. It is happening now in major healthcare institutions thanks to Nokia's technologies: in the US (at Kaiser Permanente, Ochsner Health Systems, Duke Hospitals), but also at the Leiden Hospital in the Netherlands, and in the UK with the National Health Service. They are using Nokia's new Patient Care Platform, allowing doctors and care teams to remotely monitor patients via their smart devices.

Advanced digital technologies such as connected health and well-being devices and sensors, IOT (Internet Of Things), Ultra-broadband connectivity networks, and the Cloud can help healthcare organizations work more efficiently, reach more patients, and gain deeper insight into both individual and population health trends and patterns.

3. How to unleash the power of digital health ?

The Health sector needs to unleash the power of technology to fundamentally reinvent how care is delivered. While considerable success has been achieved demonstrating how digitalization and the adoption of digital health can improve health services delivery, most achievements consisted so far in pilot programs and small scale initiatives. In order to integrate digital health interventions as part of the global health service delivery, and attain large scale digital health impact, both public and private sectors need to collaborate and embrace a digitally enabled care by driving some of the key actions described here next:

a. Promote Investment in good and reliable infrastructure to bring better and faster healthcare for all. Evolutions to ultra-Broadband technologies such as 5G, IOT, and Cloud are examples of technologies driving innovation. Nokia is working with Finland's Oulu University Hospital on becoming the world's first 5G hospital. It is a test lab for trials of new devices and equipment that will help doctors make

faster, more reliable diagnosis with the help of data analysis.

b. Provide proper training/awareness building to health professionals and patients alike to encourage greater adoption of digital health solutions. Ensure continued investment in experimentation and certification demonstrating the efficacy of digital healthcare innovations.

c. Reassure doctors and patients about connected devices and sensors. Devices for medical use must be certified before being introduced on the market. Also, the explosion of connected health applications in the market will pose a true challenge for health authorities. At the same time, the regulatory framework today makes a distinction between regulated and unregulated health devices. It's important to keep a clear differentiation to enable new innovative solutions to flourish.

d. Enable Big Data analytics. Huge amount of data is created by the health information systems that need to be easily accessible in a consistent manner. Digital health data integration with Electronic Health Records is necessary, to establish data repositories allowing for Big Data analytics to generate novel insights into citizens' health status, disease progression and management, public health and personalized healthcare. Research teams in the United-States and Europe are now studying how Nokia wearable devices can help detect exacerbations from patients suffering from Multiple Sclerosis (MS) and Cystic Fibrosis (CF). While these two diseases are very different, both studies aim to test how patient self-



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monitoring using a wide array of sensors can help detect and better manage exacerbations. Studying alerts can help clinicians develop a patient's personalized educational plan, enabling better management of exacerbations, including ability to make informed choices.

- e. Invest in experimentation and evaluation.** Nokia teamed up with the American Medical Group Foundation (AMGF) as an example to work on an 18-month project seeking to improve blood pressure control in patient with uncontrolled hypertension, in conjunction with the national Measure Up/Pressure Down® hypertension campaign. Also, in association with the French National Railway company, Nokia organized a public challenge around physical activity, which recruited 6200 members who tracked their steps for a period of 10 weeks. These same participants were asked to participate in a public health study, aimed at assessing the real impact of public transports on physical activity.
- f. Reassure about data protection.** Medical data is sensitive personal data. It is essential to reassure users and doctors about the security and privacy of the data and associated solutions. The status of data changes



depending on whether the device is used for recreational purposes, in which case it's personal data, or in a medical context, in which case it requires conformity to specific hospital norms. The relevance of the collected data is not the same depending on whether the individual uses it himself or not. In the first case, it is the patient's own responsibility. When a doctor uses data, he is held responsible for it and for the diagnosis he generates based on it. In this case, an accredited hosting of health data becomes necessary.

- g. Promote interoperability and standards** especially around data exchange and semantic interoperability. We need to promote interoperability and open platforms, and move away from complex information silos where records and other data sit across multiple systems. For instance, our Nokia connected devices come with an extensive and cloud enabled API ecosystem allowing more than 100 partners and clients to develop and deploy their own innovative applications & services as needed.
- h. Sustain government leadership.** Digital health investments need to be enabled by committed long term funding and robust program management. This will give newly introduced digital health solutions time and support to be implemented and to scale up in phases, and also to integrate with existing systems and practices.

The Broadband Commission Working Group on Digital Health, chaired by Nokia and the Novartis Foundation, convened leading digital health experts from governments, international and non-governmental organizations, academic institutions and the private sector for the purpose of producing a report: Digital Health: A Call for Government Leadership and Cooperation between ICT and Health. This report documents the results of the exploration with a view to providing practical guidance on leadership governance and intragovernmental cooperation to leaders in health and ICT who wish to adopt a digital health strategy.

- i. The financial and regulatory framework.** Today, billing for medical care does not sufficiently encourage early detection and home monitoring. Insurance for instance should put greater emphasis on reimbursing preventive care. Connected devices open the door to a new model of prevention. If today a disease treatment is reimbursed, it is conceivable to fund good health itself in the future. Lastly, sick patients and healthy people alike lack incentives to adopt prevention tools. sedentary lifestyle, smoking habits and lack of exercise increase the odds of cancer and cardiovascular diseases. In this context, a system rewarding healthy behaviors could be imagined. 

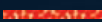


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WHOLESALE NEWS

Wind Tre Extends Wholesale FTTH Deal with Open Fiber

Wind Tre this week extended its partnership with wholesale fiber network operator Open Fiber, inking a new deal that will see it extend fiber-to-the-home (FTTH) services to an additional 258 Italian cities. The Italian telco is already using Open Fiber's infrastructure to provide FTTH in 13 cities. The new deal extends the deal to cover all 271 of Italy's so-called A and B cities, which are the economically viable and most profitable locations in the country, and cover 60% of the population. Under the terms of the deal, which is valid until 2024, Wind Tre will migrate its fixed-line customers onto the Open Fiber network. Wind Tre had a 13.1% share of the Italian fixed-line market as of March, according to the latest figures from regulator AGCOM, putting it some way behind TIM with 55%, but slightly ahead of Fastweb (12.1%) and Vodafone (11.7%). Its broadband market share stands at 15%, identical to Vodafone's, but behind TIM's 45.4%. The telco was named as an early customer of Enel's Open Fiber initiative when it was announced 18 months ago. Enel, a major Italian utility company, owns

Open Fiber in conjunction with state-owned lender Casa Depositi e Prestiti (CDP). It aims to reach the homes and businesses of 32 million people by rolling out high-speed broadband infrastructure alongside its electricity network. The network "will reach 9.6 million building units by the end of 2022, to which should be added also over 9 million building units involved in the two Infratel tenders won by Open Fiber for 6,753 cities in 16 regions," said Open Fiber CEO Tommaso Pompei. The Infratel tenders refer to the uneconomic regions of the country. The project means Italy has two companies deploying fibre infrastructure, with TIM, formerly known as Telecom Italia, also pushing ahead with its own network rollout. The incumbent last week signed a MoU with Utilitalia, a federation of companies providing electricity, gas, water and environmental services that will enable it to use the existing pipes, ducts and public lighting networks of over 500 local utility companies to deploy ultra-fast broadband networks. Open Fiber and Wind Tre were quick to point out that the deal does not only impact on

the fixed-line space though. In addition to fibre-based broadband, the deal will support Wind Tre's mobile business as it rolls out 4G and later 5G, the companies said, in a statement. "Wind Tre is achieving important investments in digital infrastructure, with the aim to become a reference player in fixed-mobile integration and in developing new generation fiber optics networks," the pair said. Wind Tre served 32.7% of Italy's 97.9 million mobile connections as of March, including M2M connections, slightly ahead of TIM's 30% and Vodafone's 29.9%. It has a bigger lead when M2M SIMs are stripped out, claiming 36.4% of mobile customers to TIM's 28.2% and Vodafone's 27.1%. "In partnership with Open Fiber we will be in a position to accelerate and reinforce the ultra-broadband development plan launched by the government," said Wind Tre chief executive Jeffrey Hedberg. "In addition, Wind Tre is strengthening its position in the Italian market as a large integrated operator, offering its customers innovative technology solutions, with simple, transparent and attractive offers."

CRTC Orders Wholesale High Speed Access for Small ISPs

The CRTC is mandating that Canada's big telecom companies give smaller internet providers access to their wholesale high-speed services over fiber-optic networks, first in Quebec and Ontario, before rolling out the same access across the rest of the country. The telecommunications regulator said Tuesday that it wants "Canadians to have more choice for innovative internet services at competitive prices," so it will proceed with a plan first announced in 2015 to let smaller ISPs piggyback on high-speed networks that larger companies have built out. "The large incumbent companies continue to possess market power in the provision of wholesale high-speed access services and is requiring that they make these services available to competitors," the

CRTC said in 2015. "Large incumbent companies will now have to make their fiber facilities available to their competitors. "While short on details, the plan means that smaller ISPs will now be able to pay for access to the incumbents' disaggregated high-speed fiber-optic networks, and then resell that service to consumers. "As of today, providers in Ontario and Quebec will have access to services based on a new architecture that will enable greater competition," the regulator said. Technology analyst Daniel Bader of Mobile Nations said that Tuesday's announcement is the CRTC's way of saying "they think that Quebec and Ontario are much more in need" of more competition. "The CRTC is looking to make the biggest impact on two most

populous provinces," Bader said in a telephone interview. The CRTC is still trying to decide on the rates that smaller companies will be allowed to purchase the access for, but decided to go ahead and let small ISPs buy access at the current interim rates to stimulate competition while that process goes on behind the scenes. "The CRTC needs to be mindful of the impacts of the rates it sets on investment in next generation broadband facilities," BCE Inc.'s communications director Marc Choma said in an email to CBC News. "We're encouraged that the CRTC has recognized our proposed changes to its dated costing methods are deserving of a thorough review before the final rates are set."

Rural Telecom Economics: Telergee Report Finds Revenues Up, Profits Down

The average small rural telco saw revenues increase in 2016 but profitability declined in comparison with the previous year, according to the latest Telergee Benchmark Study. The extensive and detailed rural telecom economics report is compiled annually by The Telergee Alliance, a group of accounting firms that specialize in rural telecom. This year's report was based on financial data from 172 small telcos – a substantial portion of the 800 or so small telcos nationwide. On average, small rural telcos saw revenues increase 2.8% between 2015 and 2016, according to the Telergee study. Yet operating income dropped an average of 3.9%.

Rural Telecom Economics

The results are not surprising, as telcos' regulated revenues are flat or in decline, driving the telcos to pursue unregulated lines of business, many of which have "super thin" margins, noted Chris Skidmore, senior manager for Moss Adams, a Telergee Alliance firm, in an interview with Telecompetitor. Some examples of unregulated services that small rural telcos have been pursuing include information technology solutions, home security, hosted services, cloud services, and even setting up and operating data centers and network operations centers, Skidmore noted. By offering services such as those, small telcos were able to push revenues up an average of 3%, but were not able to push margins up commensurately. Small telcos get 64.5% of their revenue from regulated wireline offerings, with 35.5% coming from nonregulated offerings, researchers

said. Those two numbers have been coming closer together over the last 10 years. Regulated revenues have been dropping for several reasons, according to Skidmore. He noted, for example, that the demand for high-cost support through the Universal Service Fund (USF) exceeds the amount of support available to rural carriers. In addition, long-distance access charges have been declining as the result of policy decisions made several years ago. While some of this information may be discouraging, Skidmore sees some positive signs in this year's report as well. He noted, for example, that the percentage of customers served over a fiber-to-the-premises connection has been steadily climbing and almost reached 50% in 2016. That's good news, according to Skidmore. "The more capacity they can get to the end user, the more useful and relevant they're going to be long term," commented Skidmore. "If they can give customers 100 megabits per second and charge a reasonable rate, the customer is probably going to stay their customer." Another positive is that respondents are spending an average of 22% of operating revenue to maintain and upgrade their networks, Skidmore said. That's a higher number in comparison with several years ago, when regulatory uncertainty caused telcos to scale back on investment. Skidmore attributed the increase, in part, to telcos having a clearer regulatory picture and to the fact that "the Rural Utilities Service and other lenders have been more apt to lend" – particularly in comparison with 2012 and 2013. In surveying rural telcos for the annual benchmarking report, The Telergee

Alliance asks about several specific lines of business, including wireless, video and competitive local exchange carrier (CLEC) services. Just under 15% of rural telcos surveyed (14.8%) offer wireless service. It's easy to see why the majority of rural carriers avoid this business. Annual churn for 2016 was a whopping 13% and expenses were 102% of revenues. "For a rural wireless carrier to succeed, they need one or more of three things – scale, USF support and roaming revenues," observed Skidmore. With a few notable exceptions, he said, "what they're not getting is scale." And as the FCC phases out traditional USF support for wireless carriers, the average amount collected by rural wireless carriers in Telergee's survey dropped to USD87 per line in 2016, compared to USD140 the year before. Meanwhile, roaming revenues dropped from an average of USD18,500 to USD16,000 annually per cellsite. Just under half (47.5%) of rural telcos offer cable TV and 52.3% offer IPTV, the Telergee report found. Many offer both. The typical telco video offering loses money; carriers tend to offer the service as a means of boosting broadband take rates. Perhaps surprisingly, though, video margins increased 3.6% in 2016, which Skidmore attributes to price increases. "It's almost like they've had it," commented Skidmore. As content costs have continued to climb (the rise for 2016 was 6%), carriers are increasingly less willing to absorb those costs but instead are increasing rates. Carriers may be emboldened to make that choice as over-the-top video offerings are becoming increasingly attractive substitutes for traditional pay-TV offerings. The reason is that customers choosing OTT video instead of traditional offerings may find they need to increase their broadband speed to support the OTT option. Telergee telcos have a 39.8% share in the video market and saw a 1.2% decline in their customer base in 2016. CLEC services, offered by 35% of rural telcos, were somewhat of a bright spot for those telcos in 2016. Margins on those services increased 10.7%, perhaps reflecting increased take rates and/or increases in broadband data rates similar to what rural telcos are seeing in their traditional business.



Starhome Mach: Roaming Data Usage across the EU Increased by Over 450% YoY in the Peak Travel Weeks

In the 10 weeks since the regulation went into effect, roaming data usage across the EU Roam-like-at-Home region increased by over 450% in the peak travel weeks compared to the prior year. Starhome Mach's unique research, based on the company's clearing and signaling data analytics, as well as inputs from leading operators, indicates that EU residents are taking full advantage of the new regulations. Some operators have even seen their subscribers increase roaming data usage by up to 870% compared to the prior year. While a small part of the increase can be attributed to the estimated 60% ongoing global year-over-year increase in data usage, the vast majority of this impact is clearly due to the recent EU Regulation. At the same time voice traffic showed modest increases of up to 75%. Despite the usual decrease in summer domestic traffic, the staggering demand for network services by roamers stretched the networks of leading travel destinations to the limit and, in some cases, beyond it. Leading inbound tourist countries have seen a 4x(!) and more increases in roaming data usage across their national

network, with an astonishing impact at the local city level. These phenomena, which Starhome Mach anticipated, have introduced new challenges for operators. At the subscriber level – how to handle regulation abuse by permanent roamers and abnormal use by roamers. At the network level – capacity overload and its impact on quality of service. Solving these challenges is critical for an operator to maintain a healthy and profitable business. Starhome Mach foresees that operators will soon become more assertive with abusers, powered by sophisticated solutions that will help the operators to optimize their business models. Deploying Starhome Mach's EU Regulation solution for both detecting permanent roamers and enforcing fair usage policies, together with the company's Deal Analytics, effectively meets these challenges introduced by the new regulation. "Operators have recognized the impact of the EU Roam-Like-at-Home regulation during the summer and now appreciate the urgency of implementing a smart solution to address the regulatory challenges," said Starhome Mach EMEA General

Manager Marom Ben-Menachem. "Roaming departments are being urged by management to leverage smart technologies like Starhome Mach's to quickly and effectively comply with the regulation while protecting their business model." Starhome Mach will



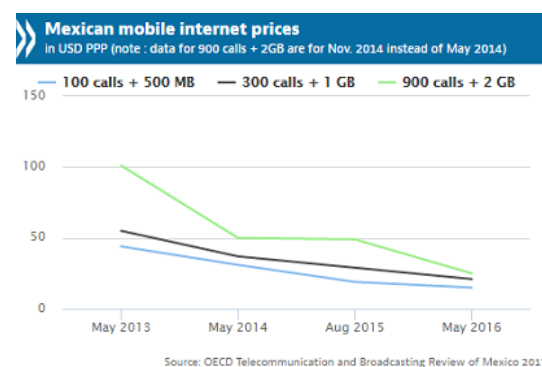
showcase their EU regulation solution at the upcoming Wholesale Agreements and Solutions (WAS) #6 conference that will take place in Marrakech, from September 25 until 28, 2017.

Mexico Telecom Reform Leads to Plunging Prices - OECD

Mexico's 2013 telecom reform has brought tangible benefits to the country, boosting competition that has increased access and sharply bringing costs from among the highest in advanced economies to among the lowest, according to a report from the OECD. In fact, prices for mobile internet now stand below the OECD country average with the cost of a low-usage mobile broadband basket of 100 calls and 500 Mbps falling by 65 percent from USD 44.05 PPP (at purchasing power parity) to USD 15.39 PPP, while the price for a high-usage basket dropped by 75 percent from USD 101 PPP to USD 24.93 PPP. The price for a medium-usage basket fell by 61 percent. Although the overall market shares of incumbent operators remain high, the OECD notes a shift in the mobile broadband market, where Telcel's share has fallen by 12 percent from 83.8

percent in 2012 to 71.8 percent in 2016 following gains made by rivals. The commencement of the "Red Compartida" wholesale wireless 4G network in 2018 should further boost competition, said the report. However, the OECD said progress has been slower in broadcasting, where limited competition and restrictions on foreign investment are factors behind a 5 percent rise in pay-TV prices over 2013-16. In that regard the report recommends lower barriers to foreign investment by abolishing the last restrictions in broadcasting and easing requirements for investing in satellite communication services. It also advises the telecom regulator IFT to consider allowing Telmex to enter the pay-TV segment to boost convergent services in the country once it completes its structural separation. Other recommendations include the need to address the uneven levels of internet

access and quality across Mexican States including by reducing obstacles to infrastructure deployment at the local and municipal level such as over-complex or divergent regulations and to eliminate the special tax on products and services (IEPS) that is currently levied on fixed and mobile telephony and pay TV services as a way to further foster access and usage.



EU Starts wholesale-Roaming Review by Commissioning Updated Cost Analysis

The true cost of providing roaming services, masked by European rules that ban mobile operators from charging subscribers when they use their cell phones in another EU states, is set to be revealed in the summer of 2019, in a report that will form the basis for potential future updates of wholesale roaming-price regulation. The ink has barely dried on the last round of wholesale-roaming regulations, published on June 9 in time for EU "roam like at home" regulations that came into force on June 15. The new rules forbid operators from charging extra when their customers use their mobiles and tablets abroad under most circumstances. The wholesale price caps seek to ensure that operators can comply with the new rules without going bankrupt from the payments they must make to other providers that host subscribers when they travel abroad. But agreeing on the wholesale rates wasn't uncontroversial. There were deep

the additional network investments they have to make in tourist hotspots, or low, to ensure countries with a lot of outbound tourists in the Nordics don't go out of business. The European Commission says the wholesale rates strike the right balance. The most important is the price cap on mobile data which will gradually decline from 7.7 euros (\$9.20) per gigabyte to 2.5 euros by 2022. But in a sign that the calculations may not be as robust as they need to be, the commission is now reviewing them. The first attempt to calculate the true cost of providing roaming services was published by the commission in June 2016. The paper, drafted by TERA Consultants, had a maximum budget of 60,000 euros.

Improving cost model

The commission has now allocated 244,000 euros via a public tender for the new report, and companies interested in drafting the updated calculations should

The commission doesn't say this will necessarily be the case, but if new legislation is proposed, the authors of the report would be called in to defend their analysis in Brussels during legislative negotiations. If these negotiations take place, that will happen between October 2019 and September 2020, coinciding with the start of the next commission term. But the bulk of the money will go to improving the model itself, and helping regulators implement it. "The contractor will make proposals to further improve the cost model," the commission says in the tender documentation. Specific parts of the 2016 report that the EU regulator thinks could be improved include the "non-network" cost estimates, such as managing wholesale roaming contracts or billing. The new study will also take a closer look at the impact of seasonal roaming patterns on investments, after the original report concluded that seasonal consumption changes affect only voice services, and not data. The new paper will also be expected to make a more precise estimate of roaming volumes, based on the data gathered since retail roaming surcharges were abolished on June 15. The commission has also warned would-be bidders for the contract to expect controversy: "In light of the variety of views that are likely to arise on many aspects of the cost model, it is particularly important that it will be widely considered fit for the purpose of the wholesale roaming review, as well as reconciling appropriately the different views of National Regulatory Authorities and stakeholders." "In this regard, the consultation process with NRAs, Berec [the Body of European Regulators for Electronic Communications] and other stakeholders throughout the project, and the contractor's response to the feedback received, will be of utmost importance," the commission added.



divisions among lawmakers on whether to keep the rates high, to ensure countries that host hordes of visitors around the shores of the Mediterranean can recoup

submit their bids by November 6. Of this sum, a maximum of 36,600 euros has been earmarked for extra work should the wholesale regulation need to be updated.

Canadian Regulator Pushes Ahead with Wholesale Fiber Access

The Canadian regulator CRTC is pushing ahead with efforts to open up the fixed broadband market to competition and has set interim rates for wholesale access to cable and fiber networks in Ontario and Quebec provinces. The Canadian regulator approved measures in 2015 to create so-called disaggregated wholesale high-speed access for alternative operators to FTTP and HFC networks. Bell Canada, Rogers Communications, Videotron and Cogeco must provide access from the central office or head-end for ISPs to deliver broadband from 50 Mbps on their networks. The CRTC received cost-based pricing proposals for the wholesale services from the operators early this year. Its initial determination found the proposals unreasonable, so in order to start the process as soon as possible it has set its own interim rates for the wholesale services, until a final review of the pricing can be completed. The operators have until September

8 to implement the interim rates in the two provinces, with other areas to follow later.



Know Roaming Includes 4G LTE for Data-Hungry Travelers

Getting reliable, affordable data while traveling abroad is often a headache. While international hotspots like the XCom Global are a good solution, they're an extra device to charge and carry around, and higher data speeds tend to be expensive. KnowRoaming offers a good solution with its SIM Sticker. It attaches to your existing SIM card and allows you to get data abroad with very little hassle. The company has also brought unlimited data to more than 80 countries and partnered with TCL Communications to bring virtual

Soft SIM's to Alcatel phones, providing global roaming without the need for any physical hardware. Now KnowRoaming is bringing 4G LTE roaming to 60 countries, including Albania, Australia, China, India, Oman, Sri Lanka, the UK, and many others. KnowRoaming users with a device capable of 4G LTE data can tap into 4G LTE for a USD7.99 per day unlimited package, which is cheaper than you'll find on many competing hotspots. If you don't want the unlimited package, there are per-MB data rates and the

company offers free, unlimited WhatsApp data for all messaging, voice, and video calling. "We are excited to share our 4G LTE network with everyone," said Gregory Gundelfinger, KnowRoaming CEO. "Our team worked hard to build and deliver a robust network supporting 4G LTE that our customers can enjoy. We will continue to expand our LTE coverage across the globe, with a priority on destinations where our customers want to use it most."

AT&T Inks Mexico Roaming Deal with America Movil

According to a Wednesday report from Reuters, AT&T and America Movil's Telcel branch have come to terms on roaming services in Mexico. Under the arrangement, which is similar to one between America Movil and fellow Mexico carrier Telefonica, America Movil will offer AT&T roaming support for its customers in Mexico. Further details of the deal were not immediately available. The move comes just days after Mexico's Supreme

Court handed America Movil a victory, ruling legislation blocking the carrier from charging interconnection fees to rivals was unconstitutional. The court indicated rate rules must be set instead by the country's regulatory body, the Federal Telecommunications Institute (IFT). Despite its finding that the 2014 telecom law meant to break America Movil's grip on the Mexico market was unconstitutional, the court also determined other carriers

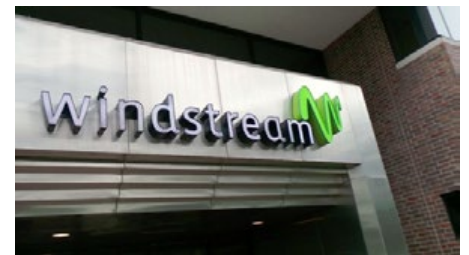
wouldn't compensate the operator for "adverse effects" caused by the rule's implementation. Future regulations are currently in the hands of the IFT to decide, but that body has not given an indication of when new rules are expected to be released. The court, however, said new interconnection rates set by the IFT will go into effect at the start of next year.

Windstream Wholesale Says SD-WAN Requires More Training for Resellers, VAR Partners

As Windstream ramps up its wholesale SD-WAN offering to target value-added resellers (VAR) and other carrier partners, the service provider has a new challenge of being able to educate how these companies can resell the service. Unlike traditional T-1 or Ethernet circuits, selling wholesale SD-WAN is a bit more complex. This is because to provision an SD-WAN service, the operator not only has to install software and maybe a device at the customer premises, but also must help procure necessary broadband connections. These connections may be supplied by Windstream or another partner provider. Melissa Cook, Vice President of the reseller program for Windstream Wholesale, told FierceTelecom that the advent of wholesale SD-WAN requires a higher touch with wholesale customers. "It is definitely a deeper partnership than our traditional products, which we have offered for years and our wholesale partners know how to position them with their agents," Cook said. "We really want to enable our clients with this so we help with them with proof of concept, negotiations, and conducting training with their operations, provisioning and sales teams." Cook added that this certification and education process will enable its VAR partners to be more successful in being able to sell the service to business customers. "This is also about how can you define the value add to that end-user who has maybe not heard of SD-WAN yet," Cook said. "Our enterprise team has had success with selling multiple location sites, but how can our clients get that 10 location site that may or may not have heard of SD-WAN because it could be an MPLS replacement, an MPLS add-on or a completely new for that 10

site location." The new wholesale SD-WAN service, which was launched in April, allows reseller partners to manage their networks and remote devices from a single, cloud-based interface, rather than through traditional methods such as routers, firewalls and switches. Selling a wholesale SD-WAN service is not a large stretch for Windstream, as it can leverage the existing investment its enterprise division has made to deliver it directly to business customers. "As we have done with other products, and it is usually the case with reselling of products, our enterprise team went out and sold it after developing the gateways and the network," Cook said. "We're able to capitalize on the investment that our enterprise and our network teams have done, which enables us to offer a stable product that's gone through iterations of testing and beta." Windstream Wholesale has reseller partners that are already tuning in to the service. The service provider recently signed a wholesale pact with BCN Telecom, for example. Being the first Windstream Wholesale reseller partner to execute an SD-WAN agreement, BCN Telecom plans to extend the service to its entire network of agents, enabling them to provide their business customers this solution. "We have had a long relationship with BCN," Cook said. "We've been working with them before rolling out the product in April by getting feedback from them on what target prices we should be looking at." While Windstream had been developing its own solutions, it's hard not to notice the impact the acquisitions of EarthLink and more recently Broadview is having on Windstream's SD-WAN strategy. By acquiring EarthLink, which had debuted an SD-WAN product first,

Windstream gained a ready-made product suite that included a concierge management feature as well as an established customer base. The ink had barely dried on its EarthLink acquisition when Windstream purchased regional competitive provider Broadview Networks, enhancing the service provider's unified communications (UC) solutions for small and medium business customers. Besides looking to sign up more resellers



like BCN, the service provider is going to integrate the Broadview suite it acquired from Broadview network with SD-WAN for wholesale customers. "With the addition of the Broadview acquisition and their base that has the Office Suite has opened up a whole new client base to work with," Cook said. "As we look to find new Office Suite customers, SD-WAN is a good tie-in to that." Cook added that having a combination of SD-WAN and UCaaS enables it to broaden its reseller targets. "The SD-WAN and Office Suite product open us up to a new type of reseller that we weren't working with because we were all about access and network only," Cook said. "I would love to be the access provider, but now I can offer resellers SD-WAN, Office Suite or both so it's opening up a lot of new client opportunities."

Danish Regulator to Revise Wholesale Tariffs from January 1, 2018

Telecoms regulator the Danish Business Authority (Erhvervsstyrelsen) has revealed that mobile termination rates (MTRs) will rise to DKK0.0495 (USD0.008) per minute from DKK0.0473, effective January 1, 2018, following the adoption of a revised method for calculating the tariffs. Under

the new method, real weighted average cost of capital (WACC) for the mobile sector is revised to 5.47% from the current 1.99%, while nominal WACC for fixed networks will rise to 5.28% (4.16% previously). Copper local loop unbundling (LLU) will cost DKK776 per year (DKK694

until December 31, 2017), while fiber LLU in Danish energy group DONG's areas will be priced at DKK1,003 per year (DKK874), with the tariff for the rest of the country set at DKK1,495 (DKK1,185).

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ARTICLE

GCC National Transformation Plans Will be Enabled by a Skilled and Adaptable Digital Workforce



Samer Bohsali

Partner,
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part of the PwC network

strategy&

- Digital jobs account for just 1.7% of the total GCC workforce, compared to 5.4% in the EU
- GCC's digital professionals' skills are not aligned to the digital age requirements
- Digital job creation requires private sector partnerships

A joint study conducted by the Ideation Center at Strategy&, part of the PwC network, together with LinkedIn has highlighted that to achieve their ambitious national plans, GCC countries must take leaps of efficiencies that are mainly enabled through digitization. To do so, they need to build an adaptable and skilled digital workforce.

According to the report titled "Empowering the GCC digital workforce: Building adaptable skills in the digital era", the percentage of digital jobs within the total workforce is low in GCC countries compared to international benchmarks. Currently, digital jobs account for only 1.7% of the total GCC workforce, compared to 5.4% of the total EU's workforce being employed in similar roles. In fact, GCC nationals are mostly employed in sectors at risk of disruption by new digital technologies. To remedy this, GCC countries should undertake the large-scale creation of digital jobs – both within and outside the ICT sector.

Commenting on the research, Ali Matar, Head of LinkedIn Talent Solutions, for EMEA Emerging Markets, Middle East & Africa said: "Our analysis mapped digital professionals on the LinkedIn platform to functions in digital-related industries. Only one of the ten skills that GCC digital professionals cited matched the fastest-growing skills globally on the LinkedIn platform. Although there is a regional trend towards more technical skills, these remain scarce for emerging technologies such as big data and analytics".

The skills showing the highest growth among GCC digital professionals are focused on technology sales and distribution, whereas globally the most rapidly growing skills relate to product development. Such a mismatch between the regional digital job environment and that of our global peers has its roots in an underdeveloped digital job market.

The GCC digital job market faces challenges on both the supply and demand sides. From a supply perspective, the GCC education system does not keep up with technological changes or provide the adequate level of information, communication, and technology (ICT) education. In fact, 93% of the region's digital professionals on LinkedIn completed their university education abroad. Also, the professional development environment is inadequate. Due to the limited awareness of what digital careers offer, young students are reluctant to study in this field – GCC nationals tending to prefer more 'stable' jobs in traditional sectors.

In terms of demand, there are low levels of digitization in the region – for example, only 18% of companies use cloud computing – which restricts employment opportunities for digital professionals locally. The GCC's ICT industry itself is also underdeveloped and focuses on technology consumption rather than production.

Developing the digital workforce in the region offers significant benefits. Melissa Rizk, fellow with the Ideation Center, Strategy& Middle East's think tank, said: "Digital jobs are more adaptable in the face of technological disruption, and can support a more flexible working culture hence allowing for self-employment and remote work – a model that encourages greater participation by women and the inactive youth". In fact, an enhanced digital job market has the potential to create 1.3 million additional jobs in the GCC by 2025, including 700,000 in Saudi Arabia alone.

To create a skilled workforce, GCC countries will need to focus their efforts on building digital capabilities within academia by emphasizing a science, technology, engineering and mathematics (STEM) approach in schools and training

To create a skilled workforce, GCC countries will need to focus their efforts on building digital capabilities within academia by emphasizing a science, technology, engineering and mathematics (STEM) approach in schools and training teachers to use more digital tools in delivering their curriculum.

teachers to use more digital tools in delivering their curriculum. Equally important is enhancing professional development opportunities, including post-graduate specializations and internships for digitally-inclined students, as well as company-led training programs. These will help digital professionals acquire the skills they need to increase their employability.

Furthermore, GCC nationals should be motivated, starting at a young age, to explore digital careers – this could be achieved through awareness campaigns in schools and universities, as well as competitions, hackathons, and boot camps.

To increase the demand for these jobs, GCC countries should push for greater digitization, the aim being to drive organizations to leverage more emerging technologies and adopt digital strategies to transform their business models. Stimulating innovation and production in the digital economy must also be a priority, and can be encouraged by making the region an appealing environment for ICT companies to thrive in. The region also needs to review its entire approach towards startups and ensure digital entrepreneurship can flourish and attract more skilled professionals.

Samer Bohsali, Partner with Strategy& and the leader of the firm's Digital Business and Technology practice and the digitization platform in the Middle East, concluded: "GCC governments need to continuously reskill their workforce

to embrace the latest technologies. The digital sector tends to change rapidly because of continuously emerging new technologies that redefine the way business is done, which is less often the case in traditional jobs. Creating a digital workforce of continuous learners is key to drive the success of national transformation plans".

To learn more about the report please visit: <http://www.ideationcenter.com/gcc-digital-job-market>

Other findings of the report include:

- Taking inputs from World Economic Forum's report - 'The Future of Jobs', the report by LinkedIn and Strategy& have concurred that a very high percentage of GCC nationals are now employed in sectors which are at high risk of disruption by new digital technologies; particularly jobs in professional services and public administration.
- If, by 2025, the region reaches the same proportion of digital employment that the EU has today, then approximately 1.3 million new jobs, could be created.
- Self-employment throughout the developed world is on the increase, propelled by a digital age which gives people more ability to design the rhythm and schedule of their working lives. There are some 3.9 million inactive women and male youth in the GCC, some of whom could benefit from digital self-employment.
- The digital skills most highly prized by employers in all sectors such as statistical analysis and data mining, Algorithm design, website architecture are almost absent among GCC digital professionals.
- Most young people have a preference for traditional public sector employment in their country because it offers them job security and high pay. Indeed, according to a 2016 survey, more than two thirds (70 percent) of GCC youth prefer public sector jobs over private sector employment. 

TECHNOLOGY NEWS

3 HK Rolls out NB-IoT Network on 900MHz Band

3 Hong Kong, the mobile unit of Hutchison Telecommunications Hong Kong, rolled out a low-power NB-IoT network on the 900MHz spectrum band across the territory with Huawei providing the equipment. The market's second largest operator said in a statement the infrastructure was built with NB-IoT modules designed to the 3GPP standard to facilitate tests and development of NB-IoT applications. The operator used NFV technology to enable proof of concept activity around NB-IoT applications, while the use of cloud technology negates need of additional hardware for testing. Hutchison Telecommunications Hong Kong CEO Cliff Woo said it is working with industry partners and startups to establish a local NB-IoT ecosystem which will provide industries with commercial applications: "The end result will be creation of more value for this city's business community at the same time as preparing 3 Hong Kong for a new era of massive connectivity via 5G technology," he said. It is also collaborating with the Hong Kong Science and Technology Parks Corporation to open up business opportunities by enabling startups to develop NB-IoT applications for various industries and take them to market. Additional efforts include working with Power Assets Holdings to apply the high-penetration capability of NB-IoT technology to utility meters. Applications



are also being developed for surveillance and management of oil pipelines, while others involve big data analysis and smart surveillance to save energy and boost operational efficiency. Three 3GPP-licensed technologies – NB-IoT, EC-GSM-IOT and LTE-M – are claimed to cover all low power wide area (LPWA) use cases, ensuring customer choice and driving the IoT ecosystem. Rival proprietary technologies using unlicensed spectrum including Sigfox, LoRa and Ingenu have enjoyed earlier entry to market and racked up commercial deals. NB-IoT and LTE-M are seeing commercial rollouts across Asia, including markets such as China, New Zealand, Singapore and South Korea.

Deutsche Telekom Launches Global Network Service Based on Ngena Platform

Deutsche Telekom announced the launch of a new network services offer for corporate customers, based on its international alliance Ngena. The Next Generation Enterprise Network Alliance (Ngena) brings together network operators from around the world, and DT said it is the first to use the shared platform to offer a dedicated connectivity service for business customers. All Ngena partners share their networks and connect them to a global, highly standardized network. DT's subsidiary

T-Systems is the first alliance partner to launch a network offering based on the Ngena platform. Dubbed 'Smart SD-WAN powered by ngena', it is available in the variants XS, S or M – depending on whether the network access is configured singly or redundantly, and whether it is provided via the internet, Ethernet or a combination of the two. The new offer is designed to supplement T-Systems' classic IP VPN offering IntraSelect, which can be tailored to specific customer requirements. The new network product

also supports other services in addition to secure worldwide networking of company sites as VPN. These include a secure regional gateway from the corporate network to the internet using firewalls, or the intelligent management of network traffic depending on priority class. The offering is initially geared to businesses based in Germany, and sales in other countries will gradually follow, along with additional access variants and services.

T-Mobile US Claims 'Industry First' with 1.175Gbps LTE Trial

T-Mobile US has claimed a 'worldwide industry first' after achieving downlink transmission speeds of 1.175Gbps using commercially available LTE technology. The tests, which took place at T-Mobile's

lab, utilized Nokia's so-called '4.9G' network technology powered by the Nokia AirScale Base Station, together with Qualcomm's Snapdragon X20 LTE modem. In addition, the trial used 4X4

MIMO, 256 QAM functionality and tri-band carrier aggregation (3C) across 60MHz of downlink spectrum.

5G Mobile Phones to Go Mainstream in 2019

The first 5G phones ready to meet next-generation mobile standards will be available for the mass market in 2019, Qualcomm's CEO says. Steven Mollenkopf, chief executive of the world's



top maker of smartphone chips, said in an interview that rising consumer and business demands were forcing the industry to accelerate its previous 2020 timeline to upgrade to new networks and devices. "You will see it (5G) in real devices, on the shelf, in 2019. And if I were

to answer that same question a year ago, I would have said 2020," Mollenkopf said in an interview on the sidelines of the Frankfurt Motor Show. Commercialization of 5G is vital to the fortunes of makers of network equipment gear such as Huawei, Nokia and Ericsson, as well as device makers like Samsung and Apple by enabling demand for new features and equipment upgrades. Moving to new networks promises to enable new mobile services and even whole new business models, but could pose challenges for industries unable to invest in upgrades. Unlike the prior upgrades of cellular standards 2G in the early 1990s, 3G just around the millennium and 4G in 2010, 5G standards will deliver not just faster phone or computer data but link up cars, machines, cargo and crop equipment to the Internet. The Qualcomm executive said South Korea, Japan and the United States all now had several network operators in each market preparing

mainstream network launches in 2019, with China likely to join this early wave rather than hanging behind. "I think you will see the typical first movers - Korea, Japan and the United States," he said referring to the history of 3G and 4G cellular network upgrades. "You will see robust demand in all of those locations, meaning that there are multiple operators wanting to be first and not be left behind. (Most) will have a different deployment strategy or goal," he said, fuelling competition for new users. China, far and away the world's largest market for phones, has traditionally lagged behind these early adopters, but Mollenkopf said they are likely to join the first movers to 5G. "What we are seeing in China is a real desire not to be a follower and to launch with everyone else. That's new this time." The Winter Olympics in PyeongChang, South Korea, in February 2018 are expected to be the first widespread public showcase for 5G services.

Nokia Pushes 5G Use Cases with WIVE

Nokia announced an industry group led by its Bell Labs established a project called WIVE (Wireless for Verticals) "to make it possible for new types of industries to gain competitive advantage from the latest wireless technologies, especially 5G." The project is co-funded by the Finnish Funding Agency for Innovation, with partners including Telia and the Finnish communications regulatory

authority. WIVE is planned to run for 2 years and will focus on the needs of the media and entertainment sector as well as machine-type connectivity for application areas including ultra-reliable low latency communications (URLLC), serving sectors like smart grids and remotely controlled machines. It will also look into massive machine type connectivity (mMTC), allowing a high

number of devices to be connected with limited cost and energy consumption. "WIVE aims to develop concepts and enable technologies, as well as to test and experiment new vertical services offered by 5G, especially for URLLC, mMTC, and media content delivery. These new communication services have versatile requirements for reliability, latency, data rates, security and availability. The WIVE project aims to demonstrate that these requirements can be fulfilled with future 5G networks with improved flexibility and cost-efficiency," Nokia said in a statement. WIVE will also investigate and promote flexible spectrum policies and spectrum management schemes to unlock new spectrum assets for 5G. Last week at MWC Americas, Nokia North America CTO Mike Murphy said the transformation to 5G will require a significant restructuring of operator networks rather than just incremental changes. Adjusting to improve distribution and keep latency low is at the top of the list, he said.



Taiwan All Set to Develop Essential IPs for 5G

The Taiwan government will collaborate with domestic companies, industrial associations and institutional organizations to develop and secure more essential IPs to safeguard the development of the local 5G industry, according to economics minister Shen Jong-chin. The ministry will support the Taiwan Association of Information and Communication Standards (TAICS) to actively participate in international standard setting organizations such as 3GPP, IEEE and ITU-R to involve itself with standard setting processes so that

it can help accelerate the development of related 5G IP products in Taiwan, Shen said on the sidelines of a 5G summit meeting held in Taipei recently. Another focus of the government strategy is to foster the development of end-to-end system integration solutions, which include chips, small cells, virtual networks and smart applications, Shen added. A number of government organizations, including Industrial Technology Research Institute (ITRI), Institute for Information Industry (III) and National Chung-Shan Institute of Science and Technology will

also join forces with TAICS and local companies such as MediaTek, Sercomm, Gemtech Technology, Accton Technology, and Quanta Computer to develop related solutions and applications. The economics ministry will earmark NT\$800-1,000 million (USD26.59-33.23 million) a year during the period from 2016-2020 for 5G development aiming to establish a comprehensive 5G industry chain on the island and help Taiwan-based IC design houses secure a leading market position in the IoT sector, Shen revealed.

5G Update: 81 Mobile Operators in 41 Countries Trialing 5G Technology

The world is advancing towards faster technologies like 5G while making the performance of various sectors efficient and improving the overall eco-system. Global mobile Suppliers Association (GSA) by the start of Sep, 2017 has identified 81

mobile operators in 42 countries that are currently testing/trialing or are being licensed to launch field tests of 5G technology. In this regard, the President of GSA, Joe Barrett said that: "We have been able to identify a wide range of operators usually working in close cooperation with GSA Member companies that have announced over 140 separate demonstrations, tests or trials. Key pre-standards 5G technologies are being explored operating in spectrum bands not previously used for mobile telecoms services; 28 GHz has been the spectrum band most often utilized." According to the report, these trials up till now have demonstrated the network slicing in order to support the delivery of services for specific types of customers; combinations of technologies such as massive MIMO, complex beam-forming that are needed to achieve very high speeds, backhaul, cloud and also edge computing arrangements to support very low latencies. The efforts are on their way to successfully launch 5G for the greater benefit of public and make this world a better and connect place.



China Telecom to Launch 5G Trial Networks in Six Cities

China Telecom plans to trial 5G networks in six cities across the country. "We are deeply devoted to engaging in 5G standard formulation and technology trial runs while proactively exploring and researching the networking plan for the evolution from 4G," the company said. China Telecom will carry out field trials in six cities, as well as develop R&D applications and services in cooperation with partners from various industries. According to China Telecom's chairman and CEO Yan Jie, the business model for

commercial 5G service "will not be like 4G, 3G and 2G, where you have universal, comprehensive, seamless network coverage". The executive believes that LTE and next-generation technologies will certainly coexist for a long time. He also announced that China Telecom is open to cooperation with market competitors China Mobile and China Unicom on future infrastructure deployments. China Telecom expects to launch commercial 5G services in 2020. Back in May, China completed planning of a 30-site 5G

test field in Huairou district. The trial has been planned by the IMT-2020 (5G) Promotion Group. Operators participating in the IMT-2020 Promotion Group include China Mobile, China Telecom, China Unicom and Japanese telecoms operator NTT DoCoMo. Vendors which are part of the initiative include Huawei, ZTE, Ericsson, Nokia, Datang and Samsung. Chipset and test measurement vendors Qualcomm, Intel, Mediatek, Ctec, Keysight Technologies and Rohde & Schwartz are also part of the initiative.

Vodacom Hits 650Mb/s in First South Africa LAA Trial

Vodacom claimed a series of firsts for South Africa after achieving data rates of 650Mb/s during tests of LTE-Licensed Assisted Access (LAA) on its commercial network at its headquarters. Adding to the operator's bragging rights is the fact the test used a commercially available handset, a Motorola Z2 Force device, South African publication Mybroadband reported. The LAA trial is tipped as the first in the country to use four-carrier aggregation (4CA) in a live LTE network. The operator combined 10MHz of its licensed 1800MHz spectrum with three blocks of 20MHz unlicensed 5GHz spectrum, the primary band used for

the unlicensed element of LTE-LAA. Vodacom's trial also used 4x4 MIMO in the licensed portion of its spectrum, and 256 quadrature amplitude modulation (QAM) across all carriers, Mybroadband stated. LTE-LAA brings licensed 4G spectrum together with unlicensed spectrum to deliver higher data rates by opening access to additional spectrum, and is considered a key technology in operators' evolution to providing gigabit LTE speeds. LAA is configured to co-exist with other 5GHz technologies including Wi-Fi using a "listen before talk" feature to ensure fair use. The South Africa-based operator is now preparing further

LAA deployments. The company will reportedly initially target busy indoor locations including airports, shopping centers and offices, adding Vodacom will announce details of compatible handsets as the rollout progresses.



Broadband Forum Targets SD-WAN Trend with vBG Network Specification

The Broadband Forum has published the distributed virtualized Customer Premises Equipment (vCPE) standard, aiming to provide network standards for the growing SD-WAN segment for businesses. The new standard, which is part of the organization's effort to accelerate its work on Open Broadband, CloudCentral Office (CO) and SD-WAN, virtual Business Gateway (vBG) (TR-328) accelerates the delivery of interoperable business services such as enterprise class firewall and WAN optimization. Developed by the Open Networking User Group (ONUG), the Broadband Forum's SD-WAN standard is enabled by the vBG, which connects to other Broadband Forum initiatives such as CloudCO and the Network Enhanced Residential Gateway. Creating a standard for SD-WAN and other virtual business service functions makes sense, particularly as a growing base of traditional telcos, CLECs and now cable operators are rolling out virtual services. IDC estimates that worldwide SD-WAN infrastructure and services revenues will see a compound annual growth rate (CAGR) of 69.6% and reach USD8.05 billion in 2021. "As operators look to transform their networks with greater use of software and virtualization, demand for solutions, such as the vBG and CloudCO, with these associated reference implementations and API's is growing – the market is now ready for standards-based software

deliverables for Open Broadband," said Robin Mersh, CEO of Broadband Forum, in a release. Completing this specification comes at the same time as the Forum begins work on two major software projects for Open Broadband and makes significant progress on its CloudCO project. The Broadband Forum said that the vBG system enables greater efficiency in service provider networks by virtualizing some of the functionality of a Business Gateway into a flexible hosting environment, which may be located at the customer premises, in the operator's network, such as a CloudCO, or using a combination of the two approaches. By using the vBG, a service provider could simplify customer-located and customer self-provisioning through a web portal, enabling it to enhance new service delivery times, shutting down unsuccessful services and up-selling value-added services. All of this can be done without the need to deploy specialized hardware devices to remote enterprise sites. CloudCO User Managed Objects Framework project creates a cloud-based user interface framework and a user-managed oriented objects template that can be used by all providers. This aims to satisfy customer requirements such as SD-WAN, where the customer wants to have WAN resource telemetry in the user browsers, portals, and for use by their applications. It will leverage and extend the Forum's work on the vBG and will use

standardized API's such as DMTF Redfish. The second key project is Broadband Access Abstraction Open Source which addresses the requirements, architecture, design, and software required to support the virtualization of access device functionality and enabling an open and interoperable unified management interface for access equipment from different vendors. This project will be managed under the Broadband Forum's agile Open Broadband software initiative, allowing for member and non-member participation to create a fast feedback loop between the specifications and the source code reference implementation that supports them. Spearheaded by groups of major service providers and their manufacturer partners, these new software projects are the first open source initiatives undertaken by the Forum. The vBG was published and the Open Broadband projects were launched during the Broadband Forum's Q3 meeting, which took place in Helsinki Finland. Broadband Forum overall has been taking an active role in driving virtualization efforts for the last mile broadband network. In July 2016, Broadband and ON.Lab entered into a Memorandum of Understanding (MOU) to collaborate on Central Office Re-architected as Data Center (CORD), advancing virtualization into the last mile network via SDN and NFV.

Zain Achieves 70Gbps Downlink in '5G' Trials

Zain Group claims to have successfully tested '5G' technology achieving maximum throughput speeds of over 70Gbps using 2GHz spectrum. The trial took place at the Zain Innovation Center in Kuwait. Bader Al-Kharafi, Zain Vice-Chairman and Group CEO, commented: 'Today's demonstration marks a leap forward in the implementation of 5G network capability and reflects our commitment to be an innovator across our operations. This ongoing testing program will enable Zain to accelerate its mobile broadband network transformation to 5G, which will release the full potential of digitalization in society and enhance ICT industry collaboration on multiple fronts.'

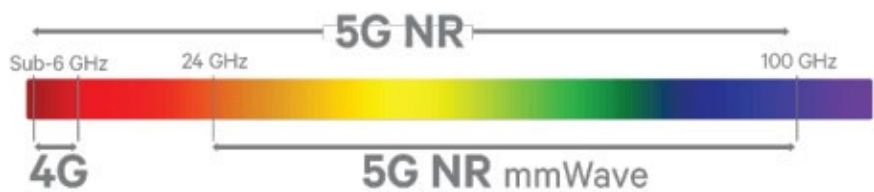


Qualcomm Shows 5G NR Prototype for mmWave Spectrum

Qualcomm announced it has a 5G New Radio prototype for mmWave spectrum ready to start tests in the second half of this year. Based on the Release-15 specifications being developed by 3GPP, the prototype system uses spectrum bands above 24 GHz, an area many operators are exploring for the first 5G services. Qualcomm already introduced a prototype for testing 5G NR in mid-band spectrum from 3.3 GHz to 5.0 GHz, which was used to demonstrate its first 5G NR connection in February. The company is testing the chips, including over-the-air trials, with infrastructure and device vendors and network operators, in order to prove the commercial viability of the technology.

Pending finalization of the 3GPP standards, the first 5G mobile services are expected to launch in 2019. The chips will ultimately be used in Qualcomm's Snapdragon X50 5G family of modems. Both the mmWave and sub-6 GHz prototypes are on display MWC Americas in San Francisco. The new prototype system employs MIMO antenna technology with adaptive analog beamforming and beam

tracking/steering techniques, which is required for robust and sustained mobile broadband communications in non-line-of-sight environments and device mobility. With support for 800 MHz bandwidth and advanced 5G NR technologies including LDPC channel coding for data channels, the prototype system is designed to support peak download speeds of up to 5 Gbps.



Nokia Expands Portfolio with 5G in Mind

Nokia is ramping up its product portfolio to help operators boost LTE coverage and increase network performance, with the view of ensuring "a smooth transition to 5G". In a statement, Nokia said the move comes in response to mobile broadband traffic growth, with operators experiencing a greater strain on their network. The Finland-based vendor is seeing demand for more capacity, higher speeds and varying network latency "to meet the needs of individuals, businesses and IoT", with the eventual evolution to 5G in mind. To that end, Nokia "defined a sustainable network evolution path", which it said will allow operators to use existing investments and maximize assets such as spectrum, enabling them

to "implement higher performance" where and when required on the network. Nokia's European rival Ericsson made a similar move yesterday, boosting its 5G platform with the addition of a new radio product and introducing a set of network services designed to "ease operators' journey from 5G preparation to actual launch". The move will enable operators to "increase peak performance and cell capacity", by leveraging carrier aggregation techniques, 4x4 MIMO and 8x4 beamforming. This will also address demand for higher output power, extend frequency band support and simplify network rollouts. In addition, the vendor announced a boost to its small cell platform, which helps boost capacity and

coverage in busy hotspots, particularly in dense urban environments. The company said its Flexi Zone Citizen Band Radio Service small cells offers operators a new option to boost coverage, particularly inside buildings. Other upgrades include backing for carrier SDN solutions, and updates to its cloud packet core. For 5G, the vendor said it was expanding its 5G Acceleration Services portfolio to work with operators "to assess the readiness of the network and design, and implement their 5G strategies and services." Indeed, rival Ericsson made similar noises yesterday, unveiling a set of new network services to help operators "on the road to 5G" through a three step process.

Intel Targets 5G Deployment "Before 2020"

Intel said its 5G Mobile Trial Platform will begin to support the non-standalone new radio (NR) standard when it becomes available later this year, describing the announcement as "an industry first". "We'll join with operators to take non-standalone NR out of the lab and begin testing it in real world situations. This heightened pace of development means we'll be able to help the industry meet ambitious targets to deploy commercial 5G services before 2020," the company said. In a blog post, Asha Keddy, GM of next generation and standards at Intel, explained 5G NR is the wireless radio standard which will be the foundation of 5G, just as LTE was for 4G. The non-standalone NR standard is due to be finalized in December, with a goal to accelerate commercial 5G trials and deployments, while the final standalone 5G NR standard is expected at the



end of 2018. Keddy said Intel's latest announcement: "is a major step forward for 5G, and the energizing and catalytic effect it will have on an array of technology and services." The platform will allow manufacturers to test interoperability with devices sooner, and let operators take the

platform into real world situations earlier. Since announcing the 5G Mobile Trial Platform in 2016, Intel said it collaborated with companies including Ericsson and Nokia, and participated in trials with operators such as AT&T, Korea Telecom, NTT Docomo and Verizon.

Vodafone Deploys NB-IoT in Ireland; Unveils Voxi in UK

Vodafone Group announced the launch of a nationwide NB-IoT network in the Republic of Ireland, adding to its European rollouts in Spain and the Netherlands. In a statement, Vodafone said it was the first operator in Ireland to launch the low-power wide-area technology – designed to interconnect millions of devices – which it said will help to transform the country into a "smart nation". Indeed, Vodafone's NB-IoT rollout in Ireland had been earmarked to go live at some point this year, after the company first launched networks in Madrid and Valencia (Spain) in January. The company then launched the technology in several other Spanish cities, along with nine cities in the Netherlands. Media reports throughout the year suggested the launches in the Netherlands and Ireland were delayed from Vodafone's initial targets. Vodafone

used its announcement to talk up the benefits of bringing NB-IoT to Ireland, stating the technology will be able to cover large areas, provide greater power efficiency and support a large number of devices in a single cell without congestion. To prepare for the rollout, Vodafone added it had upgraded existing 4G base stations to provide nationwide NB-IoT coverage, which can run alongside existing 2G, 3G and 4G networks in the country. Anne O'Leary, CEO of Vodafone Ireland, said NB-IoT will provide: "a head start to Irish businesses and consumers in their race to become truly smart and efficient, radically saving time and money". In a separate announcement, Vodafone UK unveiled a new tariff targeted at people aged up to 25 years old, which allows them to use select social and chat apps without eating into their data allowance. Dubbed

the Voxi SIM, users also have access to unlimited calling and texting, as well as roaming across Europe with no extra cost. Customers will be able to use Facebook, Facebook Messenger, Instagram, WhatsApp, Pinterest, Snapchat, Twitter and Viber without taking a hit on their data allowance. However, the operator said the apps selected may change from time to time. The company said it will also soon be adding "passes" for zero-rated data access to video and music streaming applications. Customers can sign up to Voxi without a contract, with three 30-day 4G tariffs on offer: £10 for 2GB of data; £15 for 5GB; and £20 for 15GB. Vodafone's rival 3 UK is also set to launch a new low cost mobile service, named Smarty, which offers customers discounts when they do not use their entire data allowance on a monthly basis.

China Mobile Achieves 1Gbps Speeds Using 20MHz Spectrum Block

The Shenzhen branch of China Mobile has claimed that it has achieved the 'world's first' 1Gbps cellular throughput speeds using only 20MHz of time division duplex LTE (TD-LTE) spectrum. The

technical field trial saw the mobile giant team up with domestic vendor Huawei to test a Massive multiple-input, multiple-output (MIMO) solution on commercial user equipment. China Mobile notes

that the solution can effectively resolve congestion in LTE networks and lay a solid foundation for the smooth evolution to 5G.

Huawei CEO Sees Future with 5 Major Clouds

Huawei rotating CEO Guo Ping kicked off the event by predicting the speed of digital technology development coupled with rising investment levels will drive massive consolidation and lead to a world

— becoming more and more centralized. In the future, we predict there will be five major clouds in the world. Huawei will work with our partners to build one of those five clouds." Guo said Huawei will

and Orange. He likened Huawei's cloud strategy to global airline alliances, which take passengers wherever they need to go in the world: "In future, customers will ask for Huawei Cloud and reach the entire world." Guo declined to elaborate when asked during a media briefing about the possible timing of the consolidation and the other likely remaining cloud players. The CEO emphasized Huawei's cloud business model is to generate revenue from technology and services, not data: "We do not monetize user data, but allow our partners to take advantage of our technology so they can monetize their data," he said. Huawei also announced the launch of its Enterprise Intelligence (EI) cloud services, which it will support with general and scenario-specific options. Zheng Yelai, president of Huawei's cloud business unit said: "The combination of Huawei Cloud and EI makes Huawei Cloud more intelligent and will help create greater industry value with new advancements in technology."



with just five cloud networks. "The cloud is a cornerstone of the intelligent world," he said in his keynote, adding: "Clouds around the world will begin to converge

build a cloud network based on its own public clouds as well as develop a global cloud alliance with its key telco partners, such as Deutsche Telekom, Telefonica

Huawei Sees Cloud Convergence Coming

The Chinese vendor made a series of announcements in Shanghai this week, outlining its ambitions to become a sizeable presence in the global cloud market, including a commitment to spend USD500 million over five years on the development of cloud services. Meanwhile, news outlets were buzzing with the news that Huawei aims to become one of the world's top five cloud computing companies in the coming years. That might seem like a big ask, especially given Huawei's difficulties in doing business in the U.S., for example. But taking a closer look at what the vendor's chief exec actually said, the firm's goal seems more realistic. Huawei shared details of a presentation made by rotating CEO Guo Ping at its Huawei Connect event this week, in which he noted that the global cloud space will begin to converge, in part due to the economies of scale in investment. "In

the future, we predict there will be five major clouds in the world. Huawei will work with our partners to build one of those five clouds, and we've got the technology and know-how to do it," he said. In a separate announcement, the vendor revealed that it is teaming up with Microsoft in an arrangement that will see the software giant's applications released on Huawei Cloud. The firms already work together but will bring more Microsoft enterprise-level products online under the new collaboration, including hosting and various enterprise applications as a service, Huawei said. "Facing promising prospects in the global market, both companies will jointly carry out market expansion and marketing activities on schedule," Huawei said. While working with established cloud services players will assist Huawei in its bid to move away from its roots as purely a provider of network equipment, the vendor

also recognizes the value in working with its telecoms operator partners. Representatives from companies including China Unicom, China Telecom and Softbank talked up the strengths of carriers in the cloud space at Huawei Connect, highlighting the fact that they have the capability to bring together the network and the cloud, unlike over-the-top (OTT) cloud services providers. "To succeed in B2B, carriers must first transform their business model from helping enterprise customers own assets to offering them services, and from one-off resale to delivering continuous services," said Yue Kun, VP of global marketing and solution sales at Huawei's Carrier BG. Time alone will tell how successful Huawei will be in its foray into the cloud, but the sheer volume of cloud services announcements it has made in the past few days show it is serious in its efforts.

Charter Tests 4G, Pre-5G Kit with Samsung Ahead of Mobile Launch in 2018

Samsung Electronics announced it started this summer testing wireless network technology with Charter Communications and the tests will continue until year-end. The US cable operator is testing Samsung's pre-commercial 5G system and devices for the 28 GHz (mmWave) band, as well as equipment using CBRS spectrum in the 3.5 GHz band for 4G

services. Charter is not active in the mobile market yet, but does have a MVNO agreement with Verizon and has signaled it plans to launch mobile services in 2018. Craig Cowden, Senior VP for Wireless Technology at Charter, said the company is looking at how its network could be used to power 5G services. It's also testing 4G small cells with Samsung in preparation

for the launch of mobile services next year, he said. Samsung's LTE outdoor small cell provides a compact base station that is ideal to hang on Charter's extensive cable strand asset, due to its small size and low power consumption, according to the company. The small cell provides both 4G and Wi-Fi service over multiple frequencies.

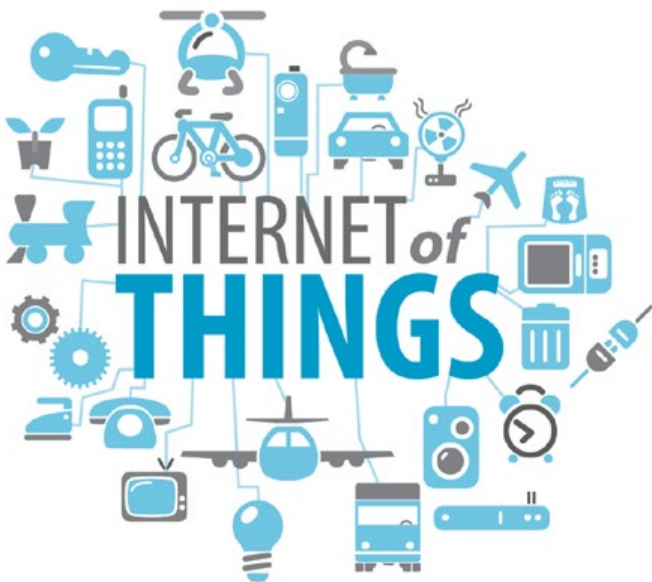
German Test Center Invests in 5G Technology

The German division of UK telecommunications firm Vodafone is equipping the Aldenhoven Testing Center (ATC) test track in the state of North Rhine-Westphalia, Germany with the latest 5G network technology to enable the ATC to test autonomous vehicle concepts such as autonomous braking. ATC says the

technology will transfer data volumes of up to ten gigabits per second with latencies of less than ten milliseconds as LTE successors. This is the technological basis for communicating cars with pedestrians and the entire traffic infrastructure, such as traffic lights. The ATC is also home to GALILEO test

environment for the future European navigation system. According to Prime Minister Armin Laschet, Digitization is a priority for the state government and it plans to invest USD8 billion (€7 billion) for digital change and develop a 5G strategy together with business and science.

IoT Presents USD1.8T Revenue Opportunity for Operators



Operators will benefit from an estimated USD1.8 trillion IoT revenue opportunity by 2026, boosted by the early deployment of commercial low power wide area (LPWA) networks in licensed spectrum, the GSMA announced. Citing fresh figures published by Machina Research in its IoT Forecast Database Research, the association said commercial launches of mobile IoT services in licensed spectrum by a dozen operators globally highlights growing momentum around the technology. Alex Sinclair, GSMA

CTO, said: "Many operators are already reaping the benefits of deploying mobile IoT and we encourage others to act now to capitalize on this clear market opportunity and further accelerate the development of the Internet of Things." Machina Research's figures show the Americas will be the top region in terms of revenue generation by 2026, accounting for USD534 billion, or around a third, of the total. In terms of individual applications, the study showed consumer demand for connected home (USD441 billion), consumer electronics (USD376 billion) and connected car technologies (USD273 billion) represent the biggest revenue opportunities. Other areas such as connected energy look set to hit USD128 billion by 2026 thanks to local governments and consumers seeking smarter ways to manage utilities. Similarly, revenues from connected cities are expected to reach USD78 billion. The GSMA said operators are enhancing their licensed cellular networks with NB-IoT and LTE-M, which together with EC-GSM are 3GPP standardized cellular IoT technologies, to scale their networks. Mobile IoT networks are expected to have 862 million active connections by 2022, or 56 per cent of all LPWA connections, and are designed to support mass-market IoT applications such as industrial asset tracking and city lighting, which require solutions that are low cost, use low data rates, require long battery life and can operate in remote locations. The GSMA is backing operators' commercial LPWA deployments in licensed spectrum through the GSMA Mobile IoT Initiative, which to-date garnered support from 74 global mobile operators, device makers and chipset, module and infrastructure companies.

Deutsche Telekom Demos Pre-Standard 5G with Huawei in Berlin

Deutsche Telekom has claimed a first in Europe with a demonstration of 5G New Radio standards on a commercial mobile network in Berlin. With partner Huawei, the German operator achieved speeds over 2 Gbps and latency of 3 ms using a 3.7 GHz spectrum link. The live test used Non-Standalone 5G NR mode. This

means that the connection is anchored in the LTE network while 5G NR carriers are used to boost data rates and reduce latency. The 3GPP is expected to finalize the standards for this method by year-end, to be included in 3GPP Release 15. Once the standards are defined, Telekom plans to trial the technology in 2018

to prepare for a wider deployment of commercial sites and the first devices available for end-users. On 12 October this year, Telekom and Huawei will hold a 5G Experience Day in Berlin to discuss the progress further.

Ericsson Expands its 5G Portfolio

Ericsson has introduced a new radio product, AIR 3246, for Massive Multiple Input Multiple Output (Massive MIMO), which is a complement to Ericsson's global 5G radio offering. AIR 3246 supports both 4G/LTE and 5G NR (New Radio) technologies and is Ericsson's first 5G NR radio for frequency division duplex (FDD). This launch will enable operators – especially in metropolitan areas – to bring 5G to subscribers using today's mid-band spectrum and boost capacity in their LTE networks. Ericsson's 5G Platform includes three previously launched time division duplex (TDD) radios capable of supporting 5G and Massive MIMO, as well as core, transport, digital support and security elements. The company has the most complete 5G portfolio in the industry, serving the needs of the first movers in 5G. Fredrik Jejdling, Head of Business Area Networks at Ericsson, says: "We now expand the 5G platform that we introduced last February. The new radio will enable operators to enhance 4G capacity for their subscribers today and be ready for 5G tomorrow, using the same hardware. We also complement

to bridge from 4G to 5G, adding intelligent capacity and boosting user experience. Stefan Pongratz, Senior Director at the Dell'Oro Group, says: "Just as carrier aggregation has been key to adding needed capacity to mobile broadband networks, Massive MIMO has the potential to be the primary capacity enabler in the next upgrade phase, providing a smooth transition towards 5G. With an expected 2021 installed base of 10M LTE macro radios in high traffic and metro areas, service providers are expected to capitalize on the improved spectral efficiency made possible with Massive MIMO." FDD Massive MIMO is part of a trial with T-Mobile US, on three sites in Baltimore, Maryland. This will be the first time that standardized Massive MIMO will be used to carry commercial LTE traffic using mid-band FDD spectrum. Neville Ray, Chief Technology Officer for T-Mobile, says: "T-Mobile's racing forward at breakneck pace with Ericsson's next-gen tech that advances LTE today and paves the way for 5G tomorrow. While the carriers scramble to prop up networks caving under the weight of unlimited, the Un-carrier's rolling out advanced technologies to massively increase network capacity and data throughput for customers. Translation – we're making America's best unlimited network even better!" Massive MIMO on FDD can increase network capacity up to three times and bring up to five times better user throughput, boosting performance for the end users. Today's global base is primarily on FDD technology and devices, which separates uplink and downlink streams on different radio frequencies. Commercially available in the second quarter 2018, AIR 3246 will be part of Ericsson Radio System. Complementing the 5G core transformation services introduced earlier this year, Ericsson is now launching a set of services helping operators on the road to 5G in three steps: Prepare, Mobilize and Launch. The services entail: Prepare for the first crucial steps based on learnings from Ericsson's trials around the world; mobilize by setting up the technical and operational resources necessary for a successful 5G launch; and launch 5G services through complete and rapid network rollout and ensure smooth operations of the services. These new 5G services use Ericsson's Engineered Intelligence approach, which builds on the best of human and machine capabilities and are supported by automation, machine learning and artificial intelligence tools. Ericsson's 5G platform comprises the 5G core, radio and transport portfolios, together with OSS, BSS, network services and security.



the products with a set of network services, simplifying the journey to 5G for our customers." People are watching, sharing and streaming video and music more than ever. As such, the demands on a sufficient speed are ever increasing. Ericsson analyzed 4G network performance statistics from metropolitan areas around the world, and found that the probability of a smart device suffering from insufficient speed can be as high as 20 percent during peak hours. Massive MIMO is a key technology

AT&T steps up 5G trials ahead of 2018 goal

AT&T will expand 5G trials to three additional US cities by the end of the year, as the US operator ramps up efforts to launch the technology by late 2018. In a statement, AT&T said it would conduct fixed wireless 5G trials in Waco, Texas; Kalamazoo, Michigan; and South Bend, Indiana later this year, following the launch of its second fixed wireless trial in Austin, Texas with local businesses. The company said it had gained "new insights" into millimeter wave (mmWave) performance and propagation since the tests in Austin, while seeing speeds of up to 1Gb/s and latency rates well under 10 milliseconds. AT&T will now use the additional trials to increase the number of participants and expand the physical footprint for the technology, with the tests reaching universities, hospitals,

churches, restaurants and other small businesses. It will also use the tests to determine whether mmWave spectrum can travel through foliage, building materials, device placement, surrounding environment, and assess whether weather impacts the signal and system in a real world environment. Similar to the trials in Texas, participants in the three additional cities will also be able to stream premium live TV via DirecTV Now, as well as access "faster broadband services, all over a 5G internet connection". AT&T added knowledge gleaned from the next 5G trials will help "speed up standards based deployment as early as late 2018". "Taking our fixed wireless 5G trials out of the lab and into the real world helps us learn important factors about mmWave and 5G," said Marachel Knight, SVP,

wireless network architecture and design at AT&T. AT&T is conducting the trials in collaboration with Ericsson, Samsung, Nokia and Intel. The US operator added it is: "aggressively deploying equipment, investing in the right mix of spectrum and technology, and laying the foundation for our evolution to 5G while 5G standards are being finalized". AT&T first said in March it was targeting late 2018 for early commercial launches of standards-based 5G deployments. Major rival Verizon is also aiming for a 2018 launch, and is currently conducting pre-commercial trials for fixed wireless 5G in 11 cities. It's important to note that these early 5G efforts are focused on fixed wireless services, not true mobile services (which won't be available until after official 3GPP specs are defined for 5G).

Verizon, Ericsson, Qualcomm, Federated Wireless Stage 3.5GHz CA Demo in Texas



Claiming a 'US industry first', Verizon Wireless, Ericsson, Qualcomm Technologies and Federated Wireless have announced the inaugural use of Citizens Broadband Radio Service (CBRS) Band 48 (3550MHz-3700MHz) spectrum in an LTE-Advanced (LTE-A) carrier aggregation (CA) demonstration. The demo, which took place at an Ericsson lab in Plano, Texas, utilized 2x20MHz LTE carrier channels in the CBRS band, and employed 256 QAM modulation in the downlink. To date, the CBRS band has been primarily used by the federal government for radar systems. In April 2015 the Federal Communications Commission (FCC) voted to add another 100MHz of spectrum in the 3.5GHz band to the 50MHz in that range that was already available for commercial use.

MTN Completes Lab Trial of Cat-M1 in South Africa

Ericsson and Qualcomm Technologies have successfully completed a lab trial for Cat-M1 with MTN South Africa. This is the first Cat-M1 test implementation of its kind on the African continent and represents the first stage of a wider scope of test activity. The Cat-M1 trial uses IoT devices integrated with a Qualcomm MDM9206 global multimode LTE IoT

modem and the Ericsson Massive IoT Radio Access Network product. The successful test will prepare MTN for a new wave of IoT services. MTN South Africa will continue testing devices and applications for Cat-M1 in its Test Bed lab. Cellular IoT technologies, such as Cat-M1 and their evolution into 5G. Cat-M1 enables advanced IoT applications by

providing hundreds of kilobits per second in throughput, mobility, and VoLTE support. Examples of typical Cat-M1 IoT applications include smart watches or fitness bands with integrated voice communications services, pet tracking devices, point of sale terminals, vending machines and vehicle tracking with emergency calling support.

Turkcell Plans NarrowBand IoT Network Across Turkey

Turkcell continuing to invest in LTE - A infrastructure, became the first operator in Turkey to support NB IOT (NarrowBand-Internet of Things) required for new-gen innovative applications on LTE - A networks. NarrowBand technology is an upper segment of IoT (Internet of Things) which allows things to communicate over the internet like the people. With the NarrowBand IoT technology, sensors in smart cities will communicate the measuring results to a platform with short delay times provided by LTE - A. Data collected by the sensors and communicated to cloud via LTE - A network will be turned into meaningful data which add to the city environment through big data analyses. We support our network with the latest technologies and continue to be a technology leader" Gediz Sezgin, Turkcell's Executive Vice President Network Technologies, says "While our living spaces become more and more "connected" every day, Turkcell's mobile infrastructure is now ready for a world where billions of devices will connect. We became the first operator in Turkey to support NB IOT (NarrowBand-Internet of Things) required for new-gen innovative applications. 5G's essential 'NarrowBand Internet of Things' is in Turkey for the first time by Turkcell. So we open the door to 5G. NarrowBand - Internet of Things will extend smart city applications and many

innovative solutions will be developed. It is expected that the economy created by this technology as of 2025 will exceed USD 3 trillion. Offering a technology which will create such a volume requires a very strong LTE - A infrastructure. We offer the first and the best NarrowBand - Internet of Things services in Turkey thanks to the advantages and broad coverage of the frequencies. As Turkcell, we will continue to research and invest to introduce the most contemporary technologies." Thanks to this new technology made possible by Turkcell's LTE - A network, machines communicate fast and effectively and makes lives easier and smarter in cities. As an example this technology can be used in large cities where parking space is a problem, where sensors which communicate fast allow

people to reserve parking spaces in advance and save time and fuel. Sensors installed on garbage containers allow the garbage to be collected on time based on fill rate. Smart sensors make remote monitoring of water and gas levels easier. On the other hand, this technology brings a new vision to agriculture and livestock industries. Automatic irrigation of cultivated areas based on measurement of humidity improve the crop yield and tracking applications for livestock are made more effective and easier. This new technology contributes to the organizations by changing their way of doing business and facilitates tracking of human health. This helps tracking health and sport activities through body sensors and ensures that the necessary interventions in a timely manner.



KDDI, Ericsson to Trial 5G at 4.5GHz

KDDI and Ericsson have signed an agreement to work together on 5G proof of concept trials in several Japanese cities. The vendor's press release confirms that the tests will focus on the 4.5GHz band – a key candidate frequency for 5G in Japan – with the trials scheduled for completion

by March 2018. The agreement is an extension of the previously announced 5G R&D collaboration between the two companies, which involves the development of a common understanding of 5G use cases, requirements and deployment scenarios, as well as

evaluating the performance of potential key 5G components and examining how they can be applied. The scope of the trial also covers interworking between LTE and 5G using the 4.5GHz and 28GHz frequency bands.

REGULATORY NEWS

Ofcom Proposes New Rules

UK regulator Ofcom has proposed a number of changes to its general rules for service providers aimed at alleviating problems with nuisance calls, complaints handling and billing problems. If approved, the changes would take effect from 01 October 2018. They are open for comment in a public consultation until November 14. The proposals include banning providers from charging for caller display facilities, which can help people to screen nuisance calls. Providers would also be required to identify and block calls with an invalid or non-drillable number. Ofcom also proposed a new requirement for all communications providers to have clear, effective policies and procedures for identifying vulnerable

customers – such as people with learning or communication difficulties or those suffering physical or mental illness or bereavement – to ensure they are treated fairly and appropriately. In addition, providers would have to offer disabled users access to priority fault repair, third-party bill management and accessible bills. These measures previously applied only to landline and mobile services for disabled customers, and will now extend to broadband. The regulator also called for better complaints handling rules, to ensure that complaints are dealt with promptly and effectively, and consumers are kept informed about the progress of their complaint, with faster access to dispute resolution services in cases

where they reach deadlock with their provider. Furthermore, broadband and mobile providers would be required to have fair and transparent debt-collection and disconnection practices in place. This requirement already applies to landline providers. Ofcom also wants to extend current rules on billing accuracy for voice services to include broadband. Other issues covered in the consultation include increased powers for Ofcom to withdraw phone numbers found to be used for nuisance calls or fraud and draft guidance on how providers should handle customer requests to cancel their contracts.

Beeline, MTS Make 5G Frequency Applications

Russian cellcos Mobile TeleSystems (MTS) and Beeline have submitted 5G frequency applications for network testing in areas of Moscow and other regions. The news follows previous 5G test spectrum allocations to Russian rival MegaFon. Beeline made applications

to the State Commission for Radio Frequencies (SCRF) for experimental frequency permits covering certain areas within: Moscow city and Moscow region, St. Petersburg and the surrounding Leningrad region, Voronezh, Samara, Tatarstan, Krasnodar and Stavropol. MTS

has made similar applications to the SCRF for experimental 5G networks in the 27.5GHz-28.35GHz frequency band in Moscow, St. Petersburg, Kazan, Rostov-on-Don and Sochi. Additionally, MTS is reported to have applied for 850MHz '5G' testing permission back in June.

EE Launches its Legal Appeal over 5G Spectrum Auction Plans

Following in the footsteps of rival Three UK, British mobile network operator (MNO) and BT subsidiary EE has officially launched its own legal challenge against regulator Ofcom's proposed auction of spectrum in the 2.3GHz and 3.4GHz bands. According to The Register, EE is seeking a change in the proposed rules for the sale which would limit companies to holding more than 37% of usable spectrum by 2020. Between them, BT and EE hold 42% of the UK's immediately usable frequencies, with Three UK

holding 15%, while the nation's other MNOs Vodafone UK and O2 UK hold 29% and 14%, respectively. While it is claimed that EE has accepted it will not participate in the auction for spectrum in the 2.3GHz band, which will be used for 4G services, it is said to be pressing for the removal of spectrum holding limits related to the 5G-suitable 3.4GHz band. It is understood that the legal challenges lodged by both EE and Three will be heard concurrently with a view to minimizing the anticipated delays to the spectrum auction, which

had initially been envisaged to take place this year. Commenting on the matter, Ofcom repeated its statement made in the wake of Three's legal appeal, saying: 'It is very regrettable that the auction will now be delayed by this litigation, which will harm consumers, businesses and ultimately the UK economy. We hope this matter can be resolved promptly, so that we can release the spectrum as soon as possible.'

Pakistan Regulator Urges Government to Centralize Telecom Policy Interventions

Pakistan Telecommunication Authority (PTA) proposed the government to set up a centralized system to ensure uniformity in telecom policy interventions across the country, the regulator's chairman said. "We asked the government to establish a central body to implement uniform telecom policies," Ismail Shah, Chairman of Pakistan Telecommunication Authority said, speaking at a 17th ITCN Asia exhibition and conference. "Prime Minister should head the committee much like other countries." The three-day conference started from Tuesday. Shah said the provincial governments are also responsible for formulating and implementation of policies after the 18th amendment into the constitution. He further said government officials need to be sensitized to the benefits of digital economy in order to promote policy interventions for growth of information and communication technology sector. Chairman PTA said the policymakers need education on importance of telecommunication services for the society and economy. "There is a stereotype about smartphone

and its usage. (The new technologies) are considered luxury," he said. PTA Chief, on hurdles in the way of policy interventions, said policymakers feel frightened to introduce innovative framework as they can be questioned by National Accountability Bureau or Federal Investigation Agency. Irfan Wahab Khan, Chief Executive Officer (CEO) at Telenor Pakistan said at least Rs100 billion worth of universal service fund (USF), established by the ministry of information technology to promote telecommunication services in remote areas remains unutilized. Khan said the utilization of funds can push up internet connectivity across underserved and unserved areas in the country. Government established USF in 2006. It has completed broadband for sustainable development projects in un-served areas. The fund consists of contributions (1.5 percent of adjusted revenues) by the telecom operators with no government funding. CEO Telenor said the fund could also help in promoting 4G technology. Currently, below 10 percent of populations are connected to 4G devices as against the

broadband subscribers of 45 million, including mobile internet users. On digital payment, he said the central bank should come forward to facilitate gateways, which enable cross-transactions from various telecom operators. Currently, cash on delivery transactions dominate online shopping due to public mistrust and regulatory issues, he added. Easypaisa, which is the online financial service of Telenor Pakistan, is the largest mobile financial service with over 90,000 Easypaisa shops in more than 800 cities serving over 21 million users on monthly basis. Telenor Pakistan, a subsidiary of Norwegian Telenor Group, has a subscriber base of more than 40 million making it the second largest mobile operator in the country after Mobilink. Telenor Pakistan launched its operations in 2005 and has so far invested over USD3.5 billion in the country. In 2014, the company acquired 3G license for USD147.5 million and obtained 4G/long-term evolution spectrum last year for USD395 million.

Bangladesh Embraces Digital Transformation in Health Sector

A Microsoft Bangladesh Biz Spark partner, Praava is building a better patient experience enabled by technology. It is also reintroducing the concept of family medicine, particularly the family doctor, to Bangladesh. The inauguration ceremony started at 10:30am. It was led by Sylvana Q Sinha, Founder, Managing Director, & CEO of Praava and was honored by the presence of Zunaid Ahmed Palak MP, Minister of State for Information and Communication Technology, according to a press release from Praava Health. Also present were Sonia Bashir Kabir, the Managing Director of Microsoft Bangladesh; Dr Jabil Rahman Sinha, Deputy Managing Director, The Acme Laboratories; Wendy Werner, Country Manager, Bangladesh, Bhutan, & Nepal, International Finance Corporation; and trending pioneer and former Twitter Chief Scientist Dr Abdur Chowdhury. "Proper

health care is our basic human right. Every patient deserves to be treated with care and respect. My own experience compelled me to imagine family health centers where professionalism, expertise, and trust between physician and patient are not luxuries of the lucky few, but rights and realities for every citizen," Sinha said in the program. She added, "The future of health care will leverage artificial intelligence, smart design, and biotechnology, and Praava is planning to use technology to enable a better patient experience and improve access and outcomes for Bangladeshis. Technology can never replace your doctor, but it can help you and your care team to better manage your health." "Bangladesh is embracing a digital transformation thanks to Praava and other entrepreneurs who are introducing technology to the health sector. Bangladesh is also moving

forward in inclusion, and I am happy to see Praava setting a good example with so many women in senior leadership positions. I am particularly excited about Praava's initiative to connect doctors from the US and abroad to Bangladesh," Zunaid Ahmed Palak said. The Banani Praava Family Health Centre is the first in a network of such facilities which will offer consultations with family doctors and a full range of diagnostic services including lab and imaging, says the release. The company is introducing Bangladesh's first molecular cancer diagnostics (Polymerase Chain Reaction, or PCR) lab in breast, cervical, colorectal, and lung cancers, as well as the country's first fully integrated Hospital Information System (HIS), including Electronic Health Records (EHR) and featuring a patient portal available on the internet and as a phone app.

NBTC Aims for Spectra Switch Rules to be in Place by Year's End

The National Broadcasting and Telecommunications Commission (NBTC) regulations to reclaim telecom and broadcasting spectra are expected to take effect by the end of this year, the regulator's Secretary General Takorn Tantasith said. He added that the watchdog was expected to air the draft regulations in a public hearing in November. Among the spectrum bands the NBTC will consider first for any reclamations are the TOT's 2.3GHz and



MCOT's 2.6GHz. The NBTC held the first focus group hearing on the draft of the country's first regulations, methods, and conditions of spectrum reclamation. The

NBTC targets to take back the whole or part of the idle spectra as well as the spectra that have not been maximally used from the spectrum holders before their spectrum valid periods expire. The previous NBTC law and the existing NBTC law empower the NBTC to reclaim such spectra for reallocation and the watchdog will compensate the affected spectrum holders. According to the draft, the NBTC will study which spectra and how much of the bandwidth it will reclaim and then inform the holders of such spectra. If the spectrum holders decline to hand over the targeted spectra, they can bring the case to court. The NBTC will hire at least three state education institutes to evaluate the targeted spectra and work out the compensation value. The NBTC can compensate the affected spectrum holders via each of the three optional methods or a mixture of them, Takorn said. The methods include allocating other spectra for them to use, paying for their cost of deploying the new spectrum equipment after the spectrum reclamation, or paying them for the loss of business opportunities after the reclamation. Many attendees of the

focus group yesterday suggested that the NBTC should consider compensating the customers of the affected spectrum holders or their contractual partners, too, after the reclamation as their customers and partners would also feel the impact of the NBTC's decisions. Some asked for the NBTC to give a clearer definition of what it means by optimal use of the spectra. The NBTC also held the first public hearing on the draft of the new version of regulations governing mergers of telecommunications businesses. The draft aims to create a more favorable merger environment in the sector. The existing regulations that govern mergers and cross shareholdings in the sector were drawn up by the now-defunct National Telecommunications Commission and have been in effect since May 2010. In the seven years since, the NBTC and the telecom license holders found that it took too much time to obtain a merger permit from the NBTC and the related processes of requesting the permit are costly. These experiences prompted the NBTC to draft the new regulations aimed at simplifying the process.

Indotel Considering Orange-Tricom Merger Application

The Dominican Telecommunications Institute (Instituto Dominicano de las Telecomunicaciones, Indotel) has confirmed that it is reviewing a merger application submitted by Netherlands-based Altice Group to formally combine its two separate Dominican Republic telecoms businesses, Orange Dominicana and Tricom. As per Altice's request, full-service telco Tricom will have its authorizations, assets and liabilities

absorbed by mobile operator Orange. Going forward, the watchdog intends to assess whether or not the tie-up would represent 'an economic concentration' within the Dominican market, and also judge whether or not 'corrective measures' will need to be implemented in terms of interconnection agreements with other players. In November 2013 the Altice Caribbean holding company signed an agreement to acquire Tricom

from Hispaniola Telecom, a company controlled by Amzak Capital Management and Inversiones Bahia, for USD400 million. Later that month, Altice agreed to buy Orange Dominicana from Paris-based Orange Group for EUR1.1 billion (USD1.435 billion). Despite suggestions that the two businesses would be merged with immediate effect, they have continued to trade separately during the ensuing four-year period.

SPRK Consults on Spectrum Sale

Latvian telecoms watchdog the Public Utilities Commission (SPRK) has published a consultation paper on the allocation of spectrum in the 3400MHz-3450MHz and 3650MHz-3700MHz

bands. The regulator is considering selling one or two licenses in the aforementioned bands, with reserve prices currently set at EUR250,000 (USD300,455). The licenses will be valid from January 1, 2019, with a

duration of ten years. Interested parties have until 9 October 2017 to submit comments on the proposals.

EC Proposes Strengthening Enisa to Create European Cybersecurity Agency

European Commission President Jean-Claude Juncker has proposed strengthening the EU's network security agency Enisa to create a new 'European Cybersecurity Agency', in order to better coordinate the EU response to cybersecurity threats. The announcement in his 'State of the Union' address was accompanied by a proposal for a new regulation called the 'Cybersecurity Act'. Juncker said greater defense is needed, as "cyber-attacks can be more dangerous to the stability of democracies and economies than guns and tanks". This was seconded by Digital Single Market commissioner Andrus Ansip, who said "nobody can address major cyber threats alone". In addition to strengthening Enisa to act as an EU center for cybersecurity coordination and expertise, the EC proposed an EU-wide certification of products and services for cybersecurity to ensure high standards and raise user confidence for instance in IoT devices, and more efforts to promote "cyber-hygiene", in order to minimize incidents caused by human error. A network of excellence centers and a European Cybersecurity Research and Competence Centre are also planned. Key to Enisa's new tasks would be implementing the Network and Information Security Directive (NIS), the



Jean-Claude Juncker, president of the European Commission

EU's first major piece of cybersecurity legislation that was passed last year. The agency would also take responsibility for the security certification of new products brought on the EU market and act as coordinator in the event of a multi-country cybersecurity crisis. Started in 2003 and based in Greece, Enisa already works as an information center on network security policy, helping member states share best practices. Its mandate was extended in 2013 for another seven years,

and the agency received additional tasks with the NIS directive. Earlier this year the Commission started a review of the agency's strategy, and the resulting new proposal is to make Enisa a permanent body with increased resources to support the cybersecurity coordination. The proposals were welcomed by Enisa in a statement. Ansip said more details on the plans will be provided at an EC presentation planned for September 19.

NCA Permits Telcos to Deploy 3G on 2G Spectrum

The National Communication Authority has authorized all telcos in the country to use their 900MHz 2G spectrum to deploy 3G technology, particularly in the unserved and underserved areas. The 900MHz spectrum band was originally licensed for telcos specifically for 2G services across the country but they were later given 3G licenses specifically on 2100MHz spectrum band. But over the years, the telcos have deployed the 900MHz in more areas across the country than they have deployed the 2100MHz because the latter is more expensive to deploy. It is estimated that aggregately, the telcos have deployed just about 30 per cent of their 3G capacities mainly up to the district capitals as required by

their licensing condition and have not gone beyond. As a result, most areas outside district capitals do not have 3G services and therefore have access to only voice and SMS services but no data. By this authorization, therefore, the NCA is allowing the telcos to deploy Universal Mobile Telecommunication Systems (UMTS), a 3G technology on the 900MHz spectrum, which is already deployed beyond district capitals and offer 3G services to the unserved and underserved area. The NCA is giving this authorization for free, while the telcos still hold on to their 2100MHz 3G spectrum as spare. The free period, however, lasts till 2019 when their original 2G licenses would have expired. When that time comes, telcos would

either have to go for a license renewal at a charge or the country would have been ready for the proposed unified license, where one license covers 2G to 4G or even higher. NCA said on its website that it expects the new authorization to enable the telcos to deploy 3G in the unserved and underserved areas and thereby give more consumers 3G access across the country. This move is expected to give consumers choice, in that once all telcos are able to deploy 3G on their existing 900MHz spectrum, no telco would have an advantage over the other so people in the remote areas would be able to swap networks when they want.

Three UK Confirms Filing of Legal Challenge Related to Ofcom's Spectrum Auction Plans

British mobile network operator (MNO) Three UK has followed through with its previously announced plans and formally filed a challenge with the UK courts against regulator Ofcom's proposed auction of spectrum in the 2.3GHz and 3.4GHz bands, the Financial Times reports. With the move beginning a judicial review that will last three months, a Three UK spokesperson was cited as saying: 'We confirm that we have filed a judicial review before the UK courts in relation to the competition measures that will apply in the upcoming spectrum

auction ... It is absolutely vital that the regulator gets this auction right for the long term benefit of all consumers.' With Three reportedly expecting a decision on the matter by early 2018, it has argued the legal challenge should not interfere with a commercial launch of 5G services in the UK. Meanwhile, another British MNO – EE – has yet to file its own request for a judicial review of the matter, though the Financial Times notes it still has a number of weeks to do so. For its part, Vodafone UK has suggested that the legal challenges will 'unnecessarily delay' the

spectrum sale process, and said: 'This is not in the interest of consumers and will undermine the UK's efforts to be a leading digital economy.' In its response to the latest development, a spokesperson for regulator Ofcom said: 'It is very regrettable that the auction will now be delayed by this litigation, which will harm consumers, businesses and ultimately the UK economy. It is now crucial that companies don't drag their feet, so the case can be heard as soon as possible.'

Australia Announces 3.4 GHz Auction for 5G

The latest regulator to announce plans for a spectrum auction geared to 5G is Australia's ACMA, which aims to hold a sale in multiple bands late this year. This will include 1.8 GHz spectrum, which will be subject to caps, but the 5G-oriented

midband airwaves in 3.4 GHz will have no caps. Australia, like other countries such as China, expect the spectrum between 3.4 GHz and 3.8 GHz (or up to 4.2 GHz in some cases) to be prime candidates for 5G deployments, supporting high capacity to

complement sub-1 GHz coverage bands, but without the technical challenges of millimeter wave bands. Acting on the advice of the Competition and Consumer Commission, the government has decided not to cap 3.4 GHz...

Cabinet Approves BSNL Tower Spin-Off

Plans to spin off the tower infrastructure assets of state-owned telecom provider Bharat Sanchar Nigam Limited (BSNL) into a new company have been approved by the cabinet, the Economic Times reports, citing a government notice. BSNL will retain full ownership of the new subsidiary, which will control around 66,000 mobile towers. Explaining the decision, the government's statement noted: 'An independent, dedicated tower company of BSNL with a focused approach will lead to increasing of external tenancies and consequentially higher revenue for the new company.'



Vodafone Seeking 4G License, NCA Reluctant to Drop Spectrum Price

Ghana's second largest cellco by subscribers, Vodafone is in 'constant talks' with telecoms regulator the National Communications Authority (NCA) over its application for a 4G license, according to GhanaWeb. Vodafone believes that the price of USD67.5 million

set by the regulator for a 4G LTE license is too high, however, Communications Minister Ursula Owusu said in July: 'there is no way we will go below that amount now.' Vodafone's CEO, Yolanda Cuba commented: 'If it was affordable, to be honest, we would have acquired it.'

Cuba went on to say that Vodafone was in constant discussions with the NCA to try and reach an agreement but would not reveal details of these discussions until an outcome had been reached.

Senate Committee Recommends Adopting NBN-Related Tax Proposal

Australia's Senate Environment and Communications Legislation Committee has recommended that the government pass proposed legislation that would introduce a tax to help subsidize rural National Broadband Network (NBN) connections, according to ZDNet Australia. In December 2016 the state announced plans to create a new Regional Broadband Scheme (RBS) to raise approximately AUD40 million (USD32 million) per annum to help pay for the expansion of the NBN in rural

areas, via a new levy on non-NBN-based telecommunications companies. If approved, the scheme would see broadband network operators outside of the NBN program pay AUD7.30 for each fixed connection in the first year, rising to AUD8.00 per connection by 2022. Exemptions would be granted for telcos with fewer than 2,000 customers as well as operators such as major providers Telstra and Optus, which are transitioning their networks to the NBN, but the levy could hit firms such as TPG and

Opticomm. Now, in its report to Parliament on the matter, the Committee was cited as saying: 'The committee considers it is critically important to establish a scheme for adequately and transparency funding the much-needed infrastructure for rural and regional Australia that cannot be provided on a commercial basis. Of the various options available for funding these non-commercial services, the proposed RBS most clearly fulfils this objective.'

TRAI Mulls Policy for M2M Communications

Indian telecom regulator, TRAI has come out with proposals on machine-to-machine communications that include a new kind of permit for companies keen on providing services for this new form of technology. TRAI has suggested to the Department of Telecom (DoT) that all existing operators should be allowed to provide connectivity for machine-to-machine services, reported a national news agency. The machine-to-machine (M2M) communication is expected to be the norm among households to control consumer durables like TV, washing machine, air conditioner and the like with

the help of mobile phones from a remote location. Under this, the devices will be fitted with SIM or universal integrated circuit card (eUICC). Meanwhile, the BSE Telecom index was trading at 1,383.92 level, down by 4.07 points or 0.29% as at 1132 hours on Wednesday, on the BSE.

Idea Cellular was down 2.30 at Rs 82.75 per share, ITI was down 0.48% at Rs 103.45 per share, Bharti Airtel was down 0.69% at Rs 403.70 per share, Reliance Communications was down 0.22% at Rs 22.55 per share.



MNP Policies May Alter Soon

The telecom regulator has recommended making modifications to the MNP (Mobile Number Portability) rules, and advised enhanced sharing of information to lower the number of requests for porting that are discarded. "Decline of requests for porting generates frustration and dissatisfaction among users. It is noticed that reasons of rejection reliant on UPC (Unique Porting Code)—invalid/expired UPC and namely UPC mismatch—attribute almost 40% of the entire rejection of requests for porting," TRAI (Telecom Regulatory Authority of India) claimed in paper posted this week. The decline may be owing to incorrect submission of the code by the latent user at the PoS (point-of-sale) of RO (recipient

operator), or due to the carrier to which the subscriber needs to move to, or by entrance of wrong code data with the RO. Number portability, obtainable all over India from early 2011, is a method which permits a user to keep hold of the mobile phone number while altering the operators. Through an alteration to MNP policies, TRAI has planned a system below which a UPC must be shared with the MCH (MNP clearing house). UPC is created by the DO (donor operator) or telecom company from which a user needs to port out. MNP clearing house technically applies the mechanism. The MCH, in return, can be reached by the carrier to which the subscriber needs to modify in order to verify the validity and

correctness of the code. "Currently, there is no method accessible with the RO to confirm the status and content of expiry date of UPC. This (TRAI's suggestion) will lead in lowering of requests rejection for porting and will elevate user satisfaction," TRAI claimed to the media. The draft alteration also recommends making a rule to send applicable data, such as amount outstanding, date of the bill, date of the notice, last date of payment, and period of notice given to the user by the DO, via the MCH. The regulator has looked for comments from shareholders by next week on the draft regulation. The suggestions on MNP regulations have been looked close owing to the rising competition in the market.

More QoS Problems for Mauritania's Cellcos

Mauritania's three cellular network operators, Mauritel, Mattel and Chinguitel, have once again been warned by the country's telecoms watchdog about poor quality of service (QoS). The Autorite de Regulation (ARE) has pulled the operators up over poor voice and data QoS for the third time this year. Following testing carried out between July 10 to August

12, Mauritel has been found to be offering poor voice service quality in 17 locations and poor data services in four locations, while Mattel has been found to be lacking at ten locations for voice quality and three sites for data services. Chinguitel was criticised for its poor voice QoS at six localities and poor data service at one location. The cellcos have been given one

month to correct the problems or they will face fines. In June this year the ARE fined the three mobile operators a total of MRO451 million (USD1.2 million) for continued QoS issues, with Mauritel ordered to pay MRO216 million, Mattel MRO118 million and Chinguitel MRO117 million.

EU Following Vivendi/TIM Situation 'Very Closely' – Vestager

European antitrust authorities are watching Vivendi's actions at TIM with a view to safeguarding competition in the Italian telecoms market, it emerged at the weekend. "Naturally we are following the situation very closely," Italian news agency ANSA quoted European competition commissioner Margrethe Vestager as saying on the sidelines of the Ambrosetti Forum in Cernobbio. Vestager was referring to the current controversy in Italy surrounding Vivendi's role as controlling shareholder of Telecom Italia, which now goes by the TIM moniker. The government is investigating whether the French firm controls TIM, and if so, whether it should have informed the state of a change in ownership at the telco. "The important thing for us is competition in the Italian market," Vestager said, highlighting the importance of choice for Italian consumers and sustainable prices

for both operators and customers. "What we look at when we make this kind of appraisal is who exercises control [and] if it is a de facto merger even if it does not seem so, because this is about how competition in the market works," she said. Vivendi has repeatedly denied exercising control over TIM, despite being the telco's largest shareholder, with a 24% stake, and having replaced CEO Flavio Cattaneo with its own chief executive Arnaud de Puyfontaine just over a month ago. In its first half results announcement late last week Vivendi again made that same assertion, but indicated that it intends to push on with plans to bring together the activities of the two businesses. "Vivendi confirmed that it considers that it does not exercise any de facto control of Telecom Italia," adding that its "interest in Telecom Italia is not sufficient to allow it to exercise, on a stable basis, a dominant

influence at Telecom Italia shareholders' meetings." It also said it does not at present have the power to govern TIM's financial and operating policies, according to accounting standard IFRS 10. However, "Vivendi, as the largest shareholder of the Italian operator, intends to promote a long-term strategy of developing the convergence between telecommunications and content," the company said. Vivendi posted revenues of €5.44 billion in the first half of 2017, up 7.8% year-on-year, buoyed by the strength of its Universal Music business, which reported 15.2% growth and accounted for 49% of turnover. Sizeable growth at Universal Music also boosted earnings, but was unable to offset weaknesses elsewhere in the business. Vivendi's group EBITDA fell by 9.2% to €352 million.

South Korean Cellcos Drop Plans for Lawsuit Related to Increased Mobile Fee Discounts

South Korea's three mobile network operators (MNOs) – SK Telecom, KT Corp and LG Uplus – have reportedly decided against taking legal action over government plans to increase mobile discount fees, according to the Korea Herald. As previously reported by CommsUpdate, earlier this month the trio all received official documentation from the Ministry of Science and ICT

(MSIT) which confirmed the regulator's intention to implement a 25% discount rate for those new subscribers that take up a one-year or two-year contract from mid-September 2017 and do not opt for a handset subsidy; currently the reduction level for new subscribers is set at 20%. With the increased discount rate set to apply from 15 September, the MSIT has now confirmed that the nation's MNOs

have acquiesced to the regulator's plans, with a statement by the ministry noting: 'The three mobile operators have notified the [MSIT] that they would accept the raising of the discount rates to 25%.' It has been suggested that the state's decision will see around 19 million subscribers benefit from a combined KRW1 trillion (US\$980 million) in discounts every year going forward.

TRAI Starts Consultation Process for Next Round of Spectrum Auction

Telecom Regulatory Authority of India (TRAI) on Monday set into motion consultation for the next round of spectrum auction across nine bands that include 60% of unsold radiowaves of the last bidding and 275 megahertz of two new bands meant for 5G services. While the department of telecom (DoT) has proposed to hold auction in 2017, the telecom regulator has sought opinion on when the next round of auction should be held and whether it should be done in a "phased manner". "The government is planning to auction the right to use of spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands in the next auction to be held in 2017," Trai said in the consultation paper. "DoT has requested the authority

to provide its recommendations on applicable reserve price, quantum of spectrum to be auctioned and associated conditions for auction of spectrum in these bands for all service areas." In the proposed spectrum auction, DoT plans to sell about 60% of total spectrum that remained unsold in the last auction. In addition, DoT has included two more bands—3300-3400 MHz and 3400-3600 MHz—it plans to allocate for mobile services through the auction. "DoT has proposed to include 100 MHz in all the 22 LSAs (licenced telecom circles) in the 3300-3400 MHz band for the forthcoming auction for access services," the paper said. Trai said that out of the 200 MHz band available in 3400 -3600 Mhz band, 25 MHz spectrum (3400-3425 MHz) is identified for ISRO's use in Indian Regional

Navigation Satellite System (IRNSS). "The remaining 175 MHz (3425-3600 MHz) spectrum is available for access services and the same can be put in the forthcoming auction," the regulator said. During the last auction, the government had put airwaves worth Rs 5.66 lakh crore for sale. In the five-day auction, seven telecom companies made commitments of Rs65,789 crore for buying 964.80 MHz of spectrum in various frequency bands. Even at the end of the auction, nearly 60% of the spectrum remained unsold (in all, 2,354.55 MHz was placed on the block) and spectrum worth Rs4 lakh crore in 700 MHz band found no takers. Last date for comments on this paper is September 25 and that of counter-comments is October 3, 2017.

Altice Appeals against Viva's 'Irregular Spectrum Use'

The Dominican Republic Institute of Telecommunications (Indotel) has confirmed that it has accepted an appeal filed by Altice Group – which owns local operators Orange and Tricom – seeking an 'administrative sanction' against smaller rival Viva Dominica for alleged 'irregular use of spectrum'. Indotel president Jose Del Castillo Savinon noted that the process will be carried out in accordance with the terms of the General Telecommunications Law No.

153-98, adding that the watchdog's board of directors has a 60-day window within which to implement sanctions. According to local news site Acento, the dispute relates to the use of 4G LTE terminology in Viva's marketing material in recent months, with Altice questioning the legitimacy of the smaller operator's claims. The main bone of contention is the fact that Viva did not participate in Indotel's 2014 spectrum auction, in which Orange and market leader Claro paid a

total of DOP3 billion (USD70.5 million) for 1700MHz/2100MHz (Claro) and 900MHz (Orange) frequencies. Last month, Viva selected Ericsson to take charge of its 4X4 multiple-input, multiple-output (4x4x MIMO) 4G upgrade in the Dominican Republic. Viva claims that the 4x4 MIMO deployment will increase spectral efficiency by delivering up to twice the downlink data rate without the need for additional spectrum.

A SNAPSHOT OF REGULATORY ACTIVITIES IN SAMENA REGION



Bahrain

The Telecommunications Regulatory Authority's (TRA) Board of Directors held their second meeting this year, at TRA's Headquarters. During the meeting, Board members discussed key issues related to the telecommunications sector in; praising TRA's outstanding efforts in the development and growth of the telecommunications sector in the Kingdom of Bahrain, in particular the significant efforts made by TRA contributing to the progress of the projects related to the Fourth National Telecommunications Plan (NTP4) which is a step towards

achieving the vision and policy of Bahrain's leadership. The projects are considered important to address consumers' concerns which play a substantial role in promoting consumers' welfare. Members of the Board expressed their keen support and satisfaction with the progress of the telecommunications sector in the Kingdom so far, emphasizing on maintaining such progress and achievements for further developments in the future.

(September 10, 2017) tra.org.bh/en



Bangladesh

Bangladesh will move ahead with a long-awaited 4G spectrum auction, with the telecoms regulator planning to hold the sale across three bands by December. The government approved the guidelines for the auction, which was previously planned for June and will be open to the country's four existing mobile players along with a new participant. The Bangladesh Telecommunication Regulatory Commission (BTRC) is working to finalize a date for the auction. The regulator set a reserve price of USD30 million for each megahertz of spectrum in the 900MHz and 1.8GHz bands, and USD27 million for each megahertz in the 2.1GHz band. Winning bidders are required to roll out service to district headquarters within 18 months of receiving a license and nationwide within three years. BTRC holds 15MHz of unsold spectrum in the 2.1GHz band, 10.6MHz in the 1.8GHz band and some spectrum in the 900MHz band, which came from Airtel after its merger with Robi. Mobile operators use the 2.1GHz band for 3G services and the other two bands for 2G services. BTRC approved technology neutrality for all existing spectrum in the country. The spectrum conversion fee for technology neutrality in the existing 900MHz and 1.8GHz bands will be reduced to USD7.5 million per megahertz from USD10 million, while the revenue sharing percentage for 4G services will be cut to 5.5 per cent from 15 per cent. The BTRC also slashed both the licensing acquisition fee and the annual licensing fee by 33 per cent to BDT100 billion (\$1.2 million) and BDT50 billion respectively. Market leader Grameenphone holds a combined 22MHz of spectrum across the 900MHz and 1.8GHz bands, while Robi has 26.4MHz, Banglalink 15MHz and state-owned Teletalk 15.2MHz. The country counts 133 million

mobile connections. According to BTRC, there are also about 70 million mobile internet users, with 35 million using 3G handsets.

(September 15, 2017) [The Daily Star](http://TheDailyStar)

The telecom regulator considers allowing mobile virtual network operators (MVNO) with a view to injecting more competition into the cellular communication market. MVNO enters into a business agreement with a mobile operator to obtain bulk access to network services at wholesale rates and then sets its own retail prices independently. The MVNO may use its own customer service, billing support systems, marketing and sales personnel. The Bangladesh Telecommunication Regulatory Commission is now conducting a feasibility study on MVNOs in the country, said its Chairman Shahjahan Mahmood. The move comes after the Prime Minister's ICT Affairs Adviser, Sajeeb Wazed Joy, directed the telecom regulator to take preparations for the introduction of MVNOs in Bangladesh. Subsequently, the telecom regulator formed a committee to draft a guideline on it, said a senior BTRC official. "After the study if we find that the MVNO would bring benefits to people, we must go for it," Mahmood said, adding that such players are in operation across the globe. MVNO agreements with network operators date back to the 1990s, when the European telecom market saw market liberalization, new regulatory frameworks, better 2G network technology and a subsequent jump in wireless subscriber numbers. The global MVNO market is expected to reach a valuation of USD75.2 billion by 2023, according to a market study.

(August 27, 2017) thedailystar.net



Egypt

Egypt's telecoms operators will begin offering high-speed 4G mobile broadband services in September, the Telecoms Minister said. The government had sold four 4G licenses in 2016 as part of a plan to reform the telecoms sector and raise dollars for

stretched government finances. The Ministry would offer more wireless frequencies for sale at an unspecified later date, the Minister told journalists.

(September 11, 2017) telecom.economictimes.indiatimes.com



Iran

The number of internet users in Iran has increased to 41 million, Merh News reported, citing figures from the Ministry of Communications. The statistics indicate that there are 30.59 million landlines, 156.01 million SIMs and 93.24 million active SIMs. Since President Rouhani took office in 2013, the government has been emphasizing ICT development. SIM

card penetration was 46.8 percent in 2007, but after ten years, the rate has reached 95 percent. Fixed line phone penetration has reached 38.61 percent and mobile phone penetration has reached 104.13 percent. Active mobile phone users have jumped to 104 percent from 39.5 percent in 2007.

(September 6, 2017) telecompaper.com



Lebanon

Lebanon's share in the submarine cable Alexandros will be increased from 310 to 1,920 gigabytes per second (GB/s), said the Ministry of Telecom (MoT). The plans will complement the start of the fiber optic project due to begin in the coming weeks. The USD300 million fiber optic project will help boost Internet speed to at least 50 megabits per second across the country. Last week, the MoT signed a memorandum of understanding with the Cyprus Telecommunications Authority (Cyta) regarding the increased share. The telecom cable links Lebanon to France through Cyprus. Lebanon's available capacity will be increased tenfold from 60 to 600 GB/s at no cost to the Lebanese State, according to the MoT. The cost of expanding the capacity of the relevant equipment, amounting to USD700,000, will be assumed by Cyta, it said. The capacity of Cadmus, the undersea cable which links Lebanon to Cyprus, has recently become 500 GB/s. The new capacity will be put into service before the end of 2017.

The Lebanese government will pay half the cost of this project, or USD350,000, while Cyta will pay the other half, the MoT said. Cadmos will be replaced in 2019 by a new cable called Europa which will also be installed in partnership with Cyprus. According to a source at the MoT, boosting the capacity of the cables that link Lebanon to the world is necessary in order to speeding up the Internet locally, because users need to connect to international servers. Expanding the bandwidth locally is not enough if it is not accompanied by a similar expansion of the international cables. Gabriel Deek, Chairman of the Internet Society, Lebanon Chapter, said that expanding the capacity of the cables that link Lebanon to the world will boost Internet speed, but that the new speed is unusable before the fiber optic project is completed. "The project will take time as it will involve linking around 7,500 telecom cabinets to the fiber optic network," Deek said. (September 17, 2017) businessnews.com.lb



Nepal

Nepal reached 35.57 million voice telephony subscribers in May, up from 35.2 million in April. The country's mobile voice subscriber base amounted to 33.8 million users in mid-May, according to data from the Nepal Telecommunications Authority (NTA). The total included 32.3 million GSM users, and 1.47 million subscribers to Nepal Telecom's CDMA service.

NDCL led the country's voice telephony services market in May, with a total of 17.4 million subscribers, followed by Ncell with 15.6 million. Nepal had a mobile teledensity of 127.8 percent at mid-May, while fixed teledensity reached 3.24 percent. Nepal also had 15.8 million data/internet services users at 15 May, and an internet penetration of 59.69 percent.

(September 12, 2017) telecompaper.com



Oman

Oman's Telecommunications Regulatory Authority (TRA) has postponed the award of a third mobile network operator (MNO) license to give it time to examine the potential implications of Oman Telecommunications Company's (Omantel's) recent acquisition of an almost 10% stake in Zain Group. Earlier this year it was reported that a number of Middle Eastern companies, including Saudi Telecom Company (STC), Kuwait's Zain Group, UAE-based Emirates Telecommunications Corporation (Etisalat) and Sudan-based Sudatel Telecom Group, had submitted technical and financial bids for permission to compete with incumbent Omani MNOs Omantel and Ooredoo Oman. A shortlist of the qualified bidders was expected to be published on August 14, with the winner scheduled to be announced on 4 September. However, according to a report by The National, which cites an unnamed telecoms executive, the license award process has now been delayed to 30 November, following the completion of Omantel's purchase of a 9.84% stake in Zain Group last month. (September 6, 2016) [telegeography.com](#)

The total number of fixed telephone line subscribers in Oman grew by 11.5 percent to 471,142 at the end of July compared to end of December 2016, according to statistics released by the National Centre for Statistics and Information (NCSI). In 2016, the number of subscribers was 422,518. The data showed that the number of mobile phone subscriptions also went up by 3.8 percent to 7.13 million compared to 6.87 million at the end of December 2016. Of the total mobile phone services subscribers, there were 638,865 post-paid subscriptions and 6.49 million pre-paid subscribers. The number of active mobile broadband subscribers was 4.44 million. The total number of Internet service subscribers increased by 19.2 percent to 321,248 at the end of July compared to 269,549 in 2016. The number of fixed narrowband internet subscribers decreased by 2.8 percent to 2,494 at the end of July compared to 2,566 at the end of 2016. The number of fixed broadband internet subscribers grew by 19.4 percent to 318,754 at the end of July 2017, compared to 312,358 at the end of 2016. (September 5, 2016) [telecompaper.com](#)



Pakistan

To create a fair regulatory regime to promote investment, encourage competition, protect consumer interest and ensure high quality Information & Communication Technology (ICT) services in Pakistan, PTA Invites Consultations for 3G/4G Auction in Azad Jammu & Kashmir & Gilgit Baltistan. PTA in this regard has issued policy directive for the auction of three blocks of 10 MHz each in 2100 MHz and one block of 10 MHz in 1800 MHz band on its official website. PTA will carry out the auction process following the powers conferred to it by the sub-section (2) of section 8 of Pakistan Telecommunication (Re-organization) Act 1996. The entire auction process will be concluded as soon as possible said by PTA. According to the policy directive, all existing telecom companies in Pakistan, GB and AJ&K will be eligible to participate in the spectrum auction. A new license for the provision of NGMS will be issued to the successful bidders. The tenure of license will be 15 years of time period. The auction winners may deploy renewable energy sources as power back up in the region. (September 15, 2017) [phoneworld.com.pk](#)

Pakistan Telecommunication Authority (PTA) has notified 'Mobile Devices Identification, Registration and Blocking Regulations, 2017' to ensure that stolen and blocked phones as well as phones with no duplicate or non-standard identifiers are blocked from use in the country. According to the regulations, the PTA will establish a Mobile Devices Identification, Registration and Blocking System (DIRBS) to ensure that non-compliant mobile devices are not imported, sold, marketed or connected with the mobile operators' networks. The move has been taken in order to protect mobile phone users' data across the country.

It will further ensure that mobile licensees actively identify such phones on their networks and maintain and update industry-wide database with information about such phones for the benefit of the mobile services sector worldwide. The regulations are notified under the Telecommunications Policy of 2015 on the type approval regime for telecommunications. The PTA will establish DIRBS and prescribe standard operating procedures (SOPs) for its implementation on technical, management and operational matters. Stolen phones, blocked phones, and phones with duplicate or non-standard identifiers shall be blocked by mobile network operator (MNO) from the use in Pakistan. The DIRBS will be installed, having the necessary hardware and software to implement the system for analysis. The analysis will be capable of identification of non-compliant mobile devices. It will comprise a core analysis system combined with subsystems to support verification of IMEI by stakeholders, registration of IMEI paired exceptions, and import of various inputs including operator device data dumps, GSMA device database, importer device lists, and stolen device lists. Analysis will be performed to allow for identification and tracking of non-compliant devices in accordance with these regulations. A device verification system interface will be provided by the PTA to type approval holders and authorized distributors for registration and identification of IMEI displayed on the mobile device to verify whether or not the device is a compliant mobile device issued certification of compliance to technical standards for IMEI devices by the PTA. Devices imported and shipped in accordance with sub-regulation (2) above will be eligible for registration. Individuals importing or carrying a device or devices for personal use will be required

to apply for certification of compliance to technical standards for IMEI devices issued by the PTA in accordance with the PTA guidelines and SOPs issued from time to time, as well as the PTA type-approval regulations, to become eligible for registration of the devices. All non-compliant mobile devices will be included in the blacklist by means of the DIRBS system. Updated blacklist, exception list and notification list will be provided by means of the DIRBS to MNOs at regular intervals. The blacklist will be sent to all MNOs periodically through DIRBS interface. All devices whose IMEIs are included in the latest blacklist will be denied mobile communication service by the MNO. Any blacklisted mobile device will not be activated except for lost/stolen and type approved devices which are verified by the MNO and DIRBS in accordance with the SOP approved by the authority. Subscribers may report their lost or stolen mobile devices and get them blocked on the helpline of MNO. Subscribers may prove the authenticity of their duplicated IMEI device(s) and get them blocked, by submitting valid documents to the PTA and the get services restored through pairing, if the device is ascertained to be compliant after scrutiny of the submitted documents to the PTA. Mobile licensees will become members of the International Mobile Equipment Identity Database (IMEI DB, formerly the CEIR) operated by the GSMA, or others as applicable. Mobile licensees will include countries that are the source of a large number of stolen devices to Pakistan in their IMEI DB notification profile. All MNOs shall carry out extensive media campaigns through SMS broadcasts, at their own cost, to educate consumers for the requirement to verify the validity of the mobile devices in their use and the procedure for verification of mobile devices available for sale/purchase, using the field verification system of DIRBS. The MNOs, authorized dealers and type approval holders shall establish an efficient methodology to receive, process and respond promptly to complaints by subscribers regarding their devices. They shall make all reasonable efforts to resolve complaints in accordance with the Telecom Consumers Protection Regulations, 2009. Mobile operators shall not disclose the contents of any data being transmitted or received from DIRBS. It must remain under their control except to the extent permitted by the PTA in writing or through any regulation/instruction/directive. MNOs shall take all reasonable measures to safeguard the databases from unauthorized interception or unauthorized access. All type approval holders/authorized distributors/ OEMs shall provide accurate information of type approved devices for issuance of certification of compliance to technical standards for IMEI devices by the PTA in order to maintain the updated list of IMEI numbers of devices in the DIRB system. The PTA will send intimation to all those subscribers who are using non-complaint mobile devices.

(September 12, 2017) propakistani.pk

The Pakistan Telecommunication Authority (PTA) is all set to auction spectrum for 3G/4G services in Azad Jammu and Kashmir and Gilgit Baltistan (AJ&K and GB) by the end of this year. In this regard, the authority has issued policy directive for auction of three blocks of 10MHz each in 2100MHz and one block of 10MHz in 1800MHz band while one block of 10MHz in 2100MHz band and one block of 10MHz in 1800MHz band have been earmarked for the Special Communications Organization (SCO), telecom services provider to both public and private sector (general populous) in AJ&K and GB region. PTA will carry out the auction process, fulfilling policy objective of optimal

outcome mitigating chances of collusion among bidders. The auction shall be accordingly conducted by PTA in the minimum possible time after the issuance of policy directive, said the PTA. Meanwhile, PTA will hire services of a local consulting firm to calculate the base price and to design auction process while the expenditure incurred on the consultancy will be met by PTA out of the auction proceeds. According to the Directive, all existing telecom operators in Pakistan, AJ&K and GB will be eligible to participate in the auction. A new license for the provision of next generation mobile services will be issued to the successful bidders/auction winners. The tenure of license will be 15 years. The auction winners may deploy renewable energy sources as power back up. The PTA said that the successful applicants can pay minimum 50% upfront payment, while the remaining to be paid in 5 equal installments in 5 years with mark-up rate of 3% + LIBOR. No further NGMS related auction will be carried out for 18 months from the date of auction. Supervisory committee has been formed to oversee the auction process to be conducted by PTA and removal of any difficulties during auction process. Around Rs. 2 billion were available in the USF Fund for development of ICT sector in AJK and GB. As soon as framework was finalized by AJK and GB Councils, the funds would be transferred to USF for development in AJK and GB.

(August 24, 2017) dailytimes.com.pk

Pakistan Telecommunication Authority (PTA) in collaboration with Asia Pacific Telecommunity (APT) has organized a 3-day meeting of South Asian Telecommunication Regulator's Council (SATRC). The ceremony was inaugurated at the local hotel in Islamabad by the Chairman of PTA Dr. Syed Ismail along with key officials including Secretary General APT Areewan Haorangsi, Member Telecom MoIT, Mudassar Hussain, officials from telecom operations and Ministry of Information & Telecom attended the ceremony. Officials and representatives from regional members are also participating in this international telecom event. Indonesia, Iran, Bangladesh, Bhutan, Afghanistan, Nepal, Sri Lanka and Maldives are participating in the meeting. The key discussion on the topics; developing spectrum roadmap for mobile broadband, Wireless backhaul spectrum, Spectrum management of Internet of Things (IoT), policy development and proliferation of WiFi networks would be on the agenda. Dr. Syed Ismail, Chairman PTA said while addressing the conference, Asia Pacific despite the difficulties is leading the broadband development in the world, it has great potential and resources which can be properly utilized only with joint efforts and collaboration of APT member countries. This event will facilitate the exchange of ideas, views on policy & regulatory issues and it will further promote the culture of harmonized regulatory environment, he added. During the past few years we have seen tremendous growth in the telecom sector and emerging technologies around the world associated with several challenges for us such as; spectrum management, introducing new technologies in Wireless broadband and equitable distribution of telecom services, he said. Member telecom Mudassar Hussain said these kinds of events are really helpful in gaining international exposure and experience which will help to focus on current challenges in ICT sector. Secretary General APT also visited PTA head office in Islamabad, Chairman PTA welcomed him and gave the briefing on PTA's overall initiatives, challenges and current performance in the telecom sector. PTA Secretary admired PTA efforts in the sector and the potential of

telecom development in the country and region, he also planted a tree on the premises to make the occasion memorable. (August 17, 2017) [researchsnipers.com](#)

The telecom sector of Pakistan has undergone through huge transformations 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. This is also evident from the recent stats announced by the PTA. Now as per June, 2017 report of Pakistan Telecommunication Authority (PTA), the number of mobile internet subscribers reached a record figure of around 42,084,032 million. Mobile Broadband Users Reach 42 Million in Pakistan. The number of 3G/4G users by the end of June have reached more than 42 Mn mark in Pakistan. Before this, the figure of MBB users in the country was 41.728 million, according to the report published by PTA. The stats revealed that the MBB leader in the market is Jazz with 13,380,549 million subscribers

as after its merger with Warid it got 937,209 users of LTE. After Jazz, Zong has 12,682,099 million together 3G and 4G users. Whereas, Telenor Pakistan has 11,060,898 million MBB users across the country. Ufone, with 4,960,486 million is the fourth mobile operator in Pakistan with decreasing subscriber's base. Also the annual cellular subscribers of Ufone are decreasing on 100,000 basis year wise. Also an interesting thing revealed from June report of PTA is that the 3G users are now decreasing whereas 4G subscribers are getting a boom. Like 3G users of Zong have reduced to 8.64 Mn by the end of last month as compared to 8.674 Mn reviewed by the end of May 2017. Whereas, there is an increase in the 4G users of Zong as the numbers jumped have from 3823877 by end May to 4041766 by the end of June, 2017. Same is the case of Telenor 3G users as its 3G subscribers goes down from 10.473 Mn by the end of May, 2017 to 10.453 by the end of June, 2017 and the number of 4G users jumped from 519788 by the end the May, 2017 to 607013 by the end of June, 2017. The overall cellular tele-density has reached to 72.41% in Pakistan. (August 4, 2017) [phoneworld.com.pk](#)



Saudi Arabia

Etihad Etisalat (Mobily) and Zain Saudi Arabia have announced that they have paid the first instalments (30% of the total sum) for the acquisition of additional spectrum in the 1800MHz band. Zain paid SAR253.8 million (USD68 million) before the deadline of 11 September, while Mobily paid SAR126.9 million; the remainder of the fees are to be paid in equal instalments (7% of the total each) over ten years, with the first instalment due in 2019. Saudi telecoms regulator the Communications and IT Commission (CITC) awarded additional spectrum in the 1800MHz band to Zain and Mobily in June, following an auction which was held on May 23. Zain Saudi secured 2x10MHz in the 1800MHz band for SAR844 million, while Mobily was awarded a 2x5MHz paired block in the 1800MHz band for SAR422 million. The concessions are valid for a period of 15 years, effective January 1, 2018. In other news, the CITC has unblocked access to over-the-top (OTT) VoIP applications, with IP calls via Skype, Viber and the likes allowed from today (September 21), Zawya writes. The ban was implemented back in June 2013 due to unspecified 'violations of the Kingdom's regulatory requirements'.

(September 21, 2017) [zawya.com](#)

Abdullah Al-Sawah, Saudi Arabia's Minister of Communications and IT, has announced that the ban on over-the-top (OTT) VoIP calls will be lifted in Saudi Arabia within a week, the Saudi Press Agency reports. The minister was cited as saying in a social media post: 'In cooperation with our telecom partners and in line with our "Customer First" policy, we have called for the lifting of call blocking within a week ... CITC [Communications and IT Commission] will oversee the review of regulatory compliance requirements and will work with telecommunications companies to enable the lifting, in compliance with requirements.' Al Sawah added that the authority and telecom services providers were coordinating to unblock VoIP service to their customers, to make use of the applications that support voice and video calls, such as WhatsApp, Viber and Skype. In March 2013 the CITC threatened to ban OTT VoIP services unless telecoms operators were willing to provide a monitoring service by the end of the month. The regulator followed through with its ultimatum, and in June 2013 banned communication application Viber due to unspecified 'violations of the Kingdom's regulatory requirements'.

(September 14, 2016) [telegeography.com](#)



Sri Lanka

The Sri Lanka Broadband Forum, set up by the Ministry of Telecommunication & Digital Infrastructure and Huawei Technologies – quotes the telecoms minister, Harin Fernando, as saying that successful discussions took place to consider how infrastructure sharing could be used to speed up broadband development in the country. Under the theme 'A Better Connected Sri Lanka', the forum considered ultra-high speed broadband development in the country to 'facilitate

business success of all partners in the industry chain and create a sustainable ecosystem'. The event reportedly drew on successes concerning infrastructure sharing in other countries which proved that physical infrastructure sharing from utilities would reduce civil work of telecom operators and avoid duplication of infrastructures like ducts and poles.

(September 15, 2016) [Online news portal LBO](#)

On a Presidential Directive the Service Providers had been asked to register their subscribers properly to curb SIM based frauds and crimes, Cabinet Spokesman and Minister, Gayantha Karunathilaka said. The Telecommunications Regulatory Commission of Sri Lanka (TRCSL) has already made a request to relevant service providers to register SIM cards with a duly filled application form and a photocopy of the National Identity Card of the owner. Addressing the media at the weekly cabinet briefing, he said the proposal had been made by the President

Maithripala Sirisena to issue an order by the relevant Minister under the Sri Lanka Telecommunications Act. No 25 of 1991, and to assign the authority of implementing this process to the TRCSL. "It has been observed that there are a large number of active SIM cards issued by various mobile phone service providers that were issued without proper documentation or identity of their subscribers," he said. It is essential to register them properly for controlling various crimes and frauds using mobile phones, and for the public security. (August 24, 2017) [dailymirror.lk](#)



The government of South Sudan has approved the 2017/2018 budget which will see taxes increased for the country's telecoms operators. The East African quotes Finance Minister Stephen Dhau as saying that under the USD300 million budget, the government plans to raise sales tax from 15% to 20% and

proposes to increase excise on telecoms services from 10% to 30%. He added that the move will 'bring the total tax burden on telecommunication services in line with other countries in the region'.

(September 8, 2016) [telegeography.com](#)

South Sudan



The Ministry of Communication Technology and the Digital Economy (Ministere des Technologies de la Communication et de l'Economie Numerique, Mincom) has selected a consortium led by the Tunisian Internet Agency (Agence Tunisienne d'Internet, ATI) – the public company tasked with managing Tunisia's internet exchange point (IXP) as well as the country's domain name and IP addressing resources – as the winner of its tender for allocation of a new infrastructure provider license.

the consortium comprises ATI (40%), Tunisian investment firm Meninx Holding (40%) – which owns several digital companies, including Eo Data Center, Eo Smart Building and Via Mobile – and an unnamed Turkish cable company (20%). The new infrastructure provider will offer high speeds services exclusively to telecom operators and ISPs, and will invest TND54 million (USD22.1 million) during its initial phase.

(September 6, 2017) [Tunisie Haut Debit](#)

Tunisia



The Telecommunications Regulatory Authority, TRA, announced the employment of a number of robots to provide several services to customers and visitors, reflecting the TRA's keenness to upgrade service delivery mechanisms and towards government process automation. The concept is based on utilizing smart solutions and reducing human intervention in the completion of transactions in faster and more efficient ways, while maintaining the progress and privacy of applications. The initiative's first phase includes the organization of the relationship between the customers and TRA by employing robots in customer areas to receive their requests and transfer them to relevant sections and departments. The second phase includes the automatic transfer of documents of departments' directors and the Director General's Office within the TRA. Commenting on the announcement, Hamad Obaid Al Mansoori, TRA Director-General, said, "TRA uses all its potentials to achieve the ultimate goal of customer happiness. We adopt latest technologies to serve customers and achieve their happiness, and in parallel, we keep the focus on raising the efficiency and quality of provided

services, and maintaining the highest standards of transparency and privacy. I would like to indicate here that in TRA, through the Type Approval Section, we test and assess latest equipment developed by major international companies to ensure that they comply with safety and security standards. Such process will enhance the confidence of these companies, especially in relation to intellectual property rights since this initiative allows the delivery of devices and issuance of results without direct human intervention." Tariq Al Hawi, Program Director – UAE mGovernment, said, "With this robot joining the Customer Happiness Centre, TRA has dedicated artificial intelligence to achieve its objectives, primarily achieving customer happiness and providing them with competitive services. This robot is equipped with radio frequency identification technology, which enables it to automatically request the elevator, select the required floor number and reach its destination. The robot is also equipped with a special number, and a detailed map of TRA building, allowing any employee to contact it and assign it to a specific task." (August 28, 2017) [abudhabicityguide.com](#)

United Arab Emirates

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



Australia

Following a recent spectrum tune-up event, the Australian Communications and Media Authority (ACMA) has published a consultation paper calling for feedback on plans to accelerate the process for considering releases in the millimeter wave spectrum for 5G broadband use. Specifically, the regulator said it is seeking comment on whether frequencies in the 26GHz band (24.25GHz-27.5GHz) could be a candidate for such consideration, citing the increased interest in mmWave spectrum for 5G use both domestically and internationally, coupled with relatively limited incumbency issues in several of the bands in question. If supported by submissions to the consultation, meanwhile, the ACMA has said it could also consider fast-tracking the release of other mmWave bands. 'Australia has a strong track record of timely review of spectrum arrangements in support of innovation in the communications industry,' said the ACMA's acting chairman, Richard Bean, of the matter, adding: '5G in the millimeter wave bands presents a great opportunity to maintain this record so the Australian community will continue to enjoy the benefits of early uptake of new technology.' The ACMA has set a deadline of October 13, 2017 for submissions to the consultation.

(September 12, 2017) telegeography.com

With the Australian authorities set to auction off spectrum in several bands later this year, it has now been confirmed that the government will follow advice from the Australian Competition and Consumer Commission (ACCC) and lift existing allocation limits related to 2GHz frequencies. In a press release, communications minister Mitch Fifield confirmed the decision to cancel the existing spectrum cap

in the 2GHz band, saying the move would allow all telecommunications providers to bid for residual spectrum from previous auctions. To that end, the minister filed 'Radiocommunications (Spectrum License Limits—2 GHz Band) Repeal Direction 2017', which repealed the earlier relevant legislation, 'Radiocommunications (Spectrum License Limits—2 GHz Band) Direction No. 2 of 2000'. Meanwhile, it has been confirmed that existing allocation limits for the 1800MHz band will remain in place, while, as is currently the case, no restrictions will apply to the amount of spectrum a company can hold in the 2.3GHz and 3.4GHz bands. Last month the Australian Communications and Media Authority (ACMA) confirmed it was preparing to allocate a range of frequencies by auction, and launch a consultation on its plan. In terms of the spectrum that is being considered for sale, the regulator confirmed that this includes: lots in the 1800MHz band that were unallocated after the most recent auction of such frequencies; and frequencies in the 2GHz, 2.3GHz and 3.4GHz bands that either were not allocated in earlier auctions or have become available following spectrum license re-issue processes, as well as some 2GHz spectrum lots in the Canberra region that have been made available for the first time. In the wake of the decision on spectrum allocation limits, meanwhile, the Department of Communications and Arts said of the sale plans: 'The auction will encourage competition and enable all currently unused spectrum in relevant bands to be licensed under the current legislative framework. It will also help with a smooth transition to the new licensing framework proposed by the Radiocommunications Bill 2017.'

(September 6, 2017) telegeography.com



Bulgaria

The telecoms watchdog the Communications Regulation Commission (CRC) has launched a public consultation procedure on the proposed allocation of available spectrum in the 1.5GHz, 2GHz, 2.6GHz and 3.6GHz radio frequency bands. The CRC says that there is currently 580MHz of available spectrum as follows: 2x10MHz in the 800MHz band (811MHz-821MHz/852MHz-862MHz), that could be provided if tests show that there is no interference between the Ministry of Defense (MO) and mobile operators; 2x10MHz in the 1800MHz band; 40MHz in the 1.5GHz range; 2 15MHz in the 2GHz range (provided for temporary use by 15.12.2017); 190MHz in the 2.6GHz range (including 2x20MHz provided for temporary use

by 20 November 2017); and 280MHz in the 3400MHz-3800MHz band (in time division duplex [TDD] mode). The authority proposes to sell eight blocks of 5MHz in the 1.5GHz (1452MHz-1492MHz) band, three paired blocks of 5MHz in the 2GHz (1920MHz-1935MHz/2110MHz-2125MHz), 14 paired 5MHz blocks of frequency division duplex (FDD) spectrum in the 2.6GHz (2500MHz-2570MHz/2620MHz-2690MHz), ten blocks of 5MHz TDD spectrum in the 2.6GHz (2570MHz-2620MHz), 34 blocks of 5MHz in the 3.6GHz (3430MHz-3600MHz) band and 22 blocks of 5MHz TDD in the 3.6GHz (3645MHz-3700MHz and 3745MHz-3800MHz). All interested parties are given 30 days to submit their comments on the topic.

(September 5, 2017) telegeography.com



Cameroon

The Telecommunications Regulatory Board (ART) has reportedly suspended the activities of 4G LTE provider Vodafone Cameroon, part of the Afrimax Group. The decision was made by the Ministry of Posts and Telecommunications (Minpostel), which claims that the firm's operating licence became invalid when it was transferred from Northwave to Afrimax Group. Vodafone Cameroon expanded its 4G LTE network to

the towns and cities of Bafoussam, Bamenda, Buea, Edea, Kribi, Kumba, Limbe and Mutengene last month, following the signing of a 'strategic national network sharing agreement' with CamTel. Under the deal, Vodafone is able to make use of the state-owned telecoms operator's existing network infrastructure in Douala and Yaounde and to expand its coverage to new locations across the country.

(September 14, 2017) APA News



Chile

The communications regulator SUBTEL has announced that some 190,000 meters of obsolete overhead cable have been taken down so far this year. The initiative is part of the National Debris Clearance Plan carried out by SUBTEL and the energy ministry, with the cable taken down in the Greater Santiago,

Valparaiso, Biobio and Los Lagos regions, among others. "Since 2012 some 130 tons of cables have been withdrawn in the Santiago Metropolitan region alone," said SUBTEL head and undersecretary of telecommunications Rodrigo Ramirez.

(September 4, 2017) telecompaper.com



China

The big three mobile operators continued their steady march toward 1 billion 4G users, picking up a combined 23.5 million LTE subs in August and taking their total to 927 million. China Mobile, the market leader with a 64 per cent share of total mobile connections, added 11 million 4G subs to end August with a staggering 617 million LTE users. Number two operator China Unicom (in terms of total mobile subs) picked up 7.5 million LTE subs to bring its 4G total

to 153 million. It narrowed the gap with rival China Telecom, which ended the month with 157 million LTE subs after signing up 5 million 4G users in August. In December 2016, China Telecom had 122 million 4G subs compared with 104.5 million for China Unicom. 4G accounts for 67.2 per cent of mobile subscribers in China. The country has 1.38 billion total mobile subs after adding 60.1 million in the first eight months of the year. (September 20, 2017) mobileworldlive.com



Congo Republic

Leon Juste Ibombo, the Minister of Posts, Telecommunications and the Digital Economy for the Republic of the Congo, has announced the creation of a universal service fund (USF). It is understood that the fund will be used to finance projects which aim to enhance connectivity for consumers, with a particular focus on improving coverage in rural and underserved regions. The USF will reportedly be

financed by operators contributing up to 2% of their annual turnover. With the local authorities having long been critical of the quality of service offered by the nation's mobile network operators, issuing formal notifications to them on several occasions regarding breaches of agreed standards, the USF is expected to help improve matters for end users.

(September 18, 2017) Agence Ecofin



Costa Rica

The Constitutional Court has ordered sector watchdog the Superintendency of Telecommunications (SUTEL) to impose a temporary minimum data transfer rate for post-paid mobile internet users that exceed their 'fair usage' allowance. La Nacion writes that the regulator has been given 30 days to impose a temporary speed floor, whilst a permanent base line must be determined within four months, the court granting the watchdog the extra time to carry out any necessary technical studies. Under the ruling, Sutel's amended fair usage policy must allow customers to maintain 'functional access' to the network after exceeding their fair use cap. The court found that Sutel's decision to allow cellcos to determine speeds under fair use policies – which allow operators to limit a customer's download speed once a set data cap has been exceeded – violated consumers'

fundamental rights. Fair use caps were introduced in Costa Rica in 2014 as a means to allow providers to mitigate the potential congestion caused by a small proportion of extremely high-use customers, and the resultant negative effect on service quality. However, in its ruling the court questioned the blanket implementation of fair use caps at all times, suggesting that the cap was not necessary during off-peak periods. Further, the court noted that Sutel's consideration of 'functional' access was outdated, as it was based on 15-year-old ITU data which defined a download speed of 128kbps as suitable for audio and video applications. Judge Paul Rueda added: 'What in the past could be a reasonable speed, today is not necessarily the same because the resources and the demand for services grow, so the minimum access speed requirements must be updated.'

(September 7, 2017) telegeography.com



Czech Republic

Following the conclusion of its 3.7GHz band (3600MHz-3800MHz) auction last month, the Czech Telecommunication Office (Český telekomunikační úřad, CTU) has announced the allocation of spectrum blocks to the four winning bidders. Nordic Telecom 5G has been assigned two 40MHz blocks in the 3720MHz-3760MHz and 3760MHz-3800MHz

range, O2 Czech Republic has secured one block at 3680MHz-3720MHz, PODA now holds 3640MHz-3680MHz frequencies and Vodafone Czech Republic was assigned one block in the 3600MHz-3640MHz range. Each 40MHz block sold for CZK203 million (USD9.2 million), generating a total of CZK1.015 billion. (September 1, 2017) telegeography.com



France

The regulator ARCEP has officially launched its new online mapping tool first introduced as a pilot for the Nouvelle Aquitaine region in March. The launch follows the introduction of additional obligations for operators to give more detailed information on the availability of mobile services to consumers. In December 2016, the regulator specified plans to differentiate between areas with very good, good and limited mobile coverage (previously described as 'covered' with no distinction on quality). Enhanced maps for 2G mobile services have now been created

for each mobile network in mainland France. The new mapping tool also shows the results of Arcep's quality of service measurements taken under real-life conditions. All maps and information are available as open data files, in line with the requirement of the Digital Republic Act of 2016. The next steps planned by the regulator are to enhance the coverage maps for 3G and 4G services between now and 2018, and extend the improved maps to the French overseas markets next year.

(September 18, 2017) telecompaper.com



Ghana

The telecoms regulator the National Communications Authority (NCA) has asked existing cellcos in the country to deploy UMTS 3G technology in a bid to improve network accessibility in rural areas. The proposed deployment will be carried out using the 900MHz frequency band, originally assigned for 2G services. Acting Director-General of the NCA, Joe Anokye said the deployment of 3G technology using 900MHz spectrum would expand companies' data coverage to mobile users 15km from base stations, with minimal costs attached: 'The benefits of allowing

telcos to deploy UMTS are particularly beneficial to consumers. With this we will be promoting digital inclusion in Ghana and in the process customers in unserved and underserved areas will see the immense benefits, especially as they see improvement with their access to data and data services.' Mr. Anokye stated that mobile network operators (MNOs) will not be required to apply for new licenses, but only to submit an application for authorization by the NCA, whilst the regulator has waived application and authorization fees in the 3G license-awarding process.

(September 11, 2017) telegeography.com



India

India's telecoms regulator has pushed back the deadline date for responses to its consultation on the country's forthcoming multi-band spectrum auction, a move that casts further doubt on the likelihood of a sale before the end of the year. The Telecom Regulatory Authority of India (TRAI) has given stakeholders until 9 October to send written comments on the consultation paper it published in late August, two weeks later than its original deadline. It has also pushed back the date for counter comments to October 16 from October 3. It made the decision following requests from interested parties for more time to compile and send comments, it said. There is a raft of spectrum up for grabs in India across multiple bands, including spectrum left unsold after last year's auction and new airwaves between 3.3 GHz and 3.6 GHz that are often referred to as 5G frequencies. When it launched its consultation, the TRAI noted that the Department of Telecommunications (DoT) expects to carry out a new auction this year, despite the fact that the previous spectrum sale was as recent as October 2016 and around 60% of the airwaves on the

block at the time were left unsold. In addition, India's mobile operators have plenty to occupy their minds at present, with the ongoing consolidation process and related price war. Regarding the former, market leader Bharti Airtel this week gained the approval of equity shareholders and unsecured creditors for its merger with Telenor's Indian business. Telcos are also struggling with hefty debt burdens, in no small part due to the prices paid at previous spectrum auctions. According to the DoT, they owe 3.08 trillion rupees (€40 billion) over the next 11 years through deferred payment plans for spectrum acquired at recent auctions, in addition to the INR4.6 trillion they owe to various financial institutions and banks. Nonetheless, there is some appetite for acquiring new frequencies. An unnamed senior executive at Bharti told the Economic Times this week that his company is open to acquiring airwaves in the 800 MHz band at the next auction or if an opportunity for trading should arise.

(September 22, 2017) totaltele.com

The Telecom Regulatory Authority of India (TRAI), after more than a year of consultations with the industry, reduced the interconnect charge by more than 50 per cent starting next month and will eliminate the fee completely from January 1, 2020. The mobile-to-mobile interconnect usage charge, or termination fee, will be cut from INR0.14 to INR0.06 (\$0.0022 to USD0.00094) starting October 1. The move has drawn sharp criticism from India's top mobile players as well as the parent company of Vodafone India and major Bharti Airtel shareholder Singtel. After Vodafone Group CEO Vittorio Colao last month warned cutting mobile termination fees in India would unfairly benefit Reliance Jio, the operator said in a statement the fee reduction was "yet another retrograde regulatory measure that will significantly benefit the new entrant alone while adversely affect[ing] the rest of the industry", ET reported. The statement went on to say: "Unless mitigated, this decision will have serious consequences for investment in rural coverage, undermining the government's vision of a Digital India. We are disappointed with this decision and are now considering our options to respond to it." Colao in August urged the government to resist pressure from Jio to cut the charge below the current level, which he said already stood below the cost of processing incoming calls. Singtel, the largest single shareholder in Airtel, said in a letter to the telecoms minister before the TRAI decision that the cut is "likely to have adverse consequences for investment and long-term sustainability of the India telecoms sector. Ultimately, this would be to the detriment of customers", ET reported. Singtel Group CEO Chua Sock Koong said the reduction or elimination of the termination charge would "simply mean that there is less revenue

available to mobile operators to finance both their existing and future investments". The Cellular Operator Association of India said members were planning to file a case in court against the regulator's decision. TRAI has argued that lower termination charges will benefit consumers because operators will have more retail price flexibility, according to an ET report. (September 20, 2017) The Economic Times

India's tax authorities have opened a new front in their long-standing legal battle over the 2007 sale of a majority stake in wireless provider Vodafone India, issuing Hong Kong-based CK Hutchison Holdings a demand for INR323 billion (USD5 billion) in unpaid capital gains tax, the Economic Times writes. The figure includes the unpaid tax of INR79 billion, a penalty of INR79 billion, plus interest of INR164 billion relating to the sale of its 67% stake in the cellco, then known as Hutchison Essar, to the UK's Vodafone Group. In a statement, Hutchison rejected the demand, stating that the order was 'in violation of principles of international law' as it is based on the retrospective legislation to overturn a January 2012 ruling from the Supreme Court of India. Until January this year, the Indian authorities' efforts had focused on pursuing Vodafone rather than Hutchison, claiming that the British group owes around USD2 billion in relation to the sale. In January 2012 the Supreme Court ruled that the telco was not liable to pay any taxes over the acquisition, but in May that year the tax laws were amended with retrospective effect and the Indian government re-issued its demand. In 2014 Vodafone filed for arbitration, and the procedure is currently ongoing.

(August 30, 2017) telegeography.com



Indonesia

Indonesia's Ministry of Communications and Information Technology (MCIT, KemKominfo) is reported to be working toward the introduction of new rules to encourage the development of passive infrastructure sharing (including telecoms and civil/mechanical/ electrical infrastructure/ equipment/ property, such as pipes [ducts], poles, towers, cabinets, manholes, handholes, shelter space and others). The ministry is also interested in active telecoms infrastructure sharing, suggesting that 'possible future guidelines will also be made' in that area. The government is said to be considering passive sharing in areas that already have infrastructure in place (dubbed 'brown field' sites) and areas where new infrastructure will be built (i.e. 'green field'). If realized, KemKominfo believes that sharing could save operators about 40%-60% of capital expenditures and operating expenses, allowing them instead to focus on extending the services, strengthening their sales and marketing activities and in turn, drive down end user prices. (September 22, 2017) IndoTelko

The Ministry of Communications and Information Technology (MCIT, known locally as KemKominfo) has once again returned to its quest to license additional frequencies in the 2100MHz and 2300MHz bands, with auction plans expected to be given to the minister with portfolio this week. In May 2017 KemKominfo announced that the bidding rules for the sale of 2.1GHz and 2.3GHz spectrum would not be released that month, as previously promised by the Minister of Communication and Information Technology (Menkominfo) Rudiantara. I Ketut Prihadi Kresna, board member of the Indonesian Telecommunication Regulatory Body (BRTI), confirmed the development at the time, while revealing that there would be a fresh meeting to discuss the tender in due course. Now, the ministry is suggesting a date of January 2018 to alleviate spectrum shortfalls – which affect capacity in many cities such as Medan, DKI Jakarta, Bodetabek, Bandung, Semarang, Yogyakarta, Surabaya, Denpasar, Pontianak and Makassar.

(September 18, 2017) IndoTelko



Italy

The financial markets regulator Consob (Commissione Nazionale per le Società e la Borsa) has ruled that French firm Vivendi does have de facto control of fixed and mobile operator Telecom Italia, which trades as TIM. Vivendi has a 24% stake in the telco and accounts for two-thirds of its board, but has previously denied that it has de facto control. The Consob ruling means that Vivendi could face a fine for failing to notify the authorities of a change of ownership at TIM, which is considered a strategic

national asset. The Italian government could also choose to use 'golden powers' which allow it to veto decisions which may be deemed to go against the national interest. According to a report from Reuters, Vivendi plans to appeal the regulator's decision. The French firm has also been under fire for its acquisition of a stake in Italian broadcaster Mediaset, with critics claiming that it now has too much influence in the country's pay-TV and communications sector. (September 14, 2017) telegeography.com



Kenya

Internet service providers (ISPs) and all mobile network operators will soon be subjected to a new law. The proposed law is contained in a draft Wireless Broadband Spectrum Policy published last week by the Ministry of Information, Communication and Technology as the Government moves to overhaul the existing spectrum management framework. It further seeks to level the playing field in distribution and make it easier for smaller firms to bid for and deploy wireless broadband services. Some of the proposals contained in the draft guidelines include providing incentives and coverage obligations to service providers to serve rural and other under-served areas. "Public protection and disaster relief services and research and development initiatives may be exempted in whole or in part from paying the requisite spectrum license and usage fees," read the proposed guidelines in part. Spectrum fees are the monies paid out by licensees to occupy specific radio frequencies on which they channel their services. Communications Authority of Kenya (CA) is the agency mandated with

the task of allocating and assigning radio frequencies to the various service providers. Up to 65 per cent of the Sh8.7 billion that CA generated in revenue in the 2015-2016 financial year came from spectrum fees as three mobile service providers acquired various 4G and 3G licenses. The new guidelines will also compel the regulator to address concerns raised by some service providers that the current spectrum allocation structure favors leading mobile service provider Safaricom. According to CA data, Airtel, Telkom and Safaricom have 10 megahertz (MHz), 7.5MHz and 17.5MHz of spectrum on the 900MHz frequency band respectively. Safaricom acquired an additional 7.5MHz that belonged to Essar Telecom in 2014 as part of the transaction that saw the firm bought out by Safaricom and Airtel. ALSO READ: Kenyan women use internet more than men Other service providers have in the past reached out to the regulator to have Safaricom cede some of the frequency spectra it currently holds, claiming it gives the service provider an unfair advantage. (September 4, 2017) standardmedia.co.ke



Mexico

The telecommunications regulator IFT has issued a call for expressions of interest in a total of 21 blocks in the 440-450MHz band for trunking services all over the country. Three of the blocks are national while the remaining 18 are regional, equivalent to two per Mexican region, said the IFT, adding that it's seeking to raise the minimum reference value of MXN 2.49

million from the tender. The country's mobile network operators as Telcel, Movistar and AT&T haven't been barred from bidding but business daily El Economista said the tender opens the way for the participation of manufacturers and equipment distributors such as Huawei, Ericsson, Nokia, Alcatel-Lucent or Steren and RadioShack. (August 29, 2017) telecompaper.com



Netherlands

The Ministry of Economic Affairs is preparing for a national frequency auction of 4G/5G mobile spectrum in the 700MHz, 1400MHz and 2100MHz bands in autumn 2019, it confirmed in a statement. Licenses will be valid for 20 years (2020-2040) and carry coverage obligations specifically for areas of the country where mobile broadband connectivity is inadequate. The auction will be organized on the basis of the 'Nota Mobile Communication' white paper to be published later this year, after the Ministry has finished processing the consultation responses to an earlier draft version. Minister Henk Kamp added: 'A new, national auction of available wireless

communications leads to additional capacity for faster internet services. This will create a basis for the digital economy in the Netherlands to continue to grow in the future.' The Ministry of Economic Affairs intends to send the final Nota Mobile Communication to the House of Representatives by the end of 2017, and a new Dutch government (yet to be formed despite elections taking place six months ago in March) will decide on additional frequencies to be distributed in the coming years, based on the finalized paper. The statement noted that such future bands will include spectrum reserved for business-only applications.

(September 22, 2017) telecompaper.com

Swedish investment fund EQT is in takeover talks with Dutch fiber/cable triple-play services operator CAIW (Caiway). The potential deal would see EQT expand its Dutch market presence following its purchase of Zeeland-based cableco DELTA in a EUR488 million (USD517 million) takeover and restructuring completed on March 1, 2017. The local report adds that Caiway's parent fund aims to sell the retail services provider division to concentrate on passive open access network infrastructure operations. CAIW Diensten (CAIW Services, trading

as Caiway) is a wholly owned subsidiary of CAIW Holding, itself owned by the Rabo Bouwfonds Communication Infrastructure Fund – a non-listed Dutch fund backed by institutional investors (part of Bouwfonds Investment Management, a member of Rabo Real Estate Group). The fund bought Caiway in January 2008 from the municipalities of Westland and Midden-Delfland for EUR110 million. In April 2012 the Netherlands' dominant PSTN operator KPN abandoned a takeover deal for Caiway, following objections from antimonopoly authorities.

(September 21, 2017) telecompaper.com



New Zealand

New Zealand's national government has pledged NZD270 million (USD195 million) worth of additional investment in the country's Ultra-Fast Broadband (UFB) and Rural Broadband Initiative (RBI) networks. The NZD270 million program will be funded by NZD240 million of recycled capital from earlier stages of the UFB program and NZD30 million from the Telecommunications Development Levy. The investment breaks down as follows:

- NZD130 million to extend UFB fiber networks to an additional 60,000 homes and businesses in 190 new towns and complete the UFB network build by 2022; and

- NZD140 million to extend rural coverage of high speed internet connectivity under the RBI to another 74,000 rural households and businesses, and to deliver mobile coverage on 1,000km of rural highways and more than 100 tourist areas through the Mobile Black Spot Fund (MBSF).

Communications Minister Simon Bridges commented: 'We started UFB in 2010 with the original goal of connecting 34 towns to world-class fiber-to-the-premises (FTTP). Earlier this year we expanded it to 200 more towns and today's announcement will bring us to 390.'

(August 31, 2017) telegeography.com



Nigeria

The Nigerian Communications Commission (NCC) has urged the Minister of the Federal Capital Territory (FCT) Malam Mohammed Bello to assist in resolving the challenges inhibiting the deployment of broadband infrastructures in the city. Its Executive Vice Chairman, Prof Umar Danbatta, who led the management team of the Commission to the minister, lamented that the "FCT appears to have some of the most challenging issues with quality of service". Also on the team was the Executive Commissioner, Stakeholders Management, Mr. Sunday Dare, the Director of Public Affairs, Mr. Tony Ojobo and other top officials of the Commission. Danbatta said the visit has become imperative given the fact that the contribution of the telecoms sector to the economy has become so important. He listed some of these contributions to include the more than USD68 billion private sector investments it has attracted to the country since 2001. According to him, the number of mobile and fixed line subscribers have averaged 150 million within the first six months of this year, while internet access stands at 92 million as at June 2017 and ICT contribution to the GDP is close to 10 per cent. Danbatta, who said the NCC would strive to attain 30 per cent broadband penetration by 2018, however, said the feat cannot be achieved without the support of the FCT administration. "It is interesting to note that FCT belongs to the first set of two zones (North Central and Lagos) where the commission has issued Infraco licenses to enable

broadband deployment in all parts of the federation using the Open Access Model," he said. Danbatta continued: "Given the status of the FCT today in the scheme of things, it ought to be the city with the best telecommunications connectivity. But the reverse is the case and has been so for several years now. "This presents us with the reality that our FCT has some challenges that may deny it the opportunity of the revolution in the ICT of the future." He listed the challenges as collocation of telecoms base stations in the FCT, the fee regime, retroactive FCTA laws that affect telecom facilities, activities of road construction companies with attendant damages and cuts of fiber lines and delayed approval for installation of base stations and fiber deployments. Prof Danbatta further said the implementation of the national economic council resolutions on multiple taxation, levies and charges on ICT infrastructures also inhibit the operations of telecom companies in the FCT, noting that "some service providers have indicated that the FCTA collects more than 100 per cent of some charges prescribed in that resolution". Prof Danbatta urged the FCT administration to look into the issues with a view to address them for the growth and development of the telecommunication industry in the country. Mallam Bello, in his remarks, described NCC management visit as timely, noting that issues raised by the NCC boss were of great concern to the FCT administration.

(August 29, 2017) thenationonline.net

In order to arrest the challenge of proliferation of substandard devices, the Nigerian Communications Commission (NCC) has announced a strategic partnership with the Computer and Allied Products Dealers Association of Nigeria (CAPDAN). The Executive Vice Chairman of NCC, Prof. Umar Danbatta, declared the partnership today when he visited the Ikeja Computer Village in Lagos, Nigeria. "A new frontier of collaborative and strategic partnership has opened between NCC, CAPDAN and all CAPDAN affiliates all over Nigeria. "Today's visit by a delegation from NCC led by its EVC/CEO underscores the reiterated commitment by NCC to partner CAPDAN as a strategic stakeholder in the telecom ecosystem," the commission stated in a press release. Prof. Danbatta said NCC is ready to partner with CAPDAN in order to translate into reality relevant provisions of the Nigerian Communications Act 2003. TheNewsGuru reports NCC and CAPDAN had earlier discussed issues of seminal benefits to the Nigerian economy. Among the issues discussed were the imperative of special partnership to arrest the challenge of proliferation of substandard devices because of their

implication for poor quality of telecom services. Also discussed was the need to halt the rise in tempo of cloning of IMEI numbers – a unique 15 digit code which every phone or Mobile Broadband Device has. Danbatta declared that as part of the strategic partnership, the commission will commence capacity building for members of the Association. He stated that the Digital Bridge Institute (a training institution set up by NCC in 2004) with its multi-campus status is sufficiently equipped to offer requisite training to CAPDAN members. He informed that the National Board for Technical Education has approved a number of courses at the Institute, including a National Innovation Diploma Program. Earlier, the President of CAPDAN, Adeniyi Ahmed Okikutu, had told Danbatta that what takes place daily at the Computer Village transcends selling of mobile devices, but includes amazing technical and innovative activities such as refurbishment of ware, software development, and demonstration of potential for the manufacturing of devices. The Computer Village has been described as Nigeria's equivalent of Silicon Valley and Bangalore, ICT hub of the United States and India respectively. (August 23, 2017) thenewsguru.com



Norway

Norway's National Communications Authority (Nkom) has announced details of the projects that will benefit from this year's broadband expansion grants. In a press release the Nkom confirmed that it is allocating funds to 40 projects across 17 counties, with a total investment of NOK138.9 million (USD17.9 million) expected to benefit around 13,700 households. According to the regulator, it received applications for funding from 142 projects, which were seeking a combined total of NOK589 million. In February 2016 the Nkom revealed a change in the weighting of the criteria for receiving broadband support under its annual scheme, confirming there would be 'more emphasis on applications in areas that do not have basic broadband coverage'. In terms of last year's funding, 30 projects covering around 9,200 premises were selected as the recipients for state funds. (September 11, 2017) telegeography.com

The Norwegian government has promised NOK 140 million towards the construction of fiber lines in and out of Norway, and for a new core network in the country, said national broadcaster NRK on its news website. In April, communications regulator Nkom had recommended state support to boost connectivity against vulnerabilities. The funding was announced when Prime Minister Erna Solberg and Minister of

Transport and Communications Ketil Solvik-Olsen visited Bulk's new data center in Stoleheia in Vennesla on September 4. Last December, Nkom pointed out the risk of 90 percent of web traffic travelling from Oslo through Sweden and on to Denmark, as is currently the case. Just ahead of the parliamentary election on 11 September, the government is pledging NOK 100 million for fiber cables in and out of Norway, and NOK 40 million for a new domestic backbone. NRK suggested to Solvik-Olsen, the telecoms minister, that NOK 100 million was not much money when a new fiber cable could cost NOK 400 million. He replied that the state funding would act as a catalyst and he hoped the telecoms sector would invest billions. Prime Minister Solberg said the goals were better data security and providing the conditions for a growing Norwegian data center industry. The government will hand Nkom the task of investing the money in projects that will be run by private operators, she said. Solvik-Olsen said connections to Sweden were good, but emergency preparations were insufficient. The state will jointly fund the schemes and be one of several owners, potentially selling its interests at a later date, he added. The funding was welcomed by Peder Naerbo, who founded Bulk, which built the Stoleheia data center. (September 5, 2017) telecompaper.com



Peru

Peruvian telecom regulator Osiptel has cleared the way for emergency services operator Dolphin Telecom to become the country's sixth mobile operator and second MVNO later this year. The watchdog issued a mandate confirming that Dolphin Telecom met the requirements to use Entel Peru's network to provide MVNO services following a year of negotiations. The

company will follow Virgin Mobile, which launched its prepaid service on the Movistar network last year but is reportedly considering abandoning the country in view of its minimal market share. Movistar currently dominates the Peruvian mobile market with 15.4 million subscribers, followed by Claro (12.2 million), Entel (6.0 million) and Bitel (4.3 million).

(August 18, 2017) telecompaper.com



Philippines

The Department of Information and Communications Technology (DICT) is mulling options to use a public-private partnership (PPP) model for at least one component of the country's National Broadband Plan (NBP). The paper cites PPP Center executive director Ferdinand Pecson as saying that the DICT had applied for the Project Development Monitoring Facility (PDMF) funding for the project. 'They just signified intention to tap into the facility so that the feasibility study could be done through this facility,' he said. The PDMF is described as a revolving facility for government agencies to prepare such projects, with Pecson noting that the DICT's application is for 'the component of the NBP which involves installation of cellular towers in parts of the country currently not reached by telcos such as PLDT Inc. and Globe Telecom Inc.' The NBP was approved by President Duterte in March 2016 and will act as the template for the rollout of broadband infrastructure

to connect government offices across the Philippines and to provide internet access to individuals living in unserved and underserved communities. With the DICT looking to conduct a feasibility study into the setting up of a working blueprint and a costing for the NBP – a previous estimate of PHP77.9 billion (USD1.5 billion) has been suggested – it is thought the total cost could come down if the government could make use of existing fiber network assets including the fiber-optic network in the transmission grid of the National Grid Corp of the Philippines (NGCP). It is hoped that a memorandum of understanding (MoU) on the use of the fiber network could be signed with the NGCP within the year. The Philippine Star points out that during the term of former president Gloria Macapagal-Arroyo, the government was looking to build a national broadband network with China's ZTE Corp. The plan was dropped, however, amid corruption issues. (September 12, 2017) [Philippine Star](http://PhilippineStar.com)



South Africa

South African regulator the Independent Communications Authority of South Africa (ICASA) has confirmed that it had received a notification from Cell C regarding its recent change of ownership, though its preliminary view is that 'the Cell C recapitalization transaction – on the face of it – triggers the provisions of Section 13 of the Electronic Communications Act of 2015 and ought to have been filed as an application for change of control of the licensee.' The authority is engaging Cell C 'to seek clarity on this apparent non-compliance with the legislative provisions', while also taking external legal advice on the matter, including what appropriate enforcement actions it can take to ensure compliance. Last month, Cell C announced that it concluded its recapitalization, with Blue Label now holding 45% of Cell C, while 3C Telecommunications – itself owned by Oger Telecom 45.6%, the Employee Believe Trust 29.4%, and CellSAf 25% – is in charge of 30%, Net1 (15%) and Cell C management and staff (10%). CellSAf filed a legal challenge against the deal in November 2016, claiming that it wasn't afforded an option to comment on the restructuring. Further, last month CellSAf described the process as a 'blatant attempt at corporate capture that is likely to collapse under regulatory scrutiny' in a strongly-worded statement, and pledged to pursue legal action in the high court to stop the deal from proceeding.

(September 6, 2017) telegeography.com

The Independent Communications Authority of South Africa (ICASA) has published its second Draft Radio Frequency Spectrum Assignment Plan to make critical wireless network capacity available to operators. ICASA's plan covers the frequency bands 825-830 MHz and 870-875 MHz, and restricts the use of the frequencies to mobile technologies, specifically International Mobile Telecommunications standards. While it is not a lot of spectrum, mobile operators have long said that lower frequency spectrum such as that in the 800 MHz band would be ideal for improving coverage to rural South Africa. As part of the plan, ICASA has proposed that spectrum assigned to Neotel be shifted immediately by 2 MHz to fall within the 825-830 MHz to 870-875 MHz ranges. Neotel currently uses this spectrum for its CDMA 850 network, and ICASA said that in the long run, it must stop using its assignment in this band for CDMA. The draft plan is open to public consultation until 20 October. ICASA has invited interested parties to submit written representations on the plan. It will then develop an invitation to apply for the spectrum in line with regulations.

(September 4, 2017) BusinessTech



Sweden

Telecoms regulator the Swedish Post and Telecom Agency (PTS) has announced that it will hold an auction for spectrum in the 450MHz frequency band early next year. The regulator will offer one national license of 2x5MHz in the 450MHz band. The minimum bid for the license has been set at SEK10 million (USD1.2 million) and the PTS has stipulated that the

winning bidder will be required to cover 80% of the area in each Swedish county with mobile broadband services, offering download speeds of 5Mbps and upload speeds of 128kbps. The license will run from March 5, 2020 until December 31, 2044. The deadline for applications is January 23, 2018, with the auction set to take place on February 6, 2018.

(September 15, 2017) telegeography.com



Switzerland

A group of nine Swiss telecom service providers and industry stakeholders has issued a joint statement urging the Federal Council to urgently revise the Telecommunications Act (TCA) to prevent the establishment of a new monopoly on combined fiber-optic and copper technologies, i.e. fiber-to-the-cabinet (FTTC), fiber-to-the-street (FTTS) and fiber-to-the-building (FTTB). Multi-play service providers UPC, Sunrise, Green, VTX, Init7, wireless operator Salt, industry groups Suisse Digital and openaxs, and Swiss Fiber Net – a cooperative of local and regional utility firms with open fiber networks – supported the move, calling on the Federal Council to ensure regulatory authorities can guarantee a minimum level of fair competition in broadband infrastructure access in the event of a market failure. In the statement, the group claims that market failures in the past have benefited state-owned incumbent Swisscom and add that, as the TCA in its current form only addresses copper infrastructure, there has not been fair competition 'for some time'. UPC CEO Eric Tveter underlined the point, noting: 'Legislation to date has favored Swisscom's home protection, resulting in a distortion of the market at the expense of all other

market players. We welcome the proposed revision as a first and important step from the Federal Council towards rectifying this imbalance.' The statement was issued following an announcement from the Federal Council that it had greenlit partial revisions of the TCA, with the draft changes now only needing approval from parliament. The changes include promotion of consumer rights, improvements to rules governing access to infrastructure and network sharing, greater flexibility with regard to spectrum usage, and additional measures concerning the blocking of sites hosting illegal content. Illustrating the benefits of improved access to infrastructure, the providers pointed out that: 'The technology-neutral design of network concessions has already resulted in a considerable surge in innovation and investments. New, more liberal provisions in network cooperation and frequency transfers increase the efficient handling of scant resources. Because of this, Switzerland benefits from further investments in new technology and competition, with the resulting improved supply being particularly beneficial in remote areas.'

(September 8, 2017) telegeography.com



Thailand

The independent regulator, the National Broadcasting & Telecommunications Commission (NBTC), is planning to hold an auction for spectrum in the 850MHz and 1800MHz bands – currently utilized by Digital Total Access Communications (DTAC) – in January 2018. The Bangkok Post writes that NBTC's decision to hold the tender three months ahead of its original plan is aiming to ensure that DTAC's services are not disrupted prior to the 2018 expiration of its concession. DTAC currently utilizes 45MHz of 1800MHz spectrum and 10MHz of 850MHz frequencies, under its build-transfer-operate (BTO) revenue-sharing agreement with state-owned telco CAT Telecom (expiring in September 2018). Takorn

Tantasith, secretary-general of the NBTC, said that a total of four concessions will be allocated – three in the 1800MHz band, and one in the 850MHz range. The executive said that he expects the auction for the two spectrum ranges to generate at least THB150 billion (USD4.5 billion) for the state, with the valuation based on the fees collected in a similar tender held in late 2015 (in which DTAC failed to secure any spectrum). Mr. Takorn Tantasith said: 'The auction of the 1800MHz and 850MHz spectra in January 2018 may draw less interest from Advanced Info Service (AIS) and True Corp, who already won 4G auction licenses in 2015,' adding that 'DTAC would most certainly be a prospective bidder.'

(September 11, 2017) telegeography.com



Uganda

The Uganda Communications Commission (UCC) has reported a 98% success rate for its recently completed SIM re-registration scheme. There had previously been fears that millions of users could face being wrongly disconnected due to delays in issuing national identity cards; these cards are necessary for

a subscriber to validate their mobile account. A report from local radio station KFM cites the regulator's Corporate Affairs Director Fred Otunnu as saying that any customers whose lines have been disconnected can still have their service reactivated by following the correct SIM registration process.

(September 21, 2017) telegeography.com

Government is considering new regulations which will prohibit street vending of simcards, and telecom companies will face sanctions on every active unregistered cards. According to the Minister of Security, Rtd Maj Gen Henry Tumukunde, the regulations have been benchmarked from Nigeria and Kenya. Nigeria recently slapped a fine of 1000 USD to telecom companies on each unregistered simcards

in use, while in Kenya Communications Authority has set fines to a tune of Ksh 100,000 (US\$ 3.4 Million) or a six months jail term for using an unregistered simcards. Gen Tumukunde who has been appearing before Parliament's Committee on Information and Communications Technology says that if the new regulations are adopted, the country might be saved from escalating levels of crime. (August 27, 2017) kfm.co.ug



Ukraine

The National Commission for State Regulation of Communications & Informatization (NCCIR or NKRZI) posted a notice on its website announcing that the decision to launch a 4G LTE mobile frequency auction has entered force. The announcement confirmed that the regulator's approval of the tender procedure (No. 281, May 30, 2017) was published in the Official Gazette of Ukraine (No. 74), having been agreed upon by the State Regulatory Service of Ukraine (DRS), the Antimonopoly Committee of Ukraine (AMCU) and the State Service of Special Communication & Information Protection of Ukraine (DSTSZI), and registered with the Ministry of Justice of Ukraine on September 11, 2017 (No. 1115/30983). NCCIR head Alexander Zhivotovsky has been quoted as saying that a 2600MHz auction will kick off in November-December 2017, closely followed by an 1800MHz competition in early 2018. In its announcement today, the NCCIR notes that the next necessary steps involve cooperation from existing mobile licensees to reform/reallocate some of their spectrum, plus the preparation of spectrum conversion plans with economic costings to be approved by the regulator.

(September 22, 2017) telegeography.com

The tender issued last month in Ukraine to find a provider of mobile number portability (MNP) systems has been declared invalid due to insufficient applications. The Ukrainian State Centre for Radio Frequencies (UCRF) had been forced to relaunch the MNP tender process in August due to litigative disputes over previous tender results, but by the September 17 deadline only one company, Ukrainian Center for Numbers & Addresses Support (UTSPNA) applied. Under the rules of the tender, there must be at least two applicants. In April 2016 Kiev-based IT security solutions specialist SI Center had been chosen by the UCRF as the lead implementer of MNP systems in a re-run tender, after the previous winning bid of Ukrainian IT company Dialink had been invalidated, but multiple legal cases surrounding the process continued (with court actions still ongoing to date). (September 22, 2017) BizLiga

The Ministry of Justice has given its approval for the long-awaited auction of 4G LTE mobile licenses, said the President of Kyivstar, the largest Ukrainian mobile operator by users, Petr Chernyshov, who wrote on his Facebook page: 'News of the week – the Ministry of Justice signed the order of holding a tender for 4G, and we took a step closer to the rest of the world.' The press department of Ukraine's telecoms watchdog, the National Commission for State Regulation of Communications & Informatization (NCCIR), clarified to BizLiga that the decision would officially enter force once published by the Ministry. Chairman of the NCCIR Alexander Zhivotovsky previously indicated that an 1800MHz LTE license auction is likely to happen in the first quarter of 2018, shortly after the upcoming 2600MHz auction, which is scheduled to take place by the end of 2017.

(September 19, 2017) BizLiga

The national telecommunications regulator NKRZI has extended several operators' licenses to use frequency bands. Radionet has obtained a license extension until 2023 to use spectrum to supply broadband in the Vinnitsia region. Platinum Internet has received a license until 2022 for radio spectrum to provide broadband in the city of Kiev, as well as the regions of Dnipropetrovsk, Ivano-Frankivsk, Kiev, Mikolaiyv, Poltava, Kharkiv, Kherson, Donetsk, Kirovograd, Zaporizhzhia and Crimea. Poltavainfocom has received a license valid until 2023 for the use of bands to deliver broadband services in the Sumi region. Intertelecom has secured extended licenses to provide mobile services over the CDMA-800 standard in the Kharkiv and Dnipropetrovsk regions, valid until 2022. (September 13, 2017) telecompaper.com

The national telecommunications regulator NKRZI has issued new licenses for companies enabling them to provide telecommunications services. Operator Intellect Dnipro Telecom received a license to provide local fixed telephony services using up to 1,000 telephone numbers in the Dnipropetrovsk region. Mobile operator Intertelecom obtained a license for providing fixed local telephony services using CDMA technology in the Dnipropetrovsk and Kharkiv regions. Both the licenses are valid for five years. (August 30, 2017) telecompaper.com



United Kingdom

The government named the first regions that will benefit from funding it allocated to fiber rollout earlier this year, but the announcement marks a very small step, accounting for just 5% of the available funding. The state will spend £10 million on six pilot projects to deploy fiber-to-the-premises – or full fiber, as it likes to call it – to homes and businesses. The test projects will take place in Aberdeen and Aberdeenshire; West Sussex; Coventry and Warwickshire; Bristol, Bath and North East Somerset; West Yorkshire; and Greater Manchester. They form the first phase of a £200 million, four-year projected spend unveiled by Chancellor of the Exchequer Philip Hammond at the government's spring budget in March. The overall aim of the project is to explore ways to accelerate the rollout of FTTP. "We want to see more commercial investment in the gold standard connectivity that full fiber provides, and these innovative pilots will help create the right environment for this to happen," said minister of state for digital Matt Hancock, at the weekend. "We need to have the right infrastructure in place to allow us to keep up with the rapid advances

in technology now and in the future," he said. The government did not provide any further details of the six pilots, but waxed lyrical about the possible benefits of fiber connectivity for schools, hospitals and businesses. When it announced the £200 million fund, the government said it aims to bring together local public sector customers, to create enough broadband demand to reduce the financial risk of building new full-fiber networks; offer full-fiber broadband connection vouchers for businesses, to increase take-up of services where new networks are built through the program; connect public sector buildings, such as schools and hospitals, thereby also bringing fiber closer to more homes and businesses; and open up public sector assets, such as existing ducts, to allow fiber to be laid more cheaply. The government confirmed it expects to spend the remaining £190 million by 2020-2021. Matt Hancock drew a large audience at Total Telecom's Connected Britain event earlier this year. Connected Britain 2018 moves to a bigger venue, the Business Design Centre in London, on 19-20 June 2018.

(September 4, 2017) totaltele.com



United States

Federal Communications Commission (FCC) for the first time since 2009, the Federal Communications Commission has concluded there is "effective competition" in the US wireless market. The agency is required by law to conduct an economic analysis of the sector. Starting in 2010, after years of major consolidation among wireless carriers, the FCC declined to say whether it believed the industry was competitive. While the FCC had stopped short of declaring the industry noncompetitive, many industry observers still took it to mean the agency thought the nation's largest carriers, AT&T and Verizon Communications, were too powerful. In 2011, the government blocked AT&T's attempted buyout of T-Mobile US. Since then, T-Mobile and Sprint Corp.

have been resurgent, stealing subscribers and transforming the industry by doing away with two-year contracts and bringing back unlimited data plans. AT&T and Verizon have lost customers and wireless prices have fallen by the largest margins on record, according to government data. The FCC's finding could have antitrust implications. If the wireless market is competitive, regulators may believe it could withstand another large merger. The nation's smaller players, Sprint and T-Mobile, have been in talks about combining, people familiar with the matter have said. "A finding of effective competition certainly helps rhetorically for those trying to consolidate or trying to deregulate," Harold Feld, a senior vice president at Public Knowledge. (September 12, 2017) benton.org



Zambia

The government has given the go-ahead for the country's telecom regulator to license new mobile operators, it emerged this week. The country will allow a fourth mobile operator into the market and possibly a fifth, Bloomberg quoted Transport and Communications Minister Brian Mushimba as saying. The fourth player could be in place within the next six to 12 months, the Minister said. As it stands, Zambia is restricted to having just three mobile operators, Reuters explained. The country passed a law to that effect in 2009 in a bid to help the current players expand their services. The Zambian mobile market is shared between MTN, Bharti Airtel and state-owned player Zamtel. However, as both newswires pointed out, the country approved a new licensing framework earlier this year that paves the way for market

newcomers. U.K.-based mobile group Vodafone is being widely tipped to become Zambia's fourth mobile licensee.

(September 21, 2017) Bloomberg.com

Vodafone already has a presence in the country through a partnership with Afrimax Group that offers 4G-based data services under the Vodafone brand. However, it is not licensed for voice services. The telco has been working hard to raise its profile in Zambia. Earlier this year it brokered a sponsorship deal with the City of Lusaka Football Club that gave it the right to rebrand the team stadium, according to local press reports. Mr. Mushimba said Government has invested the funds in communication infrastructure after realizing the important role information

communications (ICT) plays in the development of any country. He was speaking while unveiling the Zamtel board of directors. "We want to position Zambia as a regional hub in ICT considering the strategic location of the country, and Zamtel is the vehicle we want to use to achieve that," Mr. Mushimba said. He said Zamtel, being a state-owned enterprise, should be Government's preferred network, but it is not the case. "Design business solutions for Government. Why is Government using other networks? Position yourself and create value. Zamtel must take the lead, you must be the 'ferari' in the industry. As a minimum standard, every government employee should be on Zamtel network," he said. Mr. Mushimba commended Zamtel for turning around the fortunes of the company. He said in May this year, the company's opening balance was K30 million but the amount increased to K55.8 million, making its first profit of K2.3 million. Mr. Mushimba said in July, Zamtel posted a profit of

K14.5 million. "Zamtel is vibrant and on the upswing. So as a board, Government expects that you will grow the company and make it a flag of communication," he said. Mr. Mushimba said the board members have signed performance contracts to ensure that they put in their best. And Zamtel board chairperson Justin Chola promised to turn the company into an "undisputable telecom entity". Mr. Chola, the chief executive officer of Bayport Financial Services and the man behind the concept of Twangale Park, said he will ensure that Zambians become proud of Zamtel by making it the most preferred network. Other members of the board are Danny Luswili (vice chairperson), Misheck Lungu (permanent secretary in the parent ministry), Bob Musenga, Claire Limbwabwa, Francis Musonda and Sydney Mupeta (Zamtel Acting Chief Executive Officer).

(August 27, 2017) daily-mail.com.zm



Convergence
KUWAIT 2017

NOVEMBER 2017

Creating New Advantages for Industry Stakeholders

Convergence to Kuwait 2017 will corroborate the need to engage stakeholders and delineate the roles that now need to be played by regulators and policy makers as an incentive for carrying out digital development investments, and for realizing new unique advantages that each stakeholder group should work toward achieving.

In this highly competitive industry, it is important to take the lead and collaborate to allow the industry to continually push innovation to the next stage. It is crucial also to ensure that all spheres of the industry are analyzed, explored and tapped to identify a road map for progression.

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