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FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS
BUILDING DIGITAL ECONOMIES

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+X

Leaders' Summit 2020

THIS MONTH

**5G: READY FOR DIGITAL TRANSFORMATION
ACROSS INDUSTRIES**

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Industry Advisory Group for Development Issues and Private Sector Chief Regulatory Officers' meeting (IAGDI-CRO)

An industry perspective on development and regulatory issues

31 August, 2020

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Editor-in-Chief
Bocar A. BA

Contributing Editors
Izhar Ahmad
Javaid Akhtar Malik

Knowledge Contributions
China Mobile International
Etisalat
Huawei
InPhoTech, Poland
Intigral
stc Kuwait
Tech Mahindra

Publisher
SAMENA Telecommunications
Council

Subscriptions
subscriptions@samenacouncil.org

Advertising
ads@samenacouncil.org

SAMENA TRENDS
trends@samenacouncil.org
Tel: +971.4.364.2700



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5G: Ready for Digital Transformation across Industries

While immediate action is needed to beneficially exploit the power of existing digital technologies in order to put recovery back on track, governments and regulatory authorities in the region, with the support and proactive engagement of the private sector and the digital space players, should also act upon the need to create synergies across various industries—that is, vertical markets for the Telecom Industry. In July, SAMENA Council aimed to reiterate precisely this, and thanks to the level of industry participation of industry stakeholders and decision-makers witnessed during the Leaders' Summit 2020, the message has been well-established.

The post-COVID-19 world is more digitally-driven than it had ever been, and will continue to be much more so than it is today. While on one side the power of the digital infrastructure stands glaringly proven; on the other side, divides in broadband access levels, affordability and capacity as societies make the transition have also been firmly demonstrated. Fortunately, as initiated by the WEF, the public-private cross-sector community has reacted swiftly to develop a set of implementable measures to accelerate the digitally-driven recovery efforts and to unearth new growth opportunities. Such measures are centered on holistic national digital strategies that make use of unused national funds; focus on dedicating certain portions of the Covid recovery packages to digital infrastructure development where it is most needed; and necessitate supporting SMEs across all industries in their efforts to benefit from digitization.

SAMENA Council believes that public-private-people cooperation is essential for addressing the digital inclusion imperative, which has been highlighted strongly after

the crisis, and for bringing various industries closer to the Telecom Industry in order to create new cross-industry synergies for catalyzing a true digital renaissance in both socio-economic activity and in industrial productivity. Already, there is consensus and recognition by governments and the private sector alike that connectivity—at end-user, machine to machine, and industrial levels—lies at the core of these aspirations.

At the core of provision of connectivity lies the central role of Telecom Operators, and this role through out the current year, since the pandemic, has been well-recognized. However, Operators themselves are facing tremendous revenue-generation challenges, continued regulatory restrictions, taxation regimes and industry fees, all of which have a direct impact on how far, how much, and for how long the Operators can continue with their voluntary offerings to help reduce financial hardships for the end-users while living up to expectations. This merits the consideration of policy-makers and regulators, who themselves face multiple challenges, to reduce financial pressures on Operators and to help improve affordable access to broadband services for the end-users. Moreover, it is merited that relevant government bodies help accelerate 5G transformation in their respective markets, which, among other areas, requires building cross-industry 5G incubation centers and adopting approaches that not only allow for overcoming direct impediments to 5G deployment (such as spectrum interference and security issues), but which also catalyze adoption of industrial 5G among healthcare, manufacturing, transportation, and education sectors in direct collaboration with Telecom Operators.



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

Times are calling for Operators to focus on closely working with players from other industries and sectors not only to fulfill their own revenue requirements and to self-incentivize further investments, but to also directly and proactively help develop the 5G ecosystem. The "5G+X" delved into during the SAMENA Council Leaders' Summit 2020, which attracted the participation of industry minds from 64 countries, will come to life only through strong, materialized collaboration, cooperation, and in reaching out to each other to overcome common challenges and to fulfill common objectives. 🌐

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stc Speaks to SAMENA Council



5G is a critical element for accelerating digital transformational across multiple industries such as Oil & Gas, Healthcare, Public Sector, Education, Government etc., however, it benefits from additional elements such as low latency, high speed, and edge computing is going to unlock many industrial applications.

In Saudi Arabia, stc was the first operator to provide 5G services commercially and making it available to its customers in several cities. After the launch of first 5G

network in May 2018, stc has announced that it is expanding its 5G network across the Kingdom and achieving the highest reach level in the MENA Region and worldwide. stc has also announced that it is working on completing the following phases of spreading the 5G services on a wider scale to ensure keeping up with the newest global technologies, improving digital services, and enriching the customer experience across the Kingdom.

stc emphasis on 5G commercial services is in line with the Kingdom's digital transformation plans, and the objectives of the National Transformation Program as well as the Saudi Vision 2030, and seen as a confirmation of the advancement of the infrastructure that the stc Group has contributed to developing by heavily investing in it to ensure an advanced technical future.

stc has been engaging with different verticals for different 5G use cases, Working with industry for smart campus network concept that will support further digitization and diverse set of use cases implementation. In Healthcare, connecting multiple thermal cameras in different location backhaul by 5G to remote command and control site for remote monitoring and analysis. In the media and entertainment, taking advantage of 5G high bandwidth and low latency by eliminating the need for cabling/pre-cabling in broadcast camera and replacing it with a portable solution that transmits the highest quality live video via 5G network.

'Smart Campus' is an innovative dimension of 5G technology, and with high throughput and very low latency, Smart Campus will facilitate the introduction of intelligent applications and advanced use cases such as 5G CCTV, Cloud PC (office Application),

cloud gaming, cloud VR (collaboration and training), 5G live broadcasting backpack, AR remote assistance and drone inspection, delivering a more enhanced customer experience compared to existing public networks with high level of security. One of the most important benefits of the 5G is the design flexibility, allowing the network to be customized based on the enterprise need.

For Smart Campus' project, the ability to slice the network allows the operators to assign a specific slice to specific use case ensuring the highest resource utilization and address diverse Quality of Service (QoS) requirements. For instance, one network slice can be designed to deliver and support low latency & low data rate use cases while the other network slice can be configured for high throughput ones.

stc 5G Smart Campus solutions will facilitate the introduction of different service standards for enterprises, Oil rigs, gas exploration, educations, medical treatment, mining, and other industries with diversified and remote infrastructure to resolve challenges related to: capacity, density, coverage, security, high operational cost, and complex management.

5G is a critical element for accelerating digital transformational across multiple industries such as Oil & Gas, Healthcare, Public Sector, Education, Government etc., however, it benefits from additional elements such as low latency, high speed, and edge computing is going to unlock many industrial applications. The opportunities for new 5G enabled Industry 4.0 solutions at the operational sites are therefore significantly enhanced to include use cases requiring cloud analytics and AI based automation.

Especially considering the Saudi's Oil & Gas sector, 5G has arguably come along at just the right time; providing oil & gas sector with a new vehicle to drive many of the much-needed productivity and efficiency gains required to be competitive in the post Covid-19 world, and simultaneously make significant strides towards meeting Industrial digital transformation objectives. Today, it is the combination of 5G and edge computing that is unlocking a range of new

use case applications across exploration & production, pipeline transportation, refining and petrochemicals that promise to both improve productivity and make more efficient use of human resources.

In the ongoing and post Covid-19 situation, the demand for digitalization for every sector in the market is going to increase exponentially, which will eventually put pressure on network utilization, and this is the rational where 5G broadband is going to be a critical factor and become a lifeline for many businesses.

In the ongoing and post Covid-19 situation, the demand for digitalization for every sector in the market is going to increase exponentially, which will eventually put pressure on network utilization, and this is the rational where 5G broadband is going to be a critical factor and become a lifeline for many businesses. We also foresee that 5G rollouts would be doubled to meet the growing customer demand, and operators worldwide will need to continue to invest in 5G-infrastructure expansion, to stay ahead of the global competition.

Despite the emerging pandemic conditions of the Corona Virus (COVID-19), stc continuously expanding its 5G telecom infrastructure with specialize applications for every industrial sector to accelerate and enable our customers to embrace digitalization over 5G broadband backbone. stc Enterprise Business Unit, in addition to other telecom products and services already identifying 5G technology use cases which support our customers in meeting future market demands, through emerging technology based innovative products and enterprise solutions in the field of Artificial Intelligence, Big Data, Internet of Things, Cloud Computing and Cyber security.

"the importance of stc DARE strategy where stc business working on future solutions today, by introducing new breed of digital services such as SAYEN, Virtual Clinic, EMI and innovative enterprise solutions such 5G Smart Campus solution which is in line with the vision 2030 program, to accelerate the digitization of government and private sectors and to support the kingdom's digital vision".

In coming 2 years we foresee that 5G high speed broadband will be the key driver for operators in Middle East to increase 5G investments, to continuously expand the 5G footprint and focus on 5G value creation for customers, using advance applications through partnerships, customer co-creation and making 5G one of the most powerful networks delivering digital services not only in Middle East but Worldwide. 🌍





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SAMENA COUNCIL ACTIVITY

SAMENA Council Leaders' Summit 2020 Unveiled Cross-Industry 5G Readiness and Identified Transformative Priorities for the Decision-Makers across the Public and Private Sectors



SAMENA Telecommunications Council conducted its annual Leaders' Summit 2020 on July 9th as the world's first-of-its-kind digital remote-collaboration experience among global and regional industry leaders and decision-makers, spanning multiple geographies and time zones. Global bodies of renown, including special ICT development agencies of the United Nations, international financial institutions and inter-governmental economic cooperation organizations

were among the most prominent thought-leadership contributors in the leadership congregation, virtually attended by hundreds of participants across the globe. During the Leaders' Summit, the United Nations Broadband Commission for Sustainable Development was represented by 15 Commissioners, some of whom proactively spoke during the Leaders' Summit 2020, virtually attended by leaders and participants from 64 countries.

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Participating UN Broadband Commissioners' Insights

Mr. Scott Gegenheimer, CEO Operations - Zain Group

- Connecting the unconnected is key to enable better preparedness for the next crisis. To achieve this, we need to move from 2G to 3G to 4G to connect the rest of the world first. 5G won't solve our issues – it is not a crisis solver.
- Issues that are key to address across the MENA region for better preparedness include: Digital Identity, Privacy and Security and Regulatory Sandboxing

Professor Dr. Jeffrey Sachs, Columbia University

- Sustainable Development is the vital concept for better preparedness and a more inclusive and equitable future
- 5G and other Digital Technologies, in turn, are vital as a key elements of Sustainable Development
- To reduce inequalities and the Great Divide, it is fundamental that we address the GAPS first
- The gaps can only be addressed through provision of Universal Digital Access as a Public Good. This



The SAMENA Council Leaders' Summit 2020 has served as a true representation of the world's most developed and developing digital economies, all striving to accelerate digital transformation and to overcome complex challenges. Leaders' Summit demonstrated both global and regional ICT stakeholders' commitment to work together, with speaker leaders representing the UAE, Saudi Arabia, China, UK, USA, Sweden, Pakistan, Egypt, Russia, Turkey, Malaysia, Switzerland, Kuwait, France, Oman,

Bahrain, Belgium, Ireland, Colombia, South Korea, Ireland, among other nations, sharing their experiences and expertise as well as future visions for realizing 5G+X, where "X" stands for all infrastructure and cloud-based allied technologies and all industries and sectors that will be crucial to creating a sustainable 5G ecosystem and, in turn, for revitalizing the economies as well as catalyzing new financing models and investments.

is not possible on a private basis. It requires massive collaborative public private efforts.

Mr. Mats Granryd, Director General - GSMA

- 2020 is the year that changed everything
- The Mobile Industry is vital and has enabled continued social and economic activity throughout the crisis and has accelerated digital transformation
- Advancement of robust, resilient and secure mobile networks and inclusive services are key to better preparedness for the future
- The key mobile industry priorities include:
 - Ensure a positive long-term Spectrum Framework
 - Governments need to prioritize Digital Strategies and Public-Private Collaboration
 - The opportunities in the enterprise space need to be maximized to build better and broader services going forward
 - Accelerate the achievement of the SDGs

Mr. Bocar BA, CEO - SAMENA Council

- The Leaders' Summit 2020 serves as an endeavor to put various globally defined ICT milestones and action plans into perspective, and to bring us back on track by drawing on our collective conscience, wisdom, experiences, and expertise to make maximum progress in fostering Digital development and, as needed, incentivizing new ways of investment.
- We have witnessed during the Leaders' Summit an urgency with which we need advanced, reliable and resilient network infrastructure to master the current and future crises. Our success between 2020 and 2030 will indeed be influenced by our progress made in meaningfully leveraging digital communications technologies, their application and the advanced digital networks that they run and scale on. The COVID-19 crisis highlights just how the use of ICTs can contribute to better managing and living through crises.
- A foundation has been created for an ICT cultural shift, with all necessary mindsets, practices, capabilities, attitudes required to be in place for treading the next decade of connectivity and connectedness.
- Regulators and operators and the larger ICT community, together, can achieve major milestones effectively and efficiently when threats are tangible. With new challenges on the horizon, transformative changes and increased collaborative efforts to achieve key milestones on the way to fulfilling the SDGs are needed. One such major milestone is accelerating the implementation of 5G and other advanced network technologies such as satellite, in a harmonized and efficient manner. This includes meeting necessary requirements for achieving economies-of-scale in device availability and general affordability for a mass-scale adoption, for example.



Conducted from Dubai with the patronage and support of Telecommn- cation Regulatory Auth- ority (TRA) of the UAE and a special guest-of- honor address by the UAE Minister of Tol- erance & Co-existence, H.H. Sheikh Nahyan bin Mubarak Al Nahyan, the Leaders' Summit 2020 was 5G-powered in stra- tegic collaboration with Huawei Technologies Middle East.

Conducted from Dubai with the patronage and support of Telecommunication Regulatory Authority (TRA) of the UAE and a special guest-of-honor address by the UAE Minister of Tolerance & Co-existence, H.H. Sheikh Nahyan bin Mubarak Al Nahyan, the Leaders' Summit 2020 was 5G-powered in strategic collaboration with Huawei Technologies Middle East. The Summit vividly showed how large- scale industry events can be enriched with live experience-sharing across countries, and how 5G can elevate the remote digital collaboration experience. Leaders and experts participating in the Leaders' Summit, representing various industries, ensured their remote



participation through SAMENA Council's digital remote-collaboration platform. The Summit brought to light ways and

Leaders' Insights on Industry Issues of Global Importance

- H.E. Houlin Zhao, Secretary-General of ITU, said that the growth of connectivity has slowed down in the recent years and we are facing several challenges such as geographical imbalance, lack of effective guidance and industrial policies and more. As a result, ITU data shows that over 46 percent of the global population is still unconnected. All global partners need to engage in a global dialogue for broadband development if we are to close the digital divide.
- In her speech, H.M. Queen Silvia of Sweden highlighted the importance of child safety online and the importance of everyone in the industry to work together to protect children online.
- In his Guest-of-Honor's address, H.H. Sheikh Nahyan Al Nahyan expressed that technology helps promote easy exchange





means by which 5G adoption could be accelerated, and how 5G networks can support investments in various sectors such as transportation, health care, education, utilities, financial services, energy and others,

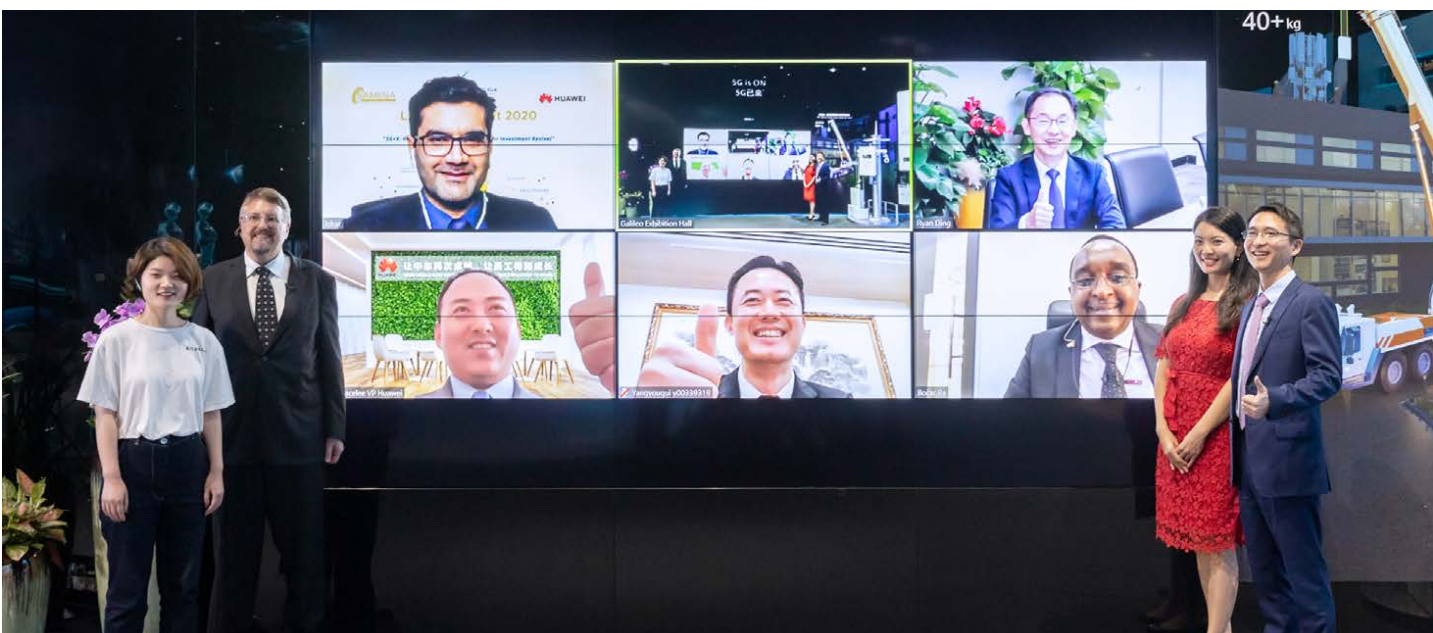
while creating a new socio-economic momentum in all aspects of social and business environments in a meaningfully digitized, integrated, smart, and useful manner.

The Summit vividly showed how large-scale industry events can be enriched with live experience-sharing across countries, and how 5G can elevate the remote digital collaboration experience.

The presence of decision-makers and stakeholders, ranging from heads of state, heads of global bodies, leaders from the regional policy and regulatory circles, and CEOs from telecom and non-telecom private sectors joining into the conversations from across the world in the one-day remote leadership congregation demonstrated will among top decision-makers to collaborate and address requirements of the post-COVID world, having already entered the 4th industrial revolution.

of viable ideas around the world. It reinforces our commitment to build a work culture in government, business, and education, and to support innovation and high levels of performance. The goal of technology should not be to make humans more like machines. It should be to let humans be more human. In this regard, 5G has tremendous potential to contribute in shaping lives to better fit our needs, as human beings. Serving those who have limited to no access to connectivity can make 5G a great advancement for the entire world. Thus we should not only focus on 5G as mere technology, but on the goals it can help serve.

- These views were echoed by H.E. Shaikh Nasser Bin Mohamed Al-Khalifa, Acting General Director, TRA-Bahrain, who stated that the Internet can bring considerable benefits to children in Bahrain and the world such as education and development. However, it also exposes them to risks such as unsuitable content, abusive interactions with others and exposure to aggressive marketing practices. He elaborated that considering these risks, TRA Bahrain is putting up all efforts for the online protection of children.
- H.E. Bassam A. Al-Bassam, Deputy Minister for Telecom and Infrastructure, MCIT – KSA, acknowledged that the pace of change in telecom industry is accelerating and telecom operators will continue to play a very important role in the future by defining how we live, work and enable digital health and education.
- Dr. Amr Badawi, Chairman ITU WRC-19 – Egypt, summarized the relevant results of the WRC-19 conference and the future of WRC-23. He said that the WRC-19 proved to be a major success in reaching global harmonization on spectrum. A major aspect of WRC-19 were the additional frequency bands identified for services such as HAPS and EESS. Dr. Amr also told how ITU Recommendation (standard) was approved to integrate ICTs in evolving Intelligent Transport Systems (ITS) to connect vehicles, improve traffic management and assist in safer driving. The WRC-23 will focus on key areas including Earth stations in motion, HIBS, Aeronautical mobile applications and GMDSS.





To this effect, the discuss agenda of the Leaders' Summit was highly relevant to global aspirations and globally agreed ICT developmental goals, regional trends and transforming socio-economic trends, innovations in technology, and shifting business processes and models. The Summit also reflected on the role of the Telecom Operators with decisive, timely, and resilient measures taken to control the pandemic, and it was agreed that, had 5G was already in place at the required scale, the response to pandemic management would have certainly been different and much stronger.

Keynotes from leaders emphasized industry issues that are more societal in nature than business, but which are integral to the industry dialogue, and to SDGs. Each of the speakers focused on a unique perspective, including on the priorities for the next decade; child protection online; developing markets and their ambitions and challenges in digital transformation, among others. Queen Silvia of Sweden's address, in particular, recognized the heroic



Private & Public Sector Viewpoints on Collaboration and Connectivity Challenges

- stc Group CEO and Chairman of SAMENA Council, Engr. Nasser Al-Nasser called upon ICT leaders to work closely together on addressing present-day challenges, and to make full use of future opportunities, while staying safe and remaining optimistic about the future. Al-Nasser reiterated that the industry leaders need to accelerate cooperation-building, which require unprecedented level of mutual engagement, participation, collective wisdom, and exchange of expertise.
- President of Huawei Middle East, Mr. Charles Yang, expressed that advantages of 5G infrastructure are increasingly clear. The outbreak has led to increased demand for ICT solutions to complex socio-economic challenges. There exists a dire need for meeting the increased demand for ICTs. New forms of public-private partnerships based on open collaboration, supporting strongly industry policies that enable social value-creation, economic development, and enhanced service experiences to consumers across the region, will be necessary to move forward.
- TRA-UAE's DG, H.E. Hamad Obaid Al Mansoori, emphasized on the significance of ICTs and that it has become clear that the most prominent change affecting the people's lifestyles, production methods, management and daily life are supported by ICTs. While pandemics are not new to the human race, it is the first time in history that the telecommunications sector has become a critical element in the fight for survival and sustainability.
- Public-sector leaders, concerned with national economic development and security of the cyber world, delineated the need to develop a roadmap for 5G introduction in the country and 5G presents an excellent opportunity to telecom stakeholders to support the national economy, as stated by Pakistan Telecom Authority Chairman Maj. Gen. (r) Amir Azeem Bajwa. Likewise, Eng. Majed Al Mazyed, Deputy Governor for International Cooperation from Saudi Arabia's National Cybersecurity Authority, expressed that WHO has reported multi-fold increase in cyber attacks, which substantiate the urgency to secure the cyber world in which we are connected today.



role of Telecom Operators providing connectivity, and urged the Industry to recognize that not only do the industry players need to directly help combat COVID, but to also help mitigate its numerous hidden consequences, including dangers that lurk in the digital space for children and young people.

Heads of regulatory authorities recognized that despite its drastic impacts, the prevailing pandemic has played a significant role in accelerating the understanding of the 4th Industrial Revolution, which requires 5G and allied technologies, such as artificial intelligence (AI) and their use be leveraged in providing unconventional solutions across all walks of human life and business activities.

Insights from Fireside Chats

- Technology and Connectivity are vital to sustainable development – everybody needs to be part of this development
- This development needs to be environmentally sustainable
- Addressing the gaps are fundamental and key to sustainable development and sustainable digital transformation
- We cannot really talk about digital transformation of digital economies until and unless all people have the tools to connect to the digital world
- The ultimate question is: What can this great industry do for the less fortunate?
- “Universal Digital Access” should be SDG 18
- Need universal approach – provide connectivity as a public service
- Asia-Pacific is doing the best – China and Korea are prime examples
- As we enter into the AI, IoT and 5G world, a key challenge for the countries is to mainstream these frontier technologies to unleash their promise in each sector and as we move toward a hyperconnected world, data driven development is very important
- Need to align investment plans with Private Sector then have Public Sector build
- Demand side needs to be stimulated
- Covid-19 has led to an acceleration of Digital Transformation
 - 70% growth in Internet Traffic
 - 600% growth in use of online collaborative tools
 - 15-30% of Workforce and school kids working from home
- The crisis highlights the digital divide and thus Digital inclusion is key
- We need to look at what the governments put on the table in terms of public financing but also what the private sector is doing when we look at digital investment and spending in the sector
- Need cross-sectoral digital plans
- SMEs represent 99% of businesses – need to help them to digitalize
- Verticals are key – fundamental change required: a real change of organization and enterprise culture is required
- We see branches of the global economy experiencing different form of digitalization that is expected to provide efficiency, transparency, new business models and products.
- Governments must think holistically to overcome infrastructure, developmental, and nation-building challenges
- One of the approaches in addressing financing gaps is to create enabling conditions for the private sector to finance as much as possible, focus the public financing as a catalyst source of last resorts, and the public investment should focus on areas where there is not enough appetite for the private sector

As its integral part, the Leaders' Summit 2020 also included diverse discussion panels and a dedicated Huawei 5G Ecosystem Conference, held for the third consecutive year during the Summit under the theme "Unleash 5G potential, build a better world". Participants reviewed 5G ecosystem cooperation in the Middle East, and how 5G paired with complementary technologies such as cloud, AI, and AI-driven autonomous and BVLOS commercial drone



Insights from Discussion Tracks

- All sectors can benefit from 5G in crisis situations
- Regulatory Sandboxes are needed to allow new technologies to flourish
- Democratization of data is important: need to enable new ways of living with New and Big Data
- Need for responsible AI, AI for good, to ensure that the digital revolution contributes to all mankind
- Need collaborative management
- At this point in time not everyone is at the same level and benefits equally from the digital revolution and the technologies it brings. We need to enable catch up and for that the most important thing is Internet Connectivity for all
- Better, more efficient processes of approval for network deployment are needed
- There is no 5G without fiber backhaul, access to public infrastructure, and dark fiber; we need to foster a regulatory environment that enables 5G roll-out
- 5G won't solve our issues – it is not a crisis solver at all! We need to move from 2G-3G-4G to connect the rest of the world first
- In the MENA region: Data Privacy obligations on operators are restricted to country borders
- End-to-end encryption may not be the right answer to address all cybersecurity concerns, as it fosters and enables criminal behavior such as child pornography and arms deals, etc.
- There is still a large discrepancy with regards to OTT and operator treatment
- Bringing meaningful connectivity to the world is paramount, and it needs to be relevant, inclusive, accessible and affordable
- We need to rethink ways to achieve the SDGs, as current approaches and ways have not been progressive enough
- The Covid crisis has brought some challenges on the networks – but challenges were mastered through prioritization of certain important content over other content
- Need predictions and predictive models
- Telcos were less affected by the crisis
- Infrastructure sharing is an important approach, and we need to ensure that we have sufficient bylaws that address site and tower and other infrastructure sharing matters
- Free provision of spectrum is required
- Need adequate local ecosystem for 5G to flourish, and we must allow for sufficient space to innovate



provision of public-sector services require understanding some key benefits and real-life use-cases of 5G, with some having been lately tested in emergency situations in the wake of COVID-19. Many of these use cases for both consumers and enterprises were showcased during the Leaders' Summit 2020 via a live 5G exhibition, courtesy of Huawei. In so doing, the Leaders' Summit's focus, steered under the theme "5G + X: Harnessing 5G Across Industries for Investment Revival", was achieved not only through knowledge exchange but through physical demonstrations, backed by expert analyses on how 5G business models can and need to change to accommodate new digital adoption trends catalyzed by the COVID-19 pandemic, and how regulation must too evolve from traditional mindsets to new-age approaches. Attaining the 5G momentum demands that technology innovation, ecosystem amplification, standard unification, business exploration and growth-oriented collaborative policies be realized with urgency.

applications, can inspire new vertical industry applications. Today that ranges from improving SME competitiveness to the digitization of oil & gas operations in the Middle East and globally, all of which boost economic potential by enhancing industrial processes and productivity.

Council's Leaders' Summit 2020 has served as the new destination for the digital space players and decision-makers to make accelerated progress in digital cooperation-building and digitization for the next decade. I present my gratitude to each leader for their gracious presence and inspirational messages, and to each speaker and moderator for their invaluable contributions. The contributions made during this Leaders' Summit by each global body, by each regional entity, and by every individual active in our thriving ICT Industry will be essential for our future success."

The SAMENA Council Leaders' Summit 2020 proved that, in the Year 2020, amidst the COVID-19 crisis situation, global and regional leaders' collaboration is more crucial than ever before. Moreover, understanding 5G's necessity and capabilities now require quick decision-making and action in achieving the next-generation of digital connectivity. 📡

Attaining the 5G momentum demands that technology innovation, ecosystem amplification, standard unification, business exploration and growth-oriented collaborative policies be realized with urgency.

Synergistic and successful use of 5G across various industries as well as the

Mr. Bocar BA, CEO & and Board Member, following an overwhelming response from the Industry on the timeliness, agenda, and mode of execution of the SAMENA Council Leaders' Summit, has stated: "In the wake of acceleration in 5G readiness as we witnessed during the Summit and new innovative developments that are already happening, and given the anticipated role 5G may play in advancing other industries and new growth streams, thereby catalyzing new economic development opportunities across established and nascent market segments around the globe, SAMENA



Al-Nasser Urges for 5G Adoption across Industries to Revive the Economy and Renew Investments Plans

stc group CEO and Chairman SAMENA Council, Nasser Al-Nasser calls CITC leaders to work closely together on addressing present-day challenges, and to make full use of future opportunities, while staying safe and remaining optimistic about the future, while facing challenging in the industry. He confirm that 5G adoption across various sectors and industries to revive the economy and renew investment planning, "adopting 5G is an opportunity to reap is timely benefits across all industries that are at the forefront of our socio-economic recovery efforts, following the debilitating effects of the pandemic". He said, in his keynote speech among the public and private-sector leaders, congregated by SAMENA Council, in SAMENA Council's Leaders' Summit 2020, under the title: "5G + X: Harnessing 5G across Industries for Investment Revival.. "This certainly is a new digital communication experience for all of us, and I, as Chairman of SAMENA Council, hope that this would prove to be a worthwhile effort, given the complexity of this leadership event, which is being held with the esteemed patronage of the TRA UAE". Al-Nasser Said. In addition to the many challenges COVID-19 has presented, Al-Nasser reaffirmed that CITC industry



leaders need to accelerate cooperation-building, which require unprecedented level of mutual engagement, participation, collective wisdom, and exchange of expertise. The COVID-19 pandemic has shown clearly what the availability of telecom networks does to contribute to better managing and living through the tough times. Apart from quick reactionary responses and measures taken by Telecom Operators with respect to ensuring connectivity and quality-of-service, COVID-19 applications to track & trace new infections have been very

helpful. Chairman of SAMENA Council, Nasser Al-Nasser Added: "emergency decisions taken over the past six months have indeed laid a foundation for a 5G Cultural Shift, with all necessary mindsets, practices, capabilities, attitudes required to be in place for treading the next decade of connectivity and connectedness, until we fulfill the Connect 2030 global agenda. The new 5G networks promise a multitude of life-changing smart solutions across a spectra of tasks and roles. It is therefore essential to understand how 5G and various allied technologies, including, AI, Big Data Analytics, Cloud, IoT, among others, can impact and change our societies and how they can be meaningfully and constructively introduced to benefit all stakeholders in an inclusive manner. The collaboration required between CITC leaders include well- responses among Operators and Regulators, including the release of additional spectrum on temporary bases to ensure sufficient network capacity. He explained: "The implementation of extensions of deadlines on a temporary basis and the facilitation of license renewals for vital digital service providers; temporary loosening of traffic management rules and prioritization of critical digital services over the non-critical content, clearly demonstrate".



Experts Say Expanding 5G Will Boost Regional Economies During COVID-19 Recovery

Telecommunications leaders and experts from the region and across the world gathered at the SAMENA Telecommunication Council Leaders' Summit 2020 on July 9th to review plans for unleashing the potential of 5G networks to boost economies and societies in a post COVID-19 environment. This year, the SAMENA Telecommunications Council Leaders' Summit welcomed H.M. Queen Silvia of Sweden, Founder of World Childhood Foundation; H.E. Houlin Zhao, Secretary-General of the ITU; Mr. Mats Granryd, Director General GSMA; Ms. Isabelle Mauro, Head of Telecommunications at the World Economic Forum in the USA; Mr. Mark Spelman, Head of Thought Leadership at the World Economic Forum in Switzerland; Dr. Boutheina Guerhazi, Director - Digital Development at The World Bank Group in the USA; Dr. Sanguchul Lee, Chief Advisor of LG Uplus and LG Group; and Mr. Kamarul A. Muhamed, Founder & Group CEO of Aerodyne Group. Summit attendees also included senior executives from telecommunications service providers, local regulatory authorities, global NGOs, and other ICT industry professionals representing decision makers for different verticals and government entities in countries from across South Asia, the



Middle East, North Africa, Asia, Europe, and beyond.

The Covid-19 pandemic has demonstrated the need to strengthen digital infrastructure to better prepare societies for future crises and to make systems more resilient and sustainable, guaranteeing a better and more effective outcome. A shift to cloud, IoT, and better integration of AI into the public health response was also spotlighted, in addition to harnessing of other technologies for smart service delivery, which should be

a key priority moving forward. SAMENA Telecommunications Council Leaders' Summit stressed on topics which are both societal in nature and are equally essential to industry dialogue. Attending speakers shed light on the impacts of collaborative efforts when deploying technology in the Middle East region to overcome digital transformation challenges.

The Summit explored how ICT stakeholders can work together with industry verticals to turn their vision into reality at the local and regional level. Participants reviewed 5G ecosystem cooperation in the Middle East, and how 5G paired with complementary technologies such as cloud, AI, and AI-driven autonomous and BVLOS commercial drone applications, can inspire new vertical industry applications. Today that ranges from improving SME competitiveness to the digitization of oil & gas operations in the Middle East and globally, all of which boost economic potential by enhancing industrial processes and productivity.

With more economies becoming digital today, the Summit also explored business resilience strategies in a hyper-connected world. Mr. Andy Purdy, Chief Security Officer for Huawei USA, was one of the experts leading the discussion on what regulatory frameworks will be needed to help vertical industries as well as governments to





strong industry policies that will enable social value, economic development, and provide enhanced service experiences to consumers across the region.

Huawei's 5G conference, held for the third consecutive year during the Leaders' Summit under the theme "Unleash 5G potential, build a better world", an integral part of the Summit, was led by Mr. You Qianwen, VP of Huawei Middle East, and Mr. Wang Su, VP of Carrier Network Business Group Marketing at Huawei Middle East.

Mr. Anjian, President of Carrier Networks Business Group at Huawei Middle East, added: "The ICT industry is the foundation and cornerstone of socioeconomic restoration today. Quite simply, 5G brings agility, productivity, security, and intelligence to all industries. Moving forward, stakeholders should work on five different aspects to realize 5G momentum for consumers, enterprises, and governments. This includes a focus on technology innovation, ecosystem amplification, standards unification, business exploration, and growth-oriented collaborative policy. In the post-pandemic era, multi-level collaboration will be the only way to navigate through tough times." 📺



leverage cloud environments for future efficiency.


Mr. Ryan Ding, Executive Director of the Board and President of Carrier Network Business Group at Huawei, noted: "Despite the unprecedented challenges we are facing, governments, regulators, and operators across the globe have spared no effort to maintain social stability, protecting peoples' livelihoods and helping the entire society fight against COVID-19. The applications of 5G will speed up enterprise digitalization in the Middle East and greatly stimulate the economy. The Middle East in particular is already expected to become a reference in 5G commercialization around the world, and together, we have ensured the normal utilization of network services during the pandemic. Looking ahead, Huawei has the responsibility and confidence to work with operators, partners, and vertical industries to achieve 5G business success—promoting the development of the 5G ecosystem to help enterprises to improve their competitiveness." Earlier, Charles Yang, President of Huawei Middle East delivered the opening keynote during the Summit, emphasizing the outbreak has led to increased demand for ICTs, and meeting that demand will require new forms of public-private partnerships based on open collaboration, supporting



SAMENA Council Emphasized on the Importance of Private Sector Engagement in the Work of ITU-D During ITU-D's Telecommunication Development Advisory Group ("TDAG") Meeting 2020 in ITU-D in Geneva, Switzerland

SAMENA Telecommunications Council, represented by Bocar A. Ba, emphasized on the importance of private sector engagement in the work of ITU-D during ITU-D's Telecommunication Development Advisory Group. TDAG reviews priorities, strategies, operations and financial matters

of the ITU and advises the Director of the Telecommunication Development Bureau (BDT) on the implementation of the WTDC Action Plan, including issues relating to the budget and the operational plan of the Sector. In his intervention, Bocar Ba in the capacity of Chair of the Private Sector

Chief Regulatory Officers' ("CRO") meeting thanked the Secretariat for its good work in relation to Membership engagement. Further, M. Ba informed the meeting that in an attempt to fully implement WTDC-17 resolution 71, SAMENA Council took the initiative to draft Terms of Reference to guide the work to enhance ITU-D membership in particular, as regards the private sector, industry, associates and academia. Bocar Ba outlined the process involved in drafting the ToRs, which were presented to a consultative meeting for ITU-D membership organized by the Director of the BDT last year. Bocar closed his intervention by re-stating the need for strengthening the role of the private sector and industry in the work of ITU, to which the ToRs can be used to fulfil this objective. 



SAMENA Council Delivered Operators' Perspectives at ITU's Virtual World Summit on the Information Society (WSIS+15 Virtual Forum 2020)

SAMENA Telecommunications Council, represented by its CEO M. Bocar Ba, provided key industry priorities and perspectives on Succeeding in the Next Decade of Connectivity & Connectedness. In his Policy Statement delivered during WSIS High-Level Policy Sessions on 23 July 2020, M. Ba emphasized the need for better approaches and incentives to roll-out advanced, reliable and resilient digital network infrastructure. M. Ba stressed that universal, affordable and accessible advanced communications networks are key to better managing and overcoming the current and future crises. The Summit was delivered virtually, bringing together key information and communication technology (ICT) experts and leaders from around the globe to advance technological solutions to accelerate progress on the United Nations' Sustainable Development Goals (SDGs).

In the context of the current COVID-19 and future crises, Bocar Ba highlighted to a global audience of ministers, government officials and private sector leaders that in order to uphold the promise of the Connect 2030 Agenda and close the Digital Divide, the availability and accessibility of high-speed broadband networks are vital. He emphasized that the COVID-19 crisis highlights just how the use of ICTs can contribute to better managing and living through crises and underlined that "our success between 2020 and 2030 will be influenced by our progress made in meaningfully leveraging digital communications technologies, their application and the advanced digital networks that they run and scale on". M. Ba further stated that regulators and operators and the larger ICT community, together, have demonstrated and can achieve major milestones effectively and efficiently when threats are tangible. Increased efforts

to achieve key milestones on the way to fulfilling the SDGs are therefore needed.

Mr. Ba closed his contribution by highlighting that to drive progress, new and innovative approaches to investment and financing, latest technologies and, a conducive business and regulatory environment are required. Key priorities for the ICT stakeholder community, in particular telecommunications operators and regulators, for the next decade include relevant public-private-people collaboration and partnerships, a broader stakeholder basis for funding and financing of infrastructure and better investment incentives, market openness, the facilitation of sufficient spectrum, increased deployment of fibre and infrastructure sharing, better tax regimes, build-out and access to resilient and secure cloud infrastructure and, sustainability. 



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MEMBERS NEWS



stc Group ranked 1st as top Telecom Company in the MENA Region: "Forbes"

According to the recent publication by international Forbes magazine, Kuwait Telecommunications Company (stc), a world-class digital leader providing innovative services and platforms to customers enabling the digital transformation, announced the parent company (stc Group) ranked 1st amongst the top telecom companies in the MENA region. As a subsidiary of stc Group, stc – Kuwait is proud to be a part of such a powerful digital leader with a solid branding position and vast capabilities.

stc Group boasts a wide range of products and service to enrich the lives of both individual and corporate customers, enabling digital transformation, even with the high demand witnessed during the current COVID-19 crisis. stc is keen on offering its customers, with the latest technologies and digital media services while capitalizing on the parent company's (stc Group) expertise and resources in this area, which in return widens the range of services proactively. Forbes announced its annual "Global 2000" list, which includes

2000 international companies ranked according to the size of their assets, market value, net profits and revenues in equitable shares. In 2019, Forbes selected stc Group amongst the first digital companies in the MENA region and among the best 44 digital companies in the world. According to Forbes' list, stc Group is among the Middle East's top 100 companies in 2020, ranked 8th amongst the top Arab companies and 335th internationally. During 2019, the parent company (stc Group), located in KSA, improved its performance with a 4.46% increase in revenues. The Company also increased its net profits by 5.93% for the first quarter of 2020 compared to the same quarter of the previous year. The 18th publication of the Forbes annual "Global 2000" ranking also discussed the recent challenges businesses are facing while giving a fair warning of the negative repercussions that would follow in the upcoming period. While the majority of companies mentioned in the "Global 2000" have already witnessed a substantial decrease in their market value compared to the year before, due to the harsh impact of the total lockdown, the telecom industry in the MENA region proved to be among the least affected industries. stc Group managed to maintain its strong market position by increasing its revenue and profitability, especially with the launch of recent 5G products and services.



stc: 1128% Increase In Remote Working

Remote working in Saudi Arabia has increased by 1128%, stc declared in a press release referring to 3500 daily virtual meetings held by stc employees. It reflects the success of stc's digital transformation plan in accordance with the company's DARE strategy which was launched in 2018. One of the major objectives of the

strategy was the digitization of business and the promotion of remote work for employees. stc noted that working remotely for five days a month was a benefit its employees enjoyed prior to the adoption of home quarantine measures which compelled everyone to adopt remote work. This feature is a reflection

of stc's digital transformation plans and a fruit of the company's efforts that are aimed at fostering a professional work environment that attracts local and international talents. In a press release, the company noted that it is proud of the impressive success figures it has achieved in light of its digital transformation

plans, especially the fact that stc now provides 99% of its services through the mystc digital platform, including the sale and delivery of stc devices to people's homes. The company further explained that it will continue to take steps towards promoting digital transformation in order to achieve the aims of Vision 2030 in relation to realizing leadership and digital enablement to serve the community and various sector. stc also seeks to further

promote the advantages of remote work to achieve digital transformation and to ensure employees are safe and have their needs met. stc today is one of the world's prominent digital companies. The company is the 44th best digital company in the world and the first in the Middle East according to Forbes' rankings. More recently, Forbes has declared stc as the most powerful telecommunication company in the Middle East. In addition to

providing its various services through its digital platform mystc, the company is also providing services through its self-service machines that are located across public spaces in the Kingdom. stc has also made a remarkable success through its Digital Day initiative last year, a day on which the company closed all its customer service and retail offices as part of its ongoing efforts to re-invent customer experience.

stc Sustainability Report: Market Value for Entrepreneurship Projects Reaches 300 Million and 18% Energy Savings

In its efforts to adopt the best responsible practices and raise the bar in the ICT sector, stc announced the publication of its first Sustainability Report, promoting its strategic role as a digital transformation enabler in Saudi Arabia and the region to maximize its ESG impact. The report unveiled some interesting figures at the sustainability front, including a 18% decrease in power consumption compared to 2018 for buildings and internal transportation and the active contribution to giving over 3 million houses access to optical fiber technology (by installing 217,000 kilometers of new fibers in 2019 in a 23% increase) as well as innovative digital solutions such as the launch of "stc pay", the largest e-wallet service in the region and the provision of all company services through "my stc" app. The report also addressed support offered to Saudi entrepreneurs through the InspireU program, which incubated 28 startups to support ICT, contributing to the creation of approximately 160,000 full-time and part-time job opportunities, with a market value of SAR 300 million for projects supported by the incubator. In addition, the company undertook to establish 22 medical centers across Saudi Arabia thanks to investments of up to SAR 100 million in collaboration with the Ministry of Health. The company's sustainability framework includes

the provision of high-quality digital communication services and products, enhancement of communication by promoting innovative digital opportunities, and provision of access to significant technologies at affordable prices by developing and adopting the best digital and communication infrastructure. Through its sustainability strategy, the company will help people build their capacities, enrich their lives, and increase proposed value for stc's key stakeholders, including clients, regulators, suppliers, business partners, investors, and shareholders, through several community development, business development, and environment protection initiatives. The stc sustainability framework follows a unified vision that benefits its key partners both in Saudi Arabia and throughout the world. Designed to be in line with the aspirations of national strategies, global development plans, and the UN sustainable development principles, the framework sets to maximize the company's positive impact in its business processes and the communication sector as a whole. By strategically focusing its framework on sustainability, stc can significantly contribute to a sustainable future in fields such as doing business with integrity, maximizing economic impact, enriching life and experiences,

expanding access to technology and communications, promoting innovative digital opportunities, caring for the environment, and empowering human resources. The program falls in line with stc's DARE strategy and new brand identity, reflecting its digital aspirations and focusing on its ESG responsibility. Through DARE, stc seeks to focus all areas of work on preserving its key principles of digitization, asset development, customer experience improvement, and expansion of the company's size and scope, through its three values of dynamism, Drive, Devotions.



stc Concludes Due Diligence Study on Vodafone Egypt Stake Acquisition

Saudi Arabian telecoms operator Saudi Telecom Company (stc) has reportedly completed a due diligence study regarding its proposed acquisition of Vodafone Group's majority stake in Vodafone Egypt. According to MENAFN, stc's financial advisors will now review the study with a view to making a final decision on the value of the mandatory offer that will be submitted to Vodafone Group for its approximate 55% stake in the Egyptian cellco. As

previously reported by CommsUpdate, in January 2020 stc signed a non-binding memorandum of understanding (MoU) with Vodafone Group to acquire its holding in Vodafone Egypt. At that date it was noted that the two parties had agreed on a cash consideration of USD2.392 billion for Vodafone's shareholding, equivalent to an enterprise value for 100% of Vodafone Egypt of USD4.350 billion; the final consideration will, however, be determined

upon signing of the definitive agreements. While the MoU was initially effective for 75 days, it was subsequently extended in April by a further 90 days due to the 'logistical challenges caused by the COVID-19 pandemic'. Meanwhile, the report cites unnamed sources as saying that stc is not interested in acquiring the almost 45% stake which Telecom Egypt currently holds in Vodafone Egypt.



Batelco Launches Cloud Unified Communications

Batelco, the leading digital solutions provider in Bahrain announced the launch of its latest digital enterprise solution, Batelco Cloud Unified Communications, which is set to provide enterprise customers with access to communication, collaboration and productivity capabilities without the need for investing in costly equipment. Batelco's Unified Cloud Solution will provide enterprise customers with the opportunity to benefit from a wide range of features including business instant messaging, voice and video calls, conferencing, as well as many other collaboration tools. The solution also offers customers the convenience of switching in real-time between different devices effortlessly from any location and is characterized by ease of use, reliability and flexibility. Commenting on the launch, Abderrahmane Mounir, Batelco GM Enterprise said, "We are pleased to be launching this innovative new solution through which we aim to support the advancement of the local telecommunications industry. Cloud Unified Communications is part of Batelco's digital communications product portfolio introduced for our enterprise customers and enabling us to support their digital transformation journey."

"Batelco is providing the tools to fit the modern and agile work style, helping users who are constantly on the go and working remotely from any location to be more flexible, as their office is with them wherever they go. We believe that it's the perfect time to launch this product as it meets all of these requirements," he added. The newly launched solution will be hosted in Batelco's private cloud from which

customers will be able to access all Unified Communications capabilities, thereby reducing maintenance and operational costs and increasing efficiency for Batelco customers. Batelco continuously strives to introduce the latest telecom and digital solutions in the Kingdom that will not only add value to customers' experience, but also contribute towards the efficiency of the customers' businesses.

The infographic features a central red square with the text "UNIFIED COMMUNICATIONS". Surrounding it are six red panels, each with an icon and text:

- Host a conference call** (while you Run around the block)
- Present to your customers** (while you work from home)
- Talk with clients** (while you are on the go)
- Secure a deal** (while you sip a home-made chai)
- Upload to the cloud** (while you do the gardening)

Batelco to Launch “Global Zone Kuwait” In Partnership with Ooredoo Kuwait

Batelco, the leading digital solutions provider in Bahrain has announced the establishment of “Global Zone Kuwait”, which will offer an ecosystem platform to further support the enablement of digital transformation in the region. In line with Batelco's strategic agenda to cater to the ever-growing regional data demands, Batelco has selected Ooredoo – the first telecom company to provide innovative digital services in Kuwait - as a strategic partner to enable the rollout of Global Zone's regional expansion and support the growing regional ICT and connectivity needs. As a result of further growing Global Zone and expanding into new markets, a seamless data center interconnection is created and entirely powered by FASTtelco, the leading internet service provider (ISP) in Kuwait; acquired by Ooredoo in 2016. Featuring state-of-the-art high density designed systems, Global Zone Kuwait is being developed rapidly and supported by a superhighway network infrastructure. This entails Batelco's wholly owned terrestrial cable system, Batelco Gulf Network (BGN), ensuring both cost effective solutions to the end customers and superior performance. Through Batelco and Ooredoo Kuwait's longstanding partnership, the two entities will be able to further strengthen their ties and help their customers and partners to reach new markets, while eliminating the complexity of getting connected to other players. Global Zone, a carrier-neutral data center, which was launched in the Kingdom of Bahrain in 2019, has a rich digital business solutions portfolio including Manama-IX, a carrier-neutral internet exchange, Cloud Connect solutions, and IPT solutions, which will also be available in Global Zone Kuwait, where Ooredoo Kuwait/FASTtelco and Batelco's partners can avail of these solutions for their business needs. Commenting on the occasion, Adel Al-Daylami, Chief Global Business Officer at Batelco said, “Batelco has always sought to broaden its reach, with the aim of meeting the needs of customers and partners across the region. Batelco also has a continued focus on developing the

ecosystem required to meet the needs of its global customers and partners. We are very pleased to have Ooredoo Kuwait as a strategic partner to support our regional rollout plans for Global Zone to deliver enhanced services to our customers and to support business innovation that will ultimately benefit the entire region from carriers through to end users.” Abdulaziz Al-Babtain, Chief Business Officer at Ooredoo Kuwait and one of the pioneer executives at FASTtelco since its early years said, “The expanded partnership with Batelco will give FASTtelco – Ooredoo's owned ISP - access to a new set of products to further grow its portfolio by offering AWS DX, Global Zone, MPLS and MN-IX.” “The establishment of Global Zone Kuwait - this extensive regional footprint - will provide our clients with access to additional global fiber routes for minimized latency and ultra-high performance and I am certain that it will significantly boost FASTtelco's capacity to support local and regional businesses and organizations to meet demanding cloud applications,” he added. Batelco's expansion of Global Zone into the Kuwaiti market is essentially a stepping-stone into the ultimate rollout plan for the region that will eventually extend globally through Batelco's strategic partnerships, robust global network, and digital ecosystem.



Batelco Extends Mobile Coverage to Jarada Island



Batelco has announced the extension of mobile coverage to Jarada Island, a popular destination with visitors and boaters located 32km east of Manama. The company claims it is the only Bahraini mobile network operator (MNO) to deliver coverage to the sand island, enabling customers to use voice, data and video call services. Commenting on the development, Batelco General Manager Networks Rashid Mohamed noted: ‘Batelco achieved the new coverage of Jarada Island by its highly skilled team of technicians deploying a custom-made solution to achieve improved range and quality of radio coverage over the sea, a testament to the ongoing improvement of the Batelco network.’

Batelco Announces Participation in the AWS Marketplace CPPO

Batelco, the leading digital solutions provider in Bahrain has announced its role as a Consulting Partner with Amazon Web Services (AWS) Marketplace, the fast-growing online software store that helps thousands of AWS customers accelerate project success and innovation, as part of the launch of the Consulting Partner Private Offer (CPPO) program in Bahrain. Launched in 2002 as a subsidiary of Amazon, AWS is a platform that offers flexible, reliable, scalable, easy-to-use and cost-effective cloud computing solutions. It has enabled its customers to achieve their business requirements and meet their digital objectives. Batelco's collaboration with AWS has grown rapidly since early

2017, enabling Batelco to offer the most in-demand services to its partners and customers. Through this launch, all AWS customers in Bahrain will be able to purchase software solutions available on AWS Marketplace directly through Batelco, while receiving guidance from Batelco's dedicated team of skilled AWS certified professionals on the right solutions and products to fit their needs. Catering to customers through the one-stop shopping solution for all Cloud, Digital, ICT and Telecom needs across any industry, Batelco will also facilitate a smooth and co-effective shopping experience for customers, allowing them to save time and money. Commenting on the announcement, Batelco GM Enterprise Abderrahmane Mounir said, "We are very pleased to be expanding our work with AWS, which complements our role as the leading provider of digital solutions in Bahrain. This launch will enable us to provide AWS services nationwide, which reflects our continuous efforts to support our valued enterprise customers, by providing the necessary technical support and tools to grow their business. Through taking this step, Batelco is also reaffirming its support for the Kingdom's Cloud-First Policy, the growth of the digital economy." Furthermore, as an AWS Consulting Partner, Batelco has an added benefit of having the required technical and specialist skillsets to help customers in end-to-end cloud and AWS needs, along with providing the attractive bundling of telecom products, with Batelco also providing options for single and monthly billing.



Etisalat Will Focus On 5G NSA for Next Two Years

Etisalat of the United Arab Emirates (UAE) says it expects to concentrate on non-standalone (NSA) 5G for the next two years before launching a standalone 5G network. The NSA standard enables 5G to operate utilizing 4G LTE equipment, while the standalone mode uses dedicated spectrum and infrastructure. A report from TechRadar cites Hani Yassin, Group Senior Director for Technology Strategy at Etisalat, as saying: 'We are taking a phased approach to maximize our return on investment and get confidence in the technology maturity.' In the mid-term (three-to-five years), Yassin said that Etisalat will focus on high throughput and low latency for applications in the standalone mode when the new 5G core is ready, serving industrial applications such as port operations for operating cranes and vehicles wirelessly, and immersive VR experiences in gaming and training. In the long-term (five-to-ten years), he said that the focus will be on mission-critical services such as autonomous vehicles and remote surgery in the standalone mode. Etisalat was one of the first operators in the Middle East to commercialize mobile 5G when it launched services last May. It had previously offered 5G only in

fixed-wireless mode due to the lack of 5G-capable handsets on the local market.



Etisalat Launches Two New Data Centers in the UAE to Strengthen International Connectivity Links

Etisalat has announced the expansion of its SmartHub in the UAE, launching a state of the art Tier 3 data center facility at two new locations in the country. The move will allow Etisalat to grow its presence in the region, whilst simultaneously enabling global partners to bring digitalization, implement cloud transformation initiatives, and accelerate connectivity and capacity reach across Europe, the US, Asia, the Middle East and Africa. Etisalat will launch the new data centers in Fujairah and Dubai, supporting the UAE's vision to become an ICT and data hub for the region. The facilities will address the diverse requirements of global data centers and technology companies. With the launch of the new facilities Etisalat's Carrier & Wholesale Services (C&WS) have set a benchmark in the region and is also a testimony to the company's strategy of 'Driving the digital future to empower societies'. "During this unprecedented period that has challenged both health and economy, global markets are looking at enhancing interconnectivity and adding new capacities for businesses

and the entire community. As the biggest neutral carrier hotels, Etisalat's SmartHub data centers will be an ICT bridge between continents always supporting business critical activities of global customers," said Ali Amiri, group chief carrier and wholesale officer, Etisalat. "Thanks to the UAE vision and Etisalat's goal of enabling digital transformation, our network has always been one of the most robust and digitally equipped to address the unique requirements during this period making it possible for businesses to work remotely, millions of students to enjoy distance learning and all citizens having access to vital services. "The launch and expansion of infrastructure, power and space of our data centers in such a short time frame is a testimony to our efforts to meet the growing demand from existing global customers. We are committed to making 'SmartHub' a preferred location for carriers, cloud service providers, Internet exchanges and companies looking for carrier grade data centers." The addition of the space and high power capacity in Fujairah and Dubai will bring the overall power capacity to more than 10MW with diversified power grid supply complemented with backup systems (N+N power redundancy). SmartHub supports several route independent carriers offering direct access to multiple independent subsea cable systems interconnecting Europe, US, Asia, Middle East and Africa. Currently, SmartHub has the potential to offer diversified and low latency route connectivity to more than 2 billion people with 30 milliseconds latency. SmartHub currently hosts more than 60 providers including major carriers, content providers, mobile and satellite services and industry sectors like financial services and digital cloud platforms.



Mobyli Fiber Services Now Available On All Fixed Networks

Ethad Etisalat Company (Mobyli) announced the start of providing Mobyli Fiber services through an agreement to open broadband, which will allow it to provide fixed and fiber optic broadband services to 3.5 million homes. Mobyli said that the broadband services for fixed communication networks through fiber optics technology will provide customers with a unique experience of high speed Internet, and a rich experience in video streaming and e-gaming. The increased speed of response and interaction will enhance this customer experience. The company added that the service will be available through Mobyli Fiber packages at speeds per the customer's request up to 500 Mbps, provided fiber cabling is available from any fiber optic infrastructure service provider. These efforts are within the initiative of the Ministry of Communications and Information Technology and the Communications and Information Technology Commission to provide broadband for fixed communications.





Omantel Inks Deal with Ericsson for 5G Network Expansion

Oman Telecommunications Company (Omantel), the Sultanate's incumbent telecoms operator, has selected Ericsson to support its ongoing 5G radio access network (RAN) deployment plans in a multi-year partnership. According to the Swedish vendor, hardware and software products and solutions from the Ericsson Radio System portfolio, including Advanced Antenna Systems and 3GPP standards-based 5G New Radio (NR), will be deployed in Omantel's network. Further, Ericsson has said it will support Omantel's commercial 5G deployment at key locations across Oman, including Salalah, Nizwa and Sur. As previously reported by CommsUpdate, Omantel announced the commercial launch of 5G services for residential broadband customers in December 2019. The network, which supports maximum download speeds of 1Gbps, is available in a number of main towns and cities,

including Muscat, Barka, Sohar, Rustaq and Saham.



Omantel Adopts Environmental Initiatives to Reduce Negative Impacts on the Environment and Secure a Better Life for Future Generations

Omantel, the leading national integrated telecommunications services provider in the Sultanate of Oman, attaches great attention to environmental aspects as the company endeavors to minimize negative impacts on the environment and ensure its sustainability. Environment forms one of the key pillars of Omantel's sustainability strategy. Every year, Omantel launches and adopts several environmental initiatives aiming to preserve the environment benefitting from Omantel leadership position in the telecom and ICT sector and the partnerships it formed with several stakeholders to maximize the impact of these initiatives. Omantel believes in the importance of preserving the environment and its sustainability and hence the company is committed to minimizing the effects of its operations on the environment and is seeking to raise awareness of the importance of preserving the environment among different groups of the society. Among its key environmental achievements, the Company has successfully reduced its carbon emissions by 12% in 2019 compared to 2017, an achievement reflecting the company's commitment to "Paris Agreement" on threats related to climate change. Omantel new headquarters is one of Muscat's iconic buildings that employs state-of-the-art technologies. Omantel ensured during the

design stage and various constructions stages, that due attention is paid to relevant environmental factors and aspects, especially those relating to material used in the building. Omantel is proud to announce that the project has achieved 100% compliance for the use of low energy emitting materials used for the interiors. During construction, 59.77% recycled materials were used, 46.14% locally-sourced regional materials and 100% FSC Certified Wood. Achieving an excellent standard of indoor air quality was imperative to Omantel during the implementation of this project. The building is set to achieve a LEED Point for 'Construction Indoor Air Quality Management', which ensures that the contaminant level in the building of all pollutants that may cause allergies and asthma are within EPA limits. For the wellbeing of employees, the amount of natural light available in all regularly used spaces was of vital importance, the project has achieved daylight >269 Lux in 75% of regularly occupied spaces and outdoors views can be seen from >90% of regularly occupied spaces. The project has also achieved a potable water saving of 51.44% relative to EPA standards. LEED (Leadership in Energy and Environmental Design) is a certification programme which focuses on new, commercial-building projects. To achieve LEED's Gold Certification,

a minimum of 60 points is required. Omantel's new HQ Building scored points in several areas, proudly aiming to the achievement of the gold certification. The building is located at Al Irfan Business Park, a central location that is accessible by public transportation networks, earning the project points for its location and accessibility by public transport. The new HQ also scores highly for efficiency. By using low-flow fixtures and treated water for irrigation, the project achieved a good standard for water efficiency. Omantel ensured that all materials and resources used in the construction of the building were responsibly sourced, by using recycled, locally-sourced materials in line with LEED requirements. As well as adhering to responsible construction practices, the project achieved well for its innovative design and high standard indoor environmental quality. As a result of these efforts, Omantel was awarded the Green Era Sustainability Award. The award was presented at a special ceremony in Lisbon, Portugal. During the ceremony, the Omantel CSR Manager demonstrated the company's sustainability efforts and said in a speech, "Omantel has been working to adopt the best international practices to ensure that Oman's ecosystem is not compromised Despite the rapid development and digital transformation

Omantel Environmental Initiatives - Continuous Achievements and Promising Targets



that we are witnessing. Omantel pays great attention to electricity and energy issues and their impact on the environment and hence closely monitors the consumption of electricity and looks for renewable energy alternatives in addition to raising awareness among community members on the need to rationalize electricity consumption". In another context, Omantel implemented and launched the e-billing service across all its business lines. E-bills are not only convenient for customers but also save papers and distribution costs thus helping to reduce the carbon footprint of our operations. Omantel has managed to find solutions that have reduced printing by 77%. This initiative saved thousands of trees, which could have been used to

produce the paper used to print these bills. Moreover, in 2019, launched a 750 kwh solar system for the new headquarters which will reduce the electrical consumption from the grid by more than 20%. Omantel has also started a pilot project at 12 sites in the Wusta, Dakhliya and Sharqiya regions to power cell towers using solar panels and batteries. The aim of the project is to reduce the consumption of diesel in remote areas by powering cell sites using solar energy. This is expected to save costs by reducing the cost of logistics and fuel consumption. The diesel generators will start working only when the batteries run out of power. In 2019 we have implemented 3 solar hybrid sites. Each site reduces diesel consumption by

18.72 m3 per year accounting for a total saving of 56.16 m3. As part of its efforts to safely dispose hazardous and non-hazardous waste, Omantel and be'ah (Oman Environmental Services Holding Company) inked a MoU in support of circular economy for a sustainable future. Based on the MoU, Omantel will provide be'ah with lead-acid batteries, end of life tyres, used lubricating oils of Omantel's transportation fleet and electronic, electric and paper waste, and the latter will recycle the waste to regain its economic value and support national economy. In-line with its transparency approach, Omantel issues an annual sustainability report that highlights Omantel's most important activities and performance in the economic, social and environmental fields. The report presents the company's performance in the environmental field for the past three years to highlight improvements made in these areas. The report also tackles the company's efforts to address any areas of weakness to improve environmental performance further. Omantel is the Sultanate's first and leading integrated telecommunications services provider, enabling the digital society to flourish, allowing new ways of doing business and delivering a world of information, news and entertainment. Omantel seeks to get optimum customer satisfaction.

Omantel Wins the Best Learning and Development Strategy for Employees and Talents International Award

Omantel, the leading provider of integrated telecom service in the Sultanate - announced that the Human Resources Unit represented by the Learning and Development Department won the Best ATD Award 2020, an international award from the U.S based Association of Talent Development (ATD). ATD, which has been established in 1943, is one of the most prestigious, non-profit specialized organizations. Omantel has been conferred this award alongside with a group of major well-known companies from different countries around the world. Omantel has been one of the only three telecom companies that have been selected to receive this prestigious award. The award has been conferred at an annual conference

attended by more than 12,000 participants from different countries of the world. The award recognizes the best "learning and development for individuals and talents" strategy. It also recognizes the initiatives that prove successful and has impact on business growth and development. Commenting on this achievement, Dr. Ghalib bin Saif Al Hosni, Chief People Officer at Omantel, said, "In Omantel, we have been working during the past years to enhance learning and development and embed as part of our organizational culture with a great focus on customer service throughout all our business operations. Our L&D strategy was developed based on different academic patterns while taking into consideration best international

experiences in this regard". "Our employee development philosophy has evolved to go beyond the limits of training and learning in the training classes. To take efficiency to new levels, we complemented training courses with practical programs that help each employee in applying what he learns in the real work environment. This has played a great role in enhancing the skills and performance of our employees in a sustainable and continuous matter. We have also provided our employees with mentors to assist them during that educational journey" Dr. Ghalib further pointed out. "We are delighted to receive this international recognition for Omantel plans and programs during the past period. I am confident that this award will

give us the motivation to do more during the coming period. It will also help us to continue focusing on developing our employees and aligning their skills with future jobs, he added. Omantel considers its employees as the most valuable asset, and therefore it invests heavily in building their capacities and providing them the best opportunities to enhance their skills in various fields. Through its Learning and Development function, Omantel adds significant value to its business by addressing three key business challenges that include; retaining talent, business sustainability, and enhancing leadership capability. Given the complexity of tackling all talent issues during a single time period, beginning in 2016, the company implemented a unique four-year talent journey focusing on a different issue every year. Omantel is the Sultanate's first and leading integrated telecommunications



services provider, enabling the digital society to flourish, allowing new ways of doing business and delivering a world of information, news and entertainment. Today, Omantel is working to achieve the

highest level of customers' satisfaction as the most reliable and wide national network.



Telecom Egypt Records 19% Net Profit Drop In 1Q20, Although Sales Climb 3%

Telecom Egypt (TE) reported consolidated revenue of EGP7.00 billion (USD432 million) for the first quarter of 2020, representing a 3% year-on-year increase, attributing the growth mainly to strong retail performance and higher data revenue. In the three months ended 31 March 2020 turnover from TE's Home & Consumer division represented the largest proportion (44.7%) of its total, EGP3.13 billion, up from EGP2.40 billion in 1Q19. Revenue generated by the Domestic Wholesale and International Carriers units reached EGP1.25 billion (down 5% y-o-y) and EGP1.13 billion (up 1% y-o-y), respectively, while Enterprise unit turnover was EGP786 million, up from EGP750 million. Rounding out the revenue breakdown, TE posted International Customers & Networks sales of EGP703 million in 1Q20, compared to EGP498 million a year earlier. TE reported EBITDA of EGP2.28 billion for 1Q20, a 20% increase against the EGP1.90 billion recorded in the corresponding period of 2019. Net profit after tax totaled EGP1.3 billion, down 19% y-o-y, with the company saying this reduction was due to a '28% y-o-y decline in investment income from Vodafone resulting from one-off costs and provisions', which had more than offset strong operational growth and foreign exchange gains. In operational terms, at the end of March 2020 TE had 5.925 million fixed broadband accesses on its books, representing a more than 7% increase against the 5.535 million reported a year

earlier. Of that figure, the lion's share – 5.679 million, up from 5.248 million – were residential subscribers. With regards to the company's mobile operations, it reported a customer base of 6.181 million as of end-March 2020, a more than 45% annualized increase from 4.247 million a year earlier.





Zain Group Posts a Strong Set of Financials for H1 2020, as It Progresses 5G and FTTH

Zain group has posted a strong set of financials for the first half of 2020, as the pan-Arabian telco continues to cement its strong position on 5G throughout the region. Zain Group served 47.6 million customers at the end of the period. In a statement to the press, Zain Group revealed that it had seen consolidated data revenue grow 10 per cent on a year on year basis to reach \$1.1 billion, representing 42 per cent of the Group's revenue. During the first half of 2020 Zain Group invested over \$494 million in CAPEX reflecting 19 per cent of revenues, predominantly in expansion of Fibre-to-the-Home (FTTH) infrastructure; spectrum fees; 4G upgrades and new network sites across its markets, as well as 5G rollouts in Kuwait, Saudi Arabia and recently Bahrain. "The first six-months was a mission-critical period as all our operations were focused on providing connectivity during the lockdown to minimize the impact of the pandemic on socio-economic life. At the same time, we refocused on digital transformation to better serve businesses, governments, and societies, granting increased digital access to essential medical, commercial and financial services," said Bader Nasser Al-Kharafi, Zain vice-chairman and Group

CEO commented. "I would like to recognize and thank all Zain personnel who have remained dedicated and motivated to their duties and provided exemplary services, helping deliver on the critical role we play in maintaining connectivity and supporting the communities we serve throughout these exceptional times. Furthermore, Zain was committed to ensuring its employees' wellbeing and safety and the company took decisive actions to support and provide them with the tools needed to adapt during this time of crisis." The Group CEO

added, "Our culture of innovation has been invaluable at this time of rapid change, and Zain has been pro-active in its use of technology to maintain its operations at a high-level of availability, and our business continuity strategy has been executed impressively in the fight against COVID-19. We are proud to not reduce the salaries of any employee, as the company is optimistic of the telecom sector's resilience in such times." In Iraq, Zain Group announced that it has successfully extended its telecoms licenses to 2030 inclusive of 4G.

Group Key Performance Indicators (KD and USD) for first six months (H1) of 2020

Total Active Customers	47.6 million	
Consolidated Revenue	KD 787 million	(USD 2.6 billion)
EBITDA	KD 336 million	(USD 1.1 billion)
EBITDA Margin	43%	
Net Income	KD 84 million	(USD 273 million)
EPS	19 fils	(USD 0.06)

Zain Group Joins Hedera Governing Council to Create a Safer, Fairer, More Secure Internet

Zain Group [Kuwait Boursa, stock ticker: ZAIN], a leading mobile telecom innovator serving 49.5 million customers in eight markets across the Middle East and Africa announces it is joining the highly innovative Hedera Governing Council. Zain is the first company from the Middle East region to participate on the Council, joining a list of prestigious global innovators including Boeing, Deutsche Telekom, DLA Piper, FIS (WorldPay), Google, IBM, LG Electronics, Magalu, Nomura, Swirlds, Swisscom Blockchain, Tata Communications, University College London, and Wipro. Hedera Hashgraph provides a next-generation form of distributed consensus that is faster, fairer and more secure than

traditional blockchains. It offers a new way for people or organizations who do not know or trust each other to securely collaborate and transact online without the need for a trusted intermediary. Through its participation on the Hedera Council, Zain Group will gain extensive early insights into the trends and applications in the distributed ledger technology (DLT) space and will be able to assess opportunities to develop services within its own field of operation. Hedera's vision is to create a safer, fairer, more secure internet - one in which online communities can collectively create and evolve shared worlds in cyberspace, and on which developers can build trusted applications that enable

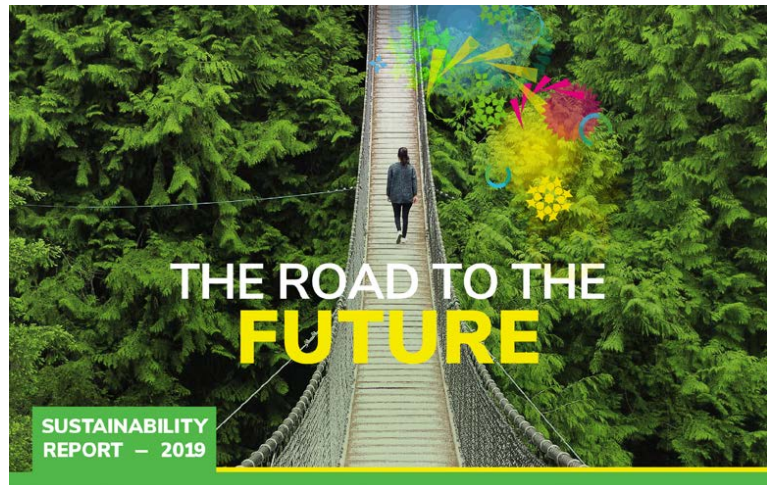
people to play games and work together. End-users will also be empowered to buy and sell goods and services safely and securely, without entrusting a central organization with their data and privacy. As a leading regional digital lifestyle operator, Zain consistently looks to ways technology can provide new solutions to its individual and business customers while also improving its own operating efficiency. Furthermore, the Hedera Hashgraph patented technology platform addresses the universally important issue of the environment as its power usage is super-efficient, utilizing a fraction of the electricity that blockchain platforms use. This is in line with Zain Group's membership

of and commitment to the Carbon Disclosure Project, which provides a reporting framework and guidance to address climate change. Zain Vice-Chairman and Group CEO, Bader Al Kharafi commented, "We feel a sense of purpose in joining the Hedera Governing Council, which has numerous blue chip, innovation-driven organizations all interested in driving the development of blockchains and the wider DLT space, which we have already noted has phenomenal potential. Council membership provides Zain first-hand exposure to cutting-edge and secure technologies that drive innovation, e-commerce and B2B across the region." Al-Kharafi continued, "From our own perspective, the growing list of new services and applications we have and continue to develop in areas such as the Group API platform; mobile money and fintech; e-health; drones; the Internet of Things; and 5G all lend themselves to further enhancement through blockchain and other distributed ledger technologies. Our participation in the Council also speaks to another pillar of Zain's corporate strategy, which is to collaborate with leading industry players to achieve mutually beneficial outcomes and thereby improve the products and services we can deliver to our customers." Hedera aims to realize

its vision to create a safer, fairer, more secure internet through a focus on addressing four fundamental challenges to the adoption of public DLT - technology, security, stability, and governance. For the vision to deliver impactful results, the network needs to be governed by representatives from a broad range of market sectors and geographies, each with world-class expertise in their respective industries. Mance Harmon, CEO of Hedera commented, "We are delighted to have Zain Group join the Council, given the company's sound track record of innovation, and professionalism in the development and delivery of cutting-edge mobile services and applications. We believe the Council will be enriched greatly by this first organization to join us from the Middle East region, given Zain Group's eight country footprint. We hope Zain will take full advantage of the opportunity to immerse itself in hashgraph and distributed ledger technologies and gain first-hand knowledge of new technologies and use cases developed on the Hedera network." The Hedera Governing Council's members contribute technical expertise to manage the technical roadmap, business expertise to advise on business operations, and legal expertise to help navigate the evolving regulatory environment.

Zain Group Publishes Ninth Annual Sustainability Report, Titled "The Road to the Future"

Zain Group, the leading mobile telecom innovator in eight markets across the Middle East and Africa, announces the publication of its ninth annual sustainability report, entitled "The Road to the Future". Embedding sustainability in every aspect of its business, Zain is dedicated to its digital strategy of consistently working towards developing the mobile telecommunications ecosystem centered on a vision of inclusive development that leads to socio-economic growth. In this consolidated Group-wide report, the company focuses on the concept of providing Meaningful Connectivity which triggers systemic change, ultimately creating room for development and growth, aiming to address the company's social, economic and environmental impacts. Noteworthy, is the FTSE Russell's inclusion of Zain Group in its FTSE4Good Index Series, the world's leading Environmental, Social and Corporate Governance (ESG) index, a key indicator to help investors identify companies that meet globally recognized sustainability standards. "The Road to the Future" report includes Zain's key ESG indicators which is primarily based on the company's sustainability strategy and initiatives, established on six main pillars with its activities driven by the following imperatives: Creating shared value; Promoting social innovation; Inclusivity and leaving no one behind; Addressing Sustainable Development Goals; Tackling climate change; and Youth empowerment. Zain Vice-Chairman and Group CEO, Bader Al-Kharafi commented, "Now more than ever, the need for a fundamental systemic change is central to the region's transformation and growth. In our world, digital and technological advancements offer endless opportunities to not only address negative impacts but create positive ones. Through digitization, our wide range of services, and reach, Zain aims to unlock the possibilities that



the Sustainable Development Goals (SDGs) offer and the publication of this report is testament to our ongoing efforts and resolve." Al Kharafi continued, "FTSE Russell's inclusion of Zain Group in its FTSE4Good Index Series reconfirms our commitment to embedding ESG principles in every operational aspect of the company." On her part, Zain Group's Chief Sustainability Officer, Jennifer Suleiman said, "In an era of rapid change and disruption, having a forward-thinking vision is an essential aspect of our sustainability strategy. At Zain, we welcome the tides of disruption as they often provide us the chance to evolve in a positive manner." Suleiman added, "It is short-sighted for a company not to consider what the impact of its operations are on the environment and adjust its way of doing business accordingly. The reason we remain so committed to publishing our sustainability reports is to be extremely forthcoming of our own experiences in this area, and to inspire others to follow suit and have real conversations and implement real solutions in the pursuit of truly sustainable programs."

Action in motion

Internal and external stakeholders alike are at heart of Zain's sustainability activities. Throughout 2019, some of the significant developments undertaken by Zain and its operations include:

1. Regarding the universally important issue of climate change, Zain became a member of the GSMA Climate Action Task Force with the objective to play a more strategic role in addressing the company's environmental footprint. By becoming a member of the Carbon Disclosure Project, which provides a reporting framework and guidance to address climate change, Zain also installed 849 outdoor (base station/power) solutions and 91 small shelters across its operations to reduce carbon dioxide emissions, while deploying 25 solar and hybrid base solutions. These actions symbolize a firm step by Zain in the fight against climate change.
2. Zain continued to solidify its supply chain process through implementing initiatives such as the Supplier Assessment Questionnaire; joining up to the Supplier Code of Conduct; alignment to international best practices through Zain's ESMP Guidelines; and supporting two audit visits per year on selected suppliers on social and environmental criteria.
3. From an economic perspective, the company has expanded its life-enhancing digital financial services available in Jordan and Iraq under the Zain Cash brand, to now include Saudi Arabia, under the brand name Tamam, an end-to-end digital microlending platform offering micro-loans to vulnerable communities in the Kingdom. 52% of men, and 35% of women possess a bank account in the Kingdom, though among the unbanked population, 86% men and 75% of women own a mobile phone. Moreover, Zain Kuwait and Boubyan Bank announced plans for the development of the first digital platform for Islamic banking services, marking the first digital partnership of this nature in the region made between one of the biggest regional telecom entities. This encourages the development of digital banking services helping support startups and emerging enterprises and contribute to the incredible digital innovation taking place across the region.
4. With respect to the people at Zain, who are the heart of the organization, the company further enhanced its Gender Diversity and Inclusion program building its Women Empowerment initiative aiming to develop and increase female leadership. Furthermore, Zain launched its WE ABLE program to promote diversity and inclusion in the workplace aiming to become Disability Inclusive by 2022 and became a signatory to the International Labor Organization (ILO) Global Business and Disability Network Charter. Zain firmly believes it is important that the contributions that people with disabilities can make in our workforce and in society in general are given ample opportunity to be recognized.
5. Moreover, Zain's Youth (ZY) Empowerment Program plays an instrumental role in empowering youth in the region. Initiatives launched under ZY include Generation Z; a year-long graduate program in Kuwait that enhances digital and behavioral skills preparing them for future employment and contributing to society at large; Zainiac, an internal e-platform that aims to encourage intrapreneurship within the organization and thereafter support in the incubation process and developing the business idea, noting the initiative has received over 700 unique ideas; and Reverse Mentoring, aiming to improve diversity and inclusion by reducing gaps between younger and senior employees, whereby youth act as a sounding board for new product launches and initiatives, better understanding one another's perspectives.
6. Engaging with its teams across the region, Zain organized several forums to align departmental strategies and objectives with the main aim of sharing best practices and scaling the opportunities of Meaningful Connectivity that empower the communities Zain serves. Functions included Regulatory, Digital, Risk Management, Commercial, Legal, Procurement and Technology.
7. From a products and customer perspective, Zain launched 5G networks in Kuwait and Saudi Arabia, expanded much needed 4G networks across other key markets and continued to expand its B2B presence expanding its reach by including SoHo (small and home offices) and SMEs segments. Furthermore, the company is moving forward in its plans to set up a centralized ICT and Digital professional services hub that serves Zain's operations and other business entities across Zain's footprint and beyond. This hub will provide Cloud and Cybersecurity services, IoT, Big Data and Analytics as well as a wider spectrum of new technologies covering areas related to Artificial Intelligence, Blockchain and Drone solutions to name a few. It is through these key steps that exemplify the efforts that the connectivity Zain provides takes a life of its own, and embodies the true meaning of Meaningful Connectivity, further accelerating much needed systemic change.
8. The company also scaled its Zain Group API, growing it exponentially in products offered and customer usage in Kuwait, Jordan and Saudi Arabia and expanding it during the year to Bahrain, Iraq and Oman. The social ambition is to open some of Zain's assets to emerging developers both regionally and internationally with the aim of creating new opportunities for young entrepreneurs to partner with Zain. This will allow the company to provide their services to our customers therefore expanding their reach ultimately creating shared value for both the company and the entrepreneurs. One relevant example that had multiple benefits, is Zain's launch of the Zain Kids application offering educational games and videos that can be managed by parents.
9. Safeguarding future generations and mitigating negative impacts of broadband connectivity is an especially important part of Zain's sustainability agenda, and the company reinforced its commitment to protecting children, publishing a report titled "Child Online Safety: Minimizing the Risk of Violence, Abuse and Exploitation" online under the Broadband Commission Working Group: Child Online Safety.

The above are just a few examples of the many initiatives outlined in the Report. With the MENA region undergoing drastic changes, Zain's sustainability agenda will continuously evolve so that the company remains of value to all our stakeholders.



Accenture Makes Strategic Investment in Synadia and the NATS.io Open Source Project

Accenture has made a strategic investment, through Accenture Ventures, in Synadia Communications, the company behind the production-proven open source NATS.io project which provides a highly-scalable, secure communications technology for digital systems, services and devices. As edge computing expands at an unprecedented pace, organizations require a secure, flexible, extensible and future-proof communications capability across cloud, on-premises, web, mobile, and Internet of Things environments. Synadia helps to address these needs with its differentiated Adaptive Edge Architecture. Synadia's cloud-native messaging technology, built on top of NATS.io and available to run on all major cloud provider platforms, enables companies to build a new class of edge applications with improved security, latency and ease-of-use over today's options. "Enterprise data is increasingly being created at the edge and the ability to securely message across the edge application landscape is critical," said Sanjeev Vohra, senior managing director, Growth & Strategy, Accenture Technology. "Powered by NATS.io, Synadia provides capabilities we believe will provide

value for our clients now and in the future as edge computing accelerates." Derek Collison, founder and CEO of Synadia, added, "As organizations continue to push the boundaries of a hyperconnected world, Synadia delivers solutions required to help accelerate business value and growth. Accenture's investment will enable Synadia to further capitalize on our position as a leader for adaptive edge architectures and modern distributed systems." Tom Lounibos, managing director, Accenture Ventures, said, "Our investment in Synadia and the NATS.io ecosystem demonstrates

Accenture Ventures' commitment to discover and curate the next generation of technologies and entrepreneurs that will forever change how the world works, lives and plays. We believe that Synadia offers our enterprise clients a foundational piece of data security and resiliency needed for edge computing." Synadia is the latest addition to the investment portfolio of Accenture Ventures, which is focused on investing in companies that create or apply disruptive enterprise technologies. Terms of the equity investment were not disclosed.



Accenture and AT&T Bring Mobile Connectivity to Phillips 66 with Private Cellular Network

Accenture and AT&T are working with Phillips 66 to develop industrial cellular wireless connectivity, with the development of a private cellular network solution. The solution will lay the foundation for potential future 5G use cases, including support for Industrial Internet of Things (IIoT) and low latency applications. Phillips 66 invited Accenture to address cellular performance gaps with its existing public cellular network near one of its refineries in Belle Chasse, Louisiana. The private cellular network – a local cellular network that includes cell sites and core network servers that support the connectivity of a specific organization's requirements – was selected as a proof of concept to

demonstrate the ability to handle increased mobile connectivity needs from the ongoing Phillips 66 digital transformation initiatives. The proof of concept private network was designed from the ground up to address Phillips 66's industrial digital requirements. AT&T was selected as the telecommunications provider to develop the necessary engineering for a dedicated cellular network solution, using multi-access edge compute across licensed spectrum. Phillips 66's private cellular network from Accenture and AT&T brings record speed improvements to their refinery "Mobile applications are central to our day-to-day business activities – we use them for safety inspection forms

for oil distillation units, capacity tracking and more – so connectivity is critical to keeping our operations running," said Zhanna Golodryga, Senior Vice President, Chief Digital and Administrative Officer at Phillips 66. "The results of the proof of concept are promising. This private cellular network can address existing coverage gaps today and potentially lays the foundation for pervasive connectivity to enable upcoming use cases based on IIoT and 5G." During the proof of concept, teams were able to bring dedicated private cellular infrastructure onsite and record speed improvements at the refinery. In addition, the cellular reference signals showed the potential for improvement in

signal strength at selected process units. At Phillips 66, a number of technical hurdles continue to be worked out and sustainable engineering solutions are being developed, before the cellular option can be made available for scale deployments while meeting the operational requirements at the refineries. "Reliable connectivity is accelerating business transformation and enabling companies to innovate faster

than ever before," said Chris Penrose, SVP of Advanced Solutions, AT&T. "Our multi-access edge compute solution will help give Phillips 66 the control, performance and security they need from their private network today, while also giving them the flexibility to expand to their other locations in the future." Mary Beth Gracy, Accenture's client account lead for Phillips 66, said: "The proof of concept of this

private network will enable Phillips 66 to selectively deploy connectivity and enable future digital opportunities across the refineries. We will also work with Phillips 66 to bring ecosystem partners to their private cellular network to give a complete end-to-end view of what is happening across the refineries and its supply chain, so that they can continue to innovate."

Only 10% of Companies Have the Customer-Centric Supply Chains Required for Resilience, According to New Accenture Report

Just 10% of companies were on the right path to building customer-centric supply chains that are resilient and enable growth prior to the COVID-19 pandemic, according to a new report from Accenture (NYSE: ACN). While supply chains have traditionally been a driver of efficiencies and scale, the report discusses how their role in recent years has evolved beyond mere efficiency and toward lasting growth. Based on a global survey of 900 senior executives from nine major industries across 10 geographies, the report, titled "A License for Growth: Customer-centric supply chains," identifies major supply chain challenges that have only been magnified by the ongoing COVID-19 global crisis including: inflexibility to deliver undifferentiated customer offerings; poor ecosystem design lacking the right partners; and a siloed technology architecture that stifles collaboration and co-innovation. The report also outlines leading practices of a few selected companies that have transformed their supply chains and created a customer experience that is both purpose-led and focused on growth. "The supply chain has always been the lifeline to humanity. The COVID-19 health crisis has brought to light the critical need for a resilient supply chain that produces and delivers all essential goods and services quickly, safely and securely," said Kris Timmermans, a senior managing director and global supply chain and operations lead at Accenture. "Companies have moved quickly to prioritize transparency and enable faster decision-making. Now they must double down on building more customer-centric, purposeful supply chains that will lead to growth as economies rebound. "The

companies in the report have invested US\$153 million, on average, over the past two years to transform their supply chains. However, it is just a small group – 10% of those surveyed – that are effectively using their investments to transform their supply chains to meet increasing and evolving customer experience demands. The Accenture analysis found that these leading companies follow four key practices that cement them as leaders among their peers:

1. Begin with the customer in mind. Base supply chain strategy on what the customer values, which is a more complex endeavor than ever before because customer experiences are now purpose-led and personalized. More than two-thirds (71%) of the leading companies build supply chain strategies to deliver experiences linked to key customer value propositions, such as sustainability, data privacy/security and customized delivery and service

2. Turn insight into innovation. Invest in building analytical, asset-light collaboration architectures, which could significantly increase the supply chain's impact on revenue and shared success within and outside their ecosystems. In fact, more than half of the average revenue growth that the leading companies experienced came from collaboration tools and data-driven insight technologies.
3. Develop targeted capabilities. All of these leading companies, whether B2B or B2C, have built capabilities to segment customers and products in real-time. They've partnered with procurement to design products and services and identify potential suppliers to achieve target margins. They also invest in advanced Cybersecurity capabilities to address the growing security threats from data breaches and data theft.
4. Engage the CEO beyond conversation. Support from the top is key to true

A LICENSE FOR GROWTH

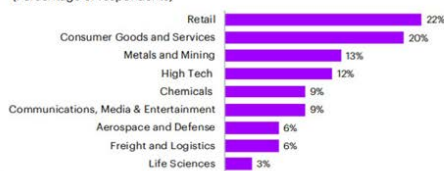
Customer-centric supply chains

Our survey covers 900 companies from nine industries across 10 geographies

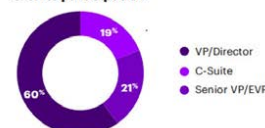
Distribution by geography
(Percentage of respondents)



Distribution by industry
(Percentage of respondents)



C-suite participation



I. We interviewed seven top supply chain executives from six industries to understand how they are transforming their existing supply chains into ones that deliver customer experience-led growth.
 II. We used econometric modeling to estimate the impact of collaborative analytical asset-light architecture on revenue growth.
 III. We also used the CapIQ database to highlight the differences in the performance of Masters versus Others on indicators such as EBITDA and share price movements.

supply chain transformation. The CEOs of these leading companies are more likely to drive supply chain discussions with their boards and translate those discussions into results. More than half (53%) of these CEOs allocate funding to drive supply chain innovation, and 49% allocate top talent to accelerate supply chain transformation

The report also includes analysis proving that the efforts taken by these leading companies have paid off. Accenture's financial analysis of these leaders has

found that during the period from 2017-2019, they have outperformed other companies in several areas. For instance, they grew [revenues] 13%, on average, compared with an average revenue decline of 5% for the other companies. Moreover, their supply chain contribution to total revenue was triple that of the other companies' (52% vs. 17%); and they delivered EBITDA* margins 2.5% higher than those of the other companies. "As we continue to navigate the uncertainty of fast-changing shifts in customer

behaviors, a customer-centric supply chain is essential to the well-being of companies and society as a whole," said Mark George, a managing director and North America lead for supply chain and operations at Accenture Strategy. "The good news is that the approaches that leaders are taking is an imitable formula that all companies can follow to transform their supply chains and sustain the operations that serve their customers and communities, as well as Main Street and Wall Street, with purpose and growth."

Accenture Named a Leader in Gartner's Magic Quadrant for Oracle Cloud Applications Services, Worldwide

Accenture has been named a Leader in Gartner's 2020 "Magic Quadrant for Oracle Cloud Applications Services, Worldwide," marking the second consecutive year that Accenture has been recognized as a Leader in the global research and advisory firm's annual assessment of Oracle Cloud Applications (OCA) service providers. According to the report, "Through 2022, the cloud-related IT services market was expected to grow at a five-year compound annual growth rate (CAGR) of 20.5%." Gartner goes on to add that, "It is too early to say just what the impact of COVID-19 will be. However, the expectation is that the move to OCA will continue to accelerate, perhaps even faster, as organizations take decisive action to become more resilient and to reduce operating costs." "By bringing together innovation, intelligence and industry knowledge into a single

purpose-built platform for Oracle Cloud, the Accenture MyConcerto for Oracle offering helps clients around the world harness Oracle Cloud Applications for superior business outcomes," said Phillip Hazen, senior managing director, Intelligent Platform Services at Accenture. "We believe our consecutive recognition by Gartner underscores our holistic strategy, as well as our successful cloud deployments at scale." According to Gartner, "The best vendors start with and justify the cloud journey to the business leaders, with a focus on innovation. Value is based on not only reducing the technology delivery cost, but also creating new customers or revenue streams or gaining business operational efficiencies. Using managed services is not only 'keeping the lights on,' but also driving yet more business value through the incorporation

and use of continuous updates." For this report, Gartner evaluated 19 service providers based on completeness of vision and ability to execute worldwide. Oracle Cloud Applications service modules cover: customer experience (CX), enterprise performance management (EPM), enterprise resource planning (ERP), human capital management (HCM) and supply chain management (SCM). Accenture has unmatched global expertise across a full range of Oracle Solutions with thousands of Oracle-skilled consultants around the world who help accelerate digital transformation by implementing Oracle-based business solutions and new business processes that develop and evolve as their digital business grows. Accenture has teamed with Oracle for over 25 years and is a Global Cloud Elite-level member in Oracle PartnerNetwork.

Accenture Completes Acquisition of Gekko

Accenture has completed its acquisition of Gekko, a leading French Amazon Web Services (AWS) cloud services company. Terms of the transaction, which was announced on April 20, were not disclosed. Gekko has more than 100 trained cloud professionals, 100 AWS certifications and a deep relationship with AWS. The

acquisition strengthens Accenture's leadership position in cloud and artificial intelligence; extends its ongoing relationships with key technology providers, including ecosystem partners such as Amazon, Google and Microsoft; and complements the cloud migration expertise and strategic objectives of the Accenture AWS Business Group (AABG) in France, Belgium, Luxembourg and the Netherlands. The AABG is built on more than 13 years of partnership and thousands of joint projects between Accenture and AWS. Accenture's AWS community consists of more than 8,000 AWS-trained professionals who hold over 5,500 AWS certifications globally. Accenture has been recognized by AWS with more than 20 AWS-awarded competencies/service delivery designations.

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Alfa Announces the Gradual Reopening of Its Stores Starting from Dekweneh and Jbeil

Alfa, managed by Orascom TMT, announces the reopening of its flagship Stores in Dekweneh and Jbeil starting today after a forced closure for 3 months as a preventive measure against the spread



of coronavirus. The Stores will reopen to customers from 8am to 5pm from Monday to Saturday. Other regional stores will be reopened gradually as part of a comprehensive reopening plan Alfa is implementing to ensure full compliance with safety measures to preserve the health of customers and staff. Internationally endorsed safety and social distancing measures will be applied in stores. In addition, a specified number of customers will be allowed to be in the stores at once and customers will be required to wear a mask. Alfa will keep its customers updated on the reopening dates of other regional stores. For additional information, customers can communicate with us via our social media platforms on facebook and twitter as well as via the live chat service on the Alfa website and mobile application or call the 111 helpline.

Arthur D Little

Arthur D. Little Acquires Cutter Consortium and Presans to Expand Open Consulting Capabilities

Arthur D. Little (ADL) announced the acquisitions of Cutter Consortium, a business technology research company based in the US, and Presans, a leading player in industrial open innovation based in France. By combining its own expertise with an existing community of independent experts, ADL expands its consulting ecosystem to establish a next-generation value proposition powered by open consulting and open problem solving. Cutter Consortium helps organizations navigate digital disruption of business models and leverage emerging technologies for competitive advantage and mission success. Through its research, consulting, training, and executive education – all delivered by globally recognized thought leaders – Cutter delivers innovative solutions to its thousands of clients worldwide. Cutter's experts have done the ground-breaking work in areas ranging from digital architectures to digital tech, enterprise agility to data analytics, and digital leadership to sustainable innovation. At the heart of its business is a membership service that gives clients valuable access to its experts and their insight. Presans is a leading data-driven platform dedicated to industrial open innovation and open problem solving. Thanks to cutting-edge technology based on big data

and artificial intelligence, as well as a team of fellows (former research and innovation executives) with in-depth knowledge in innovation, Presans leverages a network of over 6 million experts worldwide. Presans provides a variety of high-end open innovation services, contributing to the acceleration of decision-making and removal of scientific and technological roadblocks. Presans has worked for 50+ international industrial groups and delivered more than 100 innovation projects in Europe, the US and the Middle East. "Arthur D. Little applies an 'open consulting' and 'open problem solving' approach and brings the best global experts to every assignment to complement its internal strengths," comments Ignacio García Alves, Chairman and CEO of Arthur D. Little. "We believe the future is open consulting. With the double acquisition of Cutter and Presans, we are able to expand our open consulting ecosystem and open problem solving capabilities, offering access to experts, premium insight and a differentiated experience for our clients, in a seamless way." "The Cutter team felt an instant synergy with our colleagues at ADL. We share a focus on innovation, which, in ADL's case, goes back to its roots, and an emphasis on providing custom, leading-edge solutions.

Moreover, ADL's more than 40 offices in 30 countries has given Cutter an enhanced ability to assist its clients worldwide," says Karen Coburn, CEO of Cutter Consortium. "Since its inception at the École Polytechnique's start-up incubator, Presans has always engaged with the best experts in the world, mainly to help its customers solve complex technical problems," says Albert Meige, Founder of Presans. "Presans now addresses more and more problems at the crossroads of strategy consulting and scientific & technical expertise. The time had therefore come for Presans to strengthen itself by joining forces with Arthur D Little. "Together with Cutter and Presans, ADL reinforces its position on digital and information technologies, as well as industrial innovation, particularly in breakthrough innovation and convergence problem solving. In addition, through the acquisition of the technological platform of Presans, ADL is accelerating its investments in artificial intelligence and machine learning to develop state-of-the-art offerings for its clients. Cutter Consortium and Presans will continue to operate under their current brands with the same management teams, while benefiting from ADL's capabilities, investment, and global exposure.



AT&T Begins 5G DSS Deployment

AT&T heralded the commencement of a deployment of dynamic spectrum sharing (DSS) technology for its 5G network, noting it as a key move in a goal to deliver nationwide coverage this year. An AT&T representative told Mobile World Live DSS is initially deployed on parts of its network in northern Texas, but will be extended throughout the year. It launched low-band 5G on refarmed 4G spectrum in December 2019 to expand coverage beyond the limited range of its mmWave service. The importance of DSS has been heightened by the shift to 5G. At its simplest level, the technology enables a block of spectrum to be shared with legacy network technologies, in this case 4G, with allocations adapted according to demand. In a blog, AT&T SVP of Wireless Technology Igal Elbaz explained DSS had “become an integral part of our intelligent network” and is set to “play an essential

role in widespread 5G adoption”. AT&T did not name its DSS technology provider, with the representative noting only that it works with “several vendors across the ecosystem to create an intelligent, robust network for our customers”. In April, AT&T

said its 5G service covered more than 120 million people across 190 markets in the US and outlined plans to achieve nationwide coverage by the middle of the year. Rival Verizon is expected to deploy DSS for 5G later this year.



AT&T Pursues New STA for 37/39 GHz Tests

AT&T is working with several equipment vendors to test new 5G equipment in the 37/39 GHz band prior to equipment certification, including Nokia, Ericsson, Qualcomm and Samsung. The operator filed an application for Special Temporary Authority (STA) to get the FCC's permission to supplement a previous STA in order to add the 39200-40000 MHz band and an additional base station transmitter. AT&T said the tests would use several AT&T gNodeB sites in the Dallas and Waco areas of Texas, as well as in San Diego, San Francisco, New York City and Philadelphia Partial Economic Areas (PEAs). “The testing will prepare AT&T to utilize its 37/39 GHz spectrum as soon as it is licensed,” the carrier said. Last month, AT&T was granted authorization to conduct nationwide 37/39 GHz tests until November 8, 2020. The new application seeks a time frame of June 15 to December 15, 2020. AT&T states that it will be using the 5G NR Band 260

spectrum for the testing; specifically, it will use the 38.2-39 GHz and 39.2-40.0 GHz bands. The base station transmitters will come from Ericsson, Nokia and Samsung, with device prototypes from Qualcomm, Samsung and others. AT&T, Verizon and T-Mobile were the top bidders in the FCC's largest spectrum auction to date – Auction 103, which ended in March and included licenses in the upper 37, the 39 and 47 GHz bands. Verizon was the top spender in that auction, but AT&T was able to improve its 39 GHz spectrum position to 786 MHz, an increase of 102%. Before that auction, AT&T had acquired 379 MHz of 39 GHz spectrum when it purchased FiberTower for \$207 million in early 2018. When added to the mmWave spectrum AT&T already held in the 24 GHz band, AT&T's average spectrum depth post-Auction 103 increased to more than 1,040 MHz nationwide. However, Verizon is still king when it comes to mmWave spectrum,

having amassed 2,024 MHz of mmWave spectrum, according to Brian Goemmer, president of AllNet Insights. AT&T isn't the only one eager to conduct more tests. T-Mobile's STA application to conduct tests in the 39 GHz band in several markets, including Dallas/Fort Worth, Texas; and Irvine and San Diego, California, was still pending with the FCC at last check. That calls for a start date of June 7, ending December 7, 2020. In mid-range spectrum that has yet to be auctioned, Verizon has asked for experimental authorization to use the 3.7 – 3.8 GHz band; that's in portions of Basking Ridge, New Jersey; Westlake, Texas; Sunnyvale, California; and Grand Rapids and Lansing, Michigan. The 100 MHz sought under the experimental authorization is a subset of the recently expanded flexible use C-band in the ranges of 3.7 - 3.98 GHz, which will be auctioned starting at the end of this year.

AT&T Launches 5G in 28 New Markets; Network Goes Live in Puerto Rico

AT&T Communications has announced that it has switched on its 5G network in 28 new markets, increasing its footprint to 355 markets and covering 179 million people nationwide. Notable locations covered from this week include: Orlando, Miami, Maui County, Dallas, Austin and

Salt Lake City. In addition, AT&T has confirmed that 5G services have now gone live in Puerto Rico. The seven markets initially covered are Aguadilla, Aibonito Municipality, Arecibo, Mayaguez, Ponce, Rincon Municipality and San Juan. The low band 5G network utilizes

former 3G spectrum in the 850MHz band. TeleGeography notes that AT&T's original millimeter wave (mmWave) 5G footprint remains unchanged, covering parts of 35 cities. This network – branded '5G+' – was launched in December 2018 using 39GHz frequencies.

AT&T Broadens its SD-WAN Reach with Cisco for Better Security Across Branches and Cloud

With workforces becoming more distributed due to the COVID-19 pandemic, AT&T is serving up more security and better cloud support with a new SD-WAN service based on Cisco Secure SD-WAN technology. The new SD-WAN solution, which is based on Cisco's Viptela technology, offers Cisco's security capabilities across branches, cloud connections and data centers. AT&T's Rupesh Chokshi, assistant vice president, edge solutions product marketing management, said the new flavor of SD-WAN covers the full market spectrum for enterprises, mid-market organizations and small-to-medium businesses. "We are seeing a lot of growth in the market place with SD-WAN, both in terms of pre-pandemic and post-pandemic." Chokshi said in an interview with FierceTelecom. "Some of the use cases have changed post-pandemic in terms of how the workforce has been distributed to working from home and how organizations are looking at their operating environments going forward. "We do see the ongoing trends in terms of more and more network optimization, network modernization, and intelligent networking to deliver to the customer business outcomes. We're very excited to deepen our relationships with Cisco. We're able to bring very robust underlay/overlay capabilities, as well as a managed SD-WAN solution, for our customers globally." AT&T's new SD-WAN offering, which has been deployed by some of its customers, includes a reset of sorts to the hardware and software devices from Cisco. The hardware devices include Cisco's ISR and ASR routers as well as Cisco's ENCS white boxes. About a year ago, AT&T expanded its Edge Solutions portfolio with Cisco's 5000 Series Enterprise Network Compute System (ENCS) in order to offer its business customers more virtualized network functions (VNF) choices. The new SD-WAN offering includes Cisco's IOS XE operating system, integrated security features through Cisco's Umbrella, and application-aware firewall protection. It also has a single-cloud-based dashboard, intrusion prevention, URL filtering, and malware protection. AT&T Managed Services is working with AT&T Cybersecurity to support and manage the new SD-WAN service by using Cisco's vManage controller for a single management interface for both the network and security. "We have integrated elements of Wi-Fi, 5G readiness, backhaul and other elements," said Cisco's JL Valente, vice president of product management, managed services, intent-based networking group. "That's really part of the evolution of offerings that we actually bring to market with AT&T. So leveraging all the capabilities that we have today

for cloud networking and security, but also in the context of a branch office becoming more of a home office. "It also includes bringing some of the capabilities for security purposes in the context of SASE applications and cloud applications." During last month's virtual Cisco Live event, Cisco announced it had integrated the secure access service edge (SASE) model across its latest SD-WAN software release and other parts of its portfolio. Last year Gartner analysts coined the SASE term and positioned it as the unification of enterprise access security initiatives and WAN networking platforms, including SD-WAN. With the 17.2 software release, Cisco blended its Cisco Umbrella Cloud Security portfolio, which includes Cisco's secure internet gateway, with its Viptela-based SD-WAN offering. Among other SD-WAN vendors, AT&T has deployed VMware's VeloCloud SD-WAN solution. Like Cisco, VMware recently made a point of touting its integration of SASE across its portfolio, including SD-WAN. Chokshi said AT&T's new managed SD-WAN service can deliver some of the same capabilities to branches and small home offices, and that AT&T and Cisco were working to further expand the solution for distributed workforces. Chokshi said some of the verticals that have expressed interest in the new managed SD-WAN service include retail, healthcare and financial services.





BT Confirms Glasgow as Key Location

BT's main Glasgow office is set for a multi-million-pound refurbishment as the city was revealed as a key location in the company's future plans. The office on the Clydeside, first opened in 2001, will undergo a major refurbishment to modernize it and create a fantastic workplace for hundreds of colleagues. It's expected that hundreds more colleagues from across BT Group, which includes UK digital network business Openreach, will move into the building over the next few years. The company is a founding partner and one of the first tenants of Glasgow's International Financial Services District (IFSD). The office, known as Alexander Bain House, currently houses around 1,000 colleagues. Glasgow is the latest key location to be unveiled in the UK as part of BT's 'Better Workplace Program' – the largest workplace improvement and consolidation scheme of its type ever undertaken in the UK. The five-year program will improve and consolidate BT's footprint of more than 300 locations to around 30, including corporate offices, contact centers and specialist sites. Susan Aitken, Leader of Glasgow City Council, said: "It's great news that Glasgow has been chosen as a key operational location for BT. We're pleased that a large company such as BT is continuing to invest in Glasgow and modernizing its office space in the center of the city. "The expansion of their business is good news for sustainable jobs, for the city and the wider economy – particularly at a time when we are working hard to secure Glasgow's economic recovery from Covid-19." Jane Wood, BT Group director, Scotland, said: "This is a real sign of BT's continued commitment to Glasgow and to Scotland generally. "Although many of us have been working from home successfully over the past few months, we also know that modern office environments are vital. I'm so pleased we are able to announce this investment and expansion at a time when it's more important than ever to demonstrate our confidence in Scotland's ability to make a sustainable recovery from the impact of the Covid-19 pandemic." Graeme Paton, BT's managing director, property and facility services, said: "Our refurbished building in Glasgow will bring our people together in

an impressive and modern environment, transforming the way we work. "Excitingly, it will continue to be an important location for BT Group in Scotland. Our colleagues at Alexander Bain House will benefit from working in a future-fit office which sits within the city's thriving international financial district." Teams based at Glasgow's refurbished office will benefit from the company's investment in 5G and full-fiber broadband in the city. BT's ambition is to increase efficiency and productivity, improving its ability to do the best for its customers. The Better Workplace Program will deliver a combination of refurbishments like this, as well as new offices. The program is due to complete in 2024. BT Group plays an important role in Scotland and is responsible for generating £1 in every £110 produced in the country, according to an independent report. It generated nearly £1.2 billion to the Scottish economy in "Gross Value Added" GVA, during the 2017/18 financial year.* BT Group employs nearly 7,700 people across the nation. BT has also confirmed today its commitment to Dundee, where it already employs hundreds of people. Glasgow and Dundee join other locations already announced including Edinburgh, Birmingham, London, Manchester, Belfast, Bristol, Cardiff, and Ipswich (Adastral Park). More announcements will follow in due course.



BT Targets Green Tech Boost with New Initiatives

BT Group made moves to seek out green technology companies and establish fleets of electric vehicles in the UK, to contribute to efforts to tackle climate change. In a statement, the operator said the Green Tech Innovation Platform scheme aimed to uncover the latest technologies from UK-based scale-ups (the next step up from a start-up) which could be used to boost the operator's efforts to achieve a net-zero carbon footprint by 2045. As part of the program, BT will explore possibilities to develop smart street features including environmental monitoring and traffic

optimization, along with IoT-capable technology for managing buildings energy and water supplies. Another goal is exploring how 5G can be used to reduce travel, for example by using video, AR or VR for remote repair and diagnostic functions. BT is collaborating with innovation platform Plug and Play Tech Centre on the scheme and aims to select technology companies in the second half of the year. The operator also partnered with non-profit The Climate Group to establish the UK Electric Fleets Alliance, a body which will push for an acceleration in a shift to electric vehicles

for corporate fleets. BT's first step in this regard will be to electrify its own fleet of nearly 34,000 vehicles, it stated. CEO Philip Jansen (pictured) noted "the global climate emergency" was still present despite "the temporary reprieve on carbon emissions and air quality in towns and cities" during lockdown measures imposed to confine the Covid-19 (coronavirus) outbreak. "As we emerge from the crisis, the recovery presents a huge opportunity for governments, businesses and individuals to put action on climate at the heart of their efforts", he emphasized.



China Mobile International Partners with Omantel for Its Third PoP in the Middle East

Deepening its collaboration within the Middle East, China Mobile International (CMI) has joined hands with Omantel to establish its third Point of Presence (PoP) in the region in the Sultanate of Oman. The new partnership leverages Oman's strategic location and the complementary strengths of CMI and Omantel to enable closer ties between the Middle East, Africa, Asia and Europe. The new PoP will leverage Omantel's vast subsea network to provide latency improvement, prevent single point failure and connect with other CMI PoPs for resilient connectivity in the Middle East to support increased global connectivity for multinational businesses. Omantel has invested in 20 subsea cable systems covering 120 locations around the world. It is also the first and only carrier within the six Gulf Cooperation Council (GCC) countries to land a submarine cable in Europe. The Oman PoP connects to the Dubai, Fujairah and Djibouti PoPs through CMI's SMW-5 and AAE-1 cable system, and connect to other APAC cable systems in Singapore, such as SJC and APG going to Hong Kong. In the future, more new

cables will be linked to the Muscat PoP to strengthen CMI's connectivity and provide an alternative path through the Middle East. Sohail Qadir, Vice President, Wholesale, Omantel said, "With the globalization of the telecommunications sector, we are looking at an exciting future of our partnerships and expansion with CMI. Omantel became the preferred choice to help CMI take its strategies forward in part because of the Sultanate of Oman's geographical location, policies that feel the pulse of a digital future, and an infrastructure network that enables us to reach further. Forming the backbone of this partnership will be Omantel's robust infrastructure, subsea network, professional facilities management and access to power." "In an era of digitization and global cooperation, CMI and Omantel are coming together to provide secured and reliable connectivity for businesses working in GCC countries, Africa, Europe and beyond," said Andrew Niu, CMI Chief Partnership Officer, "As part of our commitment to the GCC region, CMI will be investing in backhaul to connect our new Oman POP with our PoPs at

SmartHub and Datamena and globally to our infrastructure in Djibouti, Singapore and other key hubs. This will bring Oman into a CMI network that covers China and across six continents." The partnership with CMI underscores Oman's economic potential and business-friendly climate, as a secure and stable Gulf state. It also reflects Omantel's growing reputation as a trusted global player. With modern high-speed infrastructure and ultra-low-latency connectivity, Omantel supports enterprise customers and as a state-owned company and experienced in submarine industry helps major telecom service providers with cable landing and terrestrial fiber construction to expand their reach. As the Sultanate's first and leading integrated telecommunications services provider, Omantel capitalizes on ultra-low latency networks to enable innovation and digital transformation globally. It utilizes Oman's geographic advantage at the absolute nexus of the east, west, north, and south to enable its customers and partners to deliver their services with the best possible end-user experience.

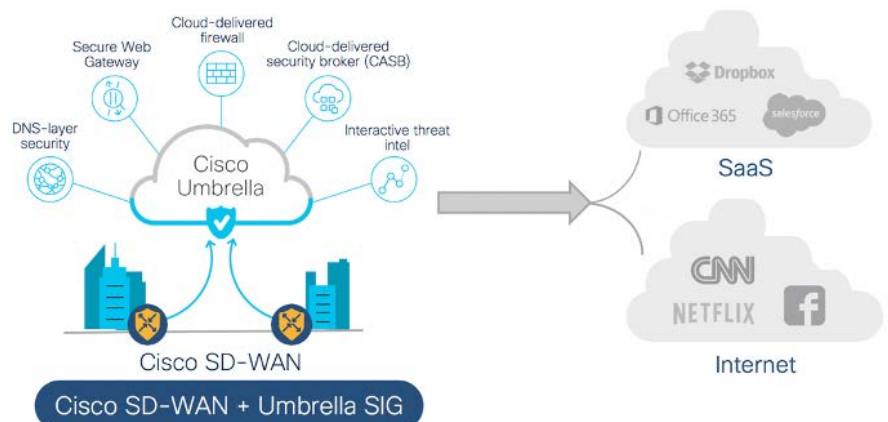


Cisco Gets SASE with Its Latest SD-WAN Software Update

Cisco has embraced the secure access service edge (SASE) model across its latest SD-WAN software release. Last year Gartner analysts coined the SASE term and positioned it as the unification of enterprise access security initiatives and WAN networking platforms, including SD-WAN. With the 17.2 software release, Cisco has blended its Cisco Umbrella Cloud Security portfolio, which includes Cisco's secure internet gateway, with its Viptela-based SD-WAN offering. After cancelling the first virtualized edition of its flagship event a few weeks ago, Cisco Live is taking place this week. At last year's Cisco Live, Cisco said it would broaden the security of its SD-WAN by combining it with Umbrella. At the Cisco Partner Summit 2018, Cisco

announced that advanced security was integrated into Cisco SD-WAN devices, from application-aware enterprise

firewall and intrusion prevention, to URL filtering. With its latest SD-WAN software, customers can extend their security to



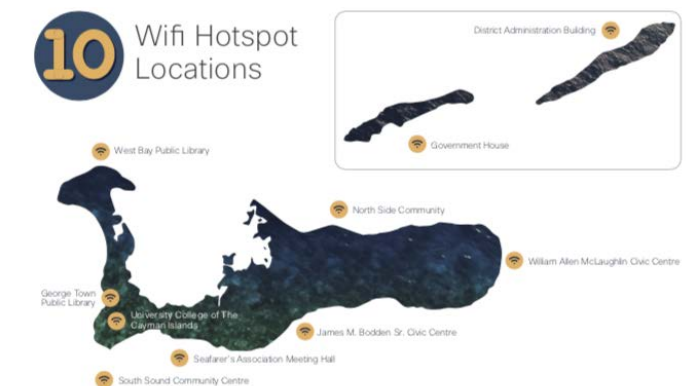
cloud firewalls with a single click for end-to-end automation from the SD-WAN service through the Umbrella secure gateway. SD-WAN customers can tap into the Umbrella capability as part of Cisco's DNA Security premium package. In order to enforce policies, the software does automatic assessments of the identity of the user and their context. "The move to SASE, I think, is the internet becoming the new WAN," said Cisco's Muninder Sambhi, vice president of product management for enterprise switching. "With the new WAN, security becomes top of mind. A lot of customers are looking to offer security at scale in a single location with a single policy enforcement. Cloud security becomes super important and super critical at this time." Sambhi said with security, customers are moving away from trust solutions toward more centric solutions that are associated with the context of the user of the device in order to enforce the correct policies and to route them efficiently for the best user experience. Customers don't have time or the resources to stitch

together all of the various cloud, SD-WAN and security technologies, according to Sambhi. In the current scenario, Sambhi said it takes multiple vendors and multiple technologies to provide holistic security "We've got all of these assets within Cisco and we're now providing a full end-to-end, fully integrated stack," he said. "We can map how the applications and devices are accessing the internet. We can secure them along the way and offer a security posture in the cloud." While Cisco has the wherewithal to create an entire ecosystem for SASE, others may argue that multiple SASE vendors that provide different components would be more desirable than relying on a single vendor. Several SD-WAN vendors, such as Cato Networks and Versa Networks, claim to have embraced the SASE elements of cloud, security and SD-WAN prior to Gartner coming up with the term. "Cisco has many of the pieces that could be used in a so-called SASE implementation – cloud security tools, SD-WAN, Meraki Wifi – but the key is the integration of the management systems,

which historically been a challenge," said Scott Raynovich, the founder and chief analyst of Futuriom. "We'll have to wait to see if indeed all of these tools can be managed by one cloud interface or operating system." In a similar vein to Cisco's approach, VMware announced in April that it was aligning various elements of its portfolio in order to be a major player in the SASE sector. Cisco and VMware/Viptela have been among the top-two SD-WAN vendors based on revenues. Whether it prevails in the SASE space over the long haul, Cisco's latest software update for SD-WAN will no doubt be embraced by companies that are Cisco-centric. Sambhi said there has been 3,000 downloads of the software to date with 75 to 100 of them currently testing it. "We are really excited about bringing together cloud security and network sensors, and being able to help our customers evolve or migrate to a SASE model by just making enterprises cloud first," Sambhi said. "I think that's something that we're proud to bring into the market."

Cisco Donates Critical Wi-Fi Access to Cayman Islands Communities

Minister of Commerce, Planning and Infrastructure, Hon. Joey Hew announced that ten community sites across the Cayman Islands will be made available for residents to enjoy free, public access to wireless internet. The opening of the community Wi-Fi hotspots coincides with the easing of three-month shelter-in-place restrictions, which were officially lifted on Sunday, June 21. The technology infrastructure and equipment for the public Wi-Fi hotspots were donated by global networking and technology leader Cisco, to help provide relief to the social impact caused by COVID-19 and help bridge the gaps of the digital divide. The Cayman Islands Utility Regulation and Competition Office (OfReg) was charged with coordinating the overall project. Installation of all Information Technology infrastructure as well as technology deployment was led and managed by local IT solutions provider Unified Technologies, while the necessary bandwidth for the hotspots was provided by regional telecommunications carrier Flow C&W. Both Unified Technologies and Flow C&W have deep and longstanding roots in the Cayman Islands and are also donating their time and resources to this initiative. Minister Hew expressed his gratitude to all stakeholders for working together to get all the necessary infrastructure in place and the project off the ground within a short timeframe. "This is a fantastic project that will serve a great purpose for many people – students, families and even young entrepreneurs. We recognize that some people may not have access to Internet so I feel sure that these hotspots will be welcomed across our Islands, especially at this time." He continued, "I have to commend OfReg for coordinating the project, the private sector organizations for providing the infrastructure,



connectivity, technical labor and set-up, and a number of entities including District Administration, Ministry of Education, University College of Cayman Islands, Seafarers Association and others for providing the locations". "Having internet access is more critical than ever. Now is the time for business and government leaders to step up and work together to close the digital divide so we can create a digital and inclusive future where no one is left behind," said Shari Slate, Vice President, Chief Inclusion and Collaboration Officer for Cisco. "We are proud to collaborate with Minister Hew and the OfReg, and to offer our technology and expertise so that residents of the Cayman Islands who need help coping with this new normal can access resources online and connect with family without worry". She added, "Cisco is grateful for the dedication and local leadership demonstrated by Unified Technologies. Alongside Flow C&W and OfReg, the deep collaboration undertaken by our teams is truly what brought this initiative to life."



New Rules and Public-Private Collaboration Needed to Implement Data Portability

New Cullen International global trend research on data flows shows that the right to data portability, enshrined as a general right across several privacy frameworks around the world, has often been delayed in practice by technical and/or regulatory barriers. This is because specific rules are usually required to implement data

portability in any given sector. To comply with a data portability obligation, an organization must, at the request of an individual, transmit the relevant personal data that is in the organization's possession or under its control to another organization in a commonly used, machine-readable format. This allows individuals to switch to

new service providers more easily.

However, there are numerous practical complications. As a result, data portability has been implemented in only a few countries around the world and, even then, only in specific sectors, for example in Australia and the UK. Data portability obligations have recently been proposed in Singapore through amendments to the country's Personal Data Protection Act. If approved, data portability in Singapore will apply only to white-listed data sets, to be identified jointly with industry stakeholders and any relevant sector regulator. To implement the proposed data portability obligations, the country's personal data protection commission said they would work with industry to pilot, test and fine-tune the mechanisms and processes before finalizing each regulatory instrument. The commission will also work with consumer groups to develop user experience guidelines.



Devoteam Accelerates on Low-Code Technologies and Signs a European Partnership with OutSystem

Devoteam is accelerating its development in the Low-Code market and is extending its partnership with OutSystems, one of the leaders in Gartner's Magic Quadrant in this field, in EMEA*. Devoteam has chosen OutSystems as its partner for the rapid development of multi-experienced business applications. The advantage of OutSystems technology is to reduce the delivery time of these applications to just a few weeks for initial delivery and just a few days for updates. This collaboration has made it possible to create a dedicated offer targeting companies wishing to gain agility and foster their innovation process. Accelerating the pace of innovation and new applications availability is

increasingly essential to standing out in the long term. In this context, Low-Code technology, which is still very recent, is set to revolutionize the world of applications by transforming working methods and drastically minimizing delays. In particular, it offers a personalized user experience to business managers who will be able, for example, to test an idea without having to engage in a complex and expensive process. "Devoteam combines in-depth knowledge of the OutSystems platform with world-class standards for customer success," says Peter Dunlap, VP of Channel and Alliances for OutSystems. "Their investment in Low-Code enables them to satisfy more clients across more

industries and in more geographies than ever before." Sebastien Chevrel, Devoteam's COO, highlights that "with this partnership, we bring the power of Low-Code and multi-experienced platforms to all our customers, in all our countries, in order to increase business value with a multiplied speed of application delivery. To achieve this, we will scale on top of the strong foundations built over the last 10 years between OutSystems and our Portuguese team Outfit by Devoteam as a Center of Excellence. Being able to develop enterprise and mobile applications twice as fast and with half of the resources is an unbeatable asset in the current Covid context."



Eutelsat, Telesat, and Claro Share C-Band Transition Plans

Eutelsat has estimated its full cost to clear the C-band and relocate its U.S. customers at \$170.9 million. Of that, \$150 million is allocated for a single satellite replacement, and the rest for ground station activities. Eutelsat, along with Telesat and Claro, formerly Star One, laid out their plans to relocate U.S. customers from the 3.7-4.0 GHz band to the 4.0-4.2 GHz band on the FCC's accelerated timeline in filings made June 19. The satellite operators must meet clearing deadlines in 2021 and 2023 in order to receive \$9.7 billion in accelerated relocation payments. Intelsat and SES, the operators eligible to receive most of the accelerated relocation payments, have shared their detailed plans as well. Eutelsat said it has four satellites that serve the United States in the C-band. Eutelsat was not planning to replace

EUTELSAT 113 West A, which needs to be deorbited by May 2023, but as available spectrum will be reduced by 60%, the operator will need to renew one satellite at that orbital position. The operator has not yet announced a satellite order. In addition, Eutelsat said it does not expect to need earth station technology upgrades, such as compression encoding and modulation equipment. Telesat said in its filing it expects to complete the clearing in a single phase and plans to be finished with transition activities by June 30, 2021. The Canadian operator expects relocation costs to total between \$1,085,000 to \$1,561,000. Telesat said it does not need to order a satellite to maintain sufficient capacity. The operator plans for new filters for earth stations, but does not need any other technological upgrades. Its filing

estimates that 56 earth stations will require retuning. Claro provides C-band service on its Star One C1 satellite, which will be taken out of service in mid-2021. It will be replaced by StarOne C2, which has already launched but is not authorized to operate in the C-band in the U.S. In order to continue to provide C-band service to a customer in the Miami, Florida-area, Claro said it has reached a contract with SES for capacity on its SES-4 satellite. Claro's filing says the operator does not anticipate requesting reimbursement for transition costs. The operator will pay for filter installation and repositioning of any antennas located on the Florida earth stations under the agreement with SES, but does not intend to seek reimbursement.

TV TEM Selects EUTELSAT 65 West A to Assure Continuity of Content Distribution Following C-Band Re-Purposing In Brazil

TV TEM, an affiliate of TV Globo, has signed a multi-year contract with Eutelsat Communications (NYSE Euronext Paris: ETL) for capacity on its EUTELSAT 65 West A satellite to distribute its programming within its concession region in the São Paulo state. The partnership has enabled TV TEM to seamlessly migrate its feeds from traditional C-Band (3.7 GHz to 4.2 GHz) to Planned

C-Band (4.5 GHz to 4.8 GHz) on the EUTELSAT 65 West A satellite, allowing for the clearing of the traditional C-band frequencies for 5G deployment in Brazil. TV TEM has the widest coverage area in the State of São Paulo with 318 municipalities within a region of 8.3 million inhabitants, around 49% of the population of the upstate of São Paulo State. The operation took place under Eutelsat's 'Planned C-Band' solution, developed to offer Brazilian broadcasters a simple procedure to adapt or replace equipment and re-point antennas to the orbital 65°W position, with some 300 sites completing the migration in less than 45 days. Commenting on the contract, Rodrigo Campos, Managing Director of Eutelsat do Brasil said: "We are delighted to welcome TV TEM to EUTELSAT 65 West A. Our 'Planned C-Band' solution offers a seamless and cost-effective proposition for Brazilian broadcasters required to migrate their signals out of the lower end of the C-Band spectrum, while offering them unparalleled coverage of the Brazilian market." Ewerton Maciel, Technology Director of TV TEM said: "TV TEM has a robust satellite operation with a diversity of transmitting sites and automatic power control to serve viewers demanding a premium service with the highest reception quality. Eutelsat has perfectly understood the regulatory and technological challenges of this migration, and we are pleased to rely on them as our partners."



FACEBOOK

Facebook Buys Maps Company in AR/VR Play

Facebook acquired Sweden-based mapping specialist Mapillary, a move Reuters reported was intended to boost the social media company's development of services for AR and VR devices. Terms of the deal were not disclosed, but Facebook told the news agency Mapillary would contribute to development of AR glasses and VR headsets. Mapillary crowd sources images globally from smartphones and cameras and combines these to create street-level 3D maps. On its website, it lists logistics and mobility; cities and infrastructure; and automotive use cases. In a blog post, Mapillary CEO and co-founder Jan Erik Solem, said its technology will power products including Facebook Marketplace and supply vital data to humanitarian organizations globally. "By merging our efforts, we will further improve the ways that people and machines can work with both aerial and street-level imagery to produce map data. Lots of exciting results will come out of this, including the data we all need to make better maps." Solem emphasized the takeover would not impact the open nature of the service, with

no plans to change "the rights given to OpenStreetMap editors" and work with related "communities and companies to continue on the same path as always".



Facebook Launches New Digital Literacy Program across Sub-Saharan Africa

Facebook has announced the launch of 'My Digital World', a program designed to equip young people and the general public across sub-Saharan Africa with digital skills needed to navigate the digital world. My Digital World is a consolidation of all Facebook digital literacy programs, including Safe Online with Facebook, Ilizwe Lam and eZibo, and will be offered virtually this year to adapt to the Covid-19

pandemic. Facebook has over the years trained thousands of people on digital literacy skills and is this year preparing to train close to 20,000 participants across Nigeria, South Africa, Kenya, Zambia, Senegal, Cote D'Ivoire and Ethiopia on safe, responsible and beneficial usage of the digital platforms. The training is free and open to youths aged 13 years and above, and will also focus on teachers, parents and

guardians. In addition to instructor-led live webinars featuring presentations, demos and virtual discussions, the company will conduct digital marketing campaigns highlighting best practices, tips, quizzes and polls on digital literacy topics, with content delivered through Facebook and Instagram. Modules will cover online safety, privacy, news and media literacy, and digital citizenship.



Saudi Arabia's BATIC Signs Smart Cities Agreement with Huawei

Batic Investments and Logistics Co. announced that its subsidiary, the Smart City Solutions Co., signed on June 28, 2020, a strategic partnership with China's Huawei to provide innovative smart cities solutions in Saudi Arabia. Under this agreement, the two parties will plan and implement their mega smart projects activities, engineering and design of solutions provided to their partners in the

Kingdom, the company said in a bourse filing. BATIC and Huawei will work jointly to operate smart cities platform and services including primary services such as parking lots, transportation, reduction of energy consumption, lighting, and waste management, as well as an integrated set of security and safety services. The agreement includes a modern and smart operations center to support informed

decision-making and follow-up of key performance indicators for smart cities. It is worth mentioning that Smart Cities signed two contracts in September 2019 to create, develop, invest and operate multi-stories car parks and smart parking spaces in Dammam, Dhahran and Al Khobar for a period of 25 years with a total value of SAR 1.24 billion.

Huawei Releases 2019 Sustainability Report

Huawei released its 2019 Sustainability Report. The report explains the progress that Huawei made in supporting network stability and security, reducing emissions, responding to climate change, implementing its TECH4ALL digital inclusion action plan, and supporting the UN's Sustainable Development Goals (SDGs) over the past year. Supporting network stability remains a major part of Huawei's social responsibility and mission. During emergencies like earthquakes, typhoons, tsunamis, and even armed conflicts, Huawei employees remain in the heart of the crisis to restore communications networks and support smooth network operations. In 2019, Huawei maintained network availability during more than 200 major events and natural disasters. "Over the past year, we faced challenges the likes of which we have never seen.



Huawei Investment & Holding Co., Ltd. 2019 Sustainability Report

Bring digital to every person, home and organization
for a fully connected, intelligent world



And we stood strong," said Liang Hua, Chairman of Huawei. "We have worked day and night to patch the holes in this beleaguered business of ours, ensuring business continuity and the timely delivery of products and services to our customers. We have helped roll out networks worth hundreds of billions of dollars in more than 170 countries. Ensuring the stable operations of these networks and providing people with the best available technology is not only our purpose, it is the central tenet of our social responsibility." Huawei also disclosed its mid- and long-term targets for carbon emissions reduction, circular economy, and renewable energy, as well as its progress in 2019. Working towards emissions reduction, the energy efficiency of Huawei's main products was improved by up to 22%. In 2019, Huawei used 1.25 billion kWh of clean energy, which is equivalent to reducing 570,000 tons of CO₂. To contribute to a circular economy, Huawei is committed to maximizing the utilization of resources throughout the product lifecycle. For example, 86% of the products returned to the company were reused, and only 1.24% of its e-waste was landfilled. Huawei is also working to use more renewables. The photovoltaic (PV) plants built on Huawei campuses have a combined capacity of 19.35 MW, and generated 13.57 million kWh of electricity in 2019. The company is also applying its smart PV solution on a larger scale, such as at the 300 MW PV plant in Argentina's Jujuy Province. This PV plant generates 660 million kWh of electricity annually, which is enough to power 160,000 homes. Huawei is committed to furthering digital inclusion and making digital technology accessible to all. In 2019, Huawei launched the RuralStar Lite solution, which greatly reduces site construction costs and connects more than 40 million people in remote places. The solution offers connectivity across all types of terrain such as plains, hilly regions, deserts, and island chains. Huawei has also worked with its partners to build the DigiTruck mobile digital classroom, which has provided digital skills training for nearly 800 Kenyans living in remote regions. In September 2019, Huawei signed an MoU with the UNESCO Regional Office for Eastern Africa. The two parties will work together to take the DigiTruck to more countries and make digital skills accessible to all Africans. Huawei said in the report that ICT will play a critical role in achieving the UN's SDGs and called on the whole industry to work together to promote socioeconomic development, environmental protection, and the well-being of humanity. "Huawei believes in openness and collaboration for shared success. We are working with industry partners, such as our suppliers, to build a thriving industry ecosystem," said Tao Jingwen, a board member and Chairman of the CSD Committee of Huawei. "We are fully confident that we can overcome these challenges. We will stay the course and continue creating value for our customers and the broader global community."

Huawei Reiterates Its Commitment to Advancing 5G in the Middle East

Chinese tech giant, Huawei, remains committed to the advancement of 5G technology in the Middle East, helping to establish the region as a centre of excellence for next generation connectivity, according to senior company officials. In a recent media roundtable, Charles Yang, president of Huawei Middle East, explored

a plethora of opportunities for 5G to expedite growth in the region following the COVID-19 pandemic, and outlined clear opportunities to support local government, societies and businesses alike. "Today, ICT companies in the region have a critical role to play in the evolution of digital economies working alongside governments, NGOs,

and local communities to harness technologies like 5G to spur industrial innovation and investment. "The outbreak has led to increased demand for ICT solutions, specifically in areas like 5G amidst a boost in network usage. There is simply a huge amount of data traffic now being generated for personal and

business use, and 5G is the best option to ease such network pressure," he said. The Middle East was among the first regions in the world to rollout 5G at scale, and many regulators took a collaborative approach to 5G spectrum allocation and licensing, with large-scale rollouts beginning as early as 2018. "The use cases for 5G are practically unlimited, although certain sectors can stand to benefit more in current circumstances, such as healthcare, education, transportation, and energy, to mention a few," said Yang. "But transitioning towards a smarter society, in general, requires strong partnerships between the public and private sectors. The need to develop the 5G ecosystem, including the talent ecosystem, is clearer than ever." One area that collaboration is being seen in the concept of 5G+X; the combination of 5G connectivity with other advanced AI, IoT, and cloud technologies. In last year's GSMA report "The Mobile Economy Middle East & North Africa",

the telecom industry body estimated that there would be around 45 million 5G connections across the region by 2025, with the contribution of mobile technology and services to the MENA region reaching more than \$220 billion in value by 2023. Yang believes that the Middle East and North Africa region's relentless investment in research and development will help to keep it at the cutting edge of next generation connectivity. "It's with long-term R&D investment that we have been able to lead the pack in multiple technology domains, and continue to earn the respect and trust of our customers despite significant external pressure," maintains Yang, who cites close cooperation with external bodies as instrumental to its success in the Middle East. "We're continuing to work closely with governments, customers, and partners to provide services that help them to pursue digital transformation and realize national development visions." Yang also reiterated his company's

commitment to providing the securest network infrastructure to operators across the region. "We work with governments, industries, and our customers in an open, transparent, and constructive way to maximize the benefits of ICT infrastructure while improving its security. We are fully aware of our responsibilities as a global ICT supplier," he said. Over the past 30 years, Huawei has worked with carriers to build more than 1,500 networks, providing network services to over 3 billion people in more than 170 countries and regions. "We have put in place a comprehensive cyber security assurance system, and have a proven track record in that field. Our cyber security practices have won the trust of partners across the global value chain. Huawei's 5G products have passed multiple third-party security certifications, and Huawei has become the first company to gain the CC EAL4+ certificate," Yang concluded.

Huawei Empowers Global Financial Customers' Digital Transformation with Mobile-Centric Strategy and Cloud, AI, and 5G Capabilities

Huawei held its Global FSI Summit 2020 (online overseas part) with the theme of "Thrive Digitally in a Mobile Future." Financial institutions and enterprises were invited to share their experience and insights in dealing with the "new normal" in the post-pandemic era, involving accelerated mobile first implementation

and using FinTech to ensure business continuity and reshape financial services models. Huawei believes that mobile capabilities are key to future banks. Supporting this mobile-centric business will require new IT architectures and key capabilities of cloud, AI and 5G. As a leading tech player, Huawei provides

its global financial customers with competitive financial ICT solutions, and works with various world-leading partners on joint innovation. The summit attracted the world's leading financial institutions including Shanghai Pudong Development (SPD) Bank, China Construction Bank, Singapore DBS Bank, Sberbank, BBVA, Isbank; the world's leading financial solutions provider Temenos, and analyst institutions IDC and other global industry participants. The COVID-19 pandemic has advanced digital operations in the financial industry with more confidence and determination in such implementation. Moreover, the industry has demonstrated its advantages and value in applying new technologies in digital operations. Peng Zhongyang, Director of the Board, President of the Enterprise Business Group, Huawei, stated: "Based on cloud computing, big data, artificial intelligence, 5G, and other ICT technologies, innovative FinTech will embrace new opportunities and lead the upgrade of financial services. We have combined our 30 years of technical experience, capabilities, and industry insights with customer needs, to



provide competitive financial ICT products and solutions that span multiple domains, and collaborate with various partners for joint innovation. We believe that financial institutions that are ready to go digital will probably see greater success." Adhering to the "mobile first" principle to achieve smart experience is the foundation for financial institutions' customer-centric business strategies, said Jason Cao, President of Global Financial Services Business Unit, Enterprise BG, Huawei. "We do believe that the mobile capability will be the core of the future of the banking industry. It

not only is applicable to the interface that connects with client, but also to the internal operations and collaborations with partners. Supporting this mobile-centric business will require new IT architectures and key capabilities of 5G, AI and cloud. As a leader of these technologies, Huawei has unique advantages that supports the cloud transformation of financial institutions, builds new connecting capabilities, and helps financial institutions improve their agility and innovation capabilities," he explained. The Transformation Experience of Banks in China Empowers the Global

Financial Services Industry Over the past 10 years, Huawei has accumulated extensive experience globally. Particularly in China market, Huawei has gained experience in leading banks' transformation and thriving in the mobile App era. Notably, the banking sector has taken a series of measures to ensure business continuity in different stages of the pandemic. In the post-pandemic era, banks need to proactively reflect on their business model and prepare for any uncertainties in order to ensure an agile business moving forward.

Global Tech Community Recognizes Huawei's Continued Research and Development Gains

Huawei announced that its innovative products and solutions have won eight awards, including five grand awards, at the iconic 'Best of Show Awards' held during Interop Tokyo 2020, the largest and most prestigious ICT exhibition in Japan and overall ICT industry. Each year, hundreds of solutions are reviewed by the panel of judges made up of authoritative industry experts and university professors, after which they select the most innovative products and solutions that have the most cutting-edge technologies and highest commercial value. The awards received at Interop Tokyo in 2020, and in the years preceding it, show the industry's recognition of Huawei's emphasis on innovation and quality, and is a reflection of its long-term strategic investment in R&D to provide customers with competitive, innovative, unique ICT products and solutions through core technological innovation. The conference showcased the most advanced technological innovation and practices in the industry, and gathered together leading solutions in multiple fields, including AI, IoT, edge computing, and the industrial Internet. Demonstrating its "open, collaborative, and mutually beneficial" cooperation with partners, Huawei also showcased a brand new digital intelligent ecosystem and its relevant application cases, including 14 products and solutions at Interop Tokyo 2020. These cutting-edge offerings ably illustrated Huawei's capabilities to comprehensively promote rapid digital and intelligent development in the ICT field. With continuous investment in new ICT technologies and ecosystems, and with the ongoing accumulation of global service experience, Huawei is gaining trust from an increasing number of industry-leading enterprises. To date, over 700 cities and 228 Fortune Global 500 companies – including 58 in the top 100 – have chosen Huawei as their digital transformation partner.

Huawei received the following awards at Interop Tokyo 2020:

- Grand Prize in Network Infrastructure: OptiXtrans OSN 9800 M12, the industry's first super C-band transmission product.
- Grand Prize in Cloud Infrastructure: CloudEngine 16800 data

center switch, the industry's highest-density 400 GE line card for data centers in the AI era.

- Grand Prize in Server and Storage: Huawei's next-generation all-flash storage OceanStor Dorado 8000/18000 V6, oriented to core production and transaction scenarios, and continuously setting performance, reliability, and intelligence benchmarks.
- Grand Prize in IoT: Huawei edge computing gateway AR502H.
- Grand Prize in Facility: The eMIMO edge computing facility solution.
- In the AI category, the industry-leading Atlas 900 AI cluster is the only award-winning product.
- Special Prize in Enterprise IT: Huawei 5G AR NetEngine AR6000.
- Special Prize in Network Infrastructure: Huawei OptiXtrans DC908, an intelligent Data Center Interconnect (DCI) product with a single-fiber capacity of 88 Tbit/s and AI-enabled O&M.



- Facility: eMIMO MEC infrastructure Solution

- Network Infrastructure: Huawei OptiXtrans OSN9800 M12

- Cloud Infrastructure: Huawei CloudEngine 16800 Data Center Switches

- Server & Storage: OceanStor Dorado 8000/18000 V6

- IoT: Huawei AR502H Enables Power IoT



- AI: Atlas 900 AI Cluster



- Enterprise IT: Huawei 5G AR NetEngine AR6000

- Network Infrastructure: Huawei OptiXtrans DC908



Microsoft Launches 5G IoT Makerspace Powered by HKT Network at Hong Kong Cyberport

Together with Hong Kong Cyberport and HKT, Microsoft Hong Kong announced the opening of Microsoft 5G IoT Makerspace, which integrates an Internet of Things (IoT) experience zone with makers workspace to inspire and enable Hong Kong start-ups to explore and experiment their IoT solutions through utilizing HKT's 5G network and Microsoft's technologies. Leveraging Hong Kong Cyberport's start-up community and HKT's true 5G services, Microsoft 5G IoT Makerspace will also offer workshops and expert advice to upskill start-ups, test their solutions and provide go-to-market support to commercialize their solutions. Research from McKinsey Global Institute suggests that over the next decade IoT and related data growth will have an economic impact of up to US\$11 trillion per year, equivalent to about 11% of the world economy. As Hong Kong and the world enter the 5G era, IoT will be a critical foundation for the continued rise of smart devices with expectations of 20 billion connected devices by 2020. IoT is the gateway to business transformation and will create significant business opportunity for companies. Mr. Fred Sheu, National Technology Officer of Microsoft Hong Kong, said, "In the next decade, nearly every consumer gadget, every household appliance and every industrial device will be connected to the Internet. IoT has the power to help us make our everyday lives better. Companies will have an opportunity to reimagine everything and fundamentally transform their businesses with new product offerings, new customer experiences, and differentiate against

competition with new business models. We expect to see 5G accelerate this new wave of computing by supporting the proliferation of IoT and edge devices. We are going to see the combined benefits of two major industries – cloud and mobile – enabling the intelligent edge, with security as the core of Microsoft's IoT platform." Mr. Peter Yan, Chief Executive Officer of Hong Kong Cyberport, said, "One of Cyberport's goals is to strengthen the competitiveness of start-ups by promoting their collaborations with well-established tech companies and creating synergy between both parties. The establishment of the Microsoft 5G IoT Makerspace is an excellent example of how Cyberport's anchor tenants can unleash the potential of our start-ups through technology enablement and by helping them seize opportunities in 5G and IoT. We are looking forward to seeing more Cyberport start-ups develop innovative 5G solutions with Microsoft's state-of-the-art technology and be showcased at the Makerspace." Mr. Tom Chan, Managing Director of Commercial Group, HKT, said, "HKT is honored to unleash the power of true 5G at Microsoft 5G IoT Makerspace, where we can co-develop and fast-track 5G smart technology solutions with start-ups for enterprise applications in various sectors. 5G is a super enabler of emerging technologies, and will drive tremendous growth of IoT, AR and other new applications. As the only Microsoft partner in Hong Kong with both Cloud Solution Provider (CSP) and Licensing Solution Provider (LSP) status, we are pleased to

support start-ups with 5G and help on their go-to-market planning and strategies, capitalizing on our unique strengths in fixed and mobile network expertise, cloud computing, and many years of experience in system integration to help enterprises in digital transformation." Microsoft 5G IoT Makerspace also features seven partners solution to stimulate start-ups' innovation: Cherrypicks: Utilizing indoor and outdoor location and data services through IoT devices, property management companies can capture visitors' footfall patterns and analyze how visitors in different locations respond to notifications or promotions. Real-time and historical location data are also visualized in a user-friendly way for easy and immediate analysis or to prepare further actions in a timely manner, e.g. customer dwell times and crowd patterns, footfall patterns between stores, heat maps, location search history, etc. Data security is guaranteed with the integration use of Azure. Web-on (Asia) Ltd: Leveraging Azure IoT services to collect usage and telemetry data from the Eversys Barista-Grade Coffee Machines, Web-on's goBsrستا, a Connected Coffee Machine solution, enables remote management of multiple coffee machines, providing real-time insight about the performance and usage of the machines to minimize the downtime and enhance the services level. Empowered by Azure, Eversys Coffee Machine provides the option for consumers to pay at the coffee machine with various payment systems through QR Code.

MAD Gaze: As one of Cyberport's start up members, MAD Gaze develops AR smart eyewear which features dual optical display to facilitate a clear and wide visual, equivalent to a 90-inch screen from a three-meter distance, for gaming and other entertainment such as watching movies and browsing the Internet. This IoT device sets to bring brand new visual experience to users' everyday lives.

Bamboo Technologies: The site inspection solution is a next generation service solution for the field service industry by using Azure IoT Central and Microsoft Power Platform. Once the IoT devices



which are installed at the building sites detect abnormality, they will send signals to Azure IoT Central which will determine if any workers are required to be notified through smartphone applications. This role-based process flow enables businesses to optimize and automate work orders executions in the most efficient manner, and can be customized easily to meet various business needs, and to achieve digital transformation. The machine learning capabilities of the solution can also predict the lifespan of the IoT devices based on the signals generated in the past.

RIB Group: RIB's iTWOlens solution combines MTWO Cloud, the world's first integrated 5D Building Information Modelling (BIM) construction management cloud software which is empowered by Azure, with Microsoft HoloLens 2 to digitize the architecture, engineering and construction (AEC) industry. By collecting

data from HoloLens 2 and leveraging the computing power of MTWO Cloud, iTWOlens enables AEC companies to achieve higher transparency on job site situation, offers better support to field crew and enhances project management process.

Hong Kong RFID: By capturing IoT sensors data, Hong Kong RFID's predictive maintenance solution utilizes 5G network to conduct real-time analysis for property management companies to conduct 24x7 monitoring service to ensure the performance of crucial assets and facilities (such as escalators, pumps, motors, turbines) are operating optimally and safely. If the IoT sensors detect any abnormal behavior in the assets, automatic alerts will be sent to the person in charge to take appropriate actions.

RaceFit: Through using AI and IoT, RaceFit has developed many products, among them a line of "smart garments" with sensors

that record the wearer's movements for real-time feedback. The sensors send data to RaceFit's app on a mobile device for analysis using RaceFit's Fitness Ability Measurement System (FAMS) in the Azure, which delivers a wealth of information on the person's strength, stamina, flexibility, coordination, and balance.

Start-ups can utilize the Microsoft 5G IoT Makerspace by registering at this link and entitle to the following benefits:

- Free Azure cloud credit for solution testing and development (up to US\$3,000)
- One-year technical consultations with Microsoft experts including Cloud Solution Architect
- Seasonal technical training sessions on Azure IoT Hub, Azure Sphere and Azure Time Series Insights
- Business and go-to-market support from Microsoft Hong Kong

Microsoft Launches Initiative to Help 25 Million People Worldwide Acquire the Digital Skills Needed in a COVID-19 Economy

Around the world, 2020 has emerged as one of the most challenging years in many of our lifetimes. In six months, the world has endured multiple challenges, including a pandemic that has spurred a global economic crisis. As societies reopen, it's apparent that the economy in July will not be what it was in January. Increasingly, one of the key steps needed to foster a safe and successful economic recovery is expanded access to the digital skills needed to fill new jobs. And one of the keys to a genuinely inclusive recovery are programs to provide easier access to digital skills for people hardest hit by job losses, including those with lower incomes, women, and underrepresented minorities. To help address this need, Microsoft is launching a global skills initiative aimed at bringing more digital skills to 25 million people worldwide by the end of the year. This initiative will bring together every part of the company, combining existing and new resources from LinkedIn, GitHub, and Microsoft. It will be grounded in three areas of activity:

- (1) The use of data to identify in-demand jobs and the skills needed to fill them;
- (2) Free access to learning paths and

content to help people develop the skills these positions require;

(3) Low-cost certifications and free job-seeking tools to help people who develop these skills pursue new jobs.

At its heart, this is a comprehensive technology initiative that will build on data and digital technology. It starts with data on jobs and skills from the LinkedIn Economic Graph. It provides free access to content in LinkedIn Learning, Microsoft Learn, and the GitHub Learning Lab, and couples these with Microsoft Certifications and LinkedIn job seeking tools. In addition, Microsoft is backing the effort with \$20 million in cash grants to help nonprofit organizations worldwide assist the people who need it most. One-quarter of this total, or \$5 million, will be provided in cash grants to community-based nonprofit organizations that are led by and serve communities of color in the United States. Our vision for skills extends beyond these immediate steps for job seekers. Employees will also need to skill and reskill through their careers, and we want to make it easier for employers to help. Our vision is a connected "system of learning" that helps empower everyone

to pursue lifelong learning. That is why we are also announcing today that Microsoft is developing a new learning app in Microsoft Teams to help employers upskill new and existing employees. This will bring together best in class content from LinkedIn Learning, Microsoft Learn, third-party training providers, and a company's own learning content and make it all available in a place where employees can easily learn in the flow of their work. We are also pledging that we will make stronger data and analytics available to governments around the world so they can better assess local economic needs. Finally, we will use our voice to advocate for public policy innovations that we believe will advance the skilling opportunities people will need in the changed economy. While this represents the largest skills initiative in Microsoft's history, we recognize that no company can come close to closing the skills gap alone. Sustained progress will require a renewed partnership between stakeholders across the public, private, and nonprofit sectors, and we're committed to supporting this. Following is a complete description of our thinking and plans.

National Youth Commission Partners with Microsoft to Upskill Omani Youth in Emerging Technologies

The National Youth Commission (NYC) announced its collaboration with Microsoft to upskill the country's youth in emerging technologies. As part of NYC's Youth Tech Bootcamp, students and working professionals will gain the opportunity to get hands on trainings and harness technologies such as Artificial Intelligence (AI) and Internet of Things (IoT). "The Sultanate of Oman is at the forefront to make the most of the Fourth Industrial revolution and transform industries to drive sustained economic growth" Said Dr. Sami Bin Salim Al-Kharusi, President of NYC. "Our youth will be the core drivers of this journey. Hence, it is of utmost importance that we skill and upskill national talent for them to make the most of latest technology and become experts, so they can accelerate innovation, create jobs as well as be prepared for the jobs of future. Our partnership with Microsoft will be at the center of this effort to empower Omani youth and contribute to the ongoing digital transformation journey of the Sultanate – thus reshaping our

today and tomorrow." Alya Al-Shanfari, Member of the National Youth Advisory Committee and Head of the Youth Tech Bootcamp, said: "Young people will gain the opportunity to harness various modern technologies by availing these specialized courses from Microsoft; this will ensure the development of a technically skilled generation. The National Youth Committee is implementing this project as part of the "Youth Capacity Development" program, one of our five sustainable program packages." The Youth Tech Bootcamp will introduce AI and IoT learning paths along with fundamental trainings on the cloud. The course paths will provide foundational and deep technical knowledge on how these technologies can be implemented to empower them in transforming challenges into opportunities across all industries of the sultanate. NYC will make use of Microsoft's Cloud Society platform to make the courses available, and conduct instructor led trainings via Microsoft Teams – a unified communications platform that brings people together to chat, meet, call

and collaborate, all in one place. With AI courses, participants will learn to build predictive models and analysis, natural language, image and video processing, as well as create intelligent conversational bots. And the IoT modules will enable youth to learn about the architectural components, implementing it on devices and the cloud, as well as identify and articulate IoT business opportunities across a broad spectrum of industries. "The National Youth Commission is on a thoughtful journey to build a learning culture and enable youth with skills to unlock their capabilities – and contribute to the digital economy of the sultanate." Said Sheikh Saif Hilal Al Hosni, Country Manager, Microsoft Oman and Bahrain. "With our mission to empower every person and organization to achieve more, we look forward to supporting them in their efforts – and thus nurturing a generation of knowledgeable, qualified, and future-ready Omani youth with the language of the future."

Microsoft Launches Center of Excellence to Promote Innovation and Sustainability in the Energy Industry

Microsoft inaugurated a center of excellence for energy – known as 'Microsoft Energy Core' – in the UAE. The initiative, and facility aims to accelerate digital transformation; build coalitions for responsible innovation; and drive

skilling initiatives in the energy sector. The center will also help contribute towards environmental sustainability of the industry – a key element of the company's global commitment towards climate innovation. The virtual launch event was

attended by His Excellency Omar Sultan Al Olama, UAE Minister of State for Artificial Intelligence, and Samer Abu Ltaif, President for Microsoft Middle East and Africa, along with several industry customers and partners. "The UAE has always been at the forefront of innovation, with our ambition to become a role model for the world," said His Excellency, Omar Sultan Al Olama, Minister of State for Artificial Intelligence. "The UAE National Strategy for Artificial Intelligence sits at the heart of it, and our partnership with Microsoft contributes to this effort. The Energy Core will accelerate our collaboration to focus on sectors such as the energy industry – to enable digital transformation, and address core areas such as increasing efficiency, environmental sustainability and policymaking in the region – leading to a positive future for generations to come.



The Higher Education Commission of Pakistan Deploys Microsoft Teams to Over 100 Universities

In an effort to accelerate remote learning in a safe and secure environment, Microsoft is supporting the Higher Education Commission (HEC) of Pakistan by deploying Teams for official online and remote learning interactions across more than 100 public and private universities. The move is in response to the call by the HEC for ideas on how to address the impact of COVID-19 on education and research. This pandemic has forced educators and students to rush into distance learning. "Our strong collaboration with Microsoft has spanned many areas including research innovation, capacity building, and of course the services provided by Office 365. The use of Teams will ease the transition for many of our members into innovative modes of educational delivery, and also help us address the future needs of our students in rapidly shifting employment markets", says Dr. Tariq Banuri, Chairman for Higher Education Commission in Pakistan. With the help of Microsoft, the move to a virtual classroom environment has allowed for seamless continuity with no disruption in the learning experience for many students. Functions such as Whiteboard in Teams allows for a live interactive environment, while educators are able to moderate classroom discussions by muting, recording and sharing control which drives engagement. For assessments, educators are also able to easily create and grade quizzes in Teams using Microsoft Forms. Many industries are adapting to a new way of living, working, and learning. Microsoft's commitment is centered on supporting educational institutions to maintain

continuity through the provision of remote learning tools. "As universities move to remote learning, Teams can provide an online classroom that brings together virtual face-to-face connections, assignments, exams, files and conversations into a single platform accessible on a mobile device, tablet, PC, or browser. Through this partnership, we've been able to provide access at the various institutions and are working alongside HEC to ensure the smooth training and rollout throughout the country," says Jibrán Jamshad, Education Lead for Microsoft Pakistan.

Keeping Remote students engaged

Other tools that have been revolutionizing the education experience of educators and learners alike include that of Microsoft Flipgrid, a tool for educators that engages students through creating and sharing short videos. Flipgrid includes Immersive Reader, with tools that read text out loud and provides other reading assistance and accessibility features to help ensure all students can participate. It also enables students and learners of all abilities to express themselves with confidence. Educators can also make use of Microsoft Streams to record their lectures giving them automatic access through their classroom channel on Teams. For ease of reference, having their assignments and other class materials on OneNote provides one repository where all materials are organized and easily accessible. "We are also acutely aware of the online safety for our students as they transition to this new way of learning. Microsoft Teams, as part of the Microsoft 365 (M365) service, follows all the security best practices and procedures such as service-level security through defense-in-depth, customer controls within the service, security hardening and operational best practices proactively protecting our customers from security threats, added Jamshad. On the long term, HEC and Microsoft have created the Education Transformation Framework (ETF) – a foundational agreement modeled on the pillars of capacity building, skill certification, outreach campaigns and the annual Imagine Cup competition. Digital transformation is an indisputable force revolutionizing our industries, reinventing our products, redefining our services, and reshaping the way we work. This means that students will enter a very different job market. Microsoft is committed to working with HEC to provide immersive learning that will improve experiences and education outcomes of the students in Pakistan.



Microsoft and UNICEF Launch Youth Learning Passport in Jordan

UNICEF's Learning Passport, a global digital learning platform powered by Microsoft, launched in Jordan in the presence of the Minister of Digital Economy and Entrepreneurship, the Minister of Youth, Zain Jordan, and UNICEF Jordan's Representative. Seventeen young people from across the country also joined the virtual launch of

the program that will help youth affected by COVID-19 to continue their learning and skills development at home. As part of its sustainability program, Zain Jordan has come on board as a strategic partner to support youth through the Learning Passport platform. It is the first version of the global Learning Passport platform to launch in the region and in Arabic. The

platform, which is completely free for young people to access and combines both offline and online components, includes courses in advanced coding and software development, digital literacy, life skills, social entrepreneurship and the English language – with plans to scale up and expand the learning and training opportunities in the future. "Post Covid-19,

digital empowerment is key across all sectors. Youth are our biggest motivators and online learning really counts on them. Knowledge is power and the Learning Passport is a great opportunity for young people to invest in themselves to succeed, gain knowledge and acquire the skills needed for the labor market." said Dr. Nael Adwan, Director of Investment and Promotion Department, Ministry of Digital Economy and Entrepreneurship. "The Youth Learning Passport offers a scalable and enhanced solution for youth in Jordan to unleash their potential by developing the digital and other skills they need for the future of work," said Tanya Chapuisat, Representative, UNICEF Jordan. "The platform also provides a critical bridge to help hard-to-reach and disadvantaged youth access learning and training, ensuring that these young people can be at the heart of Jordan's post-Covid economic

recovery." These types of partnerships between UNICEF and businesses have the potential to make transformative change for children and youth, based on a shared value approach where producing social value and addressing challenges is also good for business. "At Microsoft, our priority has been to find ways for technology to improve people's lives and bring the promise of technology to those who are most at risk of being left behind in this era of digital transformation. Our focus includes closing the skills gap and ensuring that our solutions benefit all youth to become tomorrow's leaders – unlocking this potential for all students to learn through immersive and inclusive learning experiences. Through our partnership with UNICEF and The University of Cambridge on The Learning Passport, we are able to rapidly provide a locally-relevant, remote learning solution that ensures continuous

access to education for millions of youth." said Roula Chehab, Country Manager for Microsoft Jordan. Jordan has one of the world's youngest populations with 63 per cent of the population under 30 years of age but close to one third of youth are unemployed. The situation for girls is even more challenging, as Jordan has the third lowest female labor force participation rate in the world. Since the outbreak, UNICEF and the Ministry of Youth has scaled up support to young people in Jordan through meaningful engagement opportunities – including volunteering, cultural activities, learning and training and entrepreneurship. The Learning Passport started off as a partnership between UNICEF, Microsoft and the University of Cambridge and its departments Cambridge University Press and Cambridge Assessment.



Nexign Announces Annual Record 2019 Results

Nexign (part of ICS Holding), a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider for telecommunications service providers, announced its results of 2019 fiscal year and published its official Annual Report for 2019.

Financial Results

- Nexign delivered \$217 million in total revenue – 3% growth year-over-year

(YoY)

- Revenue from new business, including international projects, reached \$37 million, which is 38% more than in 2018
- Net profit reached unprecedented \$92 million, an increase of 22% over 2018

"2019 was extremely successful for Nexign, due to substantial growth of new business and continuous development of Nexign's product portfolio. We have strong

positions in our target markets in Middle East and Africa, and we are also expanding to the Southeast Asian market. Meanwhile, we became a part of ICS Holding, one of the largest IT groups in Russia and CIS, which enabled us to find new opportunities for development," said Igor Gorkov, CEO at Nexign.

Customers

- In 2019 Nexign continued to develop a large-scale project for MegaFon. With Nexign, MegaFon replaced seven billing systems with a unified BSS for convergent rating and billing to maintain high levels of availability and reliability and handle peak loads from a 76-million subscriber base.
- Nexign implemented the analytical reporting system for Rostelecom, which analyses data from inter-operator B2O (Business-to-Operator) accounts. The system makes effective use of big data technology and will enable Rostelecom to control voice traffic volumes and monitor the performance of its pricing policy.



- The implementation of the Partner Relationship Management System for Tele2 has been completed. This solution supports integration between telecom providers and partner networks, and allows Tele2 to create new models for digital partnerships in the mobile communications and other industries.
- Nexign continued to implement solutions for global customers. For example, Chinguitel (Mauritania) increased its revenues by 10% thanks to Nexign's BSS system and Nexign Network Monetization Suite.

"We have more leverage in the market than ever before because Nexign makes business operations more efficient," said Radi Abdalla Ali Almamoun, Chief Technical Officer at Chinguitel. "The Nexign team implemented our new billing system and migrated our subscribers in record time—just over seven months—while Nexign's competitors said they needed up to 18 months to complete the project. Finishing faster let us improve subscriber services faster."

Product Updates

In 2019 Nexign continued to develop its solutions portfolio to address critical

needs of telecom operators, such as support of new business models, better user experience and faster launch of new products and services. "Nexign has a highly competitive portfolio comprising Nexign Network Monetization Suite, Nexign Digital BSS, and Nexign IoT Platform," said John Abraham, Principal Analyst at Analysis Mason in the report: "Monetization platforms: worldwide market shares", 2018, published on 16 August 2019. "The company positions itself as a leader in creating optimally cost-efficient solutions, offering telecom operators digital products with the lowest TCO of all market vendors."

- Nexign Digital BSS now has wider functionality in the areas of order management, process visualisation, flexible pricing, and billing in convergent networks. Also, functions to make product catalogue management more convenient were added.
- Nexign Network Monetisation Suite now includes modules for direct integration with service providers (SCEF) and managing congested networks (RCAF). Nexign Network Monetisation Suite's balance management capabilities have made it possible to

launch financial products (for example, debit and credit cards linked to personal account balances at MegaFon) and support operator service factories (for example, Rostelecom).

- Nexign IoT Platform has benefitted from an updated user-friendly graphic interface, support for the NB-IoT standard thanks to integration with the SCEF, network function virtualization capability, and expanded fraud identification functionality based on device behavior analysis.

Industry recognition

In 2019 Nexign was named finalist for the TM Forum Excellence Awards, the Global Telecom Awards and the Telecoms World Awards. Nexign also scooped a prize at the 2019 RUSSOFT Awards in the "Greatest 2018 Business Growth" category. "Nexign currently occupies a sustainable position on both the Russian and international markets. Entering 2020, we will continue to focus on growth, efficiency and simplification of the digital transformation process for our customers, helping them to cope with the challenges of 5G, eSIM and the Internet of Things monetization, - says Igor Gorkov, Nexign CEO.

Nexign Expands International Presence with New Office in Latin America

Nexign (part of ICS Holding), a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider for telecommunications service providers, today announced that it expands its international presence to Latin America by opening a new office in Santo Domingo, Dominican Republic. This initiative will enable Nexign to strengthen its positions in emerging markets by offering LATAM customers solutions to drive digital transformation efforts. According to the GSMA report, the data traffic in LATAM will grow more than sixfold by 2024. Also, GSMA expects the mobile penetration rate to reach 73% by 2025. Nexign aims to use its 28 years of engineering excellence to help local telecom operators consolidate

their systems and provide customers with better connectivity, uninterrupted internet access and other services. The office in Dominican Republic will focus on business development initiatives for the entire LATAM and providing operators with modular, truly convergent solutions to enable stress-free modernization and sustainable performance. "During the past three years, Nexign has grown significantly. As a maturing company we are taking the next step in our international expansion strategy and establishing our corporate presence in Latin America. We believe that understanding of the local market specifics is critical for smooth digital transformation of local CSPs. We will leverage our market knowledge and

industry expertise to support operators in the region and speed up the modernization process for them. With Nexign's BSS solutions, they will be able to meet local customer demands and bring added value to business," said Igor Gorkov, CEO at Nexign. "LATAM is an emerging market with great potential. Operators in the region realize that they need up-to-date BSS solutions to keep up with customer needs. As a result, they are ready to embrace new development opportunities and find new ways to monetize traffic. We are happy to support local operators and offer them solutions that can enable them achieve their business goals and deliver superior services to subscribers," said Andrey Moldovan, Regional Director, LATAM.



stc Bahrain Rolls Out First Large-Scale Indoor 5G Deployment

stc Bahrain has launched the first local integrated large-scale indoor 5G commercial deployment, declaring that it has achieved a new milestone in developing an integrated network infrastructure that supports the 5G connectivity. The deployment, launched at stc Bahrain's corporate headquarters in cooperation with Huawei, restates stc Bahrain's digital vision to introduce technological advances that offer its business customers and individuals new

experiences and opportunities, according to a press release. The successful 5G deployment will utilize state-of-the-art applications and modern systems to upgrade the technology services in the company. Commenting on this breakthrough, stc Bahrain's CEO, Nezar Banabeela, said, "stc Bahrain is committed to investing in new levels of agile and highly flexible network infrastructure that not only enables our business and customers but also positions Bahrain as a global telecommunication and ICT player." "Moreover, by launching this technology at our headquarters, this enables us to further explore its reach and capabilities through numerous field tests and pre-commercial trials of potential 5G user cases at our Innovation Center located in the main building and develop new 5G services," he concluded. It is noteworthy that the successful 5G deployment will elevate stc's network agility to a whole new level with faster speeds with peak indoor data rates of 1.2 Gigabits per second (Gbps) and massive connections and lower latency.



stc Bahrain Wins "Most Innovative Digital Solutions Brand" at Global Brands Magazine Awards 2019

stc Bahrain, a world class digital enabler, has won the distinguished "Most Innovative Digital Solutions Brand" from the Global Brands Magazine Awards 2019, recognising stc Bahrain as a ground-breaking digital network. stc Bahrain is the first company to break through Bahrain's digital space with successful commercial testing and launch of 5G, which now covers up to 50% of Bahrain's commercial and industrial areas. Adding to its extraordinary list of technological achievements, stc Bahrain has introduced

smart city such as Smart Security, Smart parking and digital insurance solutions, stc Protect, enabling Bahrain to evolve into a more sustainable and smart society. Owing to its recent digital brand transformation, stc Bahrain has been working towards introducing futuristic technological solutions that are relevant and responsive to the discerning needs of its customers and businesses, thus equipping Bahrain to be at the forefront of innovation. Eng. Nezar Banabeela, CEO of stc Bahrain, commented: "We are honored

to be awarded the Most Innovative Digital Solutions Brand from the Global Brands Magazine Awards 2019. stc Bahrain continues to bring in next-generation technologies to make an impact on the lives of its customers, helping businesses embrace digital disruption, while creating infrastructural advancements to support Bahrain's economic vision." The Global Brands Magazine is a UK – based company aimed to recognize and reward excellence in business to companies all over the globe, both in the public and private sector.

stc Bahrain Partners With China Telecom Global For Global Connectivity Services

stc Bahrain, a world-class digital enabler signed a partnership with China Telecom Global (CTG), a leading global ICT services provider for the Seamless global connectivity services, which will be vital to augment fast-growing economies in the Middle East and North Africa (MENA) region. Under this new partnership, stc Bahrain's customers in the region—particularly those looking to expand in Asia Pacific will have an opportunity to enjoy more convenient and reliable connections that support

their business growth. The MENA market plays a critical role in CTG's global expansion and hence, will further boost CTG's network support to its customers in the MENA market, and empower Chinese companies to further explore global markets and actively embrace the digital economy. "Through this partnership, China Telecom is able to extend its services to its clients in the Middle East while utilizing stc Bahrain's reliable and robust infrastructure," said Eng. Nezar Banabeela, CEO of stc

Bahrain. "We are also delighted to consolidate our presence in Asia Pacific and are looking forward to a long-term partnership with China Telecom." Commenting on this partnership, Mr. Changhai Liu, Managing Director of China Telecom Africa & Middle East Limited explained that: "This new collaboration with stc Bahrain further allows China Telecom to strengthen its service capabilities in the Middle East and North Africa region. We look forward to this long-term partnership with stc Bahrain and

hope to unlock potential and create new value for our users." Evident through stc Bahrain's self-healing national backhaul network and border-crossing terrestrial fiber cables, the Middle East is at a significant growth stage where the region is increasingly considered a connectivity hub, and the future of peering. The agreement allows stc Bahrain and CTG to expand their service coverage with tremendous

resources to maintain a consistently high level of services and improved accessibility in the key gateway between the East and the West. This partnership also comes at a time where stc Bahrain has been actively establishing a strong reputation in the wholesale industry, enabling it to own one of the largest wholesale market shares while promoting Bahrain as the GCC ICT hub. With its extensive network

and capabilities across the globe, China Telecom has always taken an international perspective to address growing market demands. This is in line with the company's tremendous experience of serving large-scale multinational corporations, accounting for 40% of Fortune Global 500, and helping businesses worldwide to be better equipped for digital transformation of their products and services.



stc Introduces Innovative State Of The Art Security Solution Through 5GLIVEBUS

Kuwait Telecommunications Company - stc announced the launch of the 5G LIVEBUS, a safe and smart bus supported by 5G connectivity, creating a safe and convenient transportation method for the passengers. The first of its kind transportation innovative in the Middle East provides advance and integrated safety solutions for the business owner's and their employees, targeting all sectors and institutions of the state, especially the transportation sector, which is the most vital in the development of infrastructure. In a statement released by stc, the Company highlighted that the initiative is designed to meet the needs of its strong network of relationships with businesses in Kuwait, and is led by General Manager of Sales & Account Management at stc, Meshari Al Hamad. The innovative concept falls in line with stc's sustainable strategy to enable digital transformation by investing in developing the communications and technology sectors. The unique service will allow customers to enjoy the benefits of digital services and improve their business, while maintaining stc's position as a leading telecom and digital solutions provider in the region. The company added that the stc 5G LIVEBUS initiative is a critical step towards supporting business owners at the present time and falls in line with government's guidelines in the fight against the COVID 19 pandemic. Businesses can ensure the safety of their employees during the transition process with ease while monitoring their status instantaneously and abiding to health and safety standards by monitoring social distancing through the command center. The initiative also contributes to the education sector by

providing a safe and comfortable means of transportation that is monitored while transporting students from their homes to schools. stc added that its R&D team has focused on developing and introducing the 5G LIVEBUS technology to begin with the transportation sector. Equipped with a continuous monitoring system, cameras are covering every angle of the exterior and interior of the bus, with the capability of tracking and recording movements. Motion sensors and an automated stop arm ensure the safety of riders when exiting the smart bus. The GPS feature helps locate the bus and reduces waiting time for its arrival, in addition to temperature, humidity and smoke sensors to ensure the comfort of users during the summer season. The vehicle is also equipped with sensors to monitor driver behavior to help the driver stay undistracted and focused on the road. These technology is connected and reporting activity to linked command control centers to monitor bus data and ensure

immediate response when necessary. Also provided by an easy to use application, keeping passengers safe and monitored at any given time. Conforming to the highest safety standards and to support the guidelines imposed by the government in the battle against COVID-19, the vehicle can also be equipped with fever screening thermal cameras with the option of adding artificial intelligence and facial recognition to analyze and identify riders with high body temperatures. stc concluded by saying that the 5G LIVEBUS project is an additional initiative added to the numerous activities launched by the Company related to the commercial use of 5G technology. This service provides 5G connectivity and unlimited connectivity Dedicated Access (DA) for the first time in the Middle East and Kuwait for the corporate sector, which relies on the largest 5G network covering all areas in Kuwait, and an advanced infrastructure to keep pace with this technological revolution.





Tech Mahindra Signs UN Global Compact Initiative Statement on Climate Action

Tech Mahindra Ltd. a leading provider of digital transformation, consulting and business reengineering services has signed a joint declaration with UN Global Compact urging governments to align their COVID-19 recovery efforts with the latest climate science. Tech Mahindra reaffirms the science-based commitment of achieving net-zero carbon emissions while calling on governments to "prioritize a faster and fairer transition from a grey to a green economy." By moving towards a zero-carbon resilient economy, Tech Mahindra aims to reduce carbon footprint, emissions and will conserve energy using new-age technologies like internet of things, artificial intelligence and blockchain. Furthermore, an internal Carbon Price of \$10/ton CO₂ has also been implemented by the company to boost green investments and have also adopted a low emission technology path to increase the use of renewable energy from 1.7% in 2016 to 18% in 2020. Moreover, Tech Mahindra has also taken targets to increase the renewable source of energy to 50% by 2025. Tech Mahindra has joined 155 global companies in calling for policies that will build resilience against future shocks by supporting efforts to hold global temperature rise to within 1.5°C above pre-industrial levels, in line with reaching net-zero emissions well before 2050. The statement comes as governments around the world are preparing trillions of dollars' worth of stimulus packages to help economies recover from the impacts of the coronavirus pandemic, and as they prepare to submit enhanced national climate plans under the Paris Agreement. CP Gurnani, MD & CEO, Tech Mahindra, said, "COVID-19

has allowed all of us to reconfigure our priorities and understand the importance of building a sustainable world - by focusing on healthcare and leveraging technology to enable new ways of working. At Tech Mahindra, we are committed towards building a sustainable business with responsibility and by creating value for our stakeholders, while also keeping in mind the long-term impacts on the environment. It's time to focus on and implement technology-led solutions that will help us reboot." The United Nations Global Compact has stated that the 155 signatories span across 34 sectors and have a combined market capitalization of more than \$2.4 trillion, representing 5 million employees. The business voices are convened by the Science Based Targets initiative (SBTi) and its Business Ambition for 1.5°C campaign partners, the UN Global Compact and the We Mean Business coalition. Sandeep Chandna, Chief Sustainability Officer, Tech Mahindra, said, "COVID-19 has made businesses realize the importance of adopting

strategies which will deliver innovative solutions without adversely affecting the environment. Our commitment towards going carbon neutral, conserving, and deploying resources efficiently will enable helps us to accelerate our transition to a low carbon economy while creating sustainable value for our stakeholders. As part of our TechMNxt charter, we have incorporated reduction of emissions as a key aspect to every function's mandate and our overall business strategy." Tech Mahindra also works closely with partners and customers to help them increase energy savings, digitize and automate operations and create collaborative work environments addressing the need for sustainable practices. This includes solutions like Micro Grid as a Service, Smart city solutions, Smart grid, Smart Data Hubs, Smart Street light, Smart bin, Smart Energy Management, Smart metering and analytics, IEVCS (Intelligent Electric Vehicle Charging System) and CAPE (Community Action Platform for Energy).



Tech Mahindra Launches Blockchain-Based Contracts and Digital Rights Management Platform for Media and Entertainment Industry

Tech Mahindra announced the launch of a new digital platform, branded as 'Blockchain based Contracts and Rights Management System' (bCRMS) for the global media and entertainment industry. The platform is designed to enable

production houses and content creators to track revenue, royalty payments, manage rights and address content piracy by leveraging IBM blockchain. Tech Mahindra's new bCRMS platform is built on open source Hyperledger Fabric protocol

and utilizes techniques like content hashing and forensic watermarking to track and trace content. The technology is industry agnostic and thereby it could also be used across other industries like trade, finance and healthcare that have

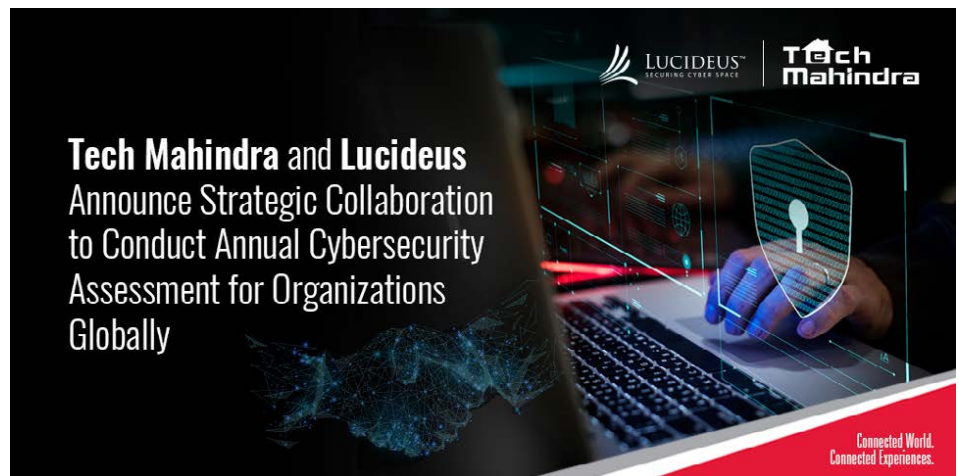
a requirement for intellectual property and secured digital content. Built on IBM Blockchain, the platform will restrict unauthorized access and redistribution of digital content, mitigate content piracy and manage royalty payments. The platform is designed to be scalable and empowers artists, fulfillment partners and distributors with a clear, automated system for accessing and managing payments. Rajesh Dhuddu, Blockchain and Cybersecurity Practice Leader, Tech Mahindra, said, "Fragmentation in the media and entertainment (M&E) landscape has had a profound impact on media consumption. Both media production houses and OTT (Over the top) players are creating intriguing content to improve customer stickiness and gain market share. This has led to an exponential increase in fraud with revenue lost due to online piracy estimated to approximately \$ 50 billion by 2022*. As part of our TechMNxt charter, bCRMS is developed to usher in the next generation of digital rights management systems for the media and entertainment industry that orchestrate the entire media

content life cycle workflows across pre-production, post-production and distribution phases to enhance revenues, preempt contracts or rights infringement and focus on redefining end customer's content consumption experience" bCRMS is designed to provide accurate, near real-time information and insights into the authenticity of content and detect any unauthorized use and distribution. Tech Mahindra is deploying bCRMS on IBM Blockchain for linear broadcast and Over-The-Top (OTT) service providers. Also, Tech Mahindra is part of the IBM public cloud ecosystem to help clients transform their operations and accelerate their hybrid cloud strategies and use blockchain technology to help foster trust and transparency across industries. "Digital rights management is a pressing problem impacting artists, content creators and advertisers worldwide, potentially costing the industry billions every year. Tech Mahindra's innovation using IBM Blockchain helps address this challenge with a new approach that offers the digital media market the ability to track the quality

and authenticity of content as well as track downloads and usage of content in a clear and flexible manner," said Alistair Rennie, General Manager, IBM Blockchain. "Tech Mahindra is an important addition to IBM's growing cloud and blockchain ecosystem." Tech Mahindra under its TechMNxt charter has continued its focus on leveraging next-generation technologies including blockchain, to disrupt and enable digital transformation, and to build cutting-edge technology solutions and services for customers globally. Tech Mahindra provides a holistic framework called 'Block Ecosystem' comprises of various levers: Block Studio, Block Engage, Block Talk, Block Geeks, Block Accelerate, Block Access & Block Value, which can be used to create industry leading applications that are architected on innovation and human excellence to unlock significant value for clients. Tech Mahindra's technologists can also assist clients to build Blockchain-Platform-as-a-Service (BPaaS), System Integration and Product Engineering Services on IBM Blockchain.

Tech Mahindra and Lucideus Announce Strategic Collaboration to Conduct Annual Cybersecurity Assessment for Organizations Globally

Tech Mahindra Ltd., a leading provider of digital transformation, consulting and business reengineering services and Lucideus, a global leader in cyber risk quantification solutions, announced a strategic collaboration to conduct annual Cybersecurity risk assessment for global organizations. The initiative is branded as 'Most Admired Cyber-Secure Enterprise' (MACE), that will help global corporations measure and mitigate prevailing cyber risks in real-time through a complimentary online assessment. This will be an ongoing annual assessment aimed at bringing the most advanced cyber risk quantification solutions to customers globally, and transform the way businesses monitor Cybersecurity currently. MACE program will play a pivotal role to ensure proactive identification and minimization of these susceptibilities. The participating organizations will be measured and comprehensively evaluated across 25+ parameters including cloud, web and network, email, domain name



system, leaked credentials in the deep and dark web, internet protocol & domain reputation, employee enumeration amongst others. Post the assessment, all the participating companies will receive a personalized report that will rate and score them on their present cyber risk posture and the probability of a breach occurring in the next 12 months. Rajesh Chandiramani,

Senior Vice President and Global Business Head ESRM, AI & Data Analytics, Tech Mahindra, said, "Tech Mahindra has been at the forefront in enhancing awareness and minimizing cyber security risks across its clients. With the onset of the prevailing Coronavirus, the imminent threat from increased cyber-attacks and related vulnerabilities has increased exponentially.

Today our customers view Cybersecurity as not only an essential security tool, but rather a part of board room discussions, as it has emerged as a key differentiator impacting both topline and bottom-line. Through this important strategic initiative, Tech Mahindra endeavors to reiterate its position as the Cybersecurity partner of choice by helping our clients be future ready and secure their digital assets through proactive sharing of trends and analytics to mitigate future threats." Markets and Markets forecasts the Cybersecurity Market to grow from USD 152.71 billion in 2018 to USD 248.6 billion by 2023 at a CAGR of 10.2%, and this growth will only amplify due to the outbreak of the novel

Coronavirus. With the increased adoption of digital technologies, and the new normal of working from home, businesses are susceptible to cyber-attacks now, more than ever. Saket Modi, Co-founder & CEO, Lucideus, said, "Cybersecurity today is the number one worry for CEOs globally and today businesses are dealing with multiple types of cybercriminals such as data extortionist,, digital robbers, insiders (own employees), terrorists, hactivists and state actors. There has been a huge rise in the sophistication of Cyberattacks and businesses will need to adopt a more proactive and objective approach, in viewing their Cybersecurity risk posture. Our partnership with Tech Mahindra will

enable organizations to monitor change in real-time in their digital risk posture and make cyber risk an informed business decision" CP Gurnani, Managing Director and Chief Executive Officer, Tech Mahindra with John Chambers, Ex-Chairman, CISCO formally announced the launch of the MACE program on 22nd June, 2020 during a virtual event on how enterprises are accelerating the digital transformation post COVID-19. This collaboration aligns with Tech Mahindra's TechMNxt charter to deliver innovative and cutting-edge technologies in cyber security and risk management to customers globally.

Tech Mahindra Appoints Ram Ramachandran as Senior Vice President and Head for Middle East & Africa

Tech Mahindra Ltd., a leading provider of digital transformation, consulting and business reengineering services and solutions has announced the appointment of Ram Ramachandran as Senior Vice President and Head for Middle East & Africa region. This includes the entire portfolio of Enterprise, Communications, Media & Entertainment lines of business of Tech

Mahindra. Ram is recognized by Forbes as a Top 100 Global Leader in Middle East and also in Top 50 Indian Executives in the Arab World. Under his leadership the MEA region has shown exceptional growth and today Tech Mahindra ranks amongst the largest IT service providers in the region. He is a member of Tech Mahindra's (TechM) Leadership Council and was the

General Manager and Head (Enterprise Division) for Middle East & Africa. Tech Mahindra has been present in Middle East & Africa for over 20 years and has 125,200+ professionals across 90 countries, helping 973 global customers including Fortune 500 companies.



Viu Ranks First by Number of Users Amongst Major Video Streaming Platforms in Southeast Asia Per Media Partners Asia's AMPD Research

Viu, a leading pan-regional OTT video service from PCCW Media Group with more than 41 million monthly active users*, is pleased to announce encouraging findings from a report covering Q1 2020 from AMPD Research, a subsidiary of Media Partners Asia (MPA).

Key highlights of the report:

- Viu ranks first by number of users amongst major video streaming platforms, excluding YouTube, in Southeast Asia**.
- Viu ranks second by streaming minutes amongst major streaming platforms, excluding YouTube, in Southeast Asia**.
- In terms of time spent per week among users, Viu ranks in the Top 4 in

Indonesia, Thailand, Singapore and the Philippines, excluding YouTube.

Ms. Janice Lee, Managing Director of PCCW Media Group, said, "From the beginning, our focus has been to build the leading OTT streaming platform for today's viewers with a sustainable and robust business model. With our dual revenue stream for monetization and our local offerings that are highly relevant in each country of operations, we have been the service of choice for our viewers across many markets. Our investments in content span the top pan-regional content, such as Parasite and A World of Married Couple to celebrated Viu Original productions including Asian adaptations

of international formats such as Pretty Little Liars, My Bubble Tea and The Bridge. In addition to serving viewers with great content, we have built traction by offering high quality localization in languages and user experience in our markets. All this has helped us serve our users better and thereby achieve these rankings from AMPD Research." The report, entitled "Southeast Asia Online Video Consumer Insights & Analytics: A Definitive Study", leverages MPA's proprietary AMPD Research platform, which evaluates consumer behavior and usage patterns across the digital economy, including online video and gaming. Using a unique solution that fuses passively observed

digital behavior and empirical survey data, the study is the result of research carried out between January 20 to April 11, 2020

in the four Southeast Asia** markets with insights collected from a sample of 32,245 individuals. The report also includes

detailed analysis and profiles of 43 unique OTT platforms. The report will be updated again in Q3 and Q4 2020.



Yahsat Names Andrew Cole as New Chief Financial Officer

Al Yah Satellite Communications Company (Yahsat), the leading UAE-based global satellite operator, announced that its Board of Directors has appointed Andrew Cole as Chief Financial Officer (CFO). He will assume the position from 1 July onwards. Andrew joins Yahsat soon after the company boosted its leadership with four Emirati executive appointments to lead its government, commercial, operational and technical business units. Andrew has 25 years of cross-sector experience in senior finance, operational and advisory roles. From 2015 to 2019, he was the Group Financial Controller at SES, a company with a constellation of Geostationary and Medium Earth Orbit Satellites. His primary functions covered all aspects of Finance including Financial Planning, Governance, Risk (including satellite insurance) and Compliance, Accounting and Global Controlling operations. He has also worked for EY and KPMG London as an external auditor and business advisor to many global enterprises.

His experience during his years in an external advisory role includes M&A and Financing, Corporate Restructuring, Commercial Planning, Tax, Treasury, Audit & Accounting as well as Risk Management. Andrew is a Fellow of the Institute of Chartered Accountants in England and Wales (ICAEW). He has an Executive MBA degree from Ecole Nationale des Ponts et Chaussées and a Post Graduate certificate in International Business from the University of Edinburgh. He succeeds the current CFO, Balakrishnan Doraisamy, who will be retiring, having served Yahsat for almost 12 years. Balakrishnan will continue to be part of the company as Strategic Advisor. Masood M. Sharif Mahmood, Chief Executive Officer of Yahsat, said, "I am most happy to welcome Andrew into our midst as the new CFO of Yahsat. As we continue to intensify our expansion program across the globe, Andrew's wealth of experience, especially in the satellite sector, will be highly beneficial to us. He has an excellent

record at all finance and operational leadership levels, and I am sure he will bring great value to Yahsat." Andrew said, "Yahsat is a young, ambitious company that has grown exponentially in a short span of time. I am delighted to join its dynamic leadership team at a most exciting phase, and thank the Board of Directors for the confidence they have placed in me. I look forward to working with its multicultural workforce, and together we aim to continue the legacy and deliver a strong future for the company."



Andrew Cole
Chief Financial Officer



Zain KSA, Mobily to Establish a Joint Tower Company

Zain KSA has signed a non-binding Memorandum of Understanding (MoU) with Etihad Etisalat (Mobily) for the establishment of a joint committee tasked with preparing a request for proposal (RFP) to buy the telecoms towers owned by the

two companies, merge them into one company with other investors or operate them on their behalf. The collaboration aims to 'raise participation in telecom towers to achieve maximum efficiency', under the supervision of the Communications

and Information Technology Commission (CITC). The agreement is subject to regulatory approvals and conditions, as well as internal approvals.

Zain Bahrain Launches Commercial 5G Services

Pan Arabian telco, Zain Group, has completed the launch of its commercial 5G operations in Bahrain. Zain Bahrain's state-of-the-art 5G network was built using network equipment from Swedish tech giant, Ericsson. The network will enable customers to benefit from super high-speed data, extremely low latency and ultra-high reliability and unleashes highly connected technologies trends such as virtual reality, augmented reality, and the internet of things (IoT). "Zain Bahrain's 5G launch demonstrates our continuous commitment to investing in digitalization and the latest technologies for the benefit of our customers and playing our key role in the Kingdom's Economic Vision 2030," said Zain vice-chairman and group CEO, Bader Al Kharafi. As more and more consumers opt to adopt 5G, Zain Bahrain will continue its dedication to transforming industries and enhancing people's digital lives and explore new use cases and capture new

revenue streams by addressing industry digitalization. "We continue to work closely with Zain to expand the strategic partnership between our companies and support the commercial rollout of 5G across Bahrain. This announcement endorses our global leadership as we

continue to switch on this era-defining technology around the world to drive the Internet of Things (IoT), Industry 4.0., digitalized society, and incredible new mobile broadband experiences," said Fadi Pharaon, president of Ericsson Middle East and Africa.



Zain Reaches Nationwide 5G Coverage in Saudi Arabia

Saudi Arabian carrier Zain KSA announced the expansion of its 5G network to cover all the Kingdom's regions, after it has recently included Al-Jouf and the northern borders, the telco said in a release. This expansion raises the company's 5G network's total coverage to 30 cities throughout the Kingdom. Zain KSA's CEO Sultan bin Abdulaziz Al-Deghaither reaffirmed the company's commitment to supporting digital transformation across all the Kingdom's regions, in line with Saudi Vision 2030 and in cooperation with the Ministry of Communications and Information Technology (MCIT) and the Communications and Information Technology Commission (CITC). "We will see considerable changes in the behavior of individuals whose capabilities will be enhanced by the accessible and convenient functionalities of digital services, like the IoT, including the private sector, which will enhance the on-going digital transformation in various sectors, such as healthcare, digital entertainment,

education, e-payments and more, in line with the Kingdom's on-going digital transformation towards adopting smart technologies in order to provide a better quality of life," the executive said. Zain launched commercial 5G operations in Saudi Arabia in October 2019. In the initial deployment phase, the telco deployed 2,000 towers that covered an area of more than 20 cities across Saudi Arabia. Zain Saudi Arabia ended 2019 with a total of 2,600 5G towers across 26 cities in the country. In June 2019, Nokia had announced a three-year 5G deal with Zain in Saudi Arabia for the deployment of the latter's 5G infrastructure. The deal stipulated the use of 2.6 GHz and 3.5 GHz, along with massive Multiple Input Multiple Output (massive MIMO) to deliver enhanced network capacity, coverage, and improved downlink and uplink speeds. Under the terms of the deal, Nokia said it will use E-Band microwave in certain areas to allow for ultra-high-capacity backhaul networks. Rival carrier Saudi Telecom

Company (STC) had officially launched 5G services in Saudi Arabia in June 2019. The company currently offers 5G services through 100MHz of spectrum in the 3.5GHz band. Meanwhile, Mobily selected Finnish vendor Nokia for the deployment of its 5G network in the country. Zain Group also announced the launch of its commercial 5G network in Bahrain at the end of June in partnership with Swedish vendor Ericsson. Zain Vice-Chairman and Group CEO, Bader Al Kharafi said, "Zain Bahrain's 5G launch demonstrates our continuous commitment to investing in digitalization and the latest technologies for the benefit of our customers and playing our key role in the Kingdom's Economic Vision 2030." Zain Bahrain will be expanding 5G coverage across the Kingdom throughout 2020 and will continue to grow the 5G network in 2021. Zain had also launched commercial 5G services in Kuwait during 2019. 📍

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ARTICLE

Over Four Decades of Evolution in the Telecom Sector

Transitioning to the Digital Era with an Advanced Network and Technologies

As the premier digital and telecom-munications partner of Dubai Expo2020, we have delivered one of the fastest, smartest and best-connected places on earth during the global mega event. We have been 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.

Today the UAE leads in delivery of smart services and is one of the most competitive nations globally, as one of the pioneers in the telecom sector in the region and globally, Etisalat has played a significant role contributing to the digital advancement of the country and in achieving its digital ambitions. Etisalat's continuous investments in the most advanced network and next generation technologies enabled futuristic technologies to become accessible to the youth and all other sectors of the society.

Etisalat's philosophy since its inception was about revolutionising the telecom sector in the UAE, which has encouraged us to explore new opportunities, focus on strengthening our core business while transitioning to the digital era and being well geared for the future. Our teams have worked on significant projects with the government in enabling a smart city and roll out smart services to citizens, residents and businesses. Digital transformation is at the center of this strategy and leveraging technologies

that can help accelerate this transition to the new era. These achievements were only possible due to the long-term vision of the government enabling futuristic technologies in every sector of the society.

The telecom sector in the UAE have witnessed technological development over decades starting from the first telephone call in the 70s until the launch of the 5G network last year becoming the backbone for limitless connectivity for IoT and the fourth industrial revolution.



Dr. Ahmed Bin Ali
SVP – Corporate communications
Etisalat Group



Etisalat on its part has continuously focused on innovation as part of its strategy 'Driving the digital future to empower societies' embedded within its DNA manifested across the business.

Dr Ahmed bin Ali, Group Senior Vice President, Corporate Communications, Etisalat takes us through the success journey and the evolution of connectivity over four decades

The beginning of the telecom revolution

In 1976, Etisalat began its journey on the formation of the UAE as the first national telecom provider and then launching the first mobile network. With technology evolution and as the needs of consumers evolved, in 1986, the first optic network was launched setting a path for next generation services.

The year 1989 also witnessed the launch of the Etisalat University (now Khalifa University). This was in line with our overall digital vision and strategy that encouraged strategic learning in futuristic technologies and play an essential role in shaping the talent landscape and identifying the right skill for new technology.

The culture and collaboration within the organisation based on our core values have helped build future capabilities, skills bridging the gap between current and future digital requirements and accelerate digital learning expertise.

Transforming the network

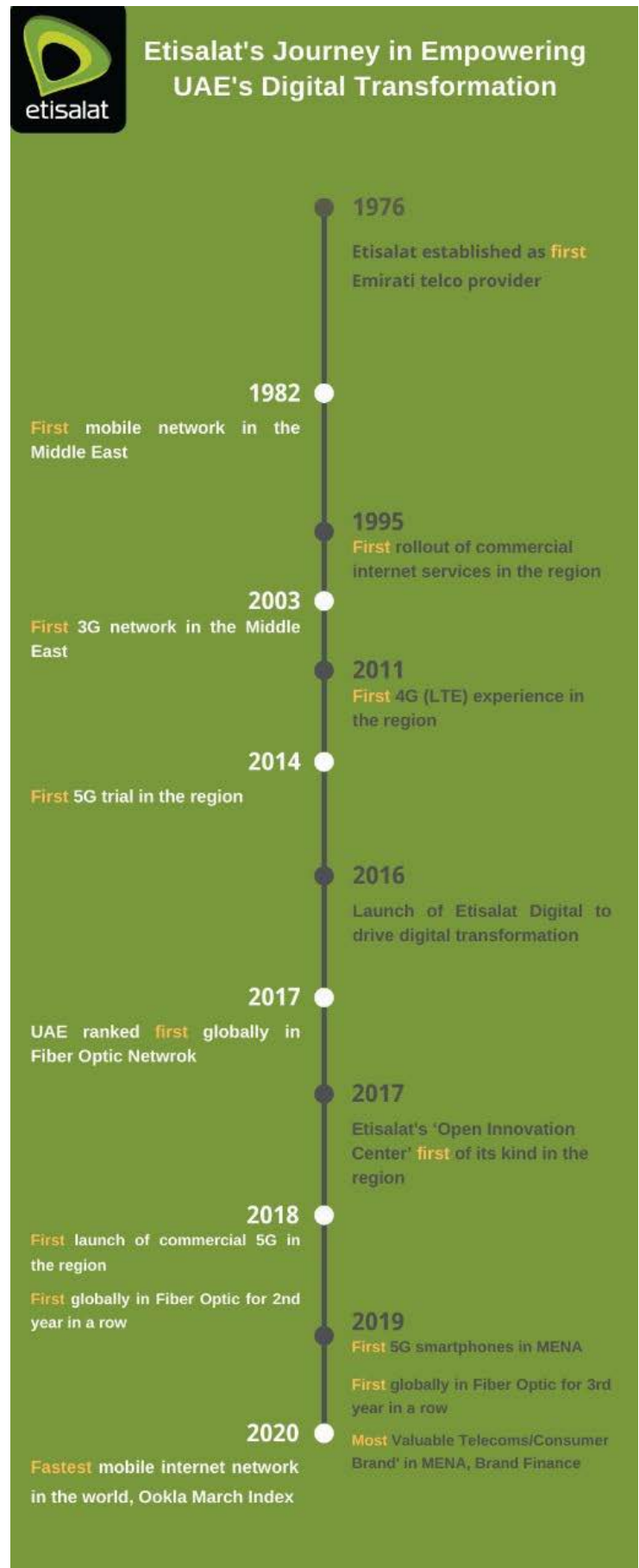
With the beginning of the next decade, Etisalat has set global strides by diversifying its business, making a bigger impact with 5G technologies and laying the foundation for the next generation of technology.

This was all possible due to the solid groundwork by our predecessors in the 90s and leading the way in the regional and digital telecom sector. In 1994, Etisalat launched its first GSM network in the Middle East with the SMS service becoming a platform for various businesses and verticals to move away from traditional advertising platforms.

The 90s witnessed a revolution in the telecom sector, with Etisalat offering internet services for the first time in the region in 1995 and the first broadband internet service via ADSL technology in 1999. This laid the foundations for the future of digital services and solutions for generations to come.

With the launch of path breaking services in the 90's there was no looking back, consumers for the first time experienced cable TV services, mobile data, MMS and 3G.

The year 2000 witnessed the launch of the first cable TV services from e-vision and Etisalat Academy a provider for telecom and technology training. In 2002, Etisalat consumers experienced mobile data on a GPRS (General Packet Radio Service) network enabling data transfers through cellular networks giving them an opportunity to use it for mobile internet, MMS and other data



communications. The foundation of an advanced futuristic network was laid during the early 2000s with High-Speed Downlink Packet Access (HSDPA) technology that provided high-speed internet services through mobile phones and mobile data cards. It was part of the 3G evolution for mobile networks that followed the GSM/UMTS track. This was also a method to provide high-speed download to users.

Fostering innovation and innovators of tomorrow was always integral to our overall company philosophy of supporting the youth in leading digital innovations. Etisalat University became Khalifa University in 2007 providing a platform for future technology innovators and entrepreneurs. This was followed with the launch of the high speed internet service (HSPA+) in the year 2010 for the first time in MENA.

Today Fiber to the Home (FTTH) has reached 95.7 percent across UAE, maintaining the UAE's position as a global leader. This was only possible due the efforts in building and investing on the infrastructure over decades.

Leading the way as a Telecom Brand and Operator

The year 2017 was significant with major successes in infrastructure and technology for Etisalat, it was the first time UAE was globally ranked as the widest FTTH network followed by the opening of a first of a kind 'Open Innovation Center' in Dubai and Etisalat being valued as the most valued telecom operator in the Middle East by Brand Finance. In the same year, we also enhanced our international connectivity to UAE with AAE-1 submarine cable system.

Today Fiber to the Home (FTTH) has reached 95.7 percent across UAE, maintaining the UAE's position as a global leader. This was only possible due the efforts in building and investing on the infrastructure over decades. In 2011, the foundation of success on the network was laid with the implementation of 4G making Abu Dhabi the first capital fully covered with fiber optic.

This was followed by a series of achievements in 2013 with cloud computing services provided to SMEs, first optic layer in 2016 connecting the region with fast internet providing IoT services and establishing an IoT centre.

Etisalat's partnership and investments have also given it a lead among competitors and in the region. The strategic

5G is a reality today in UAE with Etisalat's pioneering efforts in 5G to enable subscribers to enjoy and unleash highly connective technologies blending physical and digital realms from AR and VR to IoT, AI, autonomous vehicles, advanced robotics, 3D printing, wearable tech and more.

partnership with Microsoft to deliver the comprehensive and trusted cloud from their first data centre in the Middle East, Etisalat data centres acquiring PCI/DSS an international and global certification guaranteeing maximum safety of customer data at all times and for quality the prestigious TL9000 certification.

5G a reality for the next generation- Journey and Achievements

5G is a reality today in UAE with Etisalat's pioneering efforts in 5G to enable subscribers to enjoy and unleash highly connective technologies blending physical and digital realms from AR and VR to IoT, AI, autonomous vehicles, advanced robotics, 3D printing, wearable tech and more.

Our continuous investments and focus on enhancing and building one of the most advanced networks in the region have empowered digital transformation opening up opportunities to engage with our customers in new ways. Innovation was always at the core of our strategy and all our efforts on enabling connectivity based on speed and throughput, mobility, connected devices and IoT, energy efficiency, latency and reliability.

Etisalat embarked on its 5G journey in 2014 when it started construction of the network with a dedicated team of engineers and specialists to build one of the most advanced networks in the region. In 2015, the first major 5G project was signed with Expo 2020 Dubai as part of the premier partnership with Etisalat Group to



make it one of the fastest, smartest and best-connected places in the world during the global mega event.

At around 20 times faster than 4G and with ultra-low latency, 5G technology will enable users to stream live 4K resolution video anywhere at any time, with virtually no lag.

In the same year, a number of strategic partnerships were signed with global technology companies to carry out trials and implement advanced technologies and solutions on the network. A series of tests were carried out in the infrastructure to gauge the extent of 5G readiness and get an insight into the upgrades required to launch the 5G network first in the region. The goal was to provide access to high data transfer speeds to get the network ready for data heavy applications and content to be broadcasted across media platforms during the Expo 2020.

Another significant milestone in 2016 was the successful completion of the first live 5G experiment using millimeter waves (mmWave). This showcase was the first of its kind in the MENA region with Etisalat becoming the first telco globally to test speed at 36 Gbps on a 5G network. This was followed with another global milestone in 2017 with a speed showcase of 71Gbps setting a new global record in data transfer speed using e-band and massive MIMO technology.

Early in 2018, Etisalat set global benchmarks in 5G in technology and on the network. Etisalat successfully conducted a 5G trial with outdoor mobility. The trial demonstrated 5G capabilities in a real world environment over a live network, including tests on speed, latency and beam steering. The 5G trial system used 800MHz of spectrum in the 15GHz band, demonstrated over 20 times greater performance than what was currently used in 4G networks. The trial also achieved an aggregate site throughput of more than 24Gbps a significant improvement over current 4G networks.



This was also the year Expo 2020 was announced as the first major commercial customer to be connected and access 5G services in MEASA region. This supports Expo 2020's goal to be one of the most connected places on Earth, both physically and virtually.

Another major milestone for Etisalat and the telecom industry was the launch of the first commercial 5G wireless network in the UAE becoming the first telecom operator in the Middle East and North Africa (MENA) region to achieve this technological milestone and set an industry benchmark. Etisalat was the first operator to have a fully developed commercial 5G network available to provide gigabit internet services to its customers. The network will fuel enterprises digital transformation, IoT, smart cities and the fourth industrial revolution.

The foundation of this commercial launch was laid in 2017, where Etisalat was one of the operators to launch a pre-commercial 5G network in certain areas of the country demonstrating high-speed use cases in addition to the low latency of the 5G technology.

In the first phase of the 5G launch, fixed wireless services (fixed and internet services) was provided at selected locations in UAE, which was gradually expanded to other parts of the country depending on consumer demand and

requirements. The commercial fixed devices and services were provided to consumers in this phase. Etisalat was aiming to achieve a download speed of 5Gbps for wireless access and more than 1.5Gbps for CPE (customer premises equipment) devices.

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.

At around 20 times faster than 4G and with ultra-low latency, 5G technology will enable users to stream live 4K resolution video anywhere at any time, with virtually no lag.

Etisalat Digital-Making digital aspirations a reality

The launch of Etisalat Digital 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

Etisalat Digital brings its unique value by combining the scale, strength and robust network with the agility, skills and platforms of a digital player. The business unit have access to global skills and expertise, state-of-the-art digital assets such as data centers, cloud, cybersecurity, M2M and Internet of Things (IoT) platforms, analytics, big data engines and digital payment gateways.



unit is to enable digital transformation of enterprise and government customers.

There are several important projects the department has worked on 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 have delivered one of the fastest, smartest and best-connected places on earth during the global mega event. We have been 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.

Many of the other successful projects over the years included working on public transport projects with high speed connectivity, remote health services for the first time in the private sector with American Hospital, enabling a series of digital initiatives to empower the region's education sector with Alef Education and protecting the lives of the UAE citizens with Ministry of Interior to provide the smart fire alarm solution 'Hassantuk'.

The bespoke solution for Federal Electricity and Water Authority (FEWA) hosted and powered by Etisalat's UAE based OneCloud a fully managed application enabled the authority to connect with their customer more effectively.



Other integral projects in the banking sector include the launch of a digital invoicing solution for SMEs with First Abu Dhabi Bank (FAB) and the development of the UAE Trade Connect (UTC) platform along with eight banks safeguarding the banking industry from potential fraud losses through advanced detection tools, allowing them to extend additional financing to their corporate clients.

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.

Etisalat Digital brings its unique value by combining the scale, strength and robust network with the agility, skills and platforms of a digital player. The business unit have access to global skills and expertise, state-of-the-art digital assets such as data centers, cloud, cybersecurity, M2M and Internet of Things (IoT) platforms, analytics, big data engines and digital payment gateways. This is in addition to 24x7 Cloud, Security and IoT Command and Control Centers in Abu Dhabi and Dubai for fully managed solutions and proactive monitoring.

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 launched several challenges focusing on futuristic technologies



like AI and robotics. Selected start-ups get the chance to be on board in the Etisalat Scaleups program where they were 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.

Another significant project for Etisalat Digital was the two-year Scale Abu Dhabi (AD) programme with Abu Dhabi Digital Authority (ADDA) to help drive the emirate's digital transformation. Over this period, a design-led methodology and process will be empowered by the Etisalat Digital co-creation lab to develop innovative solutions as well as a hub to source global innovation to the emirate of Abu Dhabi. It will also enable ADDA with access to cutting-edge technology platforms such as IoT, blockchain, big data, video analytics and cloud. A co-branded space will be provided for ADDA to become a leading hub of innovation and creativity in the region.

With nurturing innovation as one of the key goals for Etisalat Digital, it introduced its own programme called 'Future Now' to collaborate with startups, IoT developers, government entities, enterprises, and their end-users. Future Now has four key pillars: Scale-ups program, a Co-creation Lab, an IoT partner ecosystem and an Innovation Center. 📍



REGIONAL NEWS

Saudi Arabia Climbs 40 Places in Digital Infrastructure Index 2020

Saudi Arabia has climbed 40 places in the Digital Infrastructure Index 2020 to rank 27, putting it at the eighth spot in the G20. It has moved up 15 places in the Human Capital Index to rank 35 globally, putting it in 10th place in the G20, and also risen nine places in the E-Government Development Index to achieve the highest classification for the index, which includes 139 countries. Saudi Arabia's Minister of Communications and Information Technology Abdullah Al-Swaha thanked King Salman and Crown Prince Mohammed bin Salman for their support to the ministry in expediting the digital transformation of the country. Al-Swaha attributed these accomplishments to the National Transformation Program, which has helped the Kingdom speed up its digitization. Prof. Dr. Mohammed Alhizan,

a Shoura Council member, said: "Citizens and residents have experienced firsthand the improvement of public services, which have been digitized for ease of access." Dr. Rafiq Jamal Aldeen, a professor at King Saud University, said that information technology and communications were instrumental to digital transformation. "Saudi Arabia is expected to have its own active information technology industry that will enhance the efficiency of e-government services, speed up the digital transformation of the private sector. Saudi Arabia has designed a number of strategies to develop the country's digital economy and digital society, and employed information technology and communications with a view to enhancing public services," he said. "The public

sector has digitized many of the services and made them available online and also enhanced e-governance." Artificial Intelligence was an evolving technology that had seen rapid developments and could offer many benefits in terms of the digital transformation efforts, he added. Jamal Aldeen said that digital transformation had been implemented across different sectors. For example, the Saudi Arabian Monetary Authority had introduced touch-free and remote payments services to increase the number of noncash transactions. This technology would also allow consumers to make easier and faster electronic purchases, he said, noting that Saudi Arabia would be a global pioneer in the technology and innovation sector in the future.

Abu Dhabi Investment Authority Takes \$750M Stake in India's Jio Platforms

The Abu Dhabi Investment Authority has agreed to acquire a 1.16 per cent stake in Reliance Industries' digital services offering, Jio Platforms. "Jio Platforms is at the forefront of India's digital revolution, poised to benefit from major socio-economic developments and the transformative effects of technology on the way people live and work. The rapid growth of the business, which has established itself as a market leader in just four years, has been built on a strong track record of strategic execution. Our investment in Jio is a further demonstration of ADIA's ability to draw on deep regional and sector expertise to invest globally in market leading companies and alongside proven partners," said Hamad Shahwan Aldhaheri, Executive Director of the Private Equities Department at ADIA. Reliance Industries, which owns India's biggest telco Reliance Jio, has attracted more than \$12.75 billion of investment into its Jio Platforms unit,

from a host of international investors, including Facebook, Mubadala Silver Lake and General Atlantic. "I am delighted that ADIA, with its track record of more than four decades of successful long-term value investing across the world, is partnering with Jio Platforms in its mission to take

India to digital leadership and generate inclusive growth opportunities," Reliance Industries chairman, Mukesh Ambani, said in the statement. "This investment is a strong endorsement of our strategy and India's potential."



UAE Ranked 1st in Arab world in Online Service Index

The United Arab Emirates has been ranked first in the GCC, Arab region, and Western Asia, and 8th globally in the Online Service Index (OSI), issued by the United Nations within the E-Government Development Index (EGDI). The UAE is also ranked 4th in Asia in this indicator, advanced one rank in the E-participation Index as well as progressing from 17th (2018) to the 16th position. According to the same survey, the UAE is ranked 7th in Telecommunication Infrastructure Index in the ICT Infrastructure Index (TII). In its current edition, the survey focused on the role of countries in serving the UN Sustainable Development Goals, especially "Leaving no one behind" and the role of digital transformation programs in narrowing the gap between segments of society in various fields. The survey addressed government programmes around the world in engaging customers in developing services, policies and programs for everyone's benefit. The UAE has been ranked 21st globally in the overall index, which consists the sub-indicators: Online Service Index, OSI; Human Capital Index, HCI; and Telecommunication Infrastructure Index, TII; in addition to the E-participation Index, EPI, that falls within the online services. With this result, the UAE assured its leading position on the Arab level in digital transformation key indicators, which reflects its global position and leadership in adopting the principles of the future government that are based on embracing advanced technologies, and particularly ICT technologies, and using them to provide customers with easy and interactive government services. The results also confirm the UAE's global role in implementing the sustainable development goals, as it has been among the first countries to establish a specialized platform for this purpose in cooperation with the United Nations and relevant international bodies. After the UAE, Bahrain has been ranked second in the GCC in EGDI, followed by the Kingdom of Saudi Arabia 3rd, Kuwait 4th, and Oman 5th. Moreover, the UAE is sharing the 4th rank in OSI in Asia along with China and Japan, following Korea, Singapore and Kazakhstan. The survey highlighted distinguished UAE experiences in interacting with customers, and emphasized the 'Rammas' Application launched by Dubai Electricity and Water Authority (DEWA), which is a virtual employee that uses Artificial Intelligence to respond in English and Arabic, where a question can be directed to "Rammas" verbally to get the answer immediately. Despite the intense competition between countries in the E-participation Index, the UAE has achieved a breakthrough by advancing one rank and reaching the 16th position, which reflects the implementation of digital transformation programs in the UAE in line with the wise leadership directives, by engaging the various segments of society in designing services and policies that enhance society's happiness. The E-Participation Index (EPI), is derived as a supplementary index to the United Nations E-Government Survey. It extends the dimension of the Survey by focusing on the government use of online services in providing



information to its citizens or "e-information sharing", interacting with stakeholders or Commenting on these results, Hamad Obaid Al Mansoori, Head of the UAE Digital Government and TRA Director-General, said, "Despite the intensity of competition between countries, with these results, the UAE maintains its position among the most advanced countries in digital transformation. We realise that the more we advance, the more difficult the competition will be, but under the directives of our wise leadership and with our national competencies and accumulated experiences in this field, we are determined to place the UAE among the best countries in the world, and we will achieve our aim through cooperation and working as one team. These results lay upon us new challenges that we will overcome with hard work to achieve the first global position in smart services." Al Mansoori added, "In this context, I thank all government entities that worked with us hand in hand, to implement the concepts of a unified and integrated e-government within the framework of the OSI executive team, and I wish them more innovation during the remainder of the 2022 survey. I am confident that we will live up to our leadership's expectations." In turn, Salem Al Housani, Acting Deputy Director General of the Information and mGovernment Sector, and Head of the OSI Executive Team, said, "I congratulate my colleagues in the OSI executive team for their efforts over the past two years. We worked together as one family, developed plans, constantly revised them, developed our work, learned about global experiences, took customer needs into consideration, and held our meetings regularly to unify understanding and coordinate efforts. We are ready for the next stage, and we will work in the same spirit to achieve more progress in the OSI and related indicators."

Egyptian Operators Sign Transmission and Interconnection Deals

Telecom Egypt and Etisalat Misr, the Egyptian subsidiary of the Etisalat Group, have announced the signing of transmission and mobile-to-fixed interconnection deals, described as two first-of-their-kind agreements. In the first deal, Etisalat Misr has signed a long-term agreement that includes an annual commitment to Telecom Egypt's infrastructure and transmission services. The agreement, say the partners, will enable Etisalat Misr to continue delivering premium offers and mobile telecommunications services to its customers in the Egyptian market. It extends for three and a half years with a total

value of EGP 2bn (around \$125 million). The two companies have also signed a mobile-to-fixed termination agreement. While this is the first commercial arrangement on mobile-to-fixed between Telecom Egypt and Etisalat Misr, it is said to be the second such agreement for Telecom Egypt in the Egyptian market. Adel Hamed, managing director and chief executive officer of Telecom Egypt, suggested that the agreements would allow the company to further monetize infrastructure investments that serve all local telecommunications companies and added, apparently touching on

the pandemic lockdown-led boost in interest usage lately: "Telecom Egypt has heavily invested in its infrastructure to accommodate the significant and ongoing increase in data usage in Egypt." Hazem Metwally, chief executive officer of Etisalat Misr, added: "The development of events across the world makes telecommunications companies eager to cope with the required changes and, during the next stage, agreements like the ones we have signed today will be reflected in the products and services that we will offer our customers for the first time in the Egyptian market."

Oman Picks Oracle Managed Cloud for Digitalization

Oman Information Technology and Communications Group (OITCG) has signed an agreement with Oracle cloud data services company to build and provide a cloud infrastructure "Cloud@Customer" system. The step comes after the OITCG studied the best solutions offered by major international cloud services firms to woo them into the setting up and operation of an integrated set of information technology built on an advanced cloud database, with full control over the infrastructure and data within the Sultanate as a measure to realize digital sovereignty. Eng. Said bin Abdullah al-Mantheri, CEO of OITCG, said that Oracle was selected after in-depth survey of most cyber service operators, noting that Oman will be the first country in the world to use such an Oracle cloud@customer system enhanced with the best features that respond to future needs at suitable cost-effective rates that are commensurate to the volume of market requirements in the Sultanate. The Ministry of Technology and Communications and OITCG will undertake the responsibility of stimulating demand and urging establishments to change and benefit from cloud services instead of continuing to utilize traditional systems, Eng. al-Mantheri explained. He added that OITCG will work to support government and private establishments through the



project so that they could keep pace with technological and technical progress in e-services and set up platforms capable of hosting artificial intelligence (AI) technologies like blockchains and utilize cloud@customer services to speed up digital transformation (build provider infrastructure, storage units, superfast data and impeccable data security). OITCG was established in 2019 and its strategies were designed to fit with Oman Vision 2040 and strategies of Ministry of Technology and Communications. It recently received the stake of Oman Investment Authority in Oman Technology Fund and Oman Broadband, in addition to cyberspace

communications firm. Its operation under one roof will help in performance governance. It will also work to achieve unified economic and investment goals that support digital economy and AI, as well as providing the educational system and government institutions with smart apps. The signing ceremony was attended by Sayyid Kamil bin Fahd al-Said, Assistant to Secretary General of the Office of Deputy Prime Minister for the Council of Ministers, Board Chairman of OITCG, and Abdussalam al-Murshidi, Chairman of Oman Investment Authority.

Bahrain Becomes 1st Country in MENA to Ratify United Nations Treaty on Electronic Communications

Bahrain has become the first country in MENA to ratify a key United Nations convention on electronic communications, helping to enable a new wave of digital business across the region and enhance investor protections. The United Nations Convention on the Use of Electronic Communications in International Contracts (2005) aims to enhance commercial certainty by ensuring that contracts concluded and other communications exchanged electronically are as valid and enforceable as their traditional paper-based equivalents and by introducing specific principles surrounding the use of technology during signing processes. This will enter into force for Bahrain on January 1 2021. The principles of the treaty include defining terminology such as 'writing' and 'signature' so that all parties are legally protected when entering into a contract. The convention also aims to remove legal obstacles to the use of electronic communications in enacting previous treaties that were first created before the widespread use of modern technology. Bahrain became the 14th country globally to join the treaty, alongside major economies such as Singapore and Russia. Countries that have signed, but not yet ratified, the convention include China, the Republic of Korea and Saudi Arabia. It comes after Bahrain made history in November 2018 by becoming the first nation to enact legislation based on the United Nations Commission on International Trade Law (UNCITRAL) e-commerce model laws. The move was

part of a series of sweeping reforms aimed at bolstering the digital readiness of the GCC region's US\$1.5 trillion economy. Commenting on the announcement, Khalid Humaidan, Chief Executive of Bahrain Economic Development Board, said: "To build a truly digital economy in the GCC, it is essential that our regulation keeps pace with the latest developments – particularly at a time when more and more business is being conducted in the virtual realm. "Bahrain is leading the way on tech-driven reforms and is committed to supporting the needs of entrepreneurs and investors as they work to build long-term growth in our thriving e-commerce landscape. "We look forward to continuing to work closely with the United Nations as we stay on the cutting edge of legislative developments." Luca Castellani, Secretary of Working Group IV (Electronic Commerce) of the United Nations Commission on International

Trade Law (UNCITRAL), noted: "The accession of Bahrain to this treaty completes the significant work that the Government of Bahrain and the UNCITRAL Secretariat have carried out together to provide Bahrain with a modern, efficient and effective enabling legal framework for the digital economy. I am confident that this will encourage more countries in the region and worldwide to adopt the latest UNCITRAL texts in the field." Stefano Pettinato, Resident Representative of the United Nations Development Program said: "By ratifying the UN Convention on electronic communications, the Kingdom of Bahrain sets an example on how digital technology, international law, and multilateralism are enabling factors for the promotion of international trade and the achievement of the Sustainable Development Goals through greener and more efficient protocols."



Morocco Wants to Use Digital Technology to Attract US\$1 Billion Plus in FDI

The Moroccan Minister of Digital Economy Moulay Hafid Elalamy announced on June that the government wants to make use of digital technology to attract MAD10 billion (about \$1.04 billion) in Foreign Direct Investments and create more than 120,000 direct and indirect jobs across the country. This was during his presentation on digital development on the sidelines of a

meeting of the National Committee for the Business Environment (CNEA). According to the official, the aim is to make the country the first regional and continental digital hub; an ambition spurred by the recent digital dynamism stemming from the coronavirus context. He also revealed that his department is currently studying a series of projects to this end. Moulay Hafid

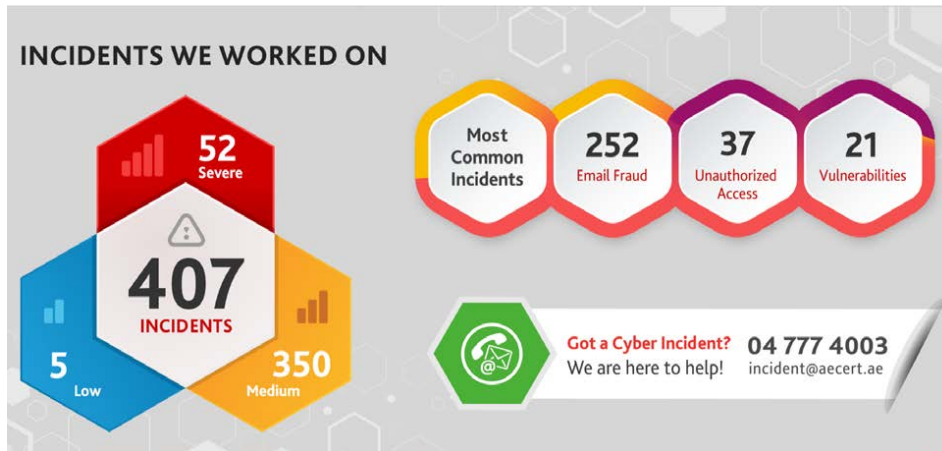
Elalamy stressed that Morocco's renewed investment in the digital sector would involve supporting digital companies, accelerating the digitization of public administrations, improving the governance of the sector and strengthening digital sovereignty.

Over 100,000 Cyber-Attacks Foiled in June: UAE's TRA

The National Computer Emergency Response Team, aeCERT, of the Telecommunications Regulatory Authority, TRA, responded to approximately 103,408

cyber-attacks, during the month of June. The TRA revealed that its monthly report on Cybersecurity developments in the Federal Government of the UAE for the

month of June 2020 showed that the cyber-attacks varied between malware (73 percent), vulnerabilities (15 percent) and phishing attacks (12 percent). aeCERT also handled 407 cyber incidents, such as email fraud, unauthorized access and vulnerabilities which were classified as 350 medium cases, 52 severe, and 5 low incidents. In terms of raising awareness and building capabilities, the report indicated that 2,085 awareness sessions and 105 training courses were held in June. The aeCERT was established in 2008 to improve practices of information security, and protect the IT infrastructure in the UAE from risks and violations, in conformity with the TRA strategy that aims to support and ensure a safer cyberspace for UAE residents.



Saudi Arabia's Digital Infrastructure Pays Dividends in COVID Response and Recovery

Saudi Arabia's investment in digital infrastructure helped ease the burden of COVID-19 lockdown measures, ensured easy access to e-government services and is likely to support the country's economic recovery, according to the World Bank. In a blog post published last month, Dr Zaki Khoury, a senior digital development specialist at the World Bank, said the kingdom's digital capabilities have provided "a solid foundation for key aspects of the COVID-19 emergency response". He cited a number of measures implemented by the government and the country's telecom operators, including ensuring business continuity by increasing mobile internet speeds and data capacity; rolling out new tools to allow public servants to work remotely effectively; upgrading digital educational platforms; and enhancing mobile money transaction services. Khoury added that the government's main online portal maintained reliable access to over 900 government services despite a surge in traffic after a national curfew was put in place in March. The curfew was lifted on 21 June. "The digital government platforms have helped various agencies

deliver safe, reliable and user-centric services while enabling flexibility in sharing data across the government ecosystem," Khoury said. Over the last two decades, Saudi Arabia has invested heavily in digital infrastructure and digital government platforms, accelerating this agenda since the publication in 2016 of its Vision 2030 strategy. The strategy aims to diversify Saudi's economy, reducing its dependence on oil, and develop public sectors including health and education. The World Bank reports that three million Saudi homes are now connected to fixed broadband and that 91% of the country's population has access to fast 4G mobile broadband. According to the Oxford Business Group, its mobile internet speeds are the 10th fastest in the world following a series of upgrades last year. The Kingdom continues to strengthen its digital infrastructure by deploying 5G networks and investing in 6,500 towers essential to provide effective coverage, Khoury's blog notes. "Saudi Arabia's government is showing digital agility in addressing the COVID-19 crisis and continues its efforts to strengthen national resilience. By harnessing

secured emerging technologies and data, expanding broadband connectivity, focusing on citizen and business needs and expectations, and leveraging multiple stakeholders' interests and engagement, governments will be well positioned to reap rewards from such digital capabilities in the future," Khoury concluded. Meanwhile a report published last week by economic research specialist the Oxford Business Group, in collaboration with telecoms company STC, corroborated Khoury's assessment. It said Saudi Arabia's digital infrastructure has played a part in containing the spread of COVID-19 and that the Kingdom shows promising prospects for economic recovery as a result of its digital investments. The report provides detailed analysis of the country's resilience ahead of the pandemic and its preparedness to withstand an unexpected shock; the speed with which policies were implemented and their effectiveness in response to the outbreak; and the direct impact of its response on public health and the wider economy.

Eight Tech Ideas Showcased at Cybersecurity Demo Day in Oman

The Sas Accelerator for Cybersecurity's first cohort, organized by the Ministry of Technology and Communications through its Sas Center for Entrepreneurship, and in partnership with the UK-Oman Digital Hub, CyLon and the Oman Technology Fund, was concluded with a virtual demo day. The program was the first Cybersecurity

early-stage accelerator in the MENA region and attracted 55 applicants with their Cybersecurity product ideas. Since February, the qualified teams have participated in intensive workshops and mentoring sessions, both in Oman and virtually with UK's CyLon, to help them refine their product and business mode.

The demo day event showcased the progress of these eight teams who worked tirelessly on product ideas ranging from Cybersecurity gamification to a real-time security testing developer tool. The eight ideas of first cohort are: Cyber Warrior- a game to raise Cybersecurity awareness, Dark Sniper - a machine learning behavior detection product, Cryptic Chains - a tool that uses blockchain technology to strengthen the security in Data Management Record Systems, U Safe - a software that simplifies the assessment of security breaches in companies' networks by using visualization and attack graphs, Octopus - a risk management system using built-in customizable per-vendor templates, Hidden Power - a tool that uses blockchain to not only track shipping more efficiently but also add an additional layer of security, Data Boat - a locally produced SIEM solution and NytoWl - a real-time security testing developer tool.



Cybersecurity Crucial In Digital Transformation in Bahrain

A call has gone out to Bahraini institutions and companies to transform their business models and strengthen their Cybersecurity infrastructure in light of the coronavirus pandemic. Internet hackers seek to exploit remote working conditions. E-mails, video conferencing and other technologies are increasingly being used in electronic fraud, information and data theft and extortion, said Yaqoob Al Awadhi, chief executive of NGN, a full-fledged systems integrator and IT consultant headquartered in Bahrain. "Technology helps in dealing with the coronavirus crisis, and support us to overcome it. This means that Cybersecurity is more important than ever, and with the increased use of technology, there are alternative ways attackers can use to harm the users. "Most companies work to change the way they run their business, and the Cybersecurity transformation was the main activity that companies started directly on executing, to cater for allowing the data access and as part of the digital transformation

that the organizations were forced to go through in a short time," Mr Al Awadhi said. "We have seen three main activities start from infrastructure transformation, by leveraging cloud solutions and more efficient tools to ensure higher availability of information and more reliable platforms with less headache to manage workforce transformation, by allowing remote access and activities." He stressed the importance of developing new measures to assess efficiency of managers, utilizing the new communication tools and information exchange security transformation, as a result of providing data and services availability and data integrity, and allowing authorized users and customers to access data and services 24/7 and being agile to provision more services online within acceptable time to go to market, without compromising and risking the security standards. NGN director of business development Hassan Kassab stressed that the company responded to the market and new customers' demands and

began to think differently, by utilizing new tools and services like SOC services, Red Teaming, penetration testing, and many tools and services. "We at NGN believe that advanced Cybersecurity is not a luxury anymore, it's a main factor that assures the continuity, profitability and competency of any organization. We help our customers in delivering this through our security and consultancy services portfolio. Also leveraging new technologies such as robotics and RPA is the main initiative in this era that ensures business continuity without full dependency on human factor or being available in the offices." He pointed to many warnings issued by the national centres for Cybersecurity in several countries regarding the increase in piracy and electronic fraud, in the midst of the coronavirus outbreak. These warnings came after many studies indicated that companies and people believe that they were targeted by fraudulent e-mails to steal their money, data, or extort them.

Nepal Internet Use Increases by 35 Percent during Lockdown

High prices, technological limitations and unreliable connectivity threaten to slow the explosive growth of Nepal's internet market during the COVID-19 lockdown even though everything from recreation to education and employment have gone online. Latest figures from the Nepal Network Operators' Group (NNOG) show a 35% increase in internet consumption in the past nearly four months of lockdown. In comparison, pre-lockdown growth of the internet market stood at just 23% per year, according to the Group's CEO Samit Jana Thing. "While pre-lockdown internet consumption stood at 1486 gigabytes per second, post-lockdown levels reach as high as 2100 gigabytes per second," says Thing, "We have seen a sharp rise in online entertainment with Netflix, TikTok, online ludo and other virtual pastimes." Traditional giants Facebook, Google and Amazon have also clocked increased hours on their social media, virtual meeting and e-commerce platforms. Google and Facebook alone dominate 82% of all internet traffic in Nepal. Most of the data went through mobile phones and cable internet, with only 11% on wifi. Multiple price hikes, including a 13%

Telecommunications Service Charge on top of 13% VAT and 4% royalty fees, have made internet in Nepal relatively expensive. Nepal also 'imports' most of its internet bandwidth through Indian companies such as Tata Communications and Airtel, and is therefore affected by price swings there. This dependence on fiber optic cable corridors to India often leave Nepal's internet connections vulnerable to network failures, says the Director of Nepal Telecommunications Authority Bijay Kumar Roy. Most of Nepal's internet comes through cables gateways at the Bhairawa, Duhabi, Tanakpur and Dhalkebar borders with India. Nepal's attempt to diversify its internet connectivity has been stymied by even higher prices of bandwidth from China. Despite an agreement with China Telecom Global for cyber connectivity, only a few domestic Internet Service Providers (ISPs) are getting their cyber connections through the Rasuwa border from China where there is also the problem of unreliability because of the terrain and extreme weather on the Tibetan Plateau. Work is ongoing to open another internet gateway through the Kodari border. The NTA says that although mobile phone have

now reached full saturation, only 72% of the population uses the internet regularly, up from only 7% ten years ago. But most complaints from customers are about slow internet from ISPs. The pattern of internet use has also changed during the lockdown. Previously, people going online peaked in the evenings. But in the past four months, there is constantly heavy traffic as Nepal has seen an explosive growth in YouTube use – up from virtually zero in 2018 to 34% last year, and then almost doubling to 60% this year. The bandwidth often is too narrow to support this kind of traffic in Nepal's international gateway and local networks. The cross border connections are through underground fiber optic cable that connect ISPs to India's Airtel and Tata. Within Nepal, local caches for YouTube and Google use artificial intelligence to 'pre-fetch' popular content into their own servers so they do not always have to use international connections to source the material. One-third of all downloaded content during the lockdown was from Google, with YouTube being the most popular.

TRA Announces Shutdown of 2G Network in UAE by End of 2022

The Telecommunications Regulatory Authority (TRA) has announced that shutdown of 2G network (GSM) in the UAE will take place at the end of 2022, with directing resources allocated to 5G to support new generations of mobile networks. TRA indicated that UAE service providers will provide all means of support to groups that may be affected by the 2G shutdown. Commenting on this subject, Hamad Obaid Al Mansoori, TRA Director General, said: "The ICT sector is one of the most developed sectors in recent decades. We have witnessed the level of development in mobile networks where generations have progressed from the first to the fifth generation that many countries in the world have begun to implement on the ground, with the UAE in the forefront, as the first in the Arab region and the fourth in the world in the launch

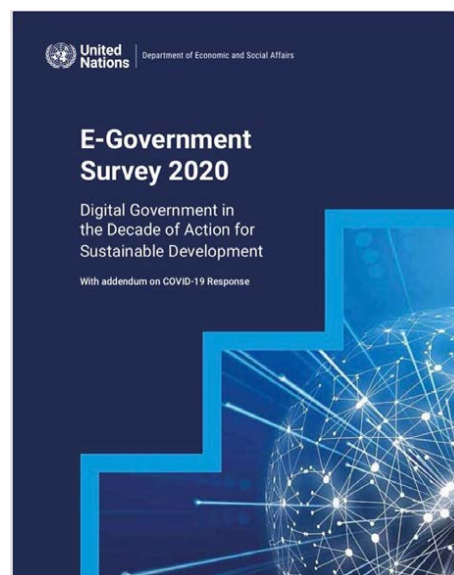
and use of 5G, according to the Global Communication Index. Thus, it is highly important for telecom service providers to stop operating less effective networks to allow the operation and activation of the latest and most effective networks." Al Mansoori added: "Mobile technology is one of the main drivers of innovation in the business world, and telecom companies must constantly develop their networks to keep pace with the rapid and continuous developments in the telecom sector. Today, we are on the threshold of a new era characterized by comprehensive digital transformation, Internet of Things and smart city, where a faster, stronger and more capable network is needed to withstand the communication between vast numbers of devices." This decision comes as part of TRA's continuous efforts in deployment of 5G in the UAE as the

main engine of the digital transformation process, the fourth industrial revolution and artificial intelligence. Moreover, this step reflects the accelerating development of the telecommunications sector, in which mobile networks are constantly evolving and changing. An old technology disappears when new technology emerges so that telecommunications companies must stop operating the least effective networks to allow the operation and activation of the most effective networks. The activation of 2G network (GSM) in the UAE dates back to 1994, and it is still effective to date, despite the succession of network generations up to 5G, which the UAE has been in the lead of its application through a comprehensive strategy and clear roadmap.

Oman 5th Most Advanced Arab Country in E-Government

The United Nations rated the Sultanate as the 5th Arab country that is most advanced in the field of electronic government, according to a new report on countries of the world issued by the UN Economic and Social Affairs Administration and published in its website. The Sultanate ranked 50th globally in the index, which covers 193 countries, after receiving 0.7749 points (overall). Oman got 0.8529 points in the index's subsection on internet services, 0.6967 points in the telecom infrastructure index and 0.7751 points in the human capital index. In its report, the UN pointed out that the Sultanate scaled up the list of "advanced countries" in e-government till it reached the level of "most advanced countries" during the period from 2018 to 2020. The latter was the list of countries like Turkey, Brazil, Czech Republic, Hungary and Latvia, whose performance ranged from 0.75 points to 1 point. The UN rated the Sultanate among the 13 countries of the world that have very extremely advanced human capital (Turkey, Brazil, Mexico, Kuwait and the UAE), noting that Oman endorsed national digital transformation plans in a manner that

guaranteed conformity of those plans with domestic development plans, and at times merging/incorporating them within Oman 2040 Vision's updates. The report said that the Sultanate is among the countries that use drones to monitor roads, deliver medical supplies and sanitize public places. It pointed out that Royal Oman Police uses drones to guide citizens and residents to stay at home and avoid going out unless extremely necessary to avoid infection with coronavirus (Covid-19) pandemic. Denmark was in the lead of the rating, followed by South Korea, Estonia and Finland. The report indicated that, given the Covid-19 lockdown in the world, most countries implemented electronic government strategies and many innovative initiatives, but a large number of people around the world still lack access to the internet. A UN official from the Economic and Social Affairs Administration pointed out that Covid-19 underscored the role of electronic government, both in the traditional use of electronic services or in the creation of innovative crisis management risks. He explained that, in the case of response to health



emergencies, governments devised new instruments, such as Covid-19 information portals, collaborate software modules (hackathons), medical supply e-services, virtual booking for appointments, self-diagnosis apps, electronic permits to ban movement, tracking apps, online work and online.

Egypt Spends US\$1.6B to Increase Internet Speed

"The government's plan for information infrastructure to develop the internet in Egypt is proceeding according to the plan, as about \$1.6 billion was spent to increase the speed of the internet," stated Minister of Communications and Information Technology Amr Talaat. During a meeting with members of the American Chamber of Commerce in Cairo, a number of the chamber's leaders in Washington and members of the Egyptian-American Joint Business Council, the minister added that the government is targeting to connect the internet to 2 million homes at a cost of \$400 million. Talaat stated that the average internet speed in Egypt increased from 5.7 Mbps in June 2018 to 15.5 Mbps. "We are trying to reach 20 Mbps at the end of 2020, and 40 Mbps in 2021," he explained, stressing that all internet companies in Egypt provide the service

with these speeds. The minister pointed out that the government also seeks to continue development and capacity building, and to provide many services through mobile applications and other services that have developed significantly in Egypt. Talaat explained that the ministry will launch an initiative in cooperation with ITIDA and other institutions to train workers in small and medium companies in the communications and information technology sector to sharpen their skills. He noted that small and medium companies can participate in the implementation of digital transformation projects in a way that ensures the achievement of governance and transparency through three tributaries. The tributaries include participation in implementing projects no less than 10 percent of the projects assigned to the main operators' companies,

or participating in a package of projects through contracting with the Ministry of Communications and Information Technology directly, or participating in competitions between workers in small and medium companies to obtain training opportunities in the field of data science and artificial intelligence at the expense of the ministry. The training opportunity is set to end with a contract with the winning companies. The minister pointed out that the implementation mechanism will be through the platform "Our Opportunity ... Digital", which is set to provide upon its launch dozens of opportunities in digital transformation projects with an estimated value of the volume of businesses offered to small and medium-sized companies by about LE 100 million.

Egypt's CIT, Higher Education Ministry to Equip Space Information System Center

The Ministry of Communication and Information and Technology and the Egyptian Space Agency have signed a cooperation protocol to equip a computer center and integrated information system for the Egyptian Space Agency. The protocol's signing was witnessed, via videoconferencing, by Minister of Higher Education and Scientific Research Khaled Abdel Ghaffar and Minister of Communication and Information Technology Amr Talaat. The protocol, which will last over three years, will see the preparation of infrastructure and a data center to connect the center up with all buildings under the space agency. It will also provide computing equipment, software, information network and security devices, servers and storage units for the agency. An agency online portal will also be made available and put into operation, to provide electronic services and external link lines to the agency. There will be cooperation agreements for training between the agency and institutions affiliated to the Ministry of Communications and Information Technology. Abdel Ghaffar said the Egyptian Space Agency's establishment

in 2019 was the culmination of significant efforts and the fruition of a dream that has been in place for 40 years. He indicated that Egypt has now become part of the global space system. The Minister pointed out that the establishment of Egypt's first satellite center is a qualitative leap in this field, and stressed that Egypt has become the permanent headquarters of the African Space Agency. This has increased the pressures and tasks placed on Egypt, and emphasizes the country's aspiration for developing integrated centres and information systems. For his part, Talaat

said the protocol is an important step in the cooperation between the ministries of Communications and Information Technology, and Higher Education and Scientific Research. He emphasized the synergy of all state sectors to create a knowledge-based society based on scientific research. The Minister noted that the cooperation protocol aims to support the Egyptian Space Agency's information systems infrastructure. This comes as part of the state's interest in both developing Egypt's space industry and achieving regional leadership in this field.



Jordan Sees Increase in Mobile Wallet Usage Due to Government Worker's Fund

Jordan has seen an increase in mobile wallets usage, as the government urged workers to open mobile wallets and telcos surged their applications for remote payments. According to Verdict UK, Mobile Financial Services (MFS) in Jordan have witnessed growth with the number of mobile wallets reaching 760,000 wallets in April 2020. This represents around 10% of the total mobile subscription base, with a total transaction value of USD 88.1 million up from USD 26.7 million in December 2019. It also represents a 230% increase in transaction value in April 2020 versus December 2019, and a 25% increase in the number of wallets over the same period.

There are multiple reasons behind the boost in the uptake and transaction values of mobile wallets, one of them being the government's decision to support the daily workers whose jobs were affected in this pandemic by a weekly fund. Therefore, the Government urged those workers to open mobile wallets to receive their funds. This initial phase of the workers' fund started in April 2020 and is expected to last until the end of June 2020. Another cause for the boost of mobile wallets is the provision of mobile wallets applications made by telcos, in order to enable their customers to make transactions such as top-ups and payments remotely. Jordan is

a prepaid mobile market with circa 80% of the customers on prepaid plans, the top-up transaction being vital to keep people connected. Overall, telecom operators have an important part in Jordan's mobile wallet development. For example, telco Orange is present in this space with the Orange Money wallet, Zain with the Zain Cash wallet, and Umniah provides the Mahfazti wallet. Additionally, financial institutions also play a key role in the ecosystem with solutions including Dinark, National Wallet, Gadhaa, and other banks, Verdict UK stated.

PTA Urges Users to Register Their VPNs

According to a public notice issued by the Pakistan Telecommunications Authority (PTA), users are now required to register their Virtual Private Networks (VPN) before 30 June 2020 or face disconnection of services and possible legal action. This step is being taken to eliminate all grey traffic from Pakistan which is the case

with many companies running call center services in the country using VPN or unregistered Voice over Internet Protocol (VoIP) services to make international calls appearing as if they're located somewhere else such as the United States. Pakistan Telecommunications Authority (PTA) wants to eliminate their grey traffic by

having people register VPN and have already started to blacklist IP addresses of corporate clients of several Internet Service Providers (ISPs) in the country. The PTA notification requests users to register their VPN service before 30 June 2020 to avoid any disconnection of service or legal action.

Jordan Ranks 87th in Global Internet Speed Index

The Kingdom has witnessed a 20-point rise in the Internet speed index during the COVID-19 pandemic, leaping from the 107th rank to the 87th in May 2020, according to the Speedtest Global Index. Jordan is expected to rise further in the index to reach the 67th rank, according to the report. Chairman of the Board of Commissioners

of the Telecommunications Regulatory Commission (TRC) Ghazi Al Jabour highlighted the "tangible" improvement in the average download speeds for mobile networks by 54 per cent (28.26 Mbps per second) during the period from March 2 to the end of May, according to a TRC statement. The authority was one of the

world's first regulatory bodies to offer free temporary use of the spectrum for mobile phone operators to face the expected pressure during lockdowns, which led to an increase in data traffic by 8 per cent and an improvement in user speed by 73 per cent, he added.

UAE Keen to Create AI Infrastructure

Omar bin Sultan Al Olama, Minister of State for Artificial Intelligence, stated that the UAE Government is keen to create a supportive infrastructure based on artificial intelligence, AI, through enhancing the capacities of Emirati citizens and enabling government staff to utilize the required tools to develop this vital sector. He made this statement during his participation in the remote graduation ceremony of 84 students representing the second batch of the Artificial Intelligence, AI, Program, which was attended by Mansour Abdullah Belhoul, UAE Ambassador to the UK, and Jonathan Michie, President of Kellogg College at Oxford University. The training program is part of the UAE Program for Artificial Intelligence, which aims to train government staff and reinforce their skills to adopt AI in their work, to achieve the objectives of the UAE Artificial Intelligence Strategy 2031 and reinforce the country's pioneering role in adopting modern technologies and preparing for the future. Al Olama noted that the effects of the coronavirus pandemic on the health, education and economic sectors and the community highlight the importance of investing in technological infrastructure,



to continue the process of development. He also stressed the need to learn from the pandemic, by adopting a proactive approach that will foresee the future and create solutions to changes and challenges. The program aims to train Emirati citizens and introduce them to the latest technologies and trends in the AI sector, through targeting government employees and equipping them with the required skills. It also focused on a set of topics, including the use of AI, ethical challenges, strategic analysis, data

collection and analysis, data security, governance, self-education, and legislation and systems related to AI. The AI Program, a joint effort between the UAE National AI Program and Kellogg College, aims to train UAE nationals and enhance their skillsets to accelerate the delivery of the UAE Strategy for Artificial Intelligence. The second batch of the Artificial Intelligence underwent specialized courses in the AI and Blockchain in line with UAE Strategy for Artificial Intelligence 2031 and the UAE Blockchain Strategy 2021.

Egypt's Communications, Immigration Ministries to Cooperate in Digital Transformation

The Egyptian Ministry of Communications and Information Technology signed a protocol of cooperation with the Ministry of Immigration and Egyptian Expatriates Affairs to develop the latter's information technology (IT) infrastructure. The collaboration comes in line with the country's efforts to promote digital transformation in all sectors in the country, minister of immigration Nabila Makram said in a statement. The Communications Minister Amr Talaat noted that the protocol aims to develop the IT infrastructure and governance, as well as working on the institutional and administrative reform and development of the immigration ministry. The three-year protocol will be implemented with an estimated budget of about EGP 40 million, Talaat added.



Ooredoo's FASTtelco Expands Range via Global Zone Kuwait Partnership with Batelco

Ooredoo Kuwait and its ISP subsidiary FASTtelco have partnered Bahrain's Batelco to establish 'Global Zone Kuwait' carrier neutral data center interconnection services, supported by infrastructure incorporating Batelco's wholly owned terrestrial cable system Batelco Gulf Network (BGN). Batelco's Global Zone Tier III data center, launched in 2019, supports a digital business solutions portfolio including Manama-IX (MN-IX),

a carrier-neutral internet exchange, Cloud Connect solutions, and IP telephony (IPT) solutions, which will also be available in Global Zone Kuwait for B2B customers and partners of Ooredoo/FASTtelco and Batelco. Abdulaziz al-Babtain, chief business officer at Ooredoo Kuwait, confirmed: 'The expanded partnership with Batelco will give FASTtelco access to a new set of products to further grow its portfolio by offering AWS DX [AWS

Direct Connect], Global Zone, MPLS and MN-IX. The establishment of Global Zone Kuwait – this extensive regional footprint – will provide our clients with access to additional global fiber routes for minimized latency and ultra-high performance and I am certain that it will significantly boost FASTtelco's capacity to support local and regional businesses and organizations to meet demanding cloud applications.'

1,036 New e-Commerce Licenses Issued in UAE in 6 Months

A total of 1,036, new e-commerce licenses were issued in the UAE during the first six months of 2020, according to National Economic Registry of the Ministry of Economy, indicating a growth in the sector. The statistics showed that the number of e-commerce licenses issued in May and June 2020 amounted to 112, a 12.1 percent rise compared to April 2020. The Ministry noted that in light of the growing interest of

investors in e-commerce activities, many specialist studies expect this sector to grow in the future. "The demand for online shopping has witnessed a significant increase by over 300 percent," it added, while quoting statistics issued by major shopping centers around the country. "This continuous growth may lead to a surge in the sector's value to over AED72 billion by the end of 2020," the data showed,

referring to estimates by relevant national authorities, including the ministry. "Many of the UAE's competitive advantages will contribute to the future development of e-commerce, most notably the country's advanced telecommunications and e-services infrastructure and the significant rise in the use of the internet and smartphones," according to the Ministry.

E-government in Saudi Arabia Makes Huge Advances Amid Pandemic

E-government experts recently gathered for a virtual “meetup” during which they discussed how countries with advanced e-services managed to continue to serve their citizens successfully during the coronavirus disease (COVID-19) crisis. Organized by the Saudi Ministry of Communications and Information Technology (MCIT) and titled “The shape of e-government during and after the pandemic,” the meeting highlighted the important role that e-government played during the lockdown and how varied models helped employment e-platforms in providing services for all. It was a lesson for many countries to accelerate their digital transformation. Moderated by ICT Coordinator at the UN Development Program Dany Wazen, the meeting's guest speakers included Ali Al-Asiri, CEO at the Saudi e-government program Yesser, Mohammed Ali Al-Qaed, chief executive of the information and e-government authority in Bahrain, Dr. Aisha bin Bishr, director general at Smart Dubai Office and Andy Main, global head of Deloitte Digital. The experts said that during the crisis governments introduced a hyper-connected world, which brought many opportunities for them to provide electronic accessibility and public services to their citizens through digital platforms. Al-Asiri said that this digital transformation was only possible with strategic vision and policies, ICT infrastructure, connected society and skilled human capital. The fundamental objective of e-government is to offer public services to citizens in an

efficient, real-time, transparent, secure and cost-effective manner, it was agreed. Al-Asiri highlighted Saudi Arabia's successful digital transformation to home-based remote work to contain COVID-19. “We were very successful in working from home and this was possible because of ongoing digital transformation in the Kingdom as part of Vision 2030,” he said, noting that Saudi Arabia has taken great strides in its digital transformation, ranked 41 out of 193 countries around the world in the UN's most recent e-government development index. The new realities of staying at home, social distancing, teleworking and remote learning are urging governments across the globe to make a rapid digital transformation to provide easy use of e-services for citizens, simplifying compliance of governmental laws for citizens, improving citizen engagement and trust and decreasing fraud and

operational cost, he said. Bishr mentioned digital transformation initiatives such as Smart Dubai and Dubai Pulse that were imperative in harnessing the power of emerging and enabling technologies such as AI, blockchain, cloud computing and big data for sustainable and productive growth to overcome the prevailing challenges of our society, she said. The experts agreed that on this journey of digital transformation governments need to pay great attention to Cybersecurity, resilience, incident response, awareness and business continuity practices to provide uninterrupted and secure e-services to connected communities. The meeting was held under the auspices of ThinkTech, an MCIT initiative that explores technology developments, looking to achieve sustainable development and build an innovative and informed generation in line with Saudi Vision 2030.



Internet Use Rose by 50 Percent during COVID-19 in Bangladesh

State Minister for ICT Zunaid Ahmed Palak said that the use of the internet increased 50 percent during the coronavirus pandemic. Besides, online marketing has increased to 50 percent while the number of opening of mobile accounts went up to 50 lakhs, said Palak. He came up with the information while inaugurating “Advanced Certification for Management Professionals (ACMP) 4.0 Summer 2020” training course through zoom online jointly organized by LICT project and Institute of Busi-

ness Administration (IBA) of University of Dhaka. Mentioning that this is one of the best examples of how to keep the economy running by using information technology during disasters and pandemics, the state minister said that advanced technologies like robot, machine learning, artificial intelligence (AI), and data analytics will be the driving force of life and economy in the future. “That's why everyone needs to have some idea about these technologies,” he said. Advanced technology is

being used extensively during Covid-19 as the increasing usages of technology are playing a pivotal role in expediting global changes including economic activities. If we fail to adapt, the country will lag behind, said Palak. He said that ICT division's LICT project and IBA are conducting the ACMP 4.0 training course like a virtual university. Palak called upon the IT professionals to take forward the economic activities by taking the training suitable for the Industrial Revolution 4.0 in the changed situation.

Satellite-Enabled SD-WAN Service Deployed in South Sudan

RCS Communication (RCS), an ICT company in South Sudan, has adopted SES Networks' SD-WAN service that will enable RCS to deliver an improved user experience while optimizing resiliency and bandwidth usage. SES Networks claims that its SD-WAN service is the first of its kind as it enables customers to optimally utilize their available WAN access connections ranging from Geostationary Earth Orbit (GEO) satellites and Medium Earth Orbit (MEO) constellation, as well as fiber and other terrestrial links. RCS has been using SES's low-latency MEO solution extensively since 2014 to provide reliable and uninterrupted Enterprise

connectivity services to NGOs, Embassies and businesses of various sectors in Juba, the capital of South Sudan. With the recent availability of fiber networks in the country, RCS began seeking services that would enable them to bring resiliency and intelligence to the edge and pass end-to-end traffic securely over different available WAN links based on application-aware steering. Through SES Networks' SD-WAN service, RCS can dynamically and intelligently priorities and route application traffic between its MEO satellite and fiber links, resulting in improved up-time. Always-on network performance monitoring and analytics provides RCS

with high visibility and insights on which to base informed decisions. Flippie Odendal, Managing Director, RCS said, "SES Networks' SD-WAN service has met RCS's requirements and direction of moving towards intelligent, software-defined services that will enable us to dynamically react to evolving market conditions and scale whenever needed." John-Paul Hemingway, CEO of SES Networks said, "We developed SES Networks' SD-WAN service to bring to our customers intelligent, application-aware resiliency, efficiency, visibility and control."

Egypt's Ministry of Public Business Sector Leads Digital Transformation

The Ministry of Public Business Sector, the Coca-Cola Bottling Company of Egypt, the HO Group, and Polyserve Chemicals and Fertilizers are leading Egypt's digital transformation during Covid-19 coronavirus to drive new levels of business innovation and customer experiences. As organizations across Egypt face unprecedented challenges, they are turning to technologies that provide reliable insights to help them better support their employees, customers, and suppliers. "The rise of Covid-19 has made every Egyptian organization more aware about the importance of accelerating digital transformation to transform operations, innovation, and customer experiences," said Hoda Mansour, Managing Director, SAP Egypt and Levant. "The Ministry of Public Business Sector, Polyserve, Coca-Cola, and HO Group are leading Middle East examples of how organizations can drive digital business innovation to manage the current challenges and emerge more competitive post-pandemic." The Ministry of Public Business Sector worked with PwC to digitally transform three organizations on the SAP S/4HANA real-time business suite: the Chemical Industry Holding Company, the Cotton Holding Company, and the Metallurgical Holding Company. By automating business processes, the Ministry has full operational visibility and real-time decision-making, and enhanced profits, supply chain, manufacturing production, and customer experiences. Leading soft drink producer The Coca-Cola Bottling Company of Egypt is taking the next steps in its digital transformation, with real-time solutions across finance, supply chain, manufacturing, and human resources. The project will be based on using the latest SAP latest technologies across in-memory computing, Big Data analytics, and the cloud, and is set to be a flagship digital transformation project in Egypt and worldwide. One of the largest pharmaceutical distributors in the Middle East and Africa, HO Group is digitally transforming to enhance efficiency across its operations. HO Group is using SAP Enterprise Resource Planning (ERP) to



Hoda Mansour, Managing Director, SAP Egypt

automate its supply chain to thousands of pharmacies, and the SAP SuccessFactors human experience management suite to transform human resources processes for 10,000 employees. Polyserve Chemicals and Fertilizers, one of the largest fertilizer and chemical production and trading groups in Egypt and Africa is digitally transforming its 4 subsidiaries (Abo Zaabel Fertilizers and Chemicals, Aswan Fertilizers and Chemicals, Ferchem Egypt, and Polyserve Trading). Polyserve is adopting real-time solutions in finance (S/4HANA Cloud), procurement (Ariba Sourcing), and talent management (SuccessFactors). In its next phase of digital transformation, Polyserve aims to explore Industry 4.0 innovations, along with Big Data analytics, the Internet of Things; predictive maintenance; environment, health, and safety; and the Digital Boardroom. Following the recent SAPHIRE NOW Converge conference, SAP is helping companies improve supply chain and industry-specific processes with, connect through the business network, and embed sustainability as a critical measure

of business success:

- SAP announced the Climate 21 programme to support customers in pursuing their climate-related objectives;
- SAP and its partners are offering industry cloud solutions that extend the end-to-end processes of SAP's intelligent suite to help drive customers' core business in their industries;
- SAP brings significant innovations across the supply chain from design to operations to deliver greater insights, automation and responsiveness with the Industry 4.0 initiative; and
- SAP announced a strategy to bring

end-to-end visibility, increased efficiency and collaboration across the entire supply chain processes, including design, planning, sourcing, procurement, manufacturing, logistics, and asset operations.

Oman Technology Fund Invests in Sana e-Learning Platform

Oman Technology Fund announced investment in the Distance Learning Centre smart educational platform called "Sana Electronic Platform". This initiative harnesses scientific and technical capabilities in information technology in the field of e-learning and distance education and adapts it to serve higher education institutions inside and outside the Sultanate by providing the necessary and specialized expertise and skills. This platform comes within the initiative of OMR1,000,000 from the Oman Technology Fund to overcome the challenges of the spread of coronavirus. In light of the current conditions and the existing need of higher education institutions in the Sultanate to activate modern education systems that can keep pace with modern technologies using e-learning and distance education systems, so that they are scientifically and technically compatible with global standards recognized in these areas. From this standpoint, the Sana platform came as a specialized electronic platform containing an integrated system for managing e-learning and distance education and producing digital courses. This platform aims to help various educational institutions, towards achieving an integrated interactive education from recorded lectures, virtual meetings, class activities and electronic tests compatible with academic quality standards. Zeyad bin Talib Almawaly, the general supervisor of the "Sana electronic platform" said: "Sana electronic platform" came to be specialized to contain an integrated system for managing e-learning and distance education and producing digital courses, as it aims to help various educational institutions to achieve an integrated interactive education from registered lectures, live virtual encounters,

class activities and electronic tests with the most appropriate smart solutions in line with international academic quality standards. Almawaly indicated that the platform is the result of a partnership between the Endowment Fund for Distance Education of the Ministry of Endowments and Religious Affairs and the Omani Fund for Technology. As this partnership sought to use education systems live in the distance education center of the Endowment Fund for Education. It is worth noting that the center started its activity since 2013 as the first educational institution in the Sultanate to operate the e-learning system. Almawaly added to his words, saying that we can demonstrate the popularity and acceptance of the idea of distance education initiated by the center, where the capacity reached nearly 5,000 students, and approximately 2,600 students graduated from them. The systems applied in the center are a local product of Omani experts specializing in this field who work inside the center, so that they develop it continuously to reach the highest levels of scientific and educational quality. Through this partnership, the Sana platform seeks to take advantage of these systems available at the Distance Learning Center and make them available to become an integrated electronic system that can compete locally and globally as Omani technical production for higher educational institutions. The platform provides space for managing these systems for all educational institutions that wish to apply distance education with the ability to add and change what is appropriate for each institution. There are many services provided by the "Sana" platform, as it mainly seeks to provide eight basic elements under which a number of sub-services fall. Maha Al Baloushi, Executive

Director of Wadi Program at the Oman Technology Fund, explained: With regard to the mechanism for selecting these companies, the fund relied on two things, the first is to accelerate the evaluation procedures so that we filter the ideas on a weekly basis and present them to the Investment Committee and then decide on their matter whether it is worthwhile to invest in them or not. The other issue is to consider the possibility of linking it with the institutions concerned with the product or service provided by startups. This comes from the Fund's belief in the importance of complementarity and the conclusion of partnerships with the institutions concerned, which reflects positively on emerging companies and the target sector of the product alike. On the level of startups, we look at several elements, on top of which are project readiness, to what extent it serves the exceptional stage that we are going through, and the element of long-term sustainability and the possibility of expansion in regional markets. Al Balushi added: The "Sana electronic platform" provides the option of contracting with it in several ways, whether it is a full purchase of the educational system or a partial contract, as the Sana platform seeks to harness its energies and the scientific and technical knowledge provided by its staff in the field of information technology to provide the education sector with the latest systems. Our belief in the importance of bringing modern technology into this sector to keep pace with global changes, and our endeavor to serve higher education institutions inside and outside the Sultanate in this regard, taking on our responsibility to specialize in this field and provide the necessary and specialized expertise and skills to make the Sultanate a leader in this aspect. "

Farmers Going Digital in Sri Lanka with Govipola

Sri Lanka has been under lockdown for over 50 days now. With the number of cases close to 870, we do not know when normalcy will return. If we're daily wage earners or if our job security is threatened, we are at the deep end of the chaos. The same applies to farmers who've had to adjust to a "new normal". When the government announced the curfew on the 27th of March, they were careful to note that "Paddy farming and plantation, including work on tea smallholdings and fishing activities, are permitted in any district". This is because our farmers and our land feeds our nation. However, continuing operations as usual has been a tough task. Logeswaran, a 57-year-old farmer from Nuwaraeliya, has struggled to make ends meet over the last two months. His small vegetable patch was handed over to him by his father, who got it, from his. This patch of land has yielded their family income for years, if not decades. Over the past two months, activity has come to a grinding halt. With economic centers closing down operations due to safety concerns, Logeswaran has had no means of selling his produce. His two trustee farmers who help him on the field cannot report to work either, as public transport systems are closed too. The risk COVID-19 presents to farmers like Logeswaran are more than just health concerns. His income and his livelihood are threatened. The level of insecurity and jeopardy created by the ongoing pandemic to farmers and the agricultural sector raises very important concerns. It makes you question the structures and rules the sector is dependent on. If it is as susceptible as this to fragility and risk, It is time we rethink our usual order of business. "Doing things digitally" is almost the new slogan gaining its well overdue fame amidst the pandemic. Running businesses remotely rely heavily on the ability to run your operations digitally. Small and big businesses seem to have embraced

the trend and overnight, equipped their operations and personnel to work digitally. Can the agricultural sector do the same? Yes it can! Your solution is Govipola. Govipola, the website and app, is an online trading platform connecting buyers and sellers digitally. It gives farmers and buyers access to communicate, negotiate and provides transparency to operate freely in a digital market. Govipola allows farmers and buyers to advertise and list what they are buying or selling on the platform. With over 36,000 downloads across the country, the app is fast becoming an essential to most farmers and buyers. Logeswaran can now list his yield on the website and be guaranteed a sale. He doesn't have to go through the hassle of taking his produce to an economic center, bargaining, and wasting his time negotiating a sale. At the click of a button, he can now advertise his produce, coordinate with an interested buyer and arrange for payment and pick up - virtually! A few weeks ago, the Government of Sri Lanka released interim guidelines that Economic Centers would have to adopt, once they resume operations. The exhaustive list of guidelines is meant to protect the health and safety of farmers

and buyers. However, with the uncertainty of the spread of the pandemic and the lack of a vaccine in close sight, going back to a crowded, claustrophobic economic center is an absolute risk. One vendor contaminating the virus is enough to spread it to hundreds. This is exactly why platforms like Govipola are important now, more than ever! Govipola almost allows contactless transactions. The ability to list your product online, negotiate prices over the phone, and arrange transport and payment digitally means that you have very limited interaction with the other party, reducing the risk of you contaminating the virus. Its time to modernize agriculture with digital tools. The solution Govipola, is already here. Hundreds of farmers and buyers have tried, tested and recommended the app and it's time for you to join us too. Think about the future of your business and your operations. If not COVID-19, something else will threaten the existence of your livelihood soon. You cannot afford to close operations for a couple of months and resume again, without burdening exorbitant costs. Choose wisely, choose Govipola. Our support staff is available on 076 212 1000 to assist you! 📞

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ARTICLE

Cross-Industry Synergies in the Enablement of 5G



Fahad Al Ali
Chief Technology Officer
stc Kuwait

stc

The Middle East has been home to pioneers in 5G commercialization and service innovation since 2018. That immense power of 5G connectivity and services are now well and truly a reality. We believe 5G will be part of the entire region's future in the near term as all the necessary stakeholders, including government, operators, and industries, have been working together to nurture 5G commercial applications and mature industrial chains.

The rollout of 5G networks is progressing rapidly around the world and bringing new value to communities as well as industries of all sizes. By the end of May 2020, over 380 operators in 125 countries and territories had announced they were investing in 5G. In Kuwait, stc announced the 1st nationwide launch of commercial 5G networks in June 2019. Today there are over 3,000 5G base stations covering over 90% of the population in Kuwait, and stc will keep enhancing the network capabilities and the digitization to improve the online sales/delivery efficiency for consumer, home, and businesses in the country.

As part of that rapid progress, a mature ecosystem is now helping accelerate 5G commercialization. Consumers may see this as more affordable 5G smartphones and hundreds of other devices leverage 5G connectivity—such as cloud gaming, and AR/VR. On a business front, 5G is inspiring new industrial models around the world, and we are learning from those experiences. In places like China, industries from education to agriculture are being supported by hundreds of 5G-powered applications, with more under validation every day. Meanwhile in Europe, logistics, manufacturing, and other domains are swiftly building their own 5G model. Global telecommunications operators are also capitalizing on a “3C approach” (Camera + Connection + Cloud) to drive revenue growth, again underscored by the 5G network.

Regional 5G strategies

The Middle East has been home to pioneers in 5G commercialization and service innovation since 2018. That immense power of 5G connectivity and services are now well and truly a reality. We believe 5G will be part of the entire region's future in the near term as all the necessary stakeholders, including government, operators, and industries, have been working together to nurture 5G commercial applications and

mature industrial chains. This is helping to push the whole 5G industry forward in a steady and sustainable way, and has encouraged the gathering of operators, vendors, and vertical industry partners to jointly explore 5G use cases from around the world. Today more than 70 partners are actively working to bring diverse 5G services into the Middle East through that program, while promoting closed-loop business models between operators and partners.

As a leader in enabling the digital transformation of Kuwait, we are constantly exploring new services and platforms that can bring value to the society. We are proud that Kuwait was among the pioneers of countries in the commercialization 5G network in the Middle East.

Approximately one year on from the first 5G networks being unveiled in the Middle East, we now have a breadth of use cases at our fingertips. These include the success of Fixed Wireless Access for home, 5G private lines for businesses, and smart campus enablement networks. Many others are being explored such as gaming, VR/AR, autonomous vehicles, and so on. In particular, the combination of 5G and AI solutions is proving incredibly beneficial to the region. We have seen this in 2020 in the context of COVID-19 as smarter, 5G-enabled technologies such as zero-touch 5G + AI temperature detection, remote collaboration systems, and more are helping in the fight against the pandemic.

While we have clearly built momentum, accelerating 5G development across the region still requires a concerted effort by governments and policymakers to release appropriate and affordable mobile spectrum. As per industry experts and proven experiences in other parts of the world, the spectrum for 5G should

ideally start in what is called the 100MHz bandwidth, with additional spectrum bands considered so that there is a seamless transition between today's networks and future 5G networks. We have great confidence that this allocation can be done smoothly and will bring the benefits of 5G to more people and businesses over the next 12 months.

Enabling future digital transformation

Knowing that there is great momentum for 5G both globally and in the Middle East today, I am often asked about what the future holds for Kuwait specifically, and what will be stc's role in that future.

As a leader in enabling the digital transformation of Kuwait, we are constantly exploring new services and platforms that can bring value to the society. We are proud that Kuwait was among the pioneers of countries in the commercialization 5G network in the Middle East. stc has led 5G network development and commercialization in Kuwait with over 1,750 5G sites, 300Mbps average service speed, 180,000 TDD users and 20,000 5G users, and over 170TB of 5G traffic by May 2020.

For consumers, stc is the market leader in MIFI package, which is designed to bring 5G Giga experience to customers, and 5G indoor coverage already started in top malls. Now stc's 5G network is being optimized for the 5G smartphone boom, which is expected to accelerate in Q3 of this year. The target is to provide continuous and seamless 5G coverage in a network that will be heavily dominated by 5G mobile users. Indoor 5G coverage in top malls has already become a reality, for example.. In areas like gaming, stc is also currently talking to TENCENT on ways to collaborate, and how to guarantee the best 5G network experience for popular games such as PlayerUnknown's Battlegrounds (a.k.a. PUBG) in Kuwait.

For homes, a speed-based 5G fixed wireless solution now empowers homes with Giga-level internet connections. This is being complemented with the mesh Wi-Fi solution in order to provide seamless and continuous Giga-throughput coverage at homes, especially in larger and 2-3 level homes. Volume-based packages

are increasingly competitive in the whole region as well as in Kuwait, but speed-based and experience-based packages still have good space to improve. We believe that wireless, speed-based packages in particular will be key to providing the stable experiences people expect, and will also have a much shorter time-to-market compared to fiber.

Services tailored for businesses are also incredibly important in the 5G era. Back in August 2019, stc launched the world's first speed-based 5G Data Access commercial service, which aimed at creating high-quality broadband access to local enterprises. Currently more than 150 businesses are using stc's 5G data access solution, which features low costs and fast time-to-market compared to microwave offerings. 5G "Dedicated Access" through SA is covering SME's requirements during this pandemic period and supporting top banks' mobile data access, such as the mobile ATM branch. Thanks to 5G "Dedicated Access", users can now directly talk to an NBK Agent using audio and video conferencing to conduct transactions like issuing a debit card, depositing or cashing a check, and more.

In the oil and gas sector, the traditional solutions such a SCADA data transfer used in the exploration, drilling, production and refinery of oil and gas, are now being replaced with 5G-based applications such as CCTV monitoring, drone inspection, AR assistants, and so on. With data security of particular importance, 5G MEC support is now a key mandatory requirement for that industry.

In short, we feel well prepared to lead 5G network development in Kuwait and the wider Middle East. stc was among the first operators in the MENA region to launch a 5G standalone network, and we will keep improving our services and delivery efficiencies, implement network slicing strategies, all while extending network capabilities to end-users in consumer, home, and business scenarios. This will ultimately be centered on product and solution innovations to enhance the user experience. 📍



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SATELLITE NEWS

Starlink Satellite Internet Beta Imminent as Elon Musk Confirms Dish Details

New details about SpaceX's Starlink satellite internet service have emerged, with the company confirming that a private beta program is set to kick off this summer. Bypassing traditional wireline internet providers, Starlink will instead use a network of satellites that SpaceX has been gradually deploying. So far, around 600 are in orbit. Beyond internal testing, though, Starlink's actual service hasn't been available to the public. Potential customers have been able to register their details by entering their ZIP code for some time now, but actual paid service hasn't gone live. Now, Starlink looks to be one step closer to that happening. In an email to registered potential customers, the company has requested address details beyond just ZIP code, Engadget reports. According to the message, a private beta will launch this summer, followed by a public beta. Exactly who can take part in either of those stages – and the equipment they'll use – has been

unearthed separately, however. Reddit users Bubby4j and lgats went digging through the Starlink site, and managed to extract not only an FAQ shedding more detail on how the betas will run, but images of the Starlink antenna. Initially only those in the Northern United States and Lower Canada, along with those in rural or remote communities in the Washington State area, will be able to take part. That's because of where Starlink's satellites are positioned. Beta members will also need to guarantee a clear view of the northern sky, "between 44 and 52 degrees north latitude," Starlink explains. Users will get a pre-assembled Starlink dish, a router, power supply, and a mount, though the exact setup will depend on the type of home it's all being installed on. CEO Elon Musk later confirmed that the kits are designed to be self-installed, since the dish "has motors to self-orient for optimal view angle." It also appears that power-over-ethernet (PoE) is being used, so that a single cable links the dish and the router. There'll be no cost for those selected to take part in the beta, beyond a single \$1 charge; that, the company says, is "to help test the billing system." Participants probably shouldn't use it as an excuse to cut their regular internet service quite yet, however. Starlink connectivity is expected to be intermittent, the company's unearthed FAQ warns, as it's optimized. "When connected, your service quality will be high, but your connection will not be consistent," Starlink advises. "This means it may support streaming video with some buffering, but likely is not suitable for gaming or work purposes." Those taking part in the beta will be expected to sign a non-disclosure agreement, effectively blocking them from talking about their experience with the satellite internet service. That includes allowing anyone to take photos of the Starlink Kit they've been provided with. They'll also need to give feedback every eight weeks to Starlink on how the system is holding up, and "dedicate an average of 30 minutes to 1 hour per day testing the Starlink Services."



SpaceX to Launch 60 Satellites into Space

SpaceX is set to launch 60 satellites into space, as part of the firm's Starlink mission. The Falcon 9 rocket is scheduled to launch from Cape Canaveral at 22:58 BST (17:58 EDT), and will carry 60 Starlink satellites into orbit. This is the tenth batch of Starlink satellites, bringing the total number in orbit to over 500. NASA's Kennedy Space Centre said: "SpaceX is scheduled to launch 60 Starlink satellites from a Falcon 9. "This

will be the 10th mission in support of the constellation of networked satellites known as Starling." The goal of Starlink is to create a network that will help provide internet services to those who are not yet connected, and to provide reliable and affordable internet across the globe. "During the launch, the Falcon 9 rocket will carry the Starlink satellites into orbit, before attempting to land at sea. Elon

Musk hopes the satellites will bring low-cost internet to remote areas on Earth. Starlink explained: "With performance that far surpasses that of traditional satellite internet, and a global network unbounded by ground infrastructure limitations, Starlink will deliver high speed broadband internet to locations where access has been unreliable, expensive, or completely unavailable."

Envistacom, NOVELSAT to Deliver Waveform for Satellite Connectivity

Envistacom, LLC, a technology enterprise which delivers advanced communications, cyber and other related services to customers in the aerospace, defense, and intelligence communities, has announced that NOVELSAT, a provider of content connectivity via satellite, will incorporate its high-performance satellite access waveforms into Envistacom's Transport Virtualization Ecosystem (TVE), the company said. Envistacom will deliver an open-architecture ecosystem which will enable virtualized applications such as advanced communications waveforms,

encryption, data analytics, and other real-time continuous processing applications to reside in common off-the-shelf (COTS) hardware. The Envistacom/NOVELSAT partnership allows commercial and Department of Defense customers to benefit from the ability to download NOVELSAT's Multi-Access Waveform as an application to be operated on non-proprietary COTS High-Performance Computers (HPCs) acting as a Virtual Modem in Envistacom's Transport Virtualization Ecosystem. Envistacom's ecosystem (TVE) will provide DoD customers with

greater cost savings through the use of COTS hardware, faster time to market (TTM), more configurable/adaptable solutions, mix and match capabilities to achieve the best results, and easier sustainment and enhancement efforts providing portability between hardware generations without re-engineering legacy technology. The combination of NOVELSAT systems waveforms with Envistacom's virtualization ecosystem will provide resilient, high-performance, and ubiquitous connectivity for mission-critical applications.

Satellite Player SES Signs On To FCC C-Band Plan

Viasat has launched high-speed internet service for residential customers in Brazil. Viasat said in a Tuesday release it expects to be the only satellite Internet Service Provider (ISP) that will be capable of making high-speed internet available in 100% of the country, upon completion of the residential launch rollout. Brazilian



residents across the initial launch states can now subscribe to a home satellite internet service with speeds up to 20 Mbps and data packages that go up to 80 GB of data per month. Viasat's new residential internet service for Brazil uses bandwidth from the Telebras SGDC-1 satellite to deliver satellite internet services. The service launched Tuesday across eight states including São Paulo, Rio de Janeiro, Minas Gerais, Pernambuco, Paraná, Rio Grande do Sul, Federal District, and Amazonas. The service will be rolled out across the country, with an expected completion date before the end of 2020. "Now, Brazilian homes will have access to a reliable, high-speed satellite-based internet service, unlike any satellite internet service they've used before," said Bruno Soares Henriques, commercial director of Viasat Brazil. "We are proud to deliver a high-quality internet service, with features like unlimited chat and web browsing, across the country. Our fast, data-rich residential plans will meet the needs and interests of the millions of Brazilians we can potentially service — enabling us to distinguish the Viasat internet service from others on the market."

Intelsat Expands Partnership in Africa with Liquid Telecom

Intelsat has extended its partnership with African telecom group Liquid Telecom to connect more than 2,000 additional Very Small Aperture Terminal (VSAT) terminals across the continent. The two companies have worked together since 2016 to deliver Liquid Telecom's VSAT service over Intelsat's high-throughput satellite fleet to provide a communications network to communities, schools, and businesses

in 20 countries across the continent. The companies said in a release that this expansion will provide connectivity to mobile operators, carriers, enterprise, media, content companies, and retail customers across Africa, and help Liquid Telecom service rural areas. "Extending our partnership with Intelsat will enable us to continue developing VSAT products with high-efficiency models and ubiquitous

coverage; in fact, Liquid Telecom has just added three new high-performance VSAT service offerings to our portfolio, each with a range of data volume options. Liquid Telecom is continuing to drive increased demand and improve service levels across the continent, and this continuation of our partnership with Intelsat is a significant boost in that regard," Liquid Telecom Satellite Services CEO Scott Mumford said.

UK Government Enters Bidding War for Stake in OneWeb

The British government is expected to bid £500 million to buy a stake in OneWeb, which filed for bankruptcy in March. Having left the EU, the UK forfeited eligibility for membership in Galileo, an innovative global navigation satellite system (GNSS) which would allow for a superior alternative to American GPS. A sovereign satellite system was discussed as an alternative predicted to have cost up to £5bn, although with a hand in OneWeb, GNSS independence could be achieved for a lot less. If successful, the UK expects a 20 percent share of the company as part of a private sector consortium, which is

yet to be formally accepted. Francis Elliott, political editor of The Times, has written: "Although the government technically is making a bid for the stake, British officials said the transaction was at 'a very advanced stage'." Elliott did not name the officials. At present the potential bidders for the other 80 percent of OneWeb are not yet known, although several Chinese firms appear to be interested. However, the bid could see some friction as a result of the US Department of Justice (DoJ) which has expressed concerns over OneWeb's sale to a non-US entity. Audrey Strauss, acting US attorney for the southern district of New

York, has filed a notice with the district's bankruptcy court reminding federal regulators could block any transaction if "it raises national security concerns." Though OneWeb is currently owned by non-US companies including SoftBank, Airbus, Virgin Group and Bharti Airtel, and its satellite license is from the UK, there are those in the US unwilling to lose the company. OneWeb has so far launched 74 of its planned 650 satellites to support a system of global broadband via LEO, originally thought to have been orbited by the end of 2021.

China Launches Final Satellite of BeiDou Navigation System Into Space

China has launched the last satellite in its BeiDou navigation system from the Xichang Satellite Launch Centre in Sichuan Province. This launch means that China will no longer have to depend on the global positioning system (GPS) owned by the US government. The \$10bn BeiDou-3 navigation system network comprises 35 satellites and offers global navigation coverage. This launch was slated for last week but was postponed due to detected technical problems with the rocket during the pre-launch tests. The Beidou-3 Navigation Satellite System (BDS) provides an alternative to Russia's GLONASS, the European Galileo systems, and the US' GPS. Among the future plans include supporting a more integrated system that is slated to come online by 2035, with at the core being BDS. Considered to be the 55th BDS system, the latest GEO satellite will work with other members in the network, thereby enabling users across the world to gain access to high-accuracy navigation, positioning, timing and communication services, reported Global Times. Unlike the earlier generation series, the BDS-3 constellation with a line-up of 30 satellites flies on three orbit planes. Three operate at the GEO while three operate at geosynchronous orbits, and 24 at medium-Earth orbit. They offer higher

bandwidth, and enhanced communication capability and carry more stable atomic clocks, which in turn helps in improving the exactness of timing and navigation services, according to the report. The first BeiDou satellite was launched into orbit in 2000 and began offering navigation, positioning, timing and messaging services in China and the Asia-Pacific towards the end of 2012. In 2018, the BDS system began offering global services.

Construction of the BDS-3 primary system was also completed during the same year. In May 2019, China launched a new satellite of the BeiDou Navigation Satellite System from the Xichang Satellite Launch Center in Sichuan Province using a Long March-3C carrier rocket to broadcast positioning and timing signals around the world this year. The launch involved the fourth BDS-2 backup satellite and 45th unit of the BDS satellite family.



Northrop Grumman Awarded Contract from SES for Two C-Band Satellites

Northrop Grumman Corporation has been selected by SES to build two C-band satellites that will operate in the upper portion of the spectrum. This award supports the Federal Communication Commission's order to make the lower portion of C-band spectrum available to mobile network operators to further the rollout of critical 5G services in the United States. "This award demonstrates SES's continued confidence in our GEOStar satellite platform and the excellent relationship that has been developed over the years between our two companies," said Amer Khouri, vice president, communication missions, Northrop Grumman. "These will be the 8th and 9th GEO communications satellites built for SES by Northrop Grumman, and will continue our legacy of delivering quality spacecraft that support our customer's most critical needs." "The timeline to build and launch these C-band satellites is ambitious, and we are fully committed and proud to be working with our long-time American partner Northrop Grumman to build these two satellites in the United States for the millions of cable TV households across the country, while clearing spectrum as quickly as possible for 5G use," said Steve Collar, CEO of SES. The C-band satellites are set to launch in 2022.



Intelsat and SES Purchase Internet Satellites from US Satellite Producers

Intelsat and SES are preparing to maximize internet connectivity by launching broadband communication satellites to space. The firms are collaborating with Boeing, Maxar, and Northrop Grumman to launch satellites in space to enhance the shift to 5G internet. This move is essential since the ten satellites will facilitate the expansion of C-band technology. These satellites are to be in a geostationary orbit with the distance of the signal response to earth exceeding 20000 miles from the customers. Intelsat and SES are following federal procedures in awarding the satellite manufacturing contracts to ensure the smooth roll-out of the 5G technology. The FCC intends to override the C-band satellites used for video services to transition to the 5G network. Intelsat and SES, who are the owners of these satellites, will then receive a total payment of \$8.84 billion as well as relocation funds. This move is to quicken the shift to 5G internet. The US government is giving incentives to these firms so that they can buy satellites

and update them to the 4.2 GHz spectrum of the C-band. Furthermore, the government is shifting the satellites with 4.0 megahertz to 5G services. Reports have it that Maxar and Northrop Grumman firms are in agreement with Intelsat to manufacture six C-band satellites. The design of Maxar's satellites is that of 1300 spacecraft series, whereas, for Northrop, their plan will be GEOStar. Intelsat's Mike DeMarco says that finalizing the 300 megahertz of the C-band satellites for the 5G devices is very technical. He adds that numerous satellites are also under production to ensure America tops in the transition to the 5G network. However, Intelsat is in a financial crisis due to C-band relocations. For this reason, they are filing for bankruptcy protection, hoping to recover from the additional coronavirus impact. Intelsat retorts that they must utilize more funds before the allocated \$4.87 billion arrives to obtain more C-band satellites for the shift to 5G network. Stephen Spengler, who is Intelsat's CEO, comments that their

leadership in satellite and communication technology is one of their propellers in the race to reach the 5G network. Spengler is hopeful that the company's knowledge in satellite technology will help in the transition and subsequent connection of homes and commercial businesses to the 5G network. SES, through its CEO Steve Collar reports that they are working to build more C-band satellites and retune their technology to enhance 5G signal transfer. He says that they have a plan to launch some of their spacecraft on an electric propulsion system to maneuver space obstacles. The firm hopes to retrieve more facilities for the routing of the 5G technology to all American homesteads. Finally, the decision by Intelsat and SES to purchase C-band satellites from satellite manufacturers is going to propel America to achieve a 5G transition. There is a clear direction for other firms to venture into this technology.

LeoStella Delivers First Two Satellites to BlackSky

LeoStella reports that it has delivered the first two satellites fully manufactured from its production line. The satellites are the fifth and sixth of an ongoing Earth Observation (EO) constellation program for BlackSky. The satellites weigh approximately 50 kg and are designed to be operated in a variety of Low-Earth Orbit (LEO) altitudes and inclinations. The satellites were delivered to the launch facility on June 1, 2020 and have been prepared for an upcoming SpaceX launch from Kennedy Space Center in Florida. LeoStella will be manufacturing 20 satellites for the BlackSky constellation. LeoStella says its intelligent manufacturing facility, which opened in Tukwila, Washington in 2019, is the first of its kind. The factory is a fully digital and networked environment that includes intelligent workstations, connected tools, automated test equipment, statistical process control, embedded product assurance, and a custom Manufacturing Resource Planning (MRP) backbone that manages and tracks all activities. The company said the production facility was designed change

the way satellites and constellations are produced, and to minimize costs and reduce development and manufacturing time. "Successful delivery of these two BlackSky satellites marks another major milestone in LeoStella's promise of rapid, low-cost, high-performance satellite constellations," said Mike Hettich, LeoStella CEO. "In a short time, we have created the designs,

infrastructure, tools, and processes that enable constellation production at scale. Delivery of these satellites provides an important validation of our approach." LeoStella is a joint venture between Thales Alenia Space and Spaceflight Industries. LeoStella's customer BlackSky is part of Spaceflight Industries and operates as an independent company.



Optus Signs Contract for Ku-Band Sixth Satellite to Launch in 2023

Australian telco Optus announced that it has signed a deal with Airbus Defence and Space for a new OneSat satellite that will be known as Optus 11, which is set to cover Australasia when it is launched in 2023. Optus touted the Ku-band satellite as software-defined, which would allow it to be "fully configurable" once launched. "Its location, coverage, bandwidth, and capacity can be changed in orbit as customer demands evolve -- where traditional satellites are limited by on-ground configurations that cannot be altered after launch," the telco said. Optus 11 will sit in a geostationary orbit, and will be the sixth Optus owns. The company said the new addition would make the size of its satellite fleet the largest in Australia's

history. "Optus 11 will add capacity and resilience to our satellite fleet and its unique capabilities will give our broadcast customers the option to tailor their dynamic video delivery via IP streaming, and our broadband customers can benefit from better performance and higher individual throughputs," Optus managing director of wholesale, satellite, and strategy Ben White said. "In addition, it will support the Optus mobile network using satellite backhaul and the government's Mobile Black Spot Programs. The spacecraft's ground-breaking design is a very exciting development and software-defined satellites will become the future of this industry." The telco has already signed Sky New Zealand as a customer and added

that the satellite's footprint, once in the sky, would reach from Antarctica to the Cocos Islands, and a "vast majority" of the Pacific. "It will have the ability to cover oceans previously out of reach to Optus and provide tracking spot beams coverage to planes and vessels anywhere within the Optus 11 footprint," White said. Elsewhere on Thursday, Vodafone Australia said it would begin offering a 250Mbps NBN plan, as well as a plan labelled Ultra that might offer up to 1Gbps speeds. Both plans will have unlimited data, with the 250Mbps plan costing AU\$135 each month, and the Ultra AU\$155 a month. Upload speeds for the plans are 25Mbps and 50Mbps, respectively, and are available on NBN's cable and full fiber networks.

Thuraya Users to Benefit from Network Modernization

UAE-based mobile satellite services operator Thuraya has signed an agreement with Ericsson for a core network modernization and upgrade to a 4G and 5G ready infrastructure. Ericsson will modernize and optimize Thuraya's network to a virtualized core that supports existing and new features and services in the future. The deal will ensure that Thuraya can continue to offer its users the best possible user experience in the most efficient way. Ericsson will also migrate the existing Thuraya users to the new platform and oversee its integration with existing systems. The operator's mobile-data users, especially those in remote locations or areas where traffic is dense, will benefit from higher availability and reliability. As a result, Thuraya can provide consumers more flexible and easy-to-use communication services integrated with various terminals, which will work seamlessly when they move between different access points. Adnan Al Muhairi, Deputy Chief Technical Officer of Thuraya stated: "By modernizing Thuraya's core network, we are looking to build its resilience and enhance overall performance. This would also improve other key aspects like guaranteeing more flexible, reliable and effective services. Our strategy is to make optimum use of existing assets and invest in infrastructure upgrades so that the network is ready to accommodate Thuraya's Next Generation System. We have a longstanding partnership with Ericsson and acknowledge them as a leader in deploying new technologies to enable high-quality mobile broadband solutions." By selecting Ericsson for the modernization of its existing mobile-core, Thuraya extends its existing partnership, in which Ericsson has been the sole vendor for its circuit-switched core network. Wojciech Bajda, Head of Ericsson Gulf Council Countries says: "Ericsson and Thuraya have enjoyed many years of successful cooperation, and we are committed to support in further strengthening our partner's position and support them to introduce 4G and 5G ready core, allowing its users to enjoy the benefits of 4G and 5G technology

in the future. Thuraya's upgrade to a virtualized core, will certainly provide a higher-quality experience for end users while streamlining their network operations." The upgrade will include deployment of virtual Evolved Packet Core Network, using network functions virtualization, including Ericsson Cloud Packet Core, Cloud Unified Data Management and Ericsson NFVI. The Virtual Evolved Packet Core will provide the capacity and flexibility to cope with network evolution challenges. For the network management aspects, Ericsson Network Manager is deployed to manage the virtual network functions which will secure the automation and provide operational efficiency when managing the network.



Amazon's Kuiper Satellite Plan Wins Backing of FCC

Amazon.com's plan for a fleet of 3,236 communications satellites won the backing of the U.S. Federal Communications Commission chairman, who said he had asked fellow commissioners to approve the venture. "Satellite constellations like this aim to provide high-speed broadband service to consumers in the U.S. and around the world," Ajit Pai said in a tweet on Friday. Pai added that he had called for conditions on the proposed service by Amazon subsidiary Kuiper Systems without

specifying them. Pai's request is likely to result in approval in closed-door voting at the agency, where he leads a Republican majority. Amazon founder Jeff Bezos wants to launch the small satellites in low orbits to provide internet coverage. Separately, Space Exploration Technologies Corp., or SpaceX, has launched more than 480 of a planned 12,000 satellites; in October 2019, the company founded by Elon Musk sought permission for 30,000 more. Amazon last year called Kuiper "a long-

term project that envisions serving tens of millions of people who lack basic access to broadband internet." "There are still too many communities where internet access is unreliable or prohibitively expensive" and Project Kuiper will help close that gap, Dave Limp, Amazon senior vice president for devices and services, said in an emailed message. "We appreciate that Chairman Pai shares our commitment to the issue."

Thuraya and Telespazio Sign Partnership Agreement for Global Distribution

Thuraya, the mobile satellite services subsidiary of the UAE's Al Yah Satellite Communications Company (Yahsat), has signed a partnership agreement with Telespazio, a joint venture between Leonardo (67%) and Thales (33%), to distribute its products and services worldwide. Telespazio customers in critical sectors such as government, maritime, energy and relief can now effectively integrate Thuraya's mobile solutions with their own platforms to enable a wide range of comms-on-the-move and comms-on-the-pause applications. Shawkat Ahmed, Thuraya's Chief commercial Officer said, "The combination of our game-changing technology and Telespazio's global distribution with support systems, makes this partnership very efficient in addressing market opportunities and delivering a compelling proposition for end users. The partnership with Telespazio, a company

that has a long history and expertise in the MSS industry, is part of our continued efforts to consolidate Thuraya's global presence in key markets and sectors so that customers have constant access to our versatile solutions." Thuraya's mobile satellite network enables seamless voice, data and broadband services on land, at sea and in the air, covering over 160 countries across Europe, Africa, Asia and Australasia. "Thuraya gives added breadth to what Telespazio has to offer in terms of solutions and services for the government, utilities, oil and gas, and mobility markets, further reinforcing our role as a global satellite service distributor. Our partnership with Thuraya allows us to offer clients worldwide a comprehensive range of mobile satellite services, backed by flexible plans and reliable equipment," said Alessandro Caranci, head of Telespazio's Satellite Communications Line of

Business. In the UAE, Telespazio's main shareholder Leonardo has a long history of collaboration based on the supply of naval technologies, trainer aircraft and new generation helicopters. In the country, Leonardo and Telespazio are also engaged in Earth Observation, satellite navigation, telecommunications and geo-information activities. Since its inception in 1997, Thuraya has grown to be a leading mobile satellite services operator, connecting two-thirds of the planet. For government customers, the company offers fully integrated secure solutions for ISR, Telemedicine, SAR and Aero applications. Its dual-mode, SAT-GSM connectivity options for voice and IoT/M2M services are unique in the industry. Thuraya also has a rich service portfolio for maritime communications including global VSAT, broadband, tracking and monitoring.

SCT, Dunes Middle East Sign MoU to Provide Satellite, VSAT Services

Space Communication Technologies (SCT) has signed a Memorandum of Understanding (MoU) with Dunes Middle East for providing satellite communication and VSAT services. A statement issued online by SCT said: "Space Communication Technologies (SCT) and Dunes Middle East (Dunes) have signed a Memorandum

of Understanding for providing satellite communication and VSAT services to the different verticals in the Omani market. Dunes will be providing managed satellite services and system integration, using the latest satellite technologies, on Ka-Band from the SCT Earth Station in Al Amerat on the Omani Satellite payload @ 30.5 E." "In addition to the managed satellite capacity, Dunes will be responsible for the implementation, commissioning, and support for the running network on the ground while SCT will provide technical support to any satellite related issues." "This cooperation comes from our belief in supporting medium and small enterprises, especially that Dunes recently acquired a class III telecom license to provide VSAT satellite services, it is a young Omani company and we hope that this collaboration will result in the success of the two companies." Eng. Salim Al Alawi, Executive Director of SCT excitingly shared. From Dunes side, Mr. Khuwailid Al Hanai, Managing Director of Dunes Middle East said, "As a young arising medium enterprise, Middle East Dunes Company is thrilled to have the continuous support from Space Communication Technologies. This collaboration opens the door for us to start with the latest technologies in the satellite communication era by utilizing the latest high-throughput satellites. "The Transformation of the Market to the latest Ka-Band satellite technologies in the Sultanate will make us one of the first companies that contribute to prepare the local market to switch to the Omani Satellite Services in the near future."



Intelsat Files C-Band Spectrum Transition Plan with FCC to Accelerate America's 5G Buildout

Intelsat, operator of the world's largest integrated satellite and terrestrial network, today filed its C-band spectrum transition plan with the U.S. Federal Communications Commission (FCC). "Intelsat is filing its comprehensive transition plan after having spent more than two years proactively working with the FCC, our customers, industry stakeholders, vendors and other satellite operators to create a clear path for meeting the FCC's accelerated clearing deadlines and ensuring the U.S. maintains its leadership in 5G," said Intelsat Chief Services Officer Mike DeMarco. "With our detailed plan finalized and our supply chain engaged, Intelsat looks forward to supporting the FCC in successfully transitioning the C-band spectrum and accelerating America's path to 5G – all while safeguarding the high-quality media broadcast services on which more than 100 million American households rely." Earlier this week, Intelsat announced that it has selected U.S. manufacturers, Maxar Technologies and Northrop Grumman, to design and manufacture satellites required to transition the company's high-

quality media distribution and contribution services – uninterrupted – from the 3.7 to 4.0 gigahertz (GHz) portion of the C-band to the 4.0 to 4.2 GHz portion of the band. In addition to articulating the company's strategy to procure, design, build and launch seven satellites, Intelsat's transition plan details how the company will:

- Migrate 80-plus broadcast, cable, radio, religious and government customers to the upper 200 megahertz (MHz) of the C-band, including the corresponding changes required at 3,500 cable head-ends and 13,500 affiliate earth stations
- Install 60,000 5G signal-blocking filters across the U.S. in order to mitigate post-transition interference
- Consolidate multiple telemetry, tracking and control (TT&C)/Gateway antennas into two locations on the East and West Coasts of the U.S.
- Contract with U.S.-based companies USSI Global, WESCO, ATCi and Convergent to perform aspects of the transition and installation work required on the ground at thousands of earth stations and cable television head-ends

throughout the U.S.

Intelsat and other satellite operators participating in the FCC's accelerated C-band clearing plan are responsible for incurring the upfront costs associated with clearing 300 MHz of the spectrum and moving their existing services to the upper portion of the band. Intelsat estimates these upfront investments will cost the company \$1.6 to \$1.7 billion. In addition to receiving reimbursement for reasonable upfront costs associated with clearing the spectrum and transitioning incumbent services to the upper portion of the band, Intelsat is eligible to receive up to \$4.87 billion in incentive payments for successfully meeting the Commission's accelerated deadlines of clearing 120 MHz of spectrum (3.7 to 3.82 GHz) by December 5, 2021, and the remaining 180 MHz (3.82 to 4.0 GHz) by December 5, 2023. Reimbursements will be funded by the winning bidders of the FCC's public C-band auction, in line with the FCC's emerging technologies framework.

Satellite Connectivity Supports Ambulance Services in Dubai



Continuing evidence of the importance of wireless telecommunications during the health crisis comes from the UAE, where satellite services are playing a part in the UAE's efforts to contain the coronavirus pandemic – in this case through Dubai's ambulance services. Mobile satellite services company Thuraya

has announced that it is providing always-on satellite connectivity to Dubai Corporation for Ambulance Services through its partner Cygnus Telecom, a provider of customized telecommunications and surveillance solutions for business needs, headquartered in Dubai. Following the launch of Mobile Laboratory Units by Dubai Corporation for Ambulance Services to provide free home-based testing for the elderly and people with special needs, Cygnus Telecom, the master distributor of Thuraya's voice solutions, has equipped 12 ambulances with Thuraya X5-Touch satellite phones so that paramedics remain connected while on duty in the remote areas of Dubai or on marine ambulances at sea. The Android-based Thuraya X5-Touch devices offer various innovative safety features useful for medical responders, including advanced navigation, tracking and a built-in SOS button for emergencies. In addition to providing satellite connectivity, they keep users connected over terrestrial telecom networks so that they are also available on their local mobile numbers. Thuraya and Cygnus Telecom have long supported medical missions within the Middle East and Africa with satellite-powered telemedicine solutions, including teleconferencing kits and connected ambulances.

Oman Invites bids For First National Satellite Program

Oman's first national satellite program has begun, with calls for consultancies to bid for financial and technical advisory contracts issued last week. Space Communications Technology LLC is leading Oman's maiden satellite communications project. It aims to launch the sultanate's first satellite by 2024. The project is being developed to bolster the country's telecommunications network and serve the evolving needs of

Oman's public and private sectors. The proposed orbit slot has good visibility with high elevation angles for the desired footprint. The satellite will be built using the latest technology by leading experts in the industry. "This project is considered as one of the strategic projects that Oman is planning, namely to launch the first national satellite system with national, regional and global coverage, however with

the primary TT&C [telemetry, tracking and control subsystem] to be located in Oman," the SCT said. The company's "operational plan is based on the rental of a large capacity that meets all the requirements of the sultanate with high technical features through coverage of the sultanate's entire territory and its economic waters with faster high throughput data", it said.

Sateliot to Launch 5G Internet of Things Satellite Constellation

Sateliot, the first satellite telecommunications operator that will provide global and continuous 5G connectivity to all the elements of the Internet of Things (IoT), will invest more than 100 million euros (\$113 million) through 2022 to launch its first constellation of nanosatellites. The company, led by Jaume Sanpera and other founders of the Eureka satellite telecommunications company, will deploy a constellation of up to 100 nanosatellites over the next two years that will function as low-latency telecommunications towers for mobile operators who are deploying IoT services in remote areas where terrestrial networks do not reach. "Only 10% of the land surface has mobile coverage, the remaining 90% does not, that is where the latest generation infrastructure of Sateliot comes into play as a complement to traditional operators to make possible the hyper-connected universe of the IOT with the arrival of 5G," Sanpera said. The first two nanosatellites, which will be the size of a microwave oven, will provide low-latency IoT services from low Earth orbit after they are launched in late 2020. The rest of the constellation will be launched by the end of 2022 to provide global coverage to IoT operators. Sateliot's British partner, Open Cosmos, will manufacture the satellites and manage their launch and operations. The objective of Sateliot's business plan is to close 2022 with a turnover of around 400 million euros (\$453 million) and a total workforce of over 100 people. To make this possible, Sateliot has completed its



first capital raise of 2.4 million euros (\$2.7 million) contributed by the company's founders and business angels. Sateliot is currently negotiating a financing round with several interested international funds for an amount in excess of 10 million euros (\$11.25 million). Sateliot is working with various partners to demonstrate the service and sign user agreements. Those partners include a technology laboratory in Asia and an operator in the United States with which Sateliot plans to create a consortium. The European Space Agency is providing advice on the development and execution of the project. Sateliot believes the IoT market with satellite connectivity will offer ample potential in the coming years. According to estimates by Riot Research, this market will be worth more than 5.4 billion euros (\$6.1 billion) in 2025. Forecasts also

indicate that 60 billion connected objects worldwide will be reached in that year. Sateliot's technology is complementary for IoT operators, to whom it can offer an extension of coverage for communications services in areas such as maritime, railway, aeronautics, connected vehicles, oil and gas exploration, electrical services, critical infrastructure, agro-technology and environmental monitoring. Sateliot will be the first satellite telecommunications operator that will provide global and continuous connectivity to all IoT elements under a 5G architecture. Thanks to a constellation of the latest generation nanosatellites, Sateliot will provide large telecommunications companies with the necessary infrastructure in areas where terrestrial technologies do not reach. 📡



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ARTICLE

China Mobile International: Enabling Connection of All Sorts of “Things” at an Unprecedented Scale



China Mobile International has established a strong framework for the development of internet-of-things (IoT) ecosystems, readying itself in a segment poised for massive future growth. And with 5G starting to take shape, it is well-prepared to handle the predicted surge in connections.

China Mobile International (CMI) and its parent company have sought to go large with their concept of “big connectivity” in the past few years, capitalising on the growing digitalisation of a whole array of “things”.

Big connectivity is ramping up further as 5G makes its debut in a rising number of countries around the world, in preparation for the widening variety of applications the new technology enables internationally in the internet-of-things (IoT) and machine-to-machine (M2M) arenas. Indeed, CMI parent China Mobile’s commercial launch of 5G in its own domestic market in November 2019 promised to lend further impetus to its IoT offering.

The company has already put itself in a strong position to provide services to customers in this burgeoning sector, as seen in the surge in growth in the offerings it has. By the end of 2019, China Mobile had 884 million IoT customers, with the number almost doubling year-on-year. In the first half of 2019, meanwhile, the company saw its IoT-derived revenue rise more than 40 per cent year-on-year, reaching over RMB5 billion (£550 million).

Wider industry forecasts also indicate the market’s huge potential. Total IoT connections worldwide are, for example, predicted to rise 160 per cent between 2018 and 2024, from 8.6 billion to 22.3

billion, according to figures in a recent Ericsson report. Among these, cellular IoT connections are forecast to quadruple over the same time period to just over 4 billion.

And given the significant traction the company has gained in its domestic IoT market, CMI can harness the extensive learnings it has gained from that in delivering services to carrier customers – something it is supplementing by strengthening its capabilities through investing in systems, platform and human resources.

While the company’s main market is China, it has also been expanding its work overseas to capitalise on the opportunity it sees for big connectivity on a wider scale. A key target for this are the “Belt and Road” countries of Asia, Africa and Europe, in line with its domestic market’s national strategy to boost land and maritime infrastructure between the regions.

Considering these trends in addition to China Mobile’s position as the world’s largest mobile operator, with close to a billion customers, and CMI’s extensive network, the company has a major part to play in enabling the connection of all sorts of “things” at an unprecedented scale.

Single point of contact

Andrew Niu, chief partnership officer at CMI, says one way in which the company

can help wholesale and enterprise customers to rapidly grasp opportunities in the IoT sector is through its ability to offer a single point of contact and contract. “The simplest way [to gain access to the market] is to have one contract with one carrier that provides global connectivity through a single platform,” he says. “The single-contract and single-platform approach helps enterprise customers reduce complexity in terms of mobile connectivity.”

The IoT connectivity management platform offered under CMI’s iConnect offering is provided on dedicated network infrastructure aimed at supplying fast, smooth and comprehensive 4G coverage throughout China, along with 2G, 3G and 4G global roaming.

The IoT connectivity management platform offered under CMI’s iConnect offering is provided on dedicated network infrastructure aimed at supplying fast, smooth and comprehensive 4G coverage throughout China, along with 2G, 3G and 4G global roaming.

The offering provides customers with services including M2M SIM cards, plus the option of connectivity and lifecycle management for these products, platform integration services and a variety of data, SMS and voice plans to meet needs for different scenarios and optimise coverage at both a local and global level.

On top of that, customers have access to a self-service portal that includes billing and invoicing services, and facilitates the management of connections on a massive scale via a web user interface or API – a key facet given the immense number of new IoT devices and applications that will be coming online in the next few years, some of which are difficult to even imagine yet.

Growth environment

China Mobile has been working hard to present partners with the most conducive environment possible for driving the types of IoT products and services being demanded by the global market, allowing them to test and experiment with new types of offering.

The operator has, for example, created an open lab for IoT innovation in Beijing, where partners can test services based on the low-power network technologies Narrowband IoT (NB-IoT) and LTE for Machine-Type Communications (LTE-M) using 3GPP-compliant equipment for those purposes. This technology is set to be key for moving forward in a segment dubbed “massive IoT”, which involves all kinds of business cases, including energy and water meters, medical wearables, tracking sensors for transport and a whole multitude of other devices with low-power requirements for operation.

The company is carrying out NB-IoT initiatives in other segments too, showing the wide-reaching possibilities of this type of technology. For example, China Mobile cites smart parking pilots it has run in conjunction with partner DTMobile, with a view to helping cities improve management of parking assets so they can boost their revenues, as well as slashing congestion and pollution.

Furthermore, testing conducted by China Mobile has indicated that NB-IoT can be delivered underground, enabling,

for example, utility meters to transmit readings from a basement.

Meanwhile, the company's partners are also able to use its open lab to test technologies and functions such as voice over LTE (VoLTE), power-saving modes and equipment interoperability, as well as SMS and non-IP communications. In addition, China Mobile offers software development kits (SDKs), which can be used by developers to support the applications they make.

On top of that, China Mobile has developed an open IoT application enablement platform known as OneNET, with the aim of enabling business customers access to a centralised platform allowing them to rapidly and cheaply integrate end-to-end services and then use them in various industry verticals when needed.

The platform aims to offer an intelligent, high-quality centralised cloud service that supports a variety of protocols and APIs. In line with this, OneNET enables data to be transferred from IoT devices and, conversely, extracted for integration into developer applications. Wrapping in big data services, the platform supports different types of connectivity, sensors and intelligent hardware.

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All these services provide a robust framework by which CMI, China Mobile and their customers and partners can grow a strong ecosystem of IoT products and solutions – meeting the demands of the markets of the future.

Building an ecosystem

With CMI pointing to industry sectors including connected cars, equipment monitoring, finance and the sharing economy as growing IoT segments, the company and its parent have also been getting involved in a wide variety of other

Hand-in-Hand Program (hi-H Program)

With a view to helping build an ecosystem that will enable services such as 5G and IoT to thrive globally, China Mobile International (CMI) launched its Hand-in-Hand Program (hi-H Program) in 2015. Comprising collaborators that include multiple major operators from across the world, it has now grown to 26 members.

Most recently, Vietnam-based Viettel Business Solutions (VTS) became the 26th member of the initiative in July 2019, joining the likes of Airtel Business, AT&T, Chunghwa Telecom, Korea Telecom, Orange, PLDT, Sparkle, StarHub, T-Mobile, Tata Communications, Telenor, Telia Company, Telstra, True, Turk Telekom International, VEON and Vodafone.

The idea of the Hi-H Program, which operates under the principles of openness, connection and collaboration, is to encourage cooperation through workshops and working groups, developing a multi-party hub to maximise efficiency and resources, share experiences and boost innovation and technological advances.

Ultimately, the aim is to find real synergies to help the big up-and-coming technologies to take off so the whole industry can benefit, increasing the scope for provision of increasingly needed seamless, borderless products and services worldwide.

Among topics discussed at a hi-H event at the end of last year were 5G+IoT, and the latest application developments, innovative concepts and use cases.

initiatives aimed at putting themselves at the forefront of the global IoT market.

The carrier believes one of the crucial elements to getting the whole ecosystem working effectively is collaboration between providers, especially to support the big transformation that the IoT sector will undergo in the developing 5G era. In this sense, CMI is well-prepared, running a global partnership initiative for 5G that it set up over four years ago to bolster the joint development of borderless products and services.

The Hand-in-Hand Program (hi-H Program), which now has 26 members, including many major global operators, has a footprint covering almost 3 billion mobile subscribers around the world. It encourages the sharing of innovative concepts and use cases through workshops and working groups, as well as developments to aid platform interoperability and the use of local SIM card resources (see box: "Hand-in-Hand Program (hi-H Program)").

Niu thinks this kind of initiative can help operators to maximise the potential of services in that sector. "The hi-H Program facilitates discussions to help members move forward with their 5G roaming service roadmap and keep them abreast on the latest IoT developments," he says. "Together, we can build a smarter, more integrated IoT ecosystem."

At the cutting edge

Some of China Mobile's activities in the industrial sector have also shown the potential for use cases enabled by the combination of 5G and IoT, wrapping in some of the most cutting-edge concepts as the industry has moved towards the latest generation of mobile technology – such as network slicing, edge computing and data intelligence.

This comes along with China Mobile being granted a commercial 5G licence in 2019 in its domestic market, quickly followed by the launch of its 5G+ brand ahead of the technology's launch. The company expects that move to have all kinds of implications for expanding the scope of smart IoT applications and harnessing data to aid social development, creating

5G for smart IoT

China Mobile expects the deep integration between information technology and the economy enabled by the upcoming launch of 5G to allow an expanding range of services and applications based on smart internet-of-things (IoT), and more real-time information that will promote the development of a smart society.

Among the applications it sees as having major potential for addressing needs in modern society and boosting social development are:

- 5G+ agriculture: high-precision farming aided by 5G-connected sensors that can monitor air, soil, light and other environmental factors to help maximise crop yields by optimising growing conditions; also, cloud platforms for smart farming to enable monitoring of health for livestock.
- 5G+ crisis management: 5G cloud-based emergency disposal systems to remotely manage explosive threats and big data analytics to predict natural disasters and enable early warnings, aiding emergency response and reducing the impact of these events.
- Integrating 5G into uncrewed aerial vehicles (UAVs) for a wide variety of applications to benefit society, including communication in emergency rescue, firefighting in high-rise buildings and forests, city surveillance, inspection of electric power lines, remote sensing for land surveys and forestry disaster assessments, and maritime applications such as monitoring marine pollution, inspecting oil spills and searching for evidence of illegal activities at sea.

opportunities on an unprecedented scale (see box: "5G for smart IoT").

As an example, one of the most interesting fields involves a prototype China Mobile created of an automated guided vehicle (AGV) in collaboration with Ericsson, a technology that the two demonstrated at the Mobile World Congress Shanghai 2019.

This could be a key growth segment, as AGVs gain momentum as a use case with real potential for improving efficiency and reducing costs in manufacturing, the port sector and other industries – with 5G making equipment such as AGV tractors, pallet movers and forklift machines more viable.

Testing of the prototype indicated the potential for incorporating processes that can make technologies even more efficient and faster. These include network slicing, which can help create dedicated networks for industrial use and aid with data security, and edge computing, which meets the need for bringing data ever closer to the edge of the network to make traffic more local and drastically reduce latency while improving stability and reducing the complexity of AGV equipment.

On top of all this, the collection of data in edge clouds enables in-depth analyses to help further improve processes and integrate data from other manufacturing systems, building the intelligence of the overall machinery over time so that it can enable slicker operations.

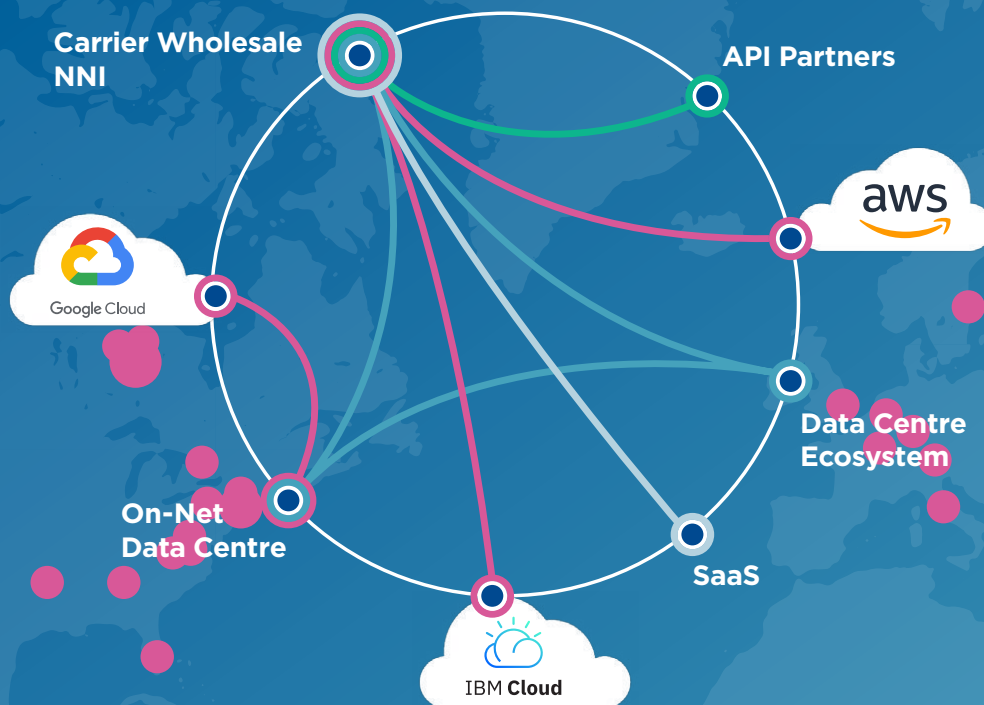
Having laid the groundwork in anticipation of some serious IoT growth in the coming years, CMI certainly has no intention of slowing down its development in this sector, says Niu – with plans to develop both "horizontally" by expanding network coverage and "vertically" by boosting the scope for applications in different industries.

"CMI will continue to work with industry players to drive IoT development and innovation, and we will see more applications available to a wide range of sectors," he says. By maintaining a focus on this segment, CMI hopes to truly capitalise on the opportunities of the 5G era – catapulting not just its own business into the future, but those of partners across the industry and their customers. 📍

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WHOLESALE NEWS

Telia Offers 5G Roaming Between Sweden, Norway and Finland

Sweden's Telia Company has launched 5G roaming between its subsidiaries in Sweden, Norway and Finland. To use the service, customers need a 5G-ready subscription and smartphone, and they need to be in an area where there is 5G coverage. The firm says it will expand roaming to cover its operations in Denmark, Estonia and Lithuania once 5G services become available in those countries. Telia is also in dialogue with several international operators to establish bilateral 5G roaming beyond Scandinavia and the Baltic region. Thomas Moe, Head of Roaming at Telia Company, commented: 'Travelling is currently limited due to Corona. But this is about laying the groundwork for the future and we have now taken an important first step by launching 5G roaming between Finland, Norway and Sweden. We want to be able to offer our customers the best possible customer experience, regardless of which country they visit.'



GCRA Confirms MTR Reductions

A new decision on mobile termination rates (MTRs) has been confirmed by the Guernsey Competition and Regulatory Authority (GCRA), which had previously launched a consultation on its proposals in April 2020. As per the regulator's statutory notice of a decision, it said it was setting out 'the revised price control applicable to Guernsey MTRs so as to bring MTRs down to a level that, based on the available evidence, is likely to be a

much closer approximation of Guernsey Mobile Network Operator (MNO) costs of terminating calls on their respective mobile networks and is more closely aligned with the prevailing level of MTRs in neighboring jurisdictions'. With the GCRA having reportedly considered all issues raised by respondents to its April 2020 consultation, it said it did not consider that any of the matters raised would require it to amend its plans. As such, it

has confirmed the regulatory direction will apply from 1 September 2020, at which date MTRs for all three domestic MNOs – JT Guernsey, Sure Guernsey and Guernsey Airtel – will be reduced to GBP0.0311 (USD0.039) per minute. Further cuts to the rate are scheduled, meanwhile, with it to fall to GBP0.011 per minute from 1 June 2021, while a final reduction will see it drop to GBP0.007 per minute from 1 June 2022.

Chorus Announces Wholesale Fiber Price Cuts, Lockdown Debt Support Package

New Zealand-based wholesale fixed line provider Chorus has updated retail service providers (RSPs) on planned changes to the pricing of its wholesale fiber products over the next three months, as well as details of a NZD2 million (USD1.29 million) fund to provide relief for RSPs who chose not to cut off customers who were unable to pay during the COVID-19 lockdown. Under the plans gigabit wholesale pricing will be reduced from NZD60 a month to NZD56 from 1 July 2020, while small business

fiber pricing will be cut by NZD3 a month to NZD52. Chorus previously announced in March that the annual regulated CPI increase to fiber products will be delayed until 1 October 2020, at which point the price for 100Mbps fiber will increase from NZD46 to NZD47.15. The reduced pricing and delayed increase are expected to deliver savings of around NZD10 million to RSPs. Chorus CEO JB Rousselot claims the changes strike the right balance between passing on savings to RSPs,

while still enabling ongoing investment in infrastructure. 'We are conscious of the critical role Chorus infrastructure played during the lockdown, and we believe this mix of pricing changes will support RSPs, allow Chorus to continue to invest in the capacity, reach and resilience of the fiber network, and also enable more customers to benefit from higher specification plans,' he said.

Lawmakers Approve National Automatic Roaming Bill

Chile's upper house has approved the National Automatic Roaming (Roaming Automatico Nacional, RAN) Bill, which establishes an obligation for mobile network operators (MNOs) to share their networks to provide connectivity to users in remote and/or rural areas. According to sector watchdog the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) the legislation will provide access to voice, messaging and mobile internet services to users in 3,200 underserved locations. The regulations will allow users in such areas to utilize the network of any operator with coverage of the area, regardless of their service provider; the service provider in question would then compensate the network operator for use

of their infrastructure. To that end, operators must create public wholesale offers for the use of their facilities, on a cost-oriented and non-discriminatory basis. The Ministry of Transport and Telecommunications (Ministerio de Transportes y Telecomunicaciones, MTT) will issue new regulations governing these offers, which will be subject to approval from Subtel.

Macquarie-Backed Onivia Launches Wholesale FTTH Service Using ex-MASMOVIL Networks

Macquarie Capital, Aberdeen Standard Investments and Daiwa Energy & Infrastructure have launched a new fiber-to-the-home (FTTH) wholesale service in Spain under the Onivia brand name. The new company claims to preside over a 2,900km fiber network that passes 966,000 homes; the GPON infrastructure is capable

of supporting symmetrical transmission speeds of up to 1.24Gbps. In November 2019 Macquarie signed an agreement with Grupo MASMOVIL to acquire an FTTH network passing around 940,000 building units in a deal worth EUR218.5 million (USD242 million). The network covers five of Spain's largest cities, namely: Madrid,

Barcelona, Valencia, Seville and Malaga. Onivia will operate as an independent wholesaler providing capacity to ISPs looking to supply broadband to homes and businesses, while MASMOVIL itself signed a long-term access agreement as part of the transaction.

T-Mobile Inks 5G Roaming Pact with GCI in Alaska to Secure Coverage in all 50 States

T-Mobile US and GCI have announced a partnership which will allow T-Mobile customers with 5G smartphones to access 5G connectivity while roaming in Anchorage, Alaska – making T-Mobile the first and only wireless provider to offer 5G coverage in all 50 US states. The new partnership also gives GCI customers roaming access to T-Mobile's nationwide 5G network, which covers more than one million square miles and nearly 6,000 cities and towns. TeleGeography notes that GCI launched Alaska's first 5G service in Anchorage on 17 April 2020. The telco notes that future 5G 'expansion opportunities' include Juneau, Fairbanks

and other fiber-served communities. GCI President and COO Greg Chapados commented: 'GCI and T-Mobile have a long history of "firsts" together. GCI and T-Mobile launched the nation's first LTE roaming partnership in 2014 and were the first providers to partner together to deliver VoLTE service.'



KPN Loses Appeal in Mobile Termination Surcharge Case

Rotterdam District Court has upheld a decision of the Netherlands' Authority for Consumers & Markets (ACM) which ruled that KPN was overcharging rival operators to terminate calls on its mobile network by adding surcharges to the

regulated maximum rates. In March 2019 ACM ordered KPN to charge only standard wholesale rates for terminating calls on its networks with retroactive effect from July 2017. KPN's appeal against the main decision was rejected by the court,

which confirmed that ACM's order was correctly imposed. An earlier appeal saw the fine issued by ACM to KPN halved to a maximum of EUR500,000 (USD565,000) in October 2019.

Canary Wharf Group, Virgin Media and Cisco Announce First-Ever Commercial Deployment of OpenRoaming for New Residents of the Canary Wharf Estate

Canary Wharf Group (CWG), owner of one of the largest business centres in Europe, together with Cisco and Virgin Media, have announced the first European commercial deployment of OpenRoaming for residents on the Canary Wharf estate. Combining the convenience of mobile roaming with Wi-Fi 6 connectivity, OpenRoaming allows devices to connect securely and automatically to Wi-Fi networks and roam seamlessly from one hotspot to another without the need for the user to log in. The joint initiative will also provide up to four times faster wireless speeds by deploying Cisco Meraki Wi-Fi 6 access points, along with sophisticated location-based analytics to allow its clients to build unique services for their customers. At a time when almost all organizations are considering new ways of operating their business, OpenRoaming will enable seamless and highly secured onboarding to Wi-Fi and dramatically improve efficiencies for the more than 20,000 businesses, entrepreneurs, independent retailers, bars, cafes, workspaces, and even the school that will be based in Wood Wharf. OpenRoaming aims to provide the benefits of Wi-Fi 6 connectivity to residents of CWG's first build to rent building from Vertus at 10 George Street, and homeowners at 10 Park Drive, CWG's first for sale residential property, both at Wood Wharf. Wood Wharf, Canary Wharf's new district, is a five million sq. ft mixed-use development of over 3,000 new homes, including two million sq. ft of world-class commercial space. With OpenRoaming, residents can take their secure and trusted Wi-Fi connection with them when they walk out of their front door, through the apartment buildings, across the Canary Wharf estate and even into the Tube station. This seamless connectivity will become more prevalent in the future and will help provide highly secured Wi-Fi connectivity on the move. As a new normal begins, the ability to connect securely and automatically across retail, residential and guest corporate environments has never

been more important for those working and living in the area, as well as those visiting for work and leisure. In Canary Wharf, Virgin Media has recently expanded its gigabit capable network, connecting more than 1,000 homes over the past year. This is part of a wider plan to connect more than 4,000 homes in the area and provide connectivity to public spaces. New residents can also benefit from a pre-installation service which allows them to be connected the same day they move into their apartments on the Canary Wharf estate. "In today's environment connectivity is akin to a critical utility. Our commercial, retail and residential customers are demanding access to world-class digital infrastructure and next-generation connectivity," said Shobi Khan, Chief Executive, Canary Wharf Group. "Canary Wharf Group is committed to creating an estate-wide environment in which businesses can thrive. The rollout of Wi-Fi 6 and OpenRoaming is a vital part of our continuously evolving user experience for residents and visitors. We're delighted to work with Cisco and Virgin Media to deliver this." Jeanie York, Virgin Media's Chief Technology and Information Officer, added: "Now more than ever people are relying on our services to help stay connected to loved ones, for work, to keep informed and stay entertained. By providing a seamless and highly secure Wi-Fi platform, users can take their Wi-Fi connection with them on the go, bringing them closer to the things and people that matter most. Network innovations like this give us a taste of the future of connectivity and are delivering real benefits for consumers." CWG will also help landlords and tenants to understand how their real estate is being used, with data analytics to drive efficiency in workspace design using Cisco DNA Spaces. This solution enables over-the-top use cases such as location-based services, end user engagement and wayfinding to enable individuals to find the meeting room or retail store they are looking for. "This year, for many UK

businesses, what was once deemed 'the future of work' became a reality almost overnight. As businesses now accelerate to a digitized and automated future, OpenRoaming and Wi-Fi 6 will play a critical role in that journey. In the next normal, strengthened digital infrastructure and robust cybersecurity are fundamental to recovery and growth. They provide the foundations for businesses to benefit in the digital economy," said David Meads, Chief Executive, Cisco UK and Ireland. "We are proud to be partnering with Canary Wharf Group and Virgin Media to develop the future vision for this iconic site and to enable next-generation experiences for Canary Wharf's customers, residents and shoppers." WBA OpenRoaming is a Wireless Broadband Alliance federation that includes trusted identity providers, allowing users to join any network that is part of the federation. It enables the network to securely auto-authenticate end user devices by using established identity providers, such as the user's service provider or device manufacturer. Proven as a concept for the first time in February 2019, with attendees from around the world at MWC Barcelona, the network technology has now been tested in some of the most challenging environments – including Orkney, one of the remotest parts of the UK. The deployment of OpenRoaming at Canary Wharf follows the completion of a successful commercial trial. OpenRoaming is now backed by a global Wi-Fi federation of WBA members, including: Airmesh, Airties, Aprecomm, American Tower, Aptilo, AT&T, Boingo Wireless, Broadcom Inc, Cisco, Cityroam, Comcast, Commscope, Deutsche Telekom, Eduroam, Eleven Software, GlobalReachTechnology, Google, Hub One, Hughes Systique Corp, Intel Corporation, IT&E, m3connect, Nomosphere, Orange, Purple Wifi, Samsung, Single Digits, Sun Global, Veniam, Virgin Media, WiFiCoin and Zephyrtel. 📍

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ARTICLE

5G+X: Revamped Business Model for Leading Consumer Telecom Operators to a Healthy Market Cycle

Proliferation of 5G is only going to make consumers rely more on connectivity and not just simple connectivity but a connectivity which is making newer experiences possible. We call this "5G+X" model where 5G provides low latency & high bandwidth connectivity and "X" stands for new services which operators can monetize.

During the last 12 months we saw multiple operators in Middle East announcing commercial launches of 5G Networks. Initially these 5G launches were very much focused on fixed wireless access to complement their Fibre Home broadband offerings as 5G provided them with a capability to offer high speed broadband access to areas with no fibre deployment. Now, we are reaching a point where 5G is ready for more ubiquitous use by smartphone users. Many operators in Middle East have already covered central business districts & residential areas in key cities with 5G sites. 5G enabled smartphones are being launched every month by popular handset vendors. Compared to the same time last year when there were only a few costly options of 5G smartphones, now consumers have over 20 options of 5G smartphones to choose from and that too at varied price points. Cheapest 5G handsets are now available in Middle East for below 500 dollars.

One thing we must keep in view is that compared to the difference between 2 earlier generations, 5G does not just mean more speed or bandwidth than what 4G is providing. The change to be brought by 5G is much more than that. 4G networks have their limitations as it cannot support new experiences and the fast developing digital ecosystem. 5G, on the other hand is an enabler of a truly connected world with countless new services and that means newer business models, new revenue streams & more monetization opportunities for operators.

"5G+X": Enabling New Revenue Streams for Operators

Past decade has made Mobile Data connectivity an essential part of our lives. It is hard to think of a world where we are not constantly connected. We consume content, attend online meetings and play games on the go any time anywhere we want. Proliferation of 5G



Anjian

President of Carrier Networks Business Group
Huawei Middle East



is only going to make consumers rely more on connectivity and not just simple connectivity but a connectivity which is making newer experiences possible. We call this "5G+X" model where 5G provides low latency & high bandwidth connectivity and "X" stands for new services which operators can monetize.

AR & VR experiences provide an immediate opportunity for operators to dominate the complete value chain from connectivity to content. With 5G as backbone, operators can create multiple opportunities to replace ageing broadcasting systems for live sports and deliver enhanced experience to fans.

An example of "X" services is Cloud Gaming. Globally, Mobile Gaming is currently the most popular mode of gaming and so is in the Middle East and will continue to grow in its popularity over PC or console gaming. 4G networks have their limitations in providing a fully immersive experience to a gamer on the go. With 5G, Cloud Gaming makes these newer experiences a

possibility without the need of native high specifications hardware at user end. Low latency of 5G networks allow games to be stored & processed on cloud and played in real time on users' smartphones. It also allows seamless experience to users across platforms. Users can leave home and pick up the games on their mobile from where they left them on console.

Telecom operators have huge opportunity to play here, Proactive moves to offer gaming as a service on their network will open up new revenue streams for them. Cloud gaming revenue streams can range from simple subscription fee, in-game purchases & Quality of service assurance on the network. We have already seen some foresighted operators in Middle East who have started working on building their cloud gaming portfolios by inking agreements with gaming aggregators and publishers. While adding new revenue streams, cloud gaming also provides an opportunity for operators to monetize their existing investments into cloud infrastructures. Operators need to move fast else cloud gaming can prove to be same as video streaming services where market is dominated by global & local streaming service providers and telecom operators' role is reduced to only providing connectivity.

5G is also bringing new value added services to the market such as 5G messaging & video ring back tones. The monetization models for video ring back tones can have both consumers as well

as enterprises as paying customers thus opening up another new revenue stream for operators.

Virtual as well as Augmented Reality applications are also expected to proliferate in the era of 5G as new revenue streams. These are cloud native applications and require high bandwidth & low latency connection to deliver immersive experiences, thus 5G enabled networks are going to be backbone of these services. AR & VR experiences provide an immediate opportunity for operators to dominate the complete value chain from connectivity to content. With 5G as backbone, operators can create multiple opportunities to replace ageing broadcasting systems for live sports and deliver enhanced experience to fans. Education & corporate trainings can also be similarly revolutionized with 5G enabled virtual reality. However it requires a long term vision and development of eco-system from the operator to dominate the new way consumers receive their entertainment & education. We have already started seeing advances from operators in South Korea who are front runners in building eco-systems for 5G+X services.

To sum it up, we can say that 5G is going to revolutionize every aspect of our life and mobile operators have a great opportunity to seize the moment to once again become a dominant player in the complete value chain with a larger play in services (+X) made possible by 5G.

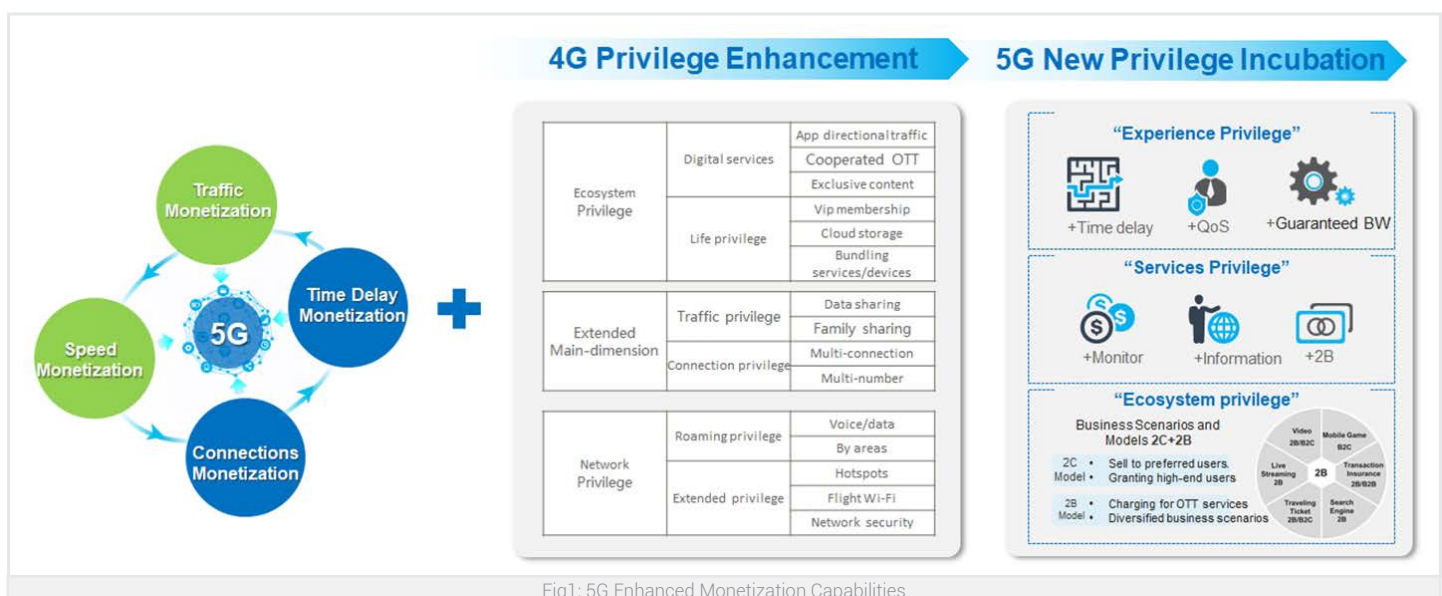


Fig1: 5G Enhanced Monetization Capabilities

TECHNOLOGY NEWS

Verizon Readies 5G Standalone Core to Support Slicing and More

Verizon said today that it has successfully completed an end-to-end data session over its new 5G standalone core network. The company said it expects to start moving traffic onto the new core in the second half of this year, with full commercialization in 2021. Initially, Verizon and other U.S. mobile carriers deployed 5G wireless in non-standalone mode, meaning that the service was underpinned by carriers' previous-generation core network infrastructure. Moving 5G traffic onto a cloud-native 5G standalone core will enable a range of advanced capabilities, including network slicing, Verizon said. As Verizon explained in a press release, slicing will use the 5G core network's cloud-native approach in combination with built-in artificial intelligence and machine learning, to provide "dynamic allocation of the appropriate resources." The goal is to enable the company's 5G network to support a wide range of applications that require different network capabilities. The company noted, for example, that an application involving massive numbers of Internet of Things (IoT) devices would need different network capabilities than an application involving augmented or virtual reality (AR/VR). Network slicing also will allow for "automated network configuration changes, including the ability

to scale up or scale down network function capacity – to provide the right service levels and network resources needed for each use case," the press release explains. Other benefits of the standalone 5G core, according to Verizon, include:

- Real-time resource management of radio access network and virtual network functions
- Advanced analytics of network data to improve network performance
- Optimized services between Verizon's fixed and mobile networks
- Scalable, more cost-efficient

architecture

- The ability to move workloads to fit use case requirements

The 5G standalone core is "critical for unleashing the most advanced benefits of 5G technology including remarkable levels of programmability to manage the advanced solutions and exponential traffic that 5G will bring," said Bill Stone, Vice President of Planning for Verizon. "By building this 5G core with cloud-native containerized architecture, we will be able to achieve new levels of operational automation, flexibility and adaptability."



Verizon 5G Small Cell

Optus Undertaking 5G mmWave Technology Tests

Australian mobile network operator (MNO) Optus has confirmed it is testing 5G millimeterWave (mmWave) technology, including making its first mmWave data call, in partnership with Swedish vendor Ericsson. Detailing the development in a press release, the MNO noted it had obtained approval from the Australian Communications and Media Authority

(ACMA) to operate and test the technology using the 26GHz band at four locations in Sydney, including its Macquarie Park headquarters where the initial data call was made this week incorporating a Casa Systems mmWave CPE. 'Technology innovation and use case development is a critical component of the work that we do and with mmWave technology

expected to become available for 5G in 2021 it's important that we start testing this technology now so that we can begin to understand how we can best harness its capabilities for our consumer and enterprise customers,' said Lambo Kanagaratnam, Optus Managing Director Networks.

Vodafone UK Showcases 5G SA Technology at Coventry University

British mobile network operator (MNO) Vodafone UK has announced that, one year on from its launch of 5G services, it has begun to showcase the next phase of the technology. To that end, the cellco revealed in a press release that it had launched a new 5G standalone (SA) network at Coventry University, in partnership Ericsson, MediaTek, OPPO and Qualcomm. According to Vodafone UK the new network 'will be used to show the true benefits of 5G, including ultra-low latency, guaranteed speed performance, and the Internet of Things on a never-before-seen scale'. Coventry University will reportedly use the new 5G SA network to trial state-of-the-art virtual reality learning technologies to support training for student nurses and allied health professionals, as part of its ambition to be the leading university for 5G-enabled technology. Meanwhile, to further support the university's 5G ambitions, Vodafone UK noted that it has also installed Ericsson's 5G Radio Dot System in the university's Disruptive Media



Learning Lab and National Transport Design Centre. It claimed that this indoor technology will deliver fast, high-capacity 5G in key buildings. As previously reported by CommsUpdate, Vodafone UK switched on its 5G NSA network back in July 2019,

with initial coverage of seven cities. Since then, Vodafone UK claims to have reached a further 37 locations with the technology, while having 'massively expanded' coverage in launch cities.

Ericsson Wins Contract in the UAE to Upgrade Thuraya's Core Network to 5G Ready Infrastructure

UAE based mobile satellite services operator, Thuraya, has signed an agreement with Ericsson to modernize and upgrade its core network to a 4G and 5G ready infrastructure. The Swedish tech giant will modernize and optimize Thuraya's network to a virtualized core that supports existing and new features and services in the future. The deal will ensure that Thuraya can continue to offer its users the best possible user experience in the most efficient way. "By modernizing Thuraya's core network, we are looking to build its resilience and enhance overall performance. This would also improve other key aspects like guaranteeing more flexible, reliable and effective services. Our strategy is to make optimum use of existing assets and invest in infrastructure upgrades so that the network is ready to accommodate Thuraya's Next Generation System. We have a longstanding partnership with Ericsson and acknowledge them as a

leader in deploying new technologies to enable high-quality mobile broadband solutions," said Adnan Al Muhairi, deputy chief technical officer of Thuraya. Ericsson will also migrate the existing Thuraya users to the new platform and oversee its integration with existing systems. The operator's mobile-data users, especially those in remote locations or areas where traffic is dense, will benefit from higher availability and reliability. As a result, Thuraya can provide consumers more flexible and easy-to-use communication services integrated with various terminals, which will work seamlessly when they move between different access points. By selecting Ericsson for the modernization of its existing mobile-core, Thuraya extends its existing partnership, in which Ericsson has been the sole vendor for its circuit-switched core network. "Ericsson and Thuraya have enjoyed many years of successful cooperation, and we are committed to support in further

strengthening our partner's position and support them to introduce 4G and 5G ready core, allowing its users to enjoy the benefits of 4G and 5G technology in the future. Thuraya's upgrade to a virtualized core, will certainly provide a higher-quality experience for end users while streamlining their network operations," said Wojciech Bajda, head of Ericsson Gulf Council Countries. The upgrade will include deployment of virtual Evolved Packet Core Network, using network functions virtualization, including Ericsson Cloud Packet Core, Cloud Unified Data Management and Ericsson NFVI. The Virtual Evolved Packet Core will provide the capacity and flexibility to cope with network evolution challenges. For the network management aspects, Ericsson Network Manager is deployed to manage the virtual network functions which will secure the automation and provide operational efficiency when managing the network.

KPN Demos 8Gbps Symmetrical PON Fiber

KPN has announced a first-in-the-Netherlands fiber broadband demonstration which it says offers 'a glimpse into the future' – an 8Gbps download/upload connection was demoed at a residential location in Amersfoort's Vathorst district using the telco's PON fiber technology. KPN installed an Optical Network Terminal (ONT, on the premises) and Optical Line Terminal (OLT, in the street cabinet) both supporting speeds up

to 10Gbps. CTO Babak Fouladi declared: 'This demonstration shows what our investments in technology will bring to our customers in the future ... In the coming period, we will continue to develop at much higher speeds that will further shape the digitization of the Netherlands and from which the customer will also reap the benefits in the long term.' As previously reported by CommsUpdate, KPN doubled its commercial consumer broadband

peak download speed to 1Gbps on 1 March 2020, covering an initial 1.2 million addresses. By end-2021, KPN expects all its fiber-to-the-home (FTTH) customers to have access to the new gigabit option, while peak upload speed – initially capped at 500Mbps – is expected to be boosted to 1Gbps by end-2020. TeleGeography's GlobalComms Database notes that KPN declared it would use GPON – and not its existing P2P fiber architecture – in all its new FTTH area deployments across the Netherlands from Q4 2019 onwards, with the telco currently expanding FTTH in more than 70 areas of the country, under its target of growing its FTTH footprint by one million new households between end-2018 and end-2021 to reach approximately 3.3 million homes, or around 41% of all Dutch households. The KPN NetwerKNL division is responsible for the construction and management of the new FTTH network sections, deployed on an open network basis enabling other providers to offer retail services over the infrastructure alongside KPN.



Ericsson Chosen to Provide 5G RAN for HT in Croatia

Croatian fixed and mobile operator Hrvatski Telekom (HT) has selected Ericsson as its sole 5G RAN supplier under a contract which runs until 2024. The deployment, which will be carried out by Ericsson's local subsidiary, Ericsson Nikola Tesla, includes Ericsson Radio System products and solutions and Ericsson Spectrum

Sharing. Kostas Nebis, CEO of HT, says: '5G technology implementation is applicable on a broad scale and resonates with Croatia's needs, such as enabling higher energy efficiencies through smart metering and dynamic management of power supply, higher efficiency in agriculture through connected and automated

devices and machinery, or optimization of irrigation processes, as well as in a variety of other industries.' TeleGeography's GlobalComms Database notes that HT is the largest cellco in Croatia by subscribers, with over 45% of all users at the end of March 2020.

Taiwan Operators Cleared For Commercial 5G

Far EasTone and Chunghwa Telecom were tipped to be targeting commercial 5G launches on 1 July, after the former received a second license issued by authorities, Taiwan News reported. The newspaper stated the National Communications Commission (NCC) issued Chunghwa Telecom's license last week, and is reviewing applications from Taiwan Mobile, Taiwan Star Telecom and Asia Pacific Telecom. Operators are

required to deploy 250 5G base stations before they can offer the next-generation mobile service. Chunghwa Telecom, Far EasTone and Taiwan Mobile have a combined market share of around 85 per cent. They are expected to introduce some of the lowest-priced unlimited 5G data plans in the world, with monthly tariffs of about TWD1,399 (\$47.26), Taiwan News wrote. At an auction in January, Chunghwa Telecom won 90MHz in the 3.5GHz band

and 600MHz of 28GHz spectrum; Far EasTone 80MHz and 400MHz respectively; and Taiwan Mobile 60MHz and 200MHz. Taiwan Star Telecom secured airwaves in the 3.5GHz band, and Asia Pacific Telecom, the smallest operator, acquired 28GHz spectrum. In March, Chunghwa Telecom named Ericsson and Nokia as 5G RAN vendors and Far EasTone selected Ericsson.

Tre Sweden Launches 5G in Six Cities

Tre Sweden has announced the commercial launch of 5G services in Malmö, Lund, Uppsala, Helsingborg, Västerås and large parts of Stockholm. The cellco says it has 385 active 5G masts, 200 of which are in Stockholm, and it says it expects to be covering most of the center of the capital by the end of the summer. Handsets supporting the new service include the Huawei P40, Huawei P40 Lite

5G, Huawei P40 Pro, Xiaomi Mi 10 and Sony Xperia 1 II. Private customers on a '3Surfa' subscription, plus all business users who have subscribed since 15 January 2019, receive 5G connectivity at no extra cost. Per Stigenberg, technical director at Tre, commented: 'this is the first step where we use the frequency spectrum we already have access to. After the real 5G frequencies become available around

the turn of the year, our customers will be able to get significantly faster speeds.' Tre launched pre-commercial 5G services in two southern suburbs of Stockholm in December 2019. Rival operators Telia and Tele2 switched on their own 5G networks towards the end of May, while fourth player Telenor is also expected to launch soon.

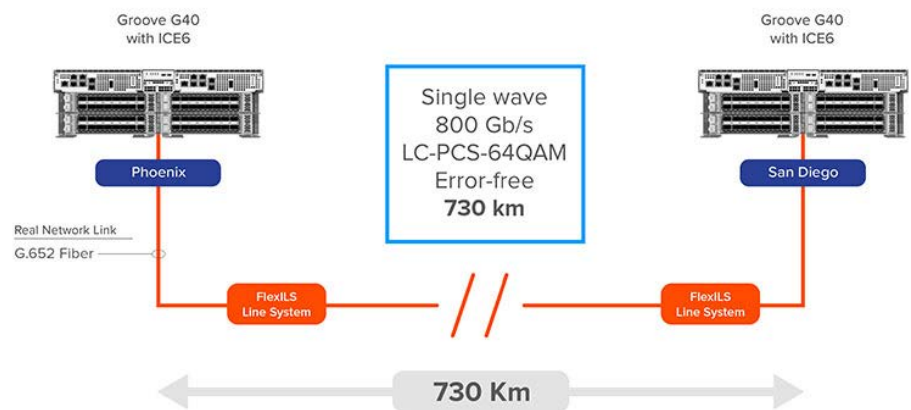
Windstream, Infinera Transmit 800G Over Long-Haul Network

Windstream worked with Infinera to trial 800 gigabits per second (800G) over 730 kilometers in a live production network between San Diego and Phoenix. The single-wavelength transmission occurred across Windstream's long-haul network. Windstream and Infinera also looped back the signal to achieve a 700G transmission over 1,460 kilometers. The trial was performed using Infinera's fifth-generation coherent optical technology - Infinite Capacity Engine (ICE6). The parties say the results of the trial prove that ultra-high-speed optical transmissions, such as 700G and 800G, can be deployed in real-world network applications over significant distances. Windstream says innovations in faster optical transport will enable network operators to realize increased efficiency in cost per bit and power per bit, as well as increased capacity per fiber. Buddy Bayer, chief network officer at Windstream, is speaking on a free FierceWireless virtual panel today, discussing innovations in optical transport. Bayer said the reason Windstream wants to see 400G, and eventually 800G, is because these technologies increase the density for a pair of fibers, which creates a cost savings.

"Packing more bandwidth in a pair of fibers is more efficient, and cost decreases," said Bayer. "As a service provider, I need a community to start to leverage it. We're seeing data centers starting it, and then we're seeing transport from data center to data center. It's a progression." He said 400G will really take off when "the router world" starts to pick it up. "It's still cheaper to turn up four 100G clients than doing one 400G client," said Bayer. "When the routers move to 400G, it will cause things to take off. We'll start to see 400 gig clients cheaper than doing four 100 gig clients.

We haven't crossed that threshold yet. We're probably talking about a window of less than 18 months." The 800G trial follows on the heels of a 400G trial, which Windstream and Infinera conducted in April. The 700G and 800G transmission performance in the latest Windstream/Infinera trial was enabled by advances in Nyquist subcarriers, a technology developed by Infinera's Optical Innovation Center. Nyquist subcarrier-based solutions map the traffic into tightly packed, lower-baud-rate digital subcarriers within a single optical carrier.

Windstream 800G Field Trial: Phoenix to San Diego



Orange Introduces 400Mbps Speed Option

Orange Belgium has introduced a new top speed option of 400Mbps for fixed broadband customers on its 'Love' dual- and triple-play packages. From 15 June, the 'Internet Boost' option will double the

previous maximum download speed of 200Mbps and increase upload speeds to 40Mbps for customers on Telenet's network and 20Mbps for those within VOO's footprint. Orange says the move is

in response to a doubling of its customers' fixed internet data consumption over the last year, largely due to the shift to remote working during the COVID-19 pandemic.

Orange Plans Poland 5G Launch in July

Orange Polska says it plans to launch its first 5G mobile services on 1 July under the name #hello5G. The firm says that around six million people will be covered by its 5G networks at launch, via 1,600 base stations in cities including Warsaw, Lodz, Krakow and Katowice. The network will utilize frequencies in the 2100MHz band while it awaits the planned auction

of spectrum in the 3.5GHz band, which has been delayed by the COVID-19 outbreak but which the government hopes to complete by the end of this year. Orange is the largest of Poland's four main mobile network operators (MNOs) in subscriber terms, with 13.7 million active users and a 28% market share at the end of March 2020, according to TeleGeography's

GlobalComms Database. Rival operator Plus (Polkomtel) launched the country's first commercial 5G network last month, while another cellco, Play (P4), says its own 2100MHz 5G infrastructure now covers 53 cities and towns, though it is still to begin offering commercial services.

Telekom Tests 2100MHz 5G in Three Cities

Deutsche Telekom (DT), which provides fixed and mobile services in Germany through its Telekom Deutschland subsidiary, has begun tests of 5G in Dusseldorf, Halle/Saale and Ingolstadt. The test network utilizes frequencies in the 2100MHz band and comprises 54 antennas in Dusseldorf, covering the inner

city area and the Derendorf district, twelve in Ingolstadt (increasing to 51 in the next few days) and 28 antennas in the eastern industrial area of Halle/Saale. In total, TD plans to switch on over 40,000 5G antennas in the 2100MHz band this year, benefiting more than half of the German population. The firm is using Dynamic Spectrum

Sharing (DSS), which enables the parallel operation of both LTE and 5G in one frequency band. TD's currently operates a 5G network in the 3.6GHz band in the eight cities of Berlin, Bonn, Darmstadt, Cologne, Munich, Hamburg, Frankfurt and Leipzig.

T-Mobile Poland Switches on 5G

T-Mobile has become the latest Polish cellco to announce a 5G launch, with services now available via 1,600 base stations and covering up to six million people. The firm says that by the end of June its 5G footprint will include Warsaw and the surrounding area, Lodz, Krakow, Poznan, Wroclaw, Plock, Opole, Czestochowa, Rzeszow, Bielsko-Biala, Kielce and the Upper Silesian Industrial District. The network uses the 2100MHz band. Fellow Polish operator Orange recently announced that it would be introducing 5G services on 1 July, and it

will be utilizing the same infrastructure as T-Mobile under their 'NetWorkS!' joint venture. Plus (Polkomtel) launched the country's first commercial 5G service in May this year, covering around 900,000

people using 2.6GHz spectrum. An auction of 5G licenses in the 3.4GHz-3.8GHz range is expected to be held in late 2020 or early 2021, having been postponed earlier this year due to the COVID-19 outbreak.



CTM Ready to Launch 5G across Macau Once Licenses are Awarded

The CEO of Companhia de Telecomunicacoes de Macau (CTM) says the firm is ready to launch 5G services as soon as the local government awards operating licenses. Vandy Poon Fuk Hei is cited by Macau News as saying that

the firm has completed deployment of a network with full outdoor coverage and is now moving onto improving the signal indoors, with a plan to complete the rollout by the end of the year. Poon added that CTM has invited companies from different

sectors to partner to explore and promote different 5G application scenarios to support the development of services for markets such as media, education, banking, real estate and transportation.

New Data Highlights Enterprise Wi-Fi 6 and 5G Opportunities

A new report from management consulting powerhouse Deloitte highlights the growing opportunity for service providers with Enterprise Wi-Fi 6 and 5G. Businesses will spend heavily on these advanced wireless networking technologies over the next three years, according to Deloitte's forecast. Organizations will spend an estimated \$115.7 million over that period, with 86% of networking executives saying that advanced wireless will transform their organizations about the same amount (87%) expect advanced wireless technologies to create significant competitive advantages for their companies. More than three quarters (76%) expect 5G to be a "critical" networking technology for their company in three years, while 70% feel the same way about Wi-Fi 6. Advanced wireless technologies are gaining in strategic importance as respondents expect their use of 5G and Wi-Fi 6 to more than double over the next three years and their use of 4G LTE and Wi-Fi (5 and below) to lessen, but not disappear, according to Deloitte analysts. "Our survey confirms that networking executives are 'all in' when it comes to adopting the latest wireless technologies," said Dan Littmann, principal, technology, media and telecommunications, Deloitte Consulting LLP, in a prepared statement. "Respondents resoundingly view advanced wireless technologies as a key enabler of AI, Cloud and Analytics-based innovations. The Covid-19 pandemic itself may even accelerate demand for automation that enables social distancing in the workplace and relies on a more robust and powerful network infrastructure."

Among other survey findings:

- 57% of network executives believe their company's current networking infrastructure prevents them from addressing the

innovative use cases they would like to target.

- More than 8 in 10 cited advanced wireless connectivity as "very" or "extremely important" to their organization's ability to take full advantage of AI, edge computing, IoT, cloud and big data analytics.
- Respondents rank data speed (63%), resilience and reliability (62%) as well as security of networks and data (61%) as the most important factors of success with advanced wireless.

Businesses will be turning to their trusted technology partners for strategy, implementation, and ongoing support with this growing interest in advanced wireless networking technology. It presents a real opportunity for service providers to play that role. ETI can help our clients better seize this opportunity. We have a portfolio of products and services, from next generation service fulfillment and subscriber management, to network automation and professional services, all of which can be put to work in support of client initiatives. Contact us to start a dialogue on how we can help you monetize this opportunity.



Magenta 5G Reaches 600 Locations

Full-service provider Magenta Telekom, which was formed last year from the merger of wireless operator T-Mobile Austria and cableco UPC Austria, has announced that its 5G network is now active at 600 locations across the country, covering 25% of Austrian homes and

businesses. By the end of the year the total coverage will increase to 1,200 locations, representing almost 40% of homes and businesses. Magenta Telekom noted that it is implementing Dynamic Spectrum Sharing (DSS) to enable the parallel operation of two mobile communications

standards (4G and 5G) in one frequency band at the same location. Between 2018 and 2021 Magenta plans to invest around EUR1 billion (USD1.1 billion) in its fixed and mobile infrastructure across the entire country. 📶

ARTICLE

Satisfy 5G Data Transmission Capacity Demand With a New-generation Fiber

In order to allow multicore fibers to be deployed quickly and easily for industrial application, InPhoTech has created a fiber design ready for implementation in existing networks. A complete system based on InPhoTech's IPT-CORE consists of a 7-core or a 19-core passive optical fiber together with fan-in/fan-out components on both ends of the fiber.

5G communication is clearly a leading trend in the telecom industry today. This new reality of connecting all and everything is in the air – but not only there. 5G mobile communication is expected to support the transmission of much larger volumes of data with much lower signal latency than the former generation. This imposes extreme requirements in terms of transmission capacity on the wireline part of the transport network – the telecom grid critical for supplying each 5G radio-base-station or antenna mast. This grid functions using millions of kilometres of optical fiber cables that have to support both the ongoing incremental increases in transmission requirements as well as extreme peak demands like that recently caused by the COVID-19 pandemic.

The most obvious way to increase the capacity of optical fiber systems is to deploy cables with higher fiber counts. However, a less evident problem emerges, especially in highly dense urban areas: the existing infrastructure is not capable of accommodating a larger number of optical fiber cables. There are two main reasons for this. Firstly, the capacity of cable ducts is limited, resulting in massive cost increases for new cable installations; and secondly, optical fiber telecom systems need to follow the trend towards miniaturization and integration in current technology.

There remains only one efficient, unexplored dimension for increasing fiber capacity, and that is adding more spatial channels in a single fiber strand. Each such channel – or core – shall perform as a single-core fiber in terms of transmission properties and be fully compliant with legacy fiber installations and active equipment.



Patryk Urban, DSc, PhD
Business and Technology Development Manager
InPhoTech, Poland



IPT-CORE multicore fibers by InPhoTech are an innovative solution dedicated to boosting optical link capacity. These standard diameter fibers contain 7 separated cores (with 19-cores available in an increased-diameter fiber). In InPhoTech's proprietary design each single-mode core of IPT-CORE is fully compliant with the ITU-T G.652 recommendation so that other established signal multiplexing methods can be used effectively. As a result the transmission capacity within a single optical fiber cable multiples dramatically.

In terms of fiber-optic network deployment and maintenance, multicore fiber is expected to bring savings of 70% to 80% in investment and operational expenditures respectively. This comes from the reduced number of fibers to be installed, lighter cabling, fewer fiber terminations, less space occupied in a telecom duct and shorter time-to-repair.

In order to allow multicore fibers to be deployed quickly and easily for industrial application, InPhoTech has created a fiber design ready for implementation in existing networks. A complete system based on InPhoTech's IPT-CORE consists of a 7-core or a 19-core passive optical fiber together with fan-in/fan-out components on both ends of the fiber. The fan-in/fan-out component allows information to be sent and received to and from each core independently, thus effectively providing

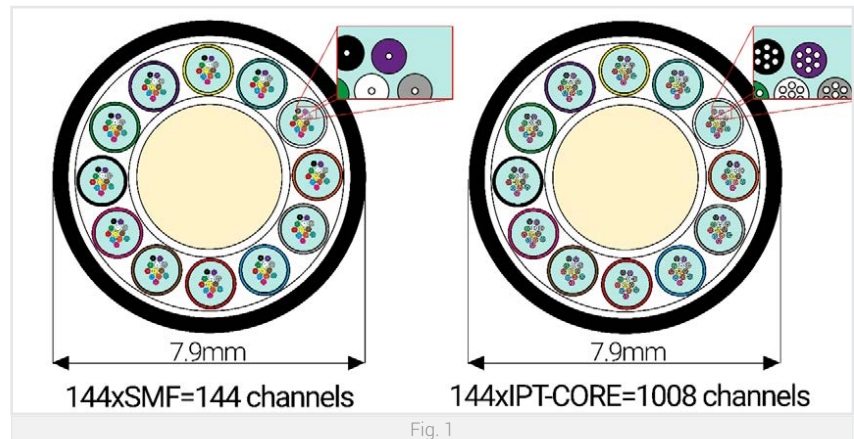


Fig. 1

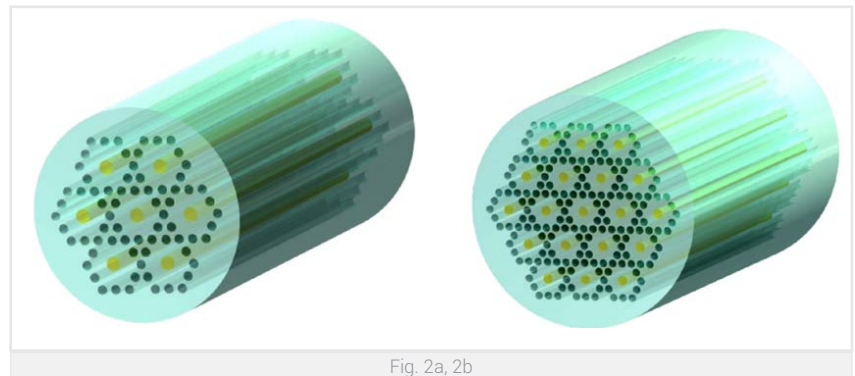


Fig. 2a, 2b

the functionality of 7 or 19 fibers within a single fiber. Furthermore, 1x7 all-fiber power splitters and erbium doped active multicore fibers (an active IPT-CORE) for signal amplification are also available. These products enable InPhoTech's solution to be used in long-haul, metro or access networks without replacing the existing transmitting-receiving devices.

Besides the necessary technological developments, there are solid economic reasons for turning towards IPT-CORE fibers. In terms of network deployment and maintenance, multicore fiber is expected to bring savings of 70% to 80% in investment and operational expenditures respectively. This comes from the reduced number of fibers to be installed, lighter cabling, fewer fiber terminations, less space occupied in a telecom duct and shorter time-to-repair.

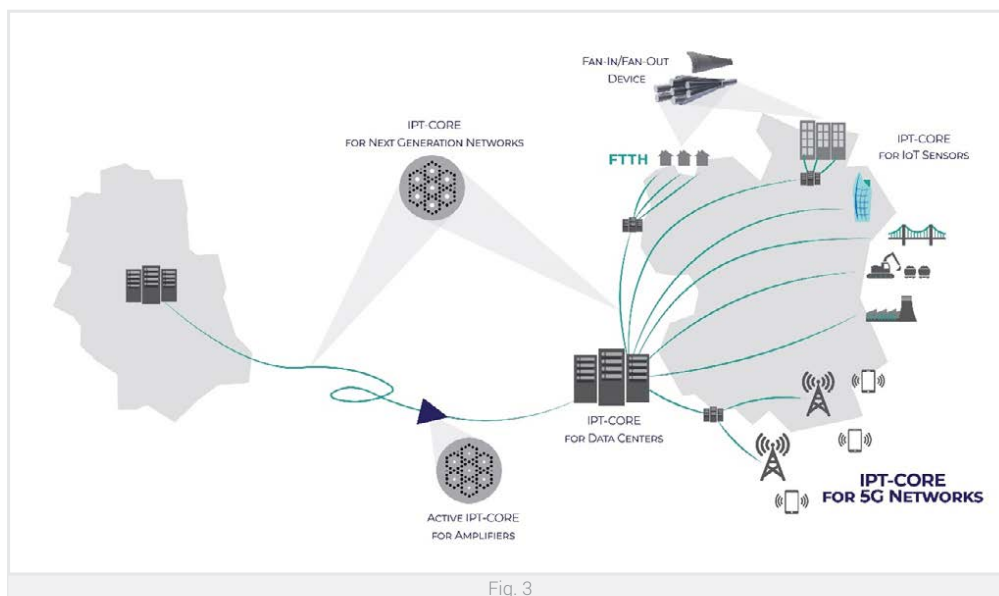


Fig. 3

Providing a complete solution, the IPT-CORE technology by InPhoTech satisfies the demand for increased capacity in telecom networks, making it both available and affordable. IPT-CORE is ready to fit a multiplied transmission into an existing infrastructural envelope. Designed with network integration in mind our multicore fibers and components enable quick deployment and provide an efficient investment in next-generation network capacity. [\[4\]](#)

REGULATORY NEWS

ITU Launch 2020 Guidelines on Child Online Protection (COP) with Key Recommendations to Keep Children Safe Online

The International Telecommunication Union (ITU) launched new 2020 Guidelines on Child Online Protection (COP), a comprehensive set of concrete recommendations for children, parents and educators, industry and policy-makers on how to contribute to the development of a safe and empowering online environment for children and young people. The COP Guidelines serve as a blueprint that can be adapted to national or local customs and laws. The new guidelines were re-designed from the ground up to reflect the significant shifts in the digital landscape in which children find themselves, such as the Internet of Things, connected toys, online gaming, robotics, machine learning and artificial intelligence. In addition, this new edition addresses an important lacuna: the situation faced by children with disabilities, for whom the online world offers a particularly crucial lifeline to full and fulfilling social participation. Consideration of the special needs of migrant children and other vulnerable groups has also been included. Today one in three children use the Internet. In developing countries, children and young people are leading Internet usage, and it is estimated that over the next five years, this population will more than double. In addition, the COVID-19 global pandemic saw a surge in the number of children

joining the online world for the first time, to support their studies and maintain social interaction. Due to the pandemic, many younger children began interacting online much earlier than their parents might have planned. At the same time, the need to juggle work commitments left many parents unable to supervise their children, leaving them at risk of accessing inappropriate content or being targeted by criminals in the production of child sexual abuse material. With this context in mind, it is clear that more than at any time before, keeping children safe online requires a collaborative and coordinated international response, demanding the active involvement and support of a broad number of stakeholders – from

industry stakeholders including private-sector platforms, service providers and network operators, to governments and civil society. Accordingly, in developing these new guidelines, ITU and its partners sought to create a highly usable, flexible and adaptable framework firmly based on international standards and shared goals – particularly the Convention on the Rights of the Child and the UN Sustainable Development Goals. The Guidelines also aim at supporting children and their entourage by informing and engaging children, raising awareness on interned safety related issues, and supporting the development of digital skills and digital literacy.



Celcom Ready to Roll Out 5G Upon Securing Suitable Spectrum

Malaysian mobile operator Celcom is reportedly prepared to deploy 5G technology commercially, pending the allocation of suitable frequencies. The Edge Markets reports Celcom's chief executive Idham Nawawi as saying that his company has – among other things – already upgraded its core network

to accommodate the next generation of mobile broadband technology, while stating it would be 'just a matter of months' before its 5G service could be made available to consumers once it has suitable frequencies. 'We have upgraded our core network to be ready so we just need to add the capacity of the core network ... We

still have some other areas to work on of course, but we will be ready to roll out the service soon after we get the green light from [the Malaysian Communications and Multimedia Commission]. Of course, other factors in the process such as ordering and delivery of equipment have to take into account,' he said.

EC Probes Consumer IoT Sector EC Probes Consumer IoT Sector

The European Commission (EC) launched an inquiry into the consumer IoT sector, fearing the nascent market may already be subject to competitive distortion. In a statement, the EC said the probe was an early-stage move designed to inform its future policy. Margrethe Vestager, EC VP and Competition Commissioner (pictured) explained the sector is “expected to grow significantly



in the coming years and become commonplace in the daily lives of European consumers”. The focus will be on products including smart home appliances and wearables. Vestager explained the key to success in the sector appeared to depend on gathering “large amounts of user data”, meaning the EC must ensure “market players are not using their control over such data to distort competition, or otherwise close-off these markets for competitors”. Early indications suggested such competitive distortion is already underway, the EC stated, citing “restrictions of data access and interoperability, as well as certain forms of self-preferencing and practices linked to the use of proprietary standards”. “IoT ecosystems are often characterized by strong network effects and economies of scale, which might lead to the fast emergence of dominant digital ecosystems and gatekeepers, and might present tipping risks.” The EC warned if competition concerns are identified, it could open investigations to ensure compliance to EU rules, to prevent abuse of market dominance and restrictive business practices. It plans to publish final findings in mid-2022.

Malaysian Communications Minister Issues Unexpected Directive Allocating 700MHz Spectrum

In an unexpected development, it has been revealed Malaysia's communications minister, Datuk Saifuddin Abdullah, has issued a directive ordering the Malaysian Communications and Multimedia Commission (MCMC) to assign spectrum in the 5G-suitable 700MHz band to five companies. The directive – dated 15 May 2020 – has only just now come to light, after it was discovered on the regulator's website, with no official announcements having been made at the time of the development. According to ‘Direction No.4 of 2020’, three companies are to be allocated 2x10MHz in the 700MHz band, namely: Celcom (723MHz-733MHz/778MHz-788MHz); Digi Telecommunications (703MHz-713MHz/758MHz-768MHz); and Maxis (733MHz-743MHz/788MHz-798MHz). Meanwhile, the other two companies to be allocated spectrum will receive a 2x5MHz block, Telekom Malaysia (718MHz-723MHz/773MHz-778MHz) and Altel Communications (713MHz-718MHz/768MHz-773MHz). No word regarding pricing for these new spectrum allocations has been forthcoming, however, while notably a new ministerial

determination (‘Determination No.1 of 2020’, also dated 15 May 2020) has revoked an earlier piece of related legislation (‘Determination No.2 of 2017’, 8 September 2017), which had set a fixed price for spectrum allocations in the 700MHz band. Previously, in January 2020 the MCMC published a final report on the allocation of spectrum, including frequencies suitable for 5G, in which it said it was considering plans to allocate both 700MHz and 3.5GHz frequencies to a single entity comprising a consortium formed by multiple licensees. However, given this latest development, and the award of 700MHz frequencies to individual companies, the authorities’ plans for the 3.5GHz band are now unclear. Indeed, according to local press reports requests for further information regarding the matter have not been responded to by the MCMC, which has still yet to release an official announcement regarding the new spectrum allocation. Alongside the developments related to the 700MHz band, yet another ministerial direction (‘Direction No.5 of 2020’, 15 May 2020) has ordered the MCMC to allocate a 2x5MHz block in the 900MHz band to Altel. Finally, a further

determination (‘Determination No.2 of 2020’, 15 May 2020) has ordered the reallocation of a spectrum in the 2600MHz band, noting that the new frequency assignments are pursuant valid for 15 years. Coupled with this, a third direction (‘Direction No.3 of 2020’, 15 May 2020), detailed the frequency allocations in the 2600MHz band for eight companies, broken down as follows:

- Altel (2540MHz-2560MHz/2660MHz-2680MHz)
- Celcom (2530MHz-2540MHz/2650MHz-2660MHz)
- Digi (2560MHz-2570MHz/2680MHz-2690MHz)
- Maxis (2510MHz-2520MHz/2630MHz-2640MHz)
- Redtone Engineering and Network Services (2500MHz-2510MHz/2620MHz-2630MHz)
- U Mobile (2520MHz-2530MHz/2640MHz-2650MHz)
- Webe Digital (2575MHz-2595MHz)
- YTL Communications (2595MHz-2615MHz).

3GPP 5G Formally Endorsed as ITU IMT-2020 5G Standard

The International Telecommunication Union Radiocommunication Sector (ITU-R) formally approved the 3rd Generation Partnership Project (3GPP) 5G technology (with the Narrowband Internet of Things (NB-IoT) included) as International Mobile Telecommunications-2020 (IMT-2020) 5G standard at the ITU-R Working Party 5D (WP5D) #35 meeting, which was convened online on July 9th due to concerns of the ongoing global pandemic. A game-changer to the development of the mobile telecom industry, this announcement was collectively witnessed by more than 200 representatives and experts from regulatory agencies, telecom manufacturing and operating businesses,



and research institutions from all over the world. This great milestone was realized after the ITU affirmed through much scrutiny that 3GPP 5G fulfills the entire set of the technological requirements of IMT-2020 5G standard. Through close collaboration of industrial partners from all the relevant countries, ITU has reached the IMT-2020 5G milestone on schedule, leading the entire globe closer to a fully connected, intelligent world. The standard, IMT-2020 5G, is an umbrella developed by the ITU towards 5G, or the fifth generation technology standard for mobile networks 2020 and beyond. To ensure technological leadership and superiority over previous cellular technologies, the ITU has posed challenging requirements and developed stringent assessment standards. Since 2016, the ITU has been undergoing a profound and thorough assessment of all received candidate proposals based on 5G's three major use cases: enhanced Mobile Broadband (eMBB), ultra-reliable low-latency communication (URLLC), and Massive Machine-Type Communications (mMTC). Finally, 3GPP 5G was approved

as the technology meets the technological standards of IMT-2020 for supporting diverse 5G applications in terms of service support, spectrum, and performance indicators. The technology boasts a peak rate of over 20 Gbps, a latency of less than 1 ms, and enablement of one million connections per square kilometer. The host of the meeting, ITU-R WP 5D, is a working group under the ITU that is responsible for the terrestrial radio access of International Mobile Telecommunications (IMT) systems. Over the past 20 years, the ITU-R WP 5D standardized 3G (known as IMT-2000), 4G (known as IMT-Advanced), as well as the current 5G standard (or termed as IMT 2020 and beyond). 3G and 4G have enabled the mobile telecom industry to achieve significant accomplishments worldwide. Led by the ITU-R WP 5D, countries and regional organizations around the world will continue to work together on mobile communications. Huawei will also continue to make contributions to advance the development of global mobile communications technologies.

FCC Adopts RDOF Auction Rules

Satellite broadband providers using low-earth orbit (LEO) satellites may not be shut out of bidding to provide low-latency service in the RDOF auction after all. The FCC today adopted rules for the RDOF, or Rural Digital Opportunity Fund, auction, and those rules would not categorically prevent LEOs from bidding to provide low-latency service. The commission didn't provide details, but the plan likely would be to evaluate LEO bids on a case-by-case basis. As FCC Chairman Ajit Pai put it, "We didn't entirely close the door on LEOs [bidding] in the low-latency tier." Phase 1 of the RDOF auction, to be known as Auction 904 and scheduled to begin October 29, will award up to \$16 billion in funding over 10 years to cover some of the costs of bringing broadband to areas where it is not already available. Funding will be awarded through a reverse auction, with

funding going to the entity that commits to deploying service for the lowest level of support. A weighting system will favor bids to provide higher speed or lower latency service. The commission had been expected to prevent all satellite broadband providers from bidding to provide low-latency service, but apparently had a last-minute change of heart with regard to the LEO operators. A second-phase auction will follow the Phase 1 auction and will award \$4.4 billion for census blocks that are partially served, based on data to be collected through a new process that is expected to be more accurate. According to FCC Commissioner Michael O'Rielly, the commission will reconsider which technologies are categorically prohibited from bidding in the second-phase auction. RDOF Auction Rules

The RDOF auction rules came in the form

of a public notice adopted at today's monthly commission meeting. Officials at today's meeting outlined key points:

- Bids will be by census block group and will include census blocks with no availability of 25/3 Mbps service.
- The public notice details procedures for collecting key information prior to the auction via a short-form application designed to determine potential bidders' legal, technical and financial qualifications.
- The auction will end when the support amount of all bids is equal to or less than the budget and competition within census block groups has been resolved.
- Winning bidders will be required to submit a more detailed long-form application after the auction.

Oman TRA: 5G Networks Affected by External Radio Interferences

The Telecommunications Regulatory Authority, (TRA), has issued a statement on radio interference in 5G networks, which has significantly affected the efficiency of the 5G networks in some regions of the Sultanate. A statement issued online by Oman News Agency (ONA), said: "The fifth generation (5G) networks affiliated with Oman Telecommunications Company (Omantel) and Oman Qatar Telecom (Ooredoo) are affected by transborder radio interference, which has significantly affected the efficiency in some regions of the Sultanate." Eng. Yousef bin Abdullah al- Balushi, TRA Vice- President for Spectrum Affairs, stated: "The TRA issued a notice to inform users in the Sultanate that the 5G networks of mobile operators in the Sultanate (Omantel and Ooredoo) are affected due to external radio interference." He added, "TRA will discuss the latest developments at a meeting of the Technical Committee of the Technical Office of Communications of the GCC General Secretariat to be held on June 23rd and 24th. There

are other countries in the region that suffer also from the radio interference on the fifth generation networks of its operators." "The solution requires a concerted effort and coordination to quickly find the source of the interference," he added.



GSMA, ETNO Urge EU to Back 5G For Economic Revival

Trade associations the GSMA and ETNO set out a list of policies they believe the European Union (EU) should adopt to aid post-pandemic economic recovery, including timely spectrum auctions and support for new infrastructure models including open RAN. In a joint statement to EU leaders, the organizations detailed a number of priorities to help the fixed and mobile industries support the development of a strong digital ecosystem in the wake of the recession brought about by the Covid-19 (coronavirus) crisis. They noted such moves would be "instrumental to lift workers and businesses out of the current crisis through sustainable and lasting economic growth" adding there was an opportunity for the EU to accelerate progress in sectors including cloud and edge computing. Among the lengthy wish list was the need for supportive measures to aid 5G and fiber rollout, including appropriate pricing and coverage obligations for spectrum licenses. The groups also urged support for RAN sharing agreements; national incentives for fiber rollout; allowing "innovative infrastructure solutions" including cloud, edge and quantum computing; and measures to tackle red tape and expenses around public site access. Continuing industry support for open RAN, the organizations noted such initiatives "have the potential to support Europe's multi-vendor approach, while reducing deployment costs, further



strengthening the security of the equipment and unleash more network innovation". Outside of telecoms infrastructure matters, the groups used the opportunity to highlight the importance of increasing uptake of new technologies, the vital role of digital initiatives for education and once again underline the damage done by 5G misinformation. Across Europe, the GSMA and ETNO noted there had been 180 arson attacks on telephone antennas in 11 countries as of 2 July.

Mobile Operators Issued Formal Warning Over QoS Failings

The Regulation Authority for Telecoms and Post (ARTP) has issued formal warnings to Senegal's three major mobile network operators (MNOs) – Orange, Free and Expresso – for failing to meet quality of service (QoS) standards. The regulator

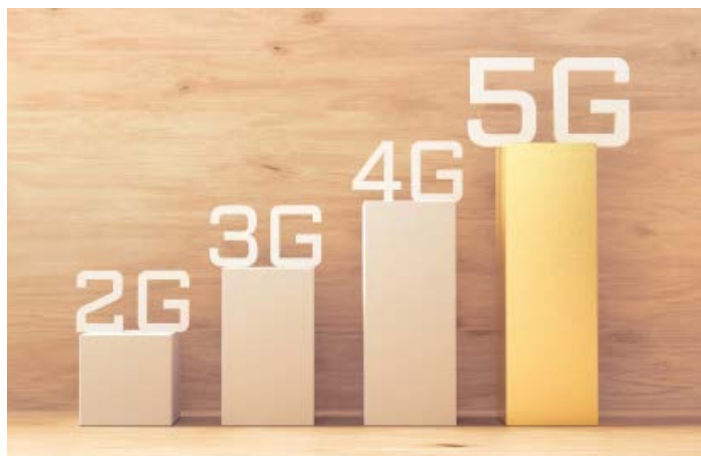
noted it had been compelled to take action after a recent audit revealed 'failings which negatively impact the electronic communications sector and cause enormous disruption to consumers'. Under Article 177 of the Code of Electronic

Communications, the three companies have been given 30 days to meet agreed QoS obligations for mobile voice and data services or face sanctions.

Emerging Markets Will Rely On 2G And 3G For Another 5 Years - GSMA

A new report from the GSMA cautions that while operators look to the future of 4G and 5G, they must not disregard their legacy 2G and 3G networks. By 2025, the report claims that around two thirds of all mobile network traffic will be on 4G and 5G networks. However, it will be a different story in emerging markets, with the majority of users continuing to have access only to older technology standards. This means that billions of mobile users in Africa, India and Latin America will remain on 2G and 3G up to 2025. However, the importance of 3G is not limited to developing markets, with the GSMA noting that its research had found that around 20% of mobile traffic was delivered via 3G networks in the US and Europe. This underlines the importance of operators maintaining their legacy networks while investing in newer deployments. Mats Granryd, director general of the GSMA, said: "We are at the dawn of a new era in mobile with the imminent launch of the first 5G networks and the Internet of Things poised to further transform the way we live and work. Meanwhile, operators continue to expand and upgrade their 4G networks in order to provide an evolutionary path into the 5G era." "In the years ahead, mobile network operators will need to balance the

capital expenditure demands of deploying their 5G networks and extending the reach of their 4G and LTE networks, with the operational expense of continuing to run their legacy network infrastructure. In order to do this, they will need to consolidate as many aspects of their mobile network infrastructure as possible."



Anti-Trust Agency Meets to Consider Team LLC's VEON Armenia Bid

Armenia's State Commission for the Protection of Economic Competition (SCPEC) met this week to consider an application to acquire the country's largest operator by revenue VEON Armenia (trading as Beeline) by Team LLC, the new venture set up by brothers Hayk and Aleksandr Yesayan in April of this year after they jumped ship from another altnet, Ucom. SCPEC chairman Gegham Gevorgyan was quoted by Arka News as saying that the commission had carried out 'a large-scale study of the telecommunications sector in Armenia and abroad with special focus on global trends and merger transactions over the past five years. It also assessed the level of centralization in the field and studied the technical capabilities of market participants.' In a closed meeting – given the commercially sensitive nature

of the talks – Team LLC moved to reassure SCPEC that there would be 'no mass layoffs' as a result of a takeover. On 1 July 2020 meanwhile, Ucom opposed the merger plan, claiming that the actions of the Team LLC management constitute 'unfair competition' given their intimate knowledge of Ucom's business going into the bid. A decision on Team LLC's application is still pending. As previously reported by CommsUpdate, last month Team LLC, which will trade under the banner Team. Telecom Armenia, confirmed it was forging ahead with its plan to purchase the country's largest operator, and that the brothers – widely credited with turning Ucom into one of the country's most successful businesses before they unloaded their shares amid a dispute over the direction of the firm's future – had

applied to the SCPEC for a permit to buy 100% of the shares in VEON. The move reportedly followed VEON's own filing to SCPEC and the Public Services Regulatory Committee (PSRC), seeking permission to sell its shares to Team LLC. 'Team is paving a new way in Armenia's telecom and digital services market and this purchase will help us further enhance our professional team and develop the infrastructure,' Team CEO Hayk Yesayan was cited as saying, after confirming the reports about the possible VEON deal. 'Team. Telecom Armenia has already begun designing and building a next generation network,' he added, noting that the purchase of VEON Armenia could 'further accelerate' the introduction of new services and solutions for the Armenian people.

Orange Completes 3.5GHz Purchase in Slovakia

French-owned Slovak telco Orange Slovensko has completed its acquisition of a 5G-capable 3.5GHz license from rival operator SWAN. As reported in

CommsUpdate last month, SWAN agreed to transfer its rights to 3490MHz-3510MHz frequencies to Orange, with the license valid until end-August 2025. In mid-2019

Orange acquired 2x20MHz of spectrum in the 3.5GHz range from another licensee, Slovanet.

FCC Oks Final Set of COVID-19 Telehealth Program Applications

The FCC approved the last 25 funding applications for the COVID-19 Telehealth Program. Congress awarded a total of \$200 million for telehealth as part of the March stimulus package known as the CARES Act. The Commission distributed in its COVID-19 Telehealth Program aimed at helping health care providers secure internet connectivity. A total of 539 grant recipients received money. The money awarded this week totaled \$10.73 million. Since the beginning of the FCC's COVID-19 Telehealth Program, the agency

has approved 539 funding applications in 47 states plus Washington, D.C. and Guam for a total of \$200 million in funding—the amount of money provided by Congress in the CARES Act. “This final tranche of approved funding applications includes recipients in both urban and rural areas of the country, and from coast to coast,” said FCC Chairman Ajit Pai. We have already seen the program's positive impact on expanding access to telehealth services and promoting the well-being of patients and healthcare providers across

the country. And I look forward to seeing how those who are awarded funding today will help patients from New York to Guam, and Alabama to North Dakota.” Pai told lawmakers last month that once the program is over, the agency wants to review how the money was spent and explore ways that might improve the FCC's Connected Care Pilot Program. He explained participants are expected to report back on the program's effectiveness.

271 Bidders Qualified for 3.5GHz Auction, FCC Confirms

In an update to its previous disclosures, the US Federal Communications Commission (FCC) has confirmed that a total of 271 potential bidders have qualified to participate in Auction 105, its sale of 5G-suitable (3550MHz-3650MHz) 3.5GHz spectrum. A further 77 applicants failed to qualify, the watchdog noted. Registered US bidders include: AT&T Spectrum Frontiers, Cable ONE, Cincinnati Bell, Consolidated Communications Enterprise Services, Cox Communications, Frontier Communications, Mediacom, Shenandoah

Cable Television, T-Mobile License, United States Cellular Corporation, Verizon Wireless Network Procurement and Windstream Services. (Note: DISH Network is understood to be bidding as Wetterhorn Wireless.) Turning to the unincorporated US territories, Puerto Rican bidders will include: Aeronet Wireless Broadband and Puerto Rico Telephone Company (Claro), while Broadband VI will target the US Virgin Islands. Over in the Pacific, meanwhile, bidders focused on Guam and the Northern Mariana Islands include

TeleGuam Holdings (GTA), DOCOMO Pacific and PTI (IT&E). In March this year the FCC confirmed that it had rescheduled its planned auction of frequencies in the 3.5GHz band as a result of the COVID-19 pandemic. The spectrum sale – which had been scheduled to commence on 25 June – will now start on 23 July. The auction will offer seven Priority Access Licenses (PALs) in each county-based license area, for a total of 22,631 PALs nationwide. Each PAL will be a ten-year renewable license, consisting of an unpaired 10MHz channel.

All Major Telecoms Obtain 5G Service Licenses from NCC

Taiwan's three major telecoms have all secured 5G licenses after the National Communications Commission (NCC) approved Taiwan Mobile's application. The NCC granted 5G licenses to Chunghwa Telecom on June 3 and to Far EasTone Telecommunications on June 6. The two plan to launch 5G services next month and have 3,000 cell stations built nationwide by the end of this year, the NCC said. Taiwan Mobile originally planned to have 2,000 cell stations built by the end of this year, but it later changed its business plan and increased the number to 4,000, NCC spokesperson Hsiao Chi-hung said. “This highlights the competition

among telecoms. Apparently, all of them are ready to launch services in the third quarter of this year,” Hsiao said. 5G service is expected to be the focus of Taiwan Mobile's shareholders' meeting today, market analysts said. The commission also approved Asia Pacific Telecom's 5G service business plan using the 28 gigahertz (GHz) frequency band, but said it still needs to have its information security plan approved before it can start building cell stations. The three major telecoms would use the 3.5GHz frequency band, which can be accessed by the general public, Hsiao said. The 5G service on the 28GHz frequency band is mainly used in

business-to-business applications, he said. To offer 5G service to the general public, Asia Pacific Telecom plans to lease 5G networks built by other telecoms, Hsiao said. “The commission can only approve such a partnership after the Telecommunications Management Act is implemented next month,” he said, adding that Asia Pacific Telecom would resubmit a business plan on how it plans to lease the networks of other carriers to offer 5G service. The commission said it would review Taiwan Star's information security plan next week.

Portuguese 5G Consultation Resumes

Portugal's National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM) has confirmed that its unfinished 5G consultation process has resumed, as the country's 'state of emergency' is no longer in force. The new consultation deadline has been set at 3 July, after which date the watchdog hopes to proceed with its delayed sale of 5G-suitable spectrum. As

previously reported by TeleGeography's CommsUpdate, on 30 December 2019 ANACOM issued its final approval regarding the frequencies it intends to distribute for 5G use. As a result, the regulator will auction spectrum in the following bands: 700MHz, 900MHz, 1800MHz, 2100MHz, 2600MHz and 3.6GHz. The spectrum sale was originally expected to take place this summer but has been delayed due to the

COVID-19 pandemic. In other regulatory news, the mobile termination rate (MTR) in Portugal will drop to EURO.0036 per minute from 1 July 2020, down from the EURO.0040 per minute rate which has been in effect since July 2019. Going forward, the fixed termination rate (FTR) will decrease to EURO.00046 per minute from 1 October 2020.

Monitoring Compliance with the EU Net Neutrality Regulation – 2019/20

Ofcom published its fourth annual report to the European Commission on monitoring open internet access, also known as 'net neutrality'. The report sets out Ofcom's approach to monitoring and enforcing the EU net neutrality rules from May 2019 to April 2020. Under these rules, broadband providers must treat all internet traffic on their networks equally, and must not give preferential treatment to certain sites or services.

Our monitoring work has identified that:

- the quality of fixed internet access services has improved compared with previous years;

- the UK's broadband and mobile networks coped during the peak of the Covid-19 pandemic, ensuring that people stayed connected; and
- there were no new cases of concern regarding ISP's traffic management practices, and our Codes of Practice relating to transparency of broadband speeds are working well.

Although the UK has left the European Union, Ofcom is still obliged under UK law to produce an annual report on UK net neutrality rules and so we will continue to monitor compliance and publish findings in this area.

Ofcom
making communications work
for everyone

Monitoring compliance with the EU Open Internet Regulation

A report to the European Commission and BEREC

Publication date: 8 July 2020

Beeline Spectrum Deal under Scrutiny in Telecoms Probe as PM Quits

Kyrgyzstan's prime minister Mukhammedkalyi Abylgaziev has resigned following allegations of state corruption in the telecoms sector regarding the sale and transfer of wireless frequencies, although he denied any wrongdoing, stating in his resignation note: 'I have nothing to do with this case, and the accusations made against me have no basis. I am confident that the investigation will put everything in its place and identify the people truly violating the law.' As reported by Eurasianet, MP Janar Akayev has led the accusations in parliament, alleging that Abylgaziev's government has been selling

mobile frequencies at below-market prices, which the PM's office denied. In April this year the State Committee for National Security began an investigation into the sale of radio spectrum licenses, allegedly prompted by a series of deals involving Kyrgyz operator Sky Mobile (Beeline). In March Beeline reportedly bought out cable TV operator Ala-TV, the owner of a '200MHz band' of spectrum, for USD1.8 million before repurposing the frequencies 'for 4G communications' for a token cost via permission from the State Communications Agency (SCA), overseen by the State Committee for Information

Technology & Communications (SCITC). Critics such as Akayev contend that such transactions have cost the Kyrgyz state 'dozens of millions of dollars' in potential revenue. In May, former SCA head Natalya Chernogubova was placed in custody under the investigation into alleged corruption, and local news site 24.kg reported a series of further arrests in June, including the founder of Ala-TV Arthur Khaldarov and the deputy chairman of the SCITC Maksat Dzhylyshbaev. SCITC head Dastan Dogoyev was not detained but was instead questioned as a witness.

EU Pushing Ahead with Digital Tax despite US Resistance

The European Union's powerful antitrust and COVID-19 bailout enforcer says the EU will push ahead with its own digital services tax even if the U.S. sticks to its efforts to block a global deal. European Commission Executive Vice President Margrethe Vestager, from Denmark, is the most senior EU official to speak out in the wake of the U.S. withdrawing from negotiations on the tax. U.S. Treasury Secretary Steven Mnuchin withdrew June 17 from talks brokered by the Paris-based Organization for Economic Cooperation and Development, which aimed to create a global system for taxing digital services in the country where each transaction takes place — at a rate of at least 2 percent — rather than where the tech company is headquartered. Vestager's strong language on the collapsing tax negotiations as well as the broader transatlantic relationship signal the EU is increasingly willing to operate with its elbows out when dealing with the United States, and has all but given up negotiating with the Trump administration. In a wide-ranging virtual interview, Vestager said the EU would "really, really prefer a global consensus" on digital tax, but will push ahead with a regional tax, "if we need to." The new tax is necessary, Vestager argued, due to the ease with which many large tech companies minimize their European taxes. That makes it "so difficult to defend the many, many, many businesses all over the world who pay their taxes," she said. French Finance Minister Bruno Le Maire told the French Senate this month that the U.S. was the lone holdout on a deal: "We were a few inches from an agreement," he told local radio. A frustrated Vestager said that big tech companies are inviting a backlash from both consumers and regulators by repeatedly pushing the limits of EU law. Many of those companies are American, Vestager highlighted, pointing to a long list of antitrust and tax cases against Apple, Amazon and Google as a sign companies are not learning from past EU regulatory tangles. "I worry that we did not have one Google case: We had two, we had three. We've had one Amazon case, (and) now we have a new one. And we unfortunately had to open (two cases) on Apple." She added, archly, "There is, I think, still a learning potential." U.S. President Donald Trump has previously labeled Vestager the "tax lady" over her decision to force Apple to pay over \$14 billion in unpaid taxes to the government of Ireland. Vestager's tough line on foreign tech companies operating in Europe is part of her broader goal for "open strategic autonomy," she said, where the continent pushes back against more aggressive U.S. and Chinese policy postures, maintains open markets, and defends Europe's "welfare states, universal health care, universal access to education." But Vestager also expressed concern that despite shared "fundamental values," the U.S. and EU are allowing themselves to be divided by China, with severe economic and political consequences. Vestager said some Chinese companies do not compete "fair and square" and said "there is a huge problem of reciprocity" when it comes to market access in China. EU officials are frustrated that Chinese authorities block foreign companies from bidding for Chinese government projects, while suspecting that Chinese companies benefit from government subsidies, giving them an unfair advantage in the EU's more open

public tender systems. The frustrations found concrete form last week when the European Commission supported the creation of a legal tool that would allow Brussels to crack down against foreign subsidies, including by blocking acquisitions or banning companies from participating in public tenders. Vestager hinted that she would not be afraid to use the EU's new powers once they are finalized. "Where I grew up in the Western part of Denmark, if you invite people over and they don't invite you back, eventually you stop" inviting them, she said. Another possible solution, she said, would be a joint U.S.-EU "Trade and Technology Council," an idea first proposed by the EU Trade Commissioner Phil Hogan to give Western powers a place to coordinate their position vis-a-vis Chinese technology and commerce. "Right now we are not making best use" of our "shared values and having a common history," she said. Vestager conceded, however, that "China is a partner, for instance, on climate change," and can't simply be cut loose. That has complicated the EU's response on issues like human rights in Hong Kong, where the continent has struggled to move from words to action. Joshua Wong, a leader of anti-Beijing protests in Hong Kong, last week accused the EU of running an "appeasement policy" on Hong Kong, to safeguard its economic interests in China. Vestager acknowledged Wong has reason to be frustrated with the EU — "he's in a very difficult situation." In the wake of the economic devastation wrought by the COVID-19 pandemic, Vestager has been put in charge of ensuring economic rescue packages passed by governments within the bloc do not unduly distort markets. And she reiterated Tuesday that she is enforcing strict rules on those who receive bailout money. Conditions on those rescue funds include a "ban of bonuses of senior management, acquisition bans, dividend bans, and "she said, adding that government support must only be offered with clear "sunset clauses." Vestager also noted the EU attaches more stringent conditions to using government money to recapitalize or restructure a company than it attaches to short-term offers of liquidity support. Businesses that were failing before the pandemic will not be allowed to take government money to camouflage their existing weaknesses, she added.



House GOP Leaders Unveil Bills to Streamline Broadband Deployment

Energy and Commerce Committee Republican Leader Greg Walden (R-OR) and Communications and Technology Subcommittee Republican Leader Bob Latta (R-OR) unveiled a comprehensive package of 26 bills that aim to streamline broadband infrastructure deployment. The legislation would promote new and upgraded infrastructure deployments, incentivize competition and consumer choice, right-size regulations for building infrastructure across industries, and facilitate broadband deployment on federal land. The cornerstone measures would streamline permitting for wireless providers to deploy new or co-located macro towers and small cells. The bills would preserve local authority over siting wireless infrastructure while also making it clear localities must respond to siting requests within set timeframes. They also set deadlines for localities to approve or deny siting requests. The Wireless Infrastructure Association thanked the Republican members of the committee, and the leadership of Reps. Walden

and Latta, for their focus on wireless broadband deployment. "As we have seen throughout the pandemic, connectivity has been essential, and we appreciate the committee's commitment to bringing broadband to communities across America. We look forward to continuing to work with the members of the committee so that our nation can reap the benefits of 5G," said WIA VP Government and Public Affairs Matt Mandel. The Competitive Carriers Association also praised lawmakers for their efforts. "Promoting new infrastructure deployment by reducing unnecessary barriers, clarifying federal, state, and local zoning authorities, and fostering competition will result in a win-win-win for consumers, industry, and the economy," said CCA President/CEO Steve Berry. "At a time when consumers are relying on mobile broadband services more than ever before, it is a real positive that policymakers are focused on ensuring broadband can be deployed in unserved and underserved areas." NTCA, The Rural Broadband Association said: "After the

business case can be made to support broadband providers serving in rural areas, freeing up resources by streamlining and simplifying time-consuming permitting processes can help promote the efficient deployment of broadband networks. This is critical as NTCA members work tirelessly to connect as many rural Americans as possible and bridge the digital divide. NTCA is pleased that Congress is taking a renewed look at streamlining the process of broadband deployment, specifically on public lands and in existing rights-of-way. NTCA looks forward to future conversations as these bills move forward."



Gulfsat Madagascar Awarded Backbone Operator License

Gulfsat Madagascar has been designated the country's second backbone operator, ending Telma's monopoly on fiber-optic transmission infrastructure, reports local news outlet 2424.mg. Speaking to journalists following a meeting at the National Assembly, telecoms minister Andriamanahisoa Ramaherison confirmed the Agency for Regulation of Technology

and Telecommunications (Autorite de Regulation des Technologies de Communications, ARTEC) awarded Gulfsat a ten-year license on 17 April, authorizing the company to build, install and deploy new fiber-optic transmission capacity. Gulfsat, which markets commercial services under the 'Blueline' banner, was previously awarded licenses in August

2018 to provide 'fixed and mobile data transfer services' and 'resell additional national transmission capacity'. A key part of the government's plans to liberalize the sector, a decree adopted in December 2019 authorized a second backbone operator to construct its own national network, potentially duplicating Telma's existing infrastructure.

Hong Kong Awards First 5G Subsidies

The Office of the Communications Authority (OFCA) approved the first batch of applications for a government subsidy to promote early deployment of 5G services, with funding awarded to three projects and additional requests being processed. Initial projects include a real-time remote monitoring and support service to improve elevator safety; 3D building modelling for

construction sites; and remote e-sports mini-car racing. Other applications received cover the use of IoT, big data and AI in the recycling, transportation, education and entertainment sectors. OFCA launched the scheme in early May to encourage 5G rollouts, as part of a fresh round of efforts to fight Covid-19 (coronavirus). Under the program, the government is funding up

to 50 per cent of the direct costs related to deploying a 5G project, with a cap of HKD500,000 (\$64,513). Applications are accepted until 30 November on a first-come, first-served basis, OFCA said. HKT, 3 Hong Kong and China Mobile Hong Kong introduced 5G services on 1 April, with SmarTone following in late May.

U.S., EU Part Ways in Regulating User Content on Social Media

U.S. President Donald Trump's attack on Twitter Inc. has highlighted how the European Union and the U.S. are taking radically different approaches to overhaul how social media platforms should treat user content. As both sides of the Atlantic move to update longstanding legal protections for internet platforms, Europe's goal is obliging tech companies to cut back on hate speech and disinformation. In the U.S., Trump is seeking to strip the legal protections if platforms engage in potential censorship or in any political conduct. The U.S. and EU rules, which protect social media companies and other platforms from liability for what users post on their sites, were designed more than 20 years ago to promote growth in the then-nascent internet sector and have since underpinned how the web works today. Now, as the rules are being re-examined both in the EU and the U.S., the question for policymakers is how platforms should treat user-generated content posted to their sites -- which could consist of hate speech, incite violence or spread disinformation -- and what legal ramifications platforms should face with respect to those decisions. While drawing Trump's ire, Twitter's decisions to add a fact-check label to his unsubstantiated claims about mail-in voting and a warning that a post about the protests in Minneapolis glorified violence, have garnered support from a senior EU official. "I want platforms to become more responsible, therefore I support Twitter's action to implement a transparent and consistent moderation policy," said European Commission Vice President Vera Jourova in relation to the labels on Trump's tweets. "This is not about censorship," Jourova said, speaking at an event streamed online last week, "it is about having some limits and taking some responsibility of what is happening in the digital world." But Twitter's fact-check label prompted Trump to unveil an executive order aimed at scrapping legal protections for social media sites that engaged in censorship or in any political conduct. The measures, which, if enacted, are designed to force companies to be more hands-off about what users post, is

drawing a distinct line with Europe over how to approach content-moderation policies. In contrast, the EU is planning changes to its framework, which it is set to announce by year-end, so that platforms like Twitter and Facebook Inc. shoulder more responsibility if users spread hate speech or other illegal content. That means platforms could be obliged to scour their sites for those posts instead of acting as neutral conduits. Recent European laws have already chipped away at the longstanding legal protections, for instance by requiring platforms to obtain licenses for copyrighted content before user posts are uploaded. In France and Germany, platforms can be fined if they fail to remove illegal hate speech and other content quickly enough. And various EU initiatives, including voluntary codes of conduct, have also pressured platforms to remove hate speech or demote disinformation. Some of those previous initiatives have drawn concern from tech representatives, who say such rules harm freedom of speech by incentivizing firms to block more content than is necessary to avoid sanctions. Trump's order, meanwhile, is also eliciting pushback from the tech community who worry it attempts to punish a private company for speech that the government doesn't like, in violation of the First Amendment. "There are significant differences between the executive order and European efforts to regulate intermediary liability, though both will have an impact on lawful speech," said Matt Schruers, president of the Computer and Communications Industry Association, which represents Facebook and Alphabet Inc.'s Google. While platforms like YouTube and Facebook are wary of shouldering too much liability for user posts, platforms have also suffered blows to their reputations in recent years for not doing enough to police activity, including for letting Russians spread disinformation across the sites to influence the 2016 U.S. presidential election and the U.K.'s Brexit vote. The pressure to do more is coming internally, too. After Facebook employees blasted their leader for his decision to leave the same Trump posts untouched,

Chief Executive Officer Mark Zuckerberg eventually said the company would review some of its content policies. As the EU prepares its so-called Digital Services Act, officials are looking to provide clearer responsibilities for platforms without scrapping the liability protection altogether, according to a person familiar with the matter. The rules will also seek to avoid creating incentives for over-removal of content, the person said. For instance, under the new EU framework, platforms could be subject to fines if they don't have adequate systems in place to remove or keep illegal content off their sites, rather than for individual decisions about a specific piece of content, the person said. Another option under consideration, which has been pushed for by platform association Edima, is to remove any disincentives platforms might have to pursue illegal hate speech or other bad content on their sites. Under current EU laws, firms are only liable for content once they've been made aware of it, making it unattractive for them to proactively seek out such posts. Meanwhile, the U.S. attempt to impose liability on tech companies may be more difficult to enact. Legal scholars have said the order is unlikely to survive a court challenge, like the one filed by the Center for Democracy and Technology, a non-profit group whose advisory council includes representatives from Facebook, Twitter, Amazon.com Inc. and others, claiming the edict violates free-speech protections. In addition, Democrats' views on hate speech and election misinformation in many ways mirror Europe's, and the debate could shift again if they take power after the November elections.



Safaricom Confirms Bid for Ethiopian telecommunications License

Kenya-based Safaricom has lodged an expression of interest (EoI) for one of the two telecommunications licenses that are being made available in Ethiopia. According to The Standard, Safaricom's CEO Peter Ndegwa was cited as saying of the matter: 'Safaricom, together with

other partners, has expressed interest and we will give an update at some point on the progress.' As previously reported by CommsUpdate, last month a request for EoI for two new licenses was launched by the local telecoms regulator, the Ethiopian Communications Authority (ECA), which

confirmed plans to award two nationwide licenses via a competitive bidding process – in accordance with the Communications Service Proclamation No. 1148/2019. Interested parties have been given until 22 June 2020 to submit an EoI.

EC Moves on Apple with Competition Probes

European officials added to growing scrutiny of Apple's business practices, opening probes exploring whether its App Store and Apple Pay services breach competition rules. In statements, the European Commission explained it was exploring whether Apple effectively shut out competitors by mandating the use of its own in-app purchasing set-up in the App Store, while also investigating the terms and conditions imposed on integrating Apple Pay. The App Store probe is a follow up to "separate complaints" by Spotify, and a distributor of e- and audio-books: it will explore whether Apple restricted the ability

of developers to let iPhone and iPad users know of "alternative cheaper purchasing possibilities outside of apps". Concerns raised by a preliminary investigation lie behind the Apple Pay move, and will explore allegations Apple refused access to the service and limited access to NFC on iPhones. Competition Commissioner and EC VP Margrethe Vestager said Apple had apparently established a "gatekeeper role when it comes to the distribution of apps and content to users of Apple's popular devices". "We need to ensure that Apple's rules do not distort competition in markets where Apple is competing with other

app developers." Apple released figures highlighting the economic contribution of the App Store, as it reportedly draws increased scrutiny from US authorities. Citing fresh research by Analysis Group, Apple stated the ecosystem generated \$519 billion in "billings and sales" globally in 2019, \$413 billion of which covered physical products and services; \$61 billion from digital; and \$45 billion from in-app advertising sales. Apple noted it only received commission from digital goods and services, meaning more than 85 per cent of the total went to third-party developers and businesses.

Mexican Senator Proposes Integrating Telecoms, Energy, Antitrust Regulators

Ricardo Monreal, the Mexican Senate Majority leader, has proposed a new bill that seeks to integrate the country's telecoms, energy and antitrust regulatory agencies via the creation of an enlarged regulatory entity. With the approval of this bill, the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT), the Energy Regulatory Commission

(Comision Reguladora de Energia, CRE) and the Federal Commission of Competition (Comision Federal de Competencia Economica, COFECE) would be merged into the National Institute of Markets and Competition for Well-being (Instituto Nacional de Mercados y Competencia para el Bienestar, INMECOB). As per the senator's plans, INMECOB

would be a constitutionally autonomous entity that would focus on investigating markets, guaranteeing competition, and combating monopolies. Monreal claims that the integration would help to save MXN500 million (USD22.3 million) a year by creating synergies that would help streamline highly bureaucratic processes.

Korean Operators Hit with Record Fine for 5G Subsidies

South Korea levied a record KRW51.2 billion (\$42.8 million) fine on operators for continued subsidy regulation breaches, this time relating to building their 5G user base, Yonhap News Agency reported. The Korea Communications Commission (KCC) imposed the largest penalty of KRW22.3 billion on market leader SK Telecom, with KT fined KRW15.4 billion and LG Uplus

KRW13.5 billion, the news agency stated. It reportedly took action following an investigation on handset subsidies offered to 5G subscribers between April 2019 and August 2019. In early 2018, the operators were fined a combined KRW50.6 billion for illegal handset subsidies. They were also penalized multiple times between 2014 and 2016 for ignoring a KRW330,000

handset subsidy cap. Last month the Ministry of Science ICT and Future Planning began assessing the quality of 5G services available following complaints and contract cancellations. The operators launched non-standalone 5G service in early April 2019 and had a combined 5.89 million subscribers by end-March. 📱

ARTICLE

Intigral Pursues Tomorrow's Digital Entertainment Scene



Beyond high-quality streaming, Intigral leverages cutting-edge solutions emerging from the digital entertainment industry and in keeping with the Vision 2030-aligned strategies aimed at positioning the Saudi media and entertainment industry for further growth.

Entertainment, like most aspects of our technology-controlled reality, is being impacted and shaped rapidly by the advancement and emergence of new technologies. Platforms are being continually updated and customized to attract subscribers on the lookout for original, captivating, and powerful content fine-tuned to meet their ever-changing tastes. Whilst the Media and Entertainment market is geared for double-digit growth over the coming years, with global industry revenues projected to reach \$792.3 billion by 2022, the COVID-19 outbreak has

placed even further pressure on digital entertainment providers to speed-up their offerings and supply viewers with quality content options.

In Saudi Arabia, where an ambitious digital transformation plan is being pursued, the Kingdom is emerging as a regional digital hub, with a multitude of opportunities for foreign and local investors. MENA's leading digital entertainment pioneer, Intigral has already positioned itself as an innovator and major adopter of modern technologies. From the outset, Intigral has invested significantly in the potential of the digital entertainment industry in Saudi Arabia, and has pursued a unique strategy to seize this opportunity.

Intigral's flagship product, Jawwy TV, is regarded as the first OTT provider in MENA to present a hybrid solution that combines both OTT services, covering linear TV and on-demand content, and investments in quality original productions, making it both a content distributor and production house. The value proposition of Jawwy TV is to provide an affordable viewing experience to both smartphone users and households across MENA with a comprehensive OTT platform that offers a seamless viewing experience and broad content portfolio, aggregating content from across the region and further afield from around the

world. In this context, it is also one of the first regional services to combine live and VOD content from providers into one easily accessible platform. Beyond high-quality streaming, Intigral leverages cutting-edge solutions emerging from the digital entertainment industry and in keeping with the Vision 2030-aligned strategies aimed at positioning the Saudi media and entertainment industry for further growth.

Cloud features

In light of the ever-evolving customer demand patterns, and increasing business operating pressures, media enterprises are opting for cloud-based solutions. Cloud based solutions offer scalable computing capabilities that underpin on-demand services while supporting the development of new business models that accommodate fragmented audiences.

Powered by its cloud-based platform, Jawwy TV features high-performance streaming with scalable deployment offering increased flexibility to its customers. As such, the cloud enables Jawwy TV to expand its existing library frequently and rapidly, supporting its ongoing production of original content and allowing it to offer efficient solutions to viewers, such as multi-screen viewing and high quality streaming with minimal latency.

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Intigral additionally utilizes data analytics to optimize performance which improves the understanding of customers' needs and behavioral trends in order to deliver more tailored viewing experiences while ensuring maximized performance.

Catching up with disruptive AI

One major technology impacting today's world is Artificial Intelligence (AI). Saudi Arabia has invested heavily in this emerging technology with \$135.2 billion going towards the development and adoption of AI. Additionally, a royal decree issued last year mandated the establishment of the Authority for Data and Artificial Intelligence and the creation of the National Center for Artificial Intelligence and the National Data Management Office.

In the digital entertainment realm, AI supports the advanced analysis of consumers' behavior trends, inclinations, and preferences enabling enterprises to make smart decisions leading to increased levels of customized offerings for viewers and a deeper engagement, thus contributing to higher satisfaction and improved perception of an entertainment service. Most content recommendations on Intigral's Jawwy TV are curated individually for each user based on their viewing activity, enabling Intigral to deliver a personalized experience based on their preferred content.

On another level, AI also allows for a seamless, cohesive, and efficient production process with reduced production times and cost, saving production entities valuable resources while guiding their decisions towards producing targeted viewer inspired content. AI offers multiple tools for back-end media operations as production companies utilize AI algorithms to automate audio/video synchronization, language translation, among many other

applications. Additionally, AI-based functions, including the augmented reality (AR) and virtual reality (VR) are shifting consumption patterns by making for a mesmerizing, individualistic viewing experience.

One word: Blockchain

Although still in the nascent stage for digital entertainment, Blockchain technology will provide multiple benefits for media and entertainment companies. The innovative distributed ledger facility could help the media and entertainment industry control piracy, slash costs, and promote the security of digital artworks.

As Intigral currently offers content catering to viewers in the GCC, Egypt, and Lebanon, and releases original content once a month on average, the company's strategy is focused on adopting the distributed ledger technology to drive more automation across its platforms and enhance its operational efficiency.

Ready to roll!

The roll out of 5G networks will be a key enabler for the expansion of digital media and entertainment services by providing higher bandwidth required to support their streaming requirements. It is estimated that around 12% of all smart mobile devices sold globally in 2020 will be 5G-enabled, which means more users will be watching more content of higher quality on the go.

As 5G penetration levels increase across the Kingdom, it will make an impact on all aspects of digital entertainment through offering rapid transmission speeds (up to 100 times faster than 4G), and allowing users to download an HD movie in just a few seconds rather than minutes as a couple of immediate advantages. Intigral, supported by stc which is playing a leading

The roll out of 5G networks will be a key enabler for the expansion of digital media and entertainment services by providing higher bandwidth required to support their streaming requirements.

role in the deployment of 5G across the Kingdom, Bahrain and Kuwait, will lead to an increased viewing experience of JawwyTV for its customers.

While such technology updates pose a disruption and challenge for media and entertainment providers, Intigral sees them as a major opportunity to embrace new trends and technological advancements both for production and distribution purposes. Intigral seeks to become the leader in the MENA digital entertainment sector through offering unmatched products and services with advanced capabilities and features to its customers. It also aspires to seize the support provided by the Kingdom's leadership towards the development and integration of advanced technologies by continually developing new and state-of-the-art entertainment offerings.

Although many of these technologies are still in their early stages of development, Intigral realizes the significance of being a first mover and preparing itself for new advances before they become mainstream. This progressive mindset and approach ultimately positions Intigral as a key contributor towards revitalizing the Saudi media and entertainment sector, a main pillar of the ambitious Saudi Vision 2030. 🇸🇦

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A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION



Afghanistan

A meeting was organized between ATRA and Ministry of Communication and Information Technology leadership for providing better services, further coordination and distinction of duties. Mr. Mohammad Omar Mansoor Ansari, ATRA Acting Chairman and Technical Vice-Chairman, stressed on technical problems and as well cooperation between the two governmental entities in addition to joint working, servicing and monitoring issues. "ATRA has accelerated telecom infrastructure strengthening and monitoring process and has collaborated with all governmental organizations in the field of digitalization", added Mr. Ansari. ATRA, MCIT and NISA discussed on finalizing a comprehensive mechanism for digitalizing governmental organizations as per instruction of H.E President Mohammad Ashraf Ghani. Mr. Mohammad Faheem Hashimi, Acting Minister of Communication and IT, emphasized on ATRA activities and achievements and both sides stressed on keeping on coordinating meetings for improving affairs and services. (July 5, 2020) atra.gov.af

The Ministry of Communications and Information Technology says it has developed a new policy to regulate telecommunications and Internet services. This policy will help improve the quality of services by all telecommunications companies as well as it will

lower the charges, MCIT said. According to the Acting Minister of Communications, although the prices of some companies have been decreased, standard services have not been yet provided. As per the new policy, state-owned companies will invest \$175 million by the end of this year to improve the quality of services, he said. The ministry also acknowledges that the infrastructure of state-owned companies is not standardized, and thus the government has decided to standardize them this year. "Our goal is to create a new policy to provide better services to citizens and to invest plenty in state-owned companies," said Fahim Hashemi, MCIT Acting Minister. On the other hand, economists criticize the MCIT leadership, noting that the ministry has not been able to develop a good plan to provide standard services. According to them, telecommunication and Internet services in Afghanistan are more unsustainable and expensive than in any other country. "There has been a lot of investments in telecommunications, but standard services are not being provided to Afghans, which means that the strategies in this ministry are not efficient and capacity needs to be built," said Hakimullah Sediqqi, an Economist. Experts point out that MCIT is one of the most important sectors in the body of the government, but it has not been able to bring the best out of it. (June 13, 2020) ariananews.af



Algeria

The government has established a special working group to draw up a roadmap to make local loop unbundling (LLU), domestic mobile network roaming and number portability more effective. Telecoms Minister Brahim Boumzar oversaw the formation of the interdepartmental committee, telling press that the group will examine 'the different technical, legal and economic aspects' of Law 18-04 of May 2018 ('General Rules on Post and Electron-

ic Communications') in terms of 'sharing infrastructure, pooling resources, promotion of competition and encouragement of investment in the telecommunications market.' Expected roadmap targets include improving the availability and choice of services for subscribers in Algeria's sparser populated interior regions, and forcing operators to improve quality of services.

(June 19, 2020) Agence Ecofin



Bahrain

Bahrain's Spectrum Strategy and Coordination Committee has approved the National Frequency Plan, based on the findings of the World Radio Conference (WRC-19) and the needs of the ICT

sector in the Kingdom. The second meeting of the Committee, which was held remotely and attended by representatives of nine entities, was chaired by Mohammed Ali Al Qaed, Chief Executive

of Information & eGovernment Authority (iGA). Despite the current challenging circumstances, the Committee has continued to meet and work towards streamlining frequency spectrum-related services, developing policies for planning and distributing resources to better serve the Government Action Plan. Al Qaed welcomed the committee members and advised to make use of the current challenges to be able to turn them into opportunities. Organized frequency distributions allow for greater flexibility in assignment of frequencies, keeping pace with rapid development within the sector and meeting current and future needs. The Kingdom of Bahrain is one of the first Arab countries to adopt a four-year plan in line with global and local requirements. National plans such as these contain essential spectrum management guidelines required for the sector to thrive. The committee also approved new maritime radio service regulations better aligned with recent global radio communications and maritime radio navigation developments. The protection of maritime

radio communication frequencies and radio navigation is ensured through provisions in the Radio Regulations (RR) of the International Telecommunication Union. Accordingly, it is necessary for governments to issue regulations on the use and interoperability of marine equipment. The two documents will offer a clear and transparent guide for radio communication sector manufacturers and investors, with guidelines aimed at regulating the sector and supporting the national economy. The committee also discussed national telecommunications services regulatory frameworks and related legislation, in addition to machine-to-machine applications and Internet of Things – IoT within the frequency bands used for terrestrial and satellite services, noting the importance of studying emerging technologies and working on a national strategy that contributes to the creation of a regulatory framework that meets the requirements of all stakeholders.

(June 15, 2020) tradedearabia.com



Bangladesh

The telecoms regulator stepped up a campaign against what it believes to be a dominant position held by operator Grameenphone, imposing fresh restrictions requiring it to seek approval before introducing new voice and data plans. The Bangladesh Telecommunication Regulatory Commission (BTRC) must approve any new tariff packages and wants to validate all existing plans by 31 August, the newspaper wrote. The new requirements come more than a year after BTRC classified Grameenphone as a significant market power. Grameenphone had a 46 per cent market share at end-March with 75.3 million mobile connections, GSMA Intelligence data showed. In 2019,

BTRC set a higher minimum price on calls for Grameenphone customers and raised the interconnection charge above the level set for other operators. But The Daily Star stated the regulator held off enforcing this due to the Covid-19 (coronavirus) pandemic. Last month, Grameenphone paid the balance of BDT20 billion (\$235.5 million) in alleged unpaid taxes after an appeals court upheld audit claim by BTRC. In February it paid BDT10 billion. The operator disputes the validity of the audit and claim, and plans to continue to fight the penalty in court. In November 2019, the country's Supreme Court ordered Grameenphone to make the first payment in the case. (June 23, 2020) The Daily Star



Egypt

The National Telecom Regulatory Authority (NTRA) is considering issuing a new regulatory framework for licensing the mobile towers construction and lease. The new framework aims to stimulate investment in the field of establishing and leasing mobile towers, and operating in the Egyptian ICT market where four mobile operators compete to provide mobile services, including 3G and 4G mobile networks, to around 90 million users. The Egyptian ICT market is one of the largest ICT markets in the Middle East and North Africa (MENA) region, representing 4% of the Gross Domestic Product (GDP). It has a number of potentials, including human capital, infrastructure and assets that qualify it for moving deeper into the digital age. It is, also, a very dynamic market; it achieves sustainable and rapid growth rates, in terms of the demand for different ICT services, in general, and broadband services in particular. It is worth mentioning that NTRA is the national authority responsible for managing and regulating the

ICT sector in Egypt, by virtue of the Law No. (10) of 2003. Its mandate is to create an enabling environment for competition among telecommunication operators, and ensure providing quality and effective telecommunication services, nationwide, according to innovative and fair regulations.

(June 17, 2020) tra.gov.eg/en

Egypt has appointed a prominent telecoms industry executive as its Assistant Minister for Global Information Infrastructure – charged with implementing a policy outlined at a Capacity conference last year. Mohamed Nasr Eldin Mohamed Ali was Head of Subsea Cable Infrastructure at PCCW Global until last month, and will now work for Egypt's Ministry of Communications and Information Technology (MCIT). He will work on maximizing Egypt's returns from global infrastructure and investments in the telecoms companies operating in the country, said the MCIT. Nasr

Eldin has been a frequent participant at Capacity's conferences. Last year at Capacity North Africa, in Cairo, he spoke about the PEACE cable, linking Pakistan with east Africa and Europe. The project was "one of the fastest cables I've ever worked on", he told the conference. Nasr Eldin will prepare a work plan for the MCIT and feasibility studies to attract mega data centers and internet traffic exchange centers, said the ministry in its announcement of his appointment. He will be responsible for implementing the state's strategy, represented by MCIT, for transforming Egypt into a global data hub, an attraction and a host to the largest data centers. That was a theme that came up a number of times at 2019 Capacity North Africa. Adel Hamed, CEO of Telecom Egypt, opened the conference by saying that Egypt is poised to become the African hub and the gateway to Africa. Nasr Eldin worked for a decade for Telecom Egypt, finishing with a two-year spell as head of its international business unit before joining PCCW Global in March 2016. At the MCIT he will be responsible for "maintaining Egypt's strategic position as a safe path for submarine cables", said the ministry. He will support "the extension of the global network to the neighbor countries" – again, a specific policy outlined at Capacity's Cairo conference. Nagui Anis Khalil, Vice President of Strategy and Planning at Fiber Misr, said at that event that Egypt "is the second country in the world in terms of submarine cable connections", but "we need to transform from just transit and build upon these cables. North Africa needs more internet exchanges and data centers to keep content in Africa."

(June 14, 2020) capacitymedia.com

Minister of Communication and Information Technology Amr Talaat has revealed the features of new rules for mobile customers who want to change their networks and keep their numbers. The new rules will be put in place to cover the four networks operating in the Egyptian market. Talaat said that his ministry started work on setting the new rules aimed at stimulating competition between mobile companies. They will also allow customers to move between the four mobile operators. In an online press conference on Sunday, Talaat said that the first of these rules will see customers paying their last monthly bill with the previous network. This is provided that the new network takes care of settling any financial dues with the operator he has left. The new rules will come into effect as of Monday, and will apply to prepaid and billed customers. He stressed that the new rules also require that a transfer request submitted by the customer should be implemented in one working day instead of the usual 15 working days. This will occur in line with a clear mechanism laid out by the National Telecommunications Regulatory Authority (NTRA) to monitor the submitted requests. Talaat added that the old system required users to obtain prior approval from the company they wanted to convert to, which was difficult to achieve. Moreover, customers had to pay all financial dues or an insurance amount, and must use their SIMS card for at least one year to be eligible for converting to another operator. He explained that only one out of five transfer requests was approved under the old system, accounting for 20% of the total requests, while the rest were rejected. (June 8, 2020) dailynewssegyp.com



Authorities in Iran say they have been successful in curbing the use of smuggled mobile phones following the introduction of a handset registration scheme. Trend News Agency says that an estimated 12.5 million devices were smuggled into the country in 2018, costing the government USD350 million in lost taxes. Ali Moayedi Khoramabadi, the head of Iran's Headquarters to Combat Smuggling of Goods and Foreign Exchange, declared: 'Due to the government actions regarding registration of mobile phones, all the processes related to the import of devices from customs release to sale have been monitored.' (July 8, 2020) commsupdate.com

Iran's market leader, state-run MCI (Mobile Communication Company of Iran), has been given a deadline of early September to begin providing 5G coverage in Tehran. The country's Minister of Communications and Information Technology Mohammad-Javad Azari Jahromi confirmed to IFP News that the operator was expected to have an operational 5G testing lab ready within the next two weeks. Jahromi added that the operator should push to have 5G services ready in at least five districts of Tehran by

August, with early September as the latest acceptable timeframe. The launch is restricted to Tehran as nationwide coverage cannot be achieved without spectrum currently held by Islamic Republic of Iran Broadcasting (IRIB), a national TV network.

(July 4, 2020) developingtelecoms.com

The Minister of Communications and Information Technology has requested the country's largest cellular operator, state-backed Mobile Communication Company of Iran (MCI), to launch a 5G network in parts of Tehran by early September. Mohammad-Javad Azari Jahromi is quoted by IFP News as saying that he is expecting a 5G test lab to be in operation within two weeks and a live network to be up and running in at least five areas of the capital in August or early September. A wider 5G launch is currently impossible, however, because crucial spectrum is currently in the hands of national TV network Islamic Republic of Iran Broadcasting (IRIB). MCI, known locally as Hamrah-e Avval (first operator), is the largest cellco in the Middle East in terms of subscribers. (June 30, 2020) commsupdate.com

Iran



Iraq

The Iraqi Cabinet has decided to renew the licenses of the nation's mobile providers for a further five years, on the condition that the cellcos clear half of their outstanding debts and commit to launching 4G services by early 2021. The plan was published on the government's website as part of a summary of the decisions made at a cabinet meeting but no further details were forthcoming. Regulatory authorities the Communications and

Media Commission (CMC) and the Ministry of Communications (MoC) have yet to issue statements on the matter. As noted by TeleGeography's GlobalComms Database, the 2G and 3G mobile spectrum licenses held by Iraq's trio of mobile providers – Zain Iraq, Asiacell and Korek Telecom – are all due to expire in 2022.

(July 9, 2020) commsupdate.com



Jordan

Jordanian watchdog the Telecommunication Regulatory Commission (TRC) has claimed that its measures to maintain service quality during the COVID-19 pandemic led to a 'significant improvement' in internet access speeds for users. According to the regulator average download speeds for mobile users increased by 54% during the period from the start of March to the end of May as a result of its decision to allow providers to temporarily utilize additional spectrum for free – the TRC also claimed that it was the first regulatory body in the world to implement such measures. The additional spectrum allowed operators to cope with the additional stresses on their networks during the

country's shutdowns, with the TRC noting that data traffic grew by 8% during the period whilst download speeds increased by as much as 73%. The TRC added that it used dynamic monitoring systems to measure and assess the impact of granting additional spectrum on key performance indicators throughout the period. In addition to the provision of additional spectrum resources for cellcos, the TRC notes that following the arrival of COVID-19 in Jordan it formed an emergency committee with senior members of the authority and the CTOs of network operators to address specific challenges relating to ICT services that might arise during the crisis. (June 15, 2020) commsupdate.com



Kuwait

Kuwait ranked 37th globally and 5th in the Arab world on internet speed with an average speed of 42.44 Mbps, according to the monthly report issued by the "speed test" website released last month. Report added that UAE ranked second in the world and first in the Arab world with an internet speed of 99.67 MB per second, and Qatar came fourth globally and second in the Arab world with Internet speed of 89.11 MB per second. In this context, Information Technology expert Engineer Qusay Al-Shatti stressed in a special statement that Kuwait, in its current position, finds itself in a gap between the three frontline Gulf states that precede it at the speed of the Internet due to a major difference in speeds, which is up to almost a double, pointing out that Kuwait has made good steps in developing its infrastructure by defining 5G service at the level of the three telecom operators in Kuwait. Al-Shatti added the 5G service does not cover all regions in Kuwait until now and needs further development, which is normal, especially as the service has not completed two years since its entry to Kuwait. He pointed out that the link for home internet service is still through copper networks, especially in the old areas. It does not depend on the optical fiber system except in the new

areas negatively impact the available capacities and contributes to slowing down the Internet speed compared to the modern system in the new regions. He pointed out that Kuwait is the least expensive country in terms of internet services compared to other Gulf countries. Nevertheless, the services are almost equal, whether in the business sector or individuals. He stressed that Kuwait is considered in the advanced quarter and ranks among countries with excellent infrastructure and similar to the countries that precede it in ranking. "I recommend concerned officials in the sector to continue working to develop the services provided and try to cover the entire Kuwait with modern services as much as possible." Returning to the report of the "speed test" website, Saudi Arabia ranked tenth globally and third in the Arab world with speed of 62.33 MB per second, Lebanon came fourth in the Arab world and 34th globally with an internet speed of 44.65 megabytes per second. It is worth noting that South Korea ranked first with internet speed of 100.22 MB per second, followed by the UAE, then China ranked third globally with speed of 97.10 MB per second.

(June 23, 2020) arabtimesonline.com



Lebanon

Mrs. Jinane Karam, Spectrum Expert at the TRA and Vice-Rapporteur for ITU-D SG1 Q2/1, participated in the ITU Webinar on “Broadcasting services for COVID-19 response”, where she exposed a presentation detailing the role of radio and television during the COVID 19 pandemic. The webinar focused on the role of broadcasting services and applications in response to the global COVID-19 pandemic. Broadcasting is undergoing countless and rapid transformations and numerous new services and applications are being implemented in this changing environment. (July 7, 2020) tra.gov.lb

The Telecommunications Regulatory Authority Employees Syndicate met with the Minister of Telecommunications HE Eng. Talal Hawat at the MoT premises on 24/6/2020. The main objectives and discussion points on the meeting's agenda related to the activation of Telecom Law 431 and the TRA prerogatives and responsibilities particularly with regard to the spectrum management and licensing. During the meeting, Minister Hawat stressed on his intention to enact and implement Law 431 soon after its revision and amendment. Minister Hawat is convinced that the TRA should practice its prerogatives and relies on the Authority to help him enact the Law through constructive cooperation. It was suggested to hold a joint workshop between both institutions to discuss Law 431 and the amendments to be included. The syndicate expressed the willingness of the TRA to cooperate with the Ministry and help the Minister succeed in his

duties. Employee representatives also highlighted the need to establish a communication channel between the Authority and the Ministry while respecting the institutional existence of the TRA and its scope of work. The Minister ended the meeting by expressing his willingness to cooperate with the TRA and stressed on the fact that he has an open door policy. (June 26, 2020) tra.gov.lb

The Telecoms Minister Talal Hawat declared in a televised news conference that tender documents for international companies seeking to bid for the management of Lebanon's two state-owned mobile networks will be complete within three months. Hawat added: ‘After completing the tender [documentation], I will present it to Cabinet and the tender department to take the necessary measures in order to launch the tender.’ In early May the Cabinet authorized the Ministry of Telecommunications (MoT) to temporarily take responsibility for the two cellular network operators – Touch and Alfa, currently managed by Kuwait's Zain Group and Egypt's Orascom Investment Holding (OIH), respectively – at which point Hawat indicated that the contract tender would be ready by August, although the minister's latest statement suggests this initial declaration was a month premature. Zain and OIH had been informed at the end of 2019 that their rolling short-term contract extensions would not continue, although both companies are expected to be permitted to bid for new contracts.

(June 8, 2020) The Daily Star



Morocco

The World Bank announced a \$500 million funding to help Morocco speed up its digital transformation and enhance its economic and social inclusion. The WB financial support will serve to improve financial inclusion and access to more competitive digital infrastructure and services for businesses and individuals. It also aims to spur private sector growth through access to finance for startups and youth-led enterprises. “The Covid-19 outbreak demonstrated the paramount importance of digitalization as a means to ensure business continuity and promote innovation”, said Jesko Hentschel, World Bank Maghreb Country Director. During this global health crisis, “Morocco's digital transition accelerated rapidly, showing the country's capacity for a greater scale up. Today, more than ever, digitalization opens new opportunities for Morocco, ranging from more fluid economic transactions to better services to citizens and businesses,” added Mr. Hentschel. The WB funding, released within the frame of its Digital Inclusion Development Policy Financing (DPF) program, will support Moroccan Govt's efforts to digitalize key services for individuals and businesses and strengthen the resilience of households and

firms. “Access to finance through digital financial services, credit, social protection programs, and insurance will allow individuals and households to start and expand businesses, invest in education or health, manage risks, and improve the overall quality of their lives,” said Djibrilla Issa, Lead Financial sector specialist and Task team leader. In addition to promoting microfinance, the DPF will support access to foreign currency for startups. “This is a critical measure for innovative Moroccan startups that are striving to compete locally and globally. It will allow them to import digital services that are not available in Morocco in order to enhance their product and service offerings and boost their competitiveness,” said Dalia Al Kadi, Senior Economist and co-Task team leader. Digital connectivity, the backbone of the current reform momentum, requires the availability of a reliable, safe, and competitive digital infrastructure. The WB program will support key policy reforms to promote competition and universal access in the telecommunication and broadband sector, providing opportunities for the digital transformation of enterprises and administrations. It also backs the “Intelaka”

entrepreneurship program by supporting reforms conducive to startups' development and creating new asset classes for early-stage financing for innovative enterprises.

(June 23, 2020) northafricapost.com

Moroccan Minister of Industry Moulay Hafid Elalamy that telecom prices in Morocco are among the lowest in the world and cannot be reduced. The Minister made the announcement before the Productive Sectors Commission at the House of Representatives. The meeting took place to study five requests by parliamentary groups concerning the department's strategy. "Pushing telecom companies to reduce their prices will either make them go bankrupt or prevent them from making more investments," said Elalamy. "We want more investment in this field, we would like to have 5G internet and more." Elalamy also highlighted how telecom companies are contributing to the remote learning campaign in Morocco. His ministry was the one to intervene to ensure free access for students using the online services.

Morocco's Ministry of Education announced on May 31 that the TelmidTICE remote learning platform does not require internet subscription to access, and that students can also download their lessons as well as digital resources on the platform. The Minister of Education, Said Amzazi, said that the initiative aims to promote equal opportunities among Moroccan students and facilitate their access to educational content. On April 20, Morocco's main telecommunication company, Maroc Telecom (IAM), announced donating MAD 1.5 billion (\$146.96 million) to Morocco's Special Fund for the Management and Response to COVID-19. King Mohammed VI created the fund on March 15, with an initial budget of MAD 10 billion (\$979.9 million), to mitigate the negative repercussions of the COVID-19 crisis on the Moroccan economy. The same day it announced its contribution to the fund, an IAM press release reported a 4% growth in total revenue in the first quarter of 2020. The company's revenue currently stands at MAD 9.3 billion (\$911 million).

(June 13, 2020) moroccoworldnews.com



Nepal

Nepal Telecommunications Authority has directed telecommunication service providers to stop selling more than two SIM/RIM cards to each person, which it said leaves room for the misuse of cards, especially in criminal cases. The cellular companies had been directed to enforce the new provision from July 8. The authority said that multiple uses of SIM/RIM cards pose a potential risk on digital payment and banking systems. Min Prasad Aryal, director at the authority, said that the increasing use of digital payment systems has made transactions more efficient in several ways but the untraceability of digital cash may encourage criminal activities such as money laundering. With the utilization of multiple cards on other digital services and social media which stores customer information in the phone, it could also pose a potential risk for criminal activities, he said. The limited distribution of cards for each individual will, however, make it easier to trace the activities, according to officials. He said that as the government is also planning to introduce a Citizens Apps where mobile phones will be the primary way to access it. "So, we thought that the limited distribution of SIM cards will minimize potential criminal activities," he said, adding that the directive has been issued as per international practice. It became important to introduce the rule as the authority recently received complaints of mis-utilization of mobile numbers, he added. Similarly, Nepal Telecom has directed service providers to issue a limit of three SIM/RIM cards per person using CDMA service. For minors, the parents should provide a proof of relationship document as well as other documents when getting a SIM card for minors. Telecommunication service providers can only issue one SIM or RIM card per minor. In case of customers who have already registered more than one SIM card from telecommunication service providers, the cards need to be registered under the names of people who have been using it. However, customers

can take two SIM cards from each service provider, he said. Recently, the telecom authority directed the firms to distribute SIM cards and provide a new one if the customer lost or damaged their original once they show a document to prove their identity. Customers can use their citizenship certificate, voter identity card, passport or any other valid identification determined by the authority. If telecommunication service providers do not adhere to the regulation as directed by the authority, they will face action as per the Telecommunication Act, 2053. Among four licensed telecommunication service providers, Nepal Telecom, Ncell and Smart Cell have been providing the service. According to a management and information system report, there are 19,652,285 Nepal Telecom subscribers, 16,291,997 of Ncell and 2,130,008 of Small Cell as of mid-May. (July 12, 2020) kathmandupost.com

Nepal Telecommunications Authority has directed internet service providers to make provisions to let customers know whether they are getting the proper internet service and speeds as per the agreement. The move comes amid criticism from users who are promised a reliable high-speed internet service in the agreement, but internet service providers (ISPs) fail to deliver. The Internet Service Providers' Association said that providing such service will take time as it needs to install technical devices. With the number of complaints regarding slow internet service rising, the authority directed internet service providers to make provisions so that customers can check if they are getting the proper service and speeds they signed up for, said Min Prasad Aryal, director at the authority. Bhoj Raj Bhatta, president of Internet Service Providers' Association of Nepal said that due to the lockdown, it will take time for ISPs to implement such provisions. He added that ISPs have already started discussions regarding the matter. ISPs have already rolled out the service for corporate houses

while residential customers are still waiting for the feature. Bhatta said that 70 percent of the problems occur between the router and connected device due to several factors such as incorrect placement of the router, resetting the device time and again, quality of router and connecting more devices. In case of issues, internet service providers can provide the information of service used, he said. Though information on real-time bandwidth can be obtained, internet utilization is another thing, with no system in place to access it. Except for a few apps, customers do not have the option to check the speed and information regarding their internet connection. If customers find that their internet speed is not according to the agreement, they can complain to their service provider. Meanwhile, the global speed test report of Ookla in May ranked Nepal 119th, down one position compared to March in fixed broadband, with a download speed of 18.58 mbps against the global average speed of 76.94 mbps. Nepal's upload

speed was measured at 17.80 mbps compared to the global average speed of 41.09 mbps. Since the government imposed a nationwide lockdown, internet utilization across the country has jumped 25 percent. With more people staying and working from home, ISPs ran out of bandwidth quickly, resulting in slow internet and a spike in complaints. According to the association, internet companies have started bolstering their networks by adding additional international bandwidth capacity. Internet utilization after the lockdown has reached 500 gigabytes, an increase of 30-40 percent. Internet service providers who used to manage their network load by dividing it during peak hours and working hours are struggling to provide stable internet during the lockdown as users are using the internet 24 hours, with greater usage during the daytime.

(June 20, 2020) kathmandupost.com



The Telecommunications Regulatory Authority (TRA) confirmed that it studied all the observations it had received from the governors and members of Majlis Ash'shura and citizens with regard to the initial list of rural villages in complementation of the efforts aimed at connecting the internet and telecom services as part of the 500 villages initiative. The first vice-chairman of the TRA and head of the team overseeing the project stated that a new list has been prepared which includes 598 villages with an increase to the previously announced figure. He added that the TRA is currently working with the Ministry of Technology and Communications and the Ministry of Finance to put the finishing touches to an agreement that will be signed with the Oman Broadband Company which is executing the project.

(June 27, 2020) omanobserver.om

The Sultanate's total internet subscriptions, excluding active mobile subscriptions rose by 11.2% to touch 491,985 until the end of April 2020, compared to 442,572 in April 2019. Fixed broadband internet subscriptions, which have more than 256 kilobytes speed increased by 11.3% to stood at 489,961 until the end of April 2020, according to the latest data released by National Centre for Statistics and Information (NCSI). The number of active mobile broadband subscriptions inclined by 27.1% to 5.25 million until the end of April 2020, compared to 4.13 million subscriptions in April 2019. Total fixed telephone lines subscriptions rose by 2.7% to 588,925 until the end of April 2020, against 573,188 subscriptions in April 2019. According to the NCSI report, the number of voice-over-internet protocol (VoIP) lines surged by 13.6% to 215,873, compared to 190,019 subscriptions in April 2019. Further, analogue fixed connections fell 3.6% to 314,314 from 326,184 subscriptions in April 2019. Public payphone connections remained unchanged

Oman

at 6,801, whereas ISDN channels rose by 3.8% to 50,364. The total number of mobile subscriptions fell by 5.5% to 6.23 million until the end of April 2020, compared to 6.59 million subscriptions in April 2019. Out of this, postpaid mobile increased by 11.7% to 816,585 from 731,265 subscribers in April 2019. Pre-paid mobile connections fell by 7.6% to 5.41 million, compared to 5.86 million in April 2019. Also, the number of resellers rose 45.9% to 1.08 million until the end of April 2020.

(June 27, 2020) omannews.gov.om

In the course of its efforts to build a collaboration with large IT companies to further enhance the information and communications technology field in the Sultanate, the Ministry of Technology and Communications (MTC) has signed a Memorandum of Cooperation with Cisco International Limited. The MoC was signed digitally by Dr. Salim bin Sultan Al Ruzaiqi, CEO of MTC and Ali bin Mohsen Al Lawati, GM Oman and Yaman, Cisco. As stated by the MoC, MTC and Cisco will implement capacity building and training workshops, hackathons and improve camps in ICT latest trends and solutions developed by Cisco. Cisco will also help MTC to inspire potential startup ideas and successful solutions to improve and increase through the Cisco platform and featuring them in Cisco innovation centers. In addition, Cisco will offer access to its sandbox environment (Cisco DevNet) for testing and creating new solutions. Both MTC and Cisco will control design thinking framework sessions on artificial intelligence and the internet of things projects to ease solutions development. This MoC will also promote further collaboration between MTC and Cisco to enable knowledge sharing and best practices adoption by government entities and SMEs.

(June 15, 2020) menafn.com



Pakistan

The Consultation Committee on Citizens Protection (Against Online Harm) Rules 2020 held a meeting with Facebook via video conference on 29th of June, 2020 on continuation of the ongoing consultation process over Citizens Protection (Against Online Harm) Rules, 2020. During the meeting, detailed discussions were held with Facebook representatives on their perspective on the provisions of the Rules. The Committee apprised that formulation of Rules is a statutory requirement under Section 37 of Prevention of Electronic Crimes Act, 2016 (PECA). It was emphasized that citizens in Pakistan enjoy complete freedom of expression over internet as enshrined in the Constitution. The Committee also stressed on sustained communication, better understanding of local context and societal values, greater transparency with respect to community standards and content moderation policies and mechanisms by FB to protect citizens against online harm. The Committee and FB representatives agreed on the need for continued engagement and complete transparency.

(July 2, 2020) pta.gov.pk

Mobile phones are the dominant form of digital connectivity in Pakistan, with 89 million unique subscribers as of the end of 2019, according to the GSMA – an industry body representing mobile networks. In a report 'Pakistan Progressing towards a fully-fledged digital economy' launched on Monday, it suggested that to achieve digital ambitions and unleash the potential of the mobile economy, the country must facilitate access to high-quality mobile broadband networks, affordable services and smartphones. "Fair and predictable regimes for spectrum

licensing and tax are central to this for unlocking the huge growth potential, investment and societal benefits associated with a better connected, modern Pakistan that ensures no one is left behind," the publication stated. It discusses the importance to achieve "Pakistan's Digital Vision" of a prosperous and innovative digital economy and outlines the role of the mobile sector in realizing that. The report notes that with decelerating GDP growth, compounded by a rising population, jobs, taxes and productivity gains generated by the digital ecosystem will be pivotal to supporting the health of Pakistan's economy moving forward. (June 9, 2020) dawn.com

Pakistan Telecommunication Authority (PTA) has further extended the deadline for blocking of mobile device IMEIs till July 3, for all GSMA valid IMEIs seen on mobile networks but currently not registered with PTA. The extension has been given to provide relief and facilitation to public and ensure social distancing during this difficult time. The blocking of such mobile devices will start from July, 4 2020 and will be communicated via SMS well in time, said a news release. As per regulations, all mobile devices being connected to local networks using local SIM are subject to registration within 60 days from first use of device on local mobile networks in Pakistan. However, due to extraordinary circumstances, non-registered device IMEIs which were to be blocked between March, 18 to July, 3 2020 will now start getting blocked from 4 July 2020. PTA launched Device Identification Registration and Blocking System (DIRBS).

(June 7, 2020) urdupoint.com



Saudi Arabia

The open access agreement between the Kingdom's six telecom service providers has entered into force, the Communications and Information Technology Commission (CITC) said. CITC clarified in its statement that the agreement will provide fiber-to-the-home (FTTH) broadband services through any subscriber-selected service provider, independent of infrastructure ownership. The end-user will have more options and high-quality services, it noted. The agreement enables the six telecom operators, Saudi Telecom Co. (STC), Etihad Etisalat Co. (Mobily), Mobile Telecommunication Co. Saudi Arabia (Zain Saudi), Etihad Atheeb Telecommunication Co. (GO), Integrated Telecom Co., and Dawiyat Telecom, to open the field between each other and allow utilization of the fiber-optic infrastructure of various companies and serve users. CITC highlighted that the agreement targets over 3.5 million FTTH across the kingdom. According to data compiled by Argaam, CITC launched in Feb. 2020 open access agreements between the Kingdom's six telecom operators,

aiming to encourage competition, attract investment, and increase broadband subscriptions by improving service quality and consumer choice. (July 1, 2020) argaam.com

About 65 percent homes in different villages and hamlets across the Kingdom gained access to the wireless broadband 4G coverage by the end of April, the Ministry of Communications and Information Technology (MCIT) has said. The expanded coverage area was beyond expectations and is an "achievement" within the Kingdom's Vision 2030, Saudi Press Agency (SPA) quoted the Ministry as saying. The Ministry is also continuing its efforts to enhance the digital infrastructure by deploying 5G networks via the construction of about 7,500 new towers so far, to include 11 regions of the Kingdom. This comes within the efforts to raise the standard of telecommunications and internet services in the Kingdom's various regions. The ministry said its efforts to expand the coverage area of wireless broadband 4G to

more remote villages and hamlets continue in partnership with the private sector. The existing coverage includes over 508,000 homes in more than 3,200 villages in the Kingdom's governorates, benefiting about 3 million citizens and residents, the Ministry said. With private sector's partnership, the Ministry aims to reach 70 percent of non-urban areas (villages and hamlets) by the end of 2020. By the end of the year, the Ministry aims to enhance the digital infrastructure by deploying 5G networks and reach a 40 percent coverage of the five major cities Riyadh, Jeddah, Makkah, Madinah and Dammam. The MCIT pointed out that investment in modern digital infrastructure is part of the goals of the Kingdom's Vision 2030. (June 23, 2020) [saudigazette.com.sa](#)

The Communications and Information Technology Commission (CITC) has announced it will lower the cap on termination rates for local mobile and fixed calls. Termination rates, which are the fees network providers charge one another for terminating calls originating outside their own networks, can lead to reduced competition among providers and increased costs for consumers. Local Mobile Termination Rates (MTR) will be set at SR 0.022, and Fixed Termination Rates (FTR) will be SR 0.011, representing reductions of 60% and 48% respectively on previous rates, which were last cut in 2017. The decision comes as a result of a thorough benchmark analysis conducted by the CITC into global averages and regulatory best practice for termination rates, as well as extensive consultations with Saudi Arabia's five telecom operators. The termination rates cap reduction is part of a wider drive to promote fair competition in the sector while encouraging the provision of reliable and affordable services. Similar initiatives aimed at enhancing competition in the telecoms sector include the tendering of new Mobile Virtual Network Operators licenses

in January 2020, with MVNOs also expected to benefit from the reduction in termination fees. Dr. Mohammed Al-Tamimi, governor of the CITC, said "The decision to further reduce termination rates will benefit consumers, operators, and investors alike, and is crucial to the strengthening of the Kingdom's telecommunications ecosystem and competitive environment." The Kingdom's ICT sector, valued at \$28.7 billion, is the largest in the MENA region. The Ministry of Information and Communication Technology recently launched a five-year strategy to accelerate the ICT sector's growth by 50% and increase its contribution to GDP by \$13.3 billion. (June 14, 2020) [saudigazette.com.sa](#)

The Saudi Communications and Information Technology Commission (CITC) announced its intention to enhance the regulatory environment for mobile communications towers. This will be through raising the participation rate of service providers via mergers in the ownership of the towers or their acquisition by interested investors, the Saudi Press Agency reported. According to the CITC, this move is aimed at reducing the capital and operational costs of towers and achieving their maximum efficiency. This will enable to achieve fair competition between mobile operators, and will enhance the deployment of 5G networks, allowing provision of new services such as the Internet of Things, in addition to raising the quality of services for users. The goals also include reducing maintenance expenses for these towers, and upgrading the communications and information technology system in the Kingdom. It is noteworthy that the CITC move follows the example of a number of developed countries under which investors can buy, manage and operate the towers, and then lease them to mobile communications companies.

(June 3, 2020) [saudigazette.com.sa](#)



Dialog Axiata PLC, together with Huawei and Simsyn, has further extended its support for the education sector by way of teleconference solutions for schools across the country, selected by the Ministry of Education (MOE). This is an extension of the Nenas 1377 distance learning initiative launched in March 2020. Contrary to most of the online teaching solutions practiced by schools due to the COVID-19 crisis, this distance learning solution is freely accessible across any network and does not require students to have internet access to sit-in on lessons, thereby ensuring that no child is left behind. This inclusive solution for distance learning will deliver education to students from schools island-wide, via classroom conference sessions, allowing students and teachers to connect through any device and any network at no cost. Students who have internet access can join by logging into the web portal via a smartphone or a laptop, whereas others can tune into the respective session(s) conducted by their school teachers via a feature phone or a landline by dialing the toll-free Nenas 1377 hotline from any network. This solution can sustain up to 48 students joining via the 1377 hotline, whilst parallelly enabling 100 students to connect through the web portal for the

same session. In total, schools can seamlessly conduct individual sessions to students who are connected through the 1377 hotline along with the others who are connected via the internet. Initiated among 100 schools, this distance learning solution will be further extended to 1000 schools across the county in order to support the ongoing COVID-19 impact mitigation efforts. With a long-term vision of facilitating schools with distance learning, this initiative aims to promote equitable access to education whilst continuing to enable the learning continuity of students from the safety of their homes. Hon. Dullas Alahapperuma, Minister of Education Sports and Youth Affairs stated "Today, we bear witness to the turning point of the Sri Lankan education system. As a result of this global pandemic, the education sector was adversely affected, prompting countries to find quick solutions. Taking mammoth steps in advancing the education sector, Dialog Axiata has facilitated the Sri Lankan government in its vision of instilling distance learning in the country. We have taken this unique situation as an opportunity to teach children through various mediums of distance learning. However, less than 30% of Sri Lankan households have access to the internet.

Sri Lanka

Partnering Dialog, we can now further target students through a widely accessible medium - the telephone. I would like to take this opportunity on behalf of the MOE and the Sri Lanka government to extend my gratitude to Dialog. Together, we are committed to ensuring equitable access to education in this time of crisis." Commenting, Supun Weerasinghe, Group Chief Executive of Dialog Axiata PLC said, "We extended these inclusive teleconferencing solutions alongside the Nenas 1377 distance learning helpline to the Ministry of Education to facilitate 1000 schools across the country with the necessary tools to ensure continuity of their educational endeavors while also upholding a high standard of

quality education and bridging the disparities faced by teachers and students in the emerging era of e-Learning. We would also like to take this opportunity to extend our gratitude to the efforts taken by the Telecommunications Regulatory Commission of Sri Lanka (TRCSL) and all network operators for facilitating us in making this inclusive distance learning solution freely accessible across all networks. Our aim is to enable teachers and students with their education efforts, and not be marginalized due to the new-age digital divide, by utilizing the power of the telephone, which is one of the most commonly available facilities in the country." (June 8, 2020) dailynews.lk



A Syrian court has ordered that mobile network operator SyriaTel be placed under judicial custody, amidst a row over dues allegedly owed by the company but disputed by the telco's majority owner, Rami Makhoul, the cousin of President Bashar Al-Assad and one of Syria's richest and most influential businessmen. Regional news agency Zawya cites a statement from the court as saying the seizure is intended to 'guarantee the rights of the public treasury and the rights of shareholders in the company'. The development comes on the heels of the Damascus Securities Exchange (DSE) deciding earlier this month to suspend trading of the company's shares – also with the intention of protecting shareholders – and has been seen as an unusually public clash between the

government and an erstwhile member of the regime's inner circle. The Syria Telecommunications Regulatory Authority (SyTRA) demanded SYP233.8 billion (USD1.09 billion) in back taxes from SyriaTel and rival cellco MTN earlier this year. Whilst MTN had reportedly agreed to negotiate with the regulator regarding a mechanism for payment of the owed amount, SyriaTel has so far refused to do so, disputing SyTRA's claims. Following this, the government ordered a 'precautionary hold' on Makhoul's assets as a 'guarantee of repayment' of the amount SyTRA claims is owed by SyriaTel, and imposed a travel ban on the businessman.

(June 9, 2020) commsupdate.com

Syria



Deputy Minister of Ministry of Transport and Infrastructure Ömer Fatih Sayan attended the Electronic Commerce Information System Digital Promotion Meeting, where the e-commerce data of the country was also announced. Stating that pandemic affects the whole life deeply, Sayan pointed out that the internet usage, which has been following an upward trend in recent years, has increased more with the epidemic. Prime Minister Recep Tayyip Erdogan, "Our agenda in our digital economy, digital commerce, digital Turkey, the future of cities are" reminiscent of the promise Sayan, "We have worked with this awareness and planning. Digital Transformation at the National Technological Breakthrough of the map of the path we have walked under the leadership of our President. And when 5G, domestic respirator, cyber security or unmanned aerial vehicles, all of which are more valuable than yesterday. We should make fine adjustments, sectoral strategies, sensitive and longest possible plans. I hope we will succeed next, as we have come to these days." Deputy Minister Sayan said, "As a result of the notifications made to ETBiS, the necessary methodology for all the data collected, determination of the overall e-commerce volume, the production

of statistics regarding the distribution of e-commerce volume on the basis of variables such as industry, provincial and demographic features, forecasting "The narrowing and expansion periods of e-commerce by determining their studies and sharing these statistical information with the public on a monthly basis, forming medium and long-term e-commerce policies and evaluating them economically constitute an important part of the studies." Deputy Minister Sayan: It will be possible to reach more detailed information with this protocol. Touching on their efforts in this field as the Ministry of Transport, Sayan said, "Statistical information is collected from the service providers operating in the postal sector by BTK. However, the data of the mail sector collected without e-commerce data obtained in a healthy way is significantly missing. With the protocol signed in this context, it will be possible to reach more detailed information about the Turkish postal sector with the data to be sent to BTK. Also, considering that one of the most important dynamics of the mail industry is e-commerce, I think that this data will provide an important input to BTK in many areas such as the quality of service in the mail industry, user rights and the solution of consumer complaints.

Turkey

The e-commerce data prepared by the Ministry of Commerce will also be an important retaining point for the comprehensive arrangements that BTK plans to make in transition to a recipient-oriented mail industry. " Deputy Minister Sayan: One of the Most Important Dimensions of E-Commerce Security Underlining that e-commerce should be carried out safely, Sayan said, "Security and privacy of personal data is the most important obstacle to the widespread spread of e-commerce services. In 2009, a third of Internet users in EU countries expressed reservations about payment security and personal data as the main reason they did not shop online. Although this rate dropped to about 25% in 2015, it still remains the most important problem to overcome. Under

the coordination of our Ministry, we carry out preventive activities against phishing sites, malicious internet sites and threats and vulnerabilities in critical institutions and organizations across the country with the works carried out in our National Cyber Incidents Response Center (USOM). Within the scope of USOM studies, 20,081 harmful connections were detected in 2019, and 16,330 harmful connections were detected as of June 2020, and their controls were denied at the infrastructure level". Deputy Minister Sayan ended his speech by emphasizing that they are ready to cooperate and work together with the Ministry of Trade on this issue.

(June 24, 2020) btk.gov.tr



The International Telecommunication Union (ITU) and the Telecommunications Regulatory Authority (TRA) of the United Arab Emirates, signed an agreement on 29 June 2020 to establish an International Centre of Digital Innovation, known as I-CoDI. I-CoDI will help ITU Members, Sector Members and other key stakeholders to integrate innovation into their national development agendas and activities. The Centre, to be based in Geneva, Switzerland, will also have a virtual component. "Innovation is at the heart of the digital revolution and an essential part of the fabric of ITU," said ITU Secretary-General Houlin Zhao. "We welcome the decision by the TRA, a long-standing partner of ITU, to establish its future International Centre of Digital Innovation in Geneva. It will help catalyze efforts to turn today's digital revolution into a development revolution for all." "The growing digital innovation divide is at the heart of the digital divide," said Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau. "Innovation has been recognized as a powerful engine for promoting development, addressing socio-economic challenges and increasing the overall competitiveness of countries. I look forward to working closely with the TRA to establish I-CoDI and contributing to the development of innovation strategies to accelerate digital transformation and the achievement of the 2030 Agenda for Sustainable Development". The I-CoDI design phase will be completed by the end of 2020. H.E. Hamad Obaid Al Mansoori, Director General of the TRA, said that "this experience reflects the success of innovation and creativity policies pursued by the UAE, which resulted in hundreds of projects and initiatives that contributed to achieving the UAE's leading position in innovation. The UAE is no longer a country that imports ideas, but rather a source of innovation and success in various sectors." I-CoDI builds on CoDI, the Centre of Digital Innovation (CoDI) launched by the UAE in 2013, as part of the UAE's efforts in digital transformation and enhancing the digital journey of the UAE citizens and Government, through research, innovation, education, training, skills development, quality assurance and of advisory services. Engineer Majid Almadhloum, Director of CoDI at the TRA, stressed the importance of this initiative and added that "ITU's aim to transfer the experience of CoDI indicates

United Arab Emirates

its uniqueness and importance in serving the goals of global societies aimed at achieving sustainable development and digital transformation. We are proud of our accomplishments to this day, and we will continue working to achieve more success." At the 2014 World Telecommunication Development Conference (WTDC-14), Member States mandated the ITU Telecommunication Development Bureau to strengthen ITU membership capabilities to integrate ICT centric innovation in their national development agendas and promote a culture of innovation through enhanced partnership and a multi-stakeholder cooperation in a converged ICT ecosystem. (June 29, 2020) itu.int

The Telecommunications Regulation Authority, TRA, is cooperating with operators in the telecommunications sector in supporting the UAE's health, education and business sectors over the past three months, by launching some 19 incentives and initiatives that have helped maintain the activities of these sectors. In response to the global pandemic of the new Coronavirus (COVID-19), the government of the United Arab Emirates has been keen to issue a set of decisions that contribute to ensuring the safety of citizens, residents and visitors on the UAE territory. According to the Federal Competitiveness and Statistics Authority, the TRA's support for the health sector enabled 800 health and education-related websites to provide services for free, in addition to several websites related to national quarantine and health participation campaigns from March until the start of June 2020. The TRA's initiatives aim to support the health sector by providing free internet access to data via mobile phone to health applications and platforms. In support of the health sector, the TRA extended the validity of all wireless permits to hospitals and medical centers regardless of the date of the end of the authorization as well as provided a package of wireless frequency as backup to support the health sector's wireless communication systems. In cooperation with Al Yah Satellite Communications Company, Yahsat, and Ministry of Education high-speed satellite broadband services were provided for students and teachers in multiple locations across the UAE, where terrestrial broadband alternatives are unavailable. Yahsat's satellite links will provide remote users access to online libraries,

educational applications and collaborative platforms, ensuring e-learning and knowledge sharing through this phase of home-based schooling. The company's services will be available to users free of charge. Parents of students of determination were exempted from paying applications fees. The TRA has also cooperated with telecommunications operators to provide a package of data needed to access the distance learning feature for families without home internet, free of charge. The TRA instructed the telecom licensees in the country to suspend deactivating the mobile services due to documents expiry. This is in line with the government initiative to enable work from home and distant learning. TRA also increased the speed of fixed broadband to 100 Mbps, to secure high internet speeds that ensure smooth running of online work and distance learning, as well as ensuring the best quality of video and voice calls and sharing files online. To facilitate a smooth experience of distant learning and remote working and due to the significant changes to the demand for telecommunications services and the usual telecommunications traffic flows, the TRA urged service providers to enhance its network capacity, perform network re-engineering when required, and to implement any necessary changes as soon as practicable in order to facilitate the success of distance learning and remote working. In order to support federal government entities within the UAE to enable them to work from home, the TRA has assisted by: Provide suite of services to enable government entities to work from home including collaboration, video conferencing tools and cloud services; Increase the infrastructure capacities and Create

and circulate guidelines and policies on how to securely deploy and use collaboration tools. In its effort to encourage people to stay at home and practice social distancing, the TRA announced a list of purchasing apps used in the UAE for consumers to use instead of physically performing daily grocery shopping. The TRA updates the list on a regular basis based on market developments. The online stores included in the list include large shopping centers and cooperatives, in addition to grocery stores, meat and vegetable shops, and other services. (June 22, 2020) wam.ae

The Telecommunications Regulatory Authority, TRA, has published the monthly report on Cybersecurity developments in the Federal Government of the United Arab Emirates for the month of May 2020, on its website. The report reviewed the efforts made by the National Computer Emergency Response Team (aeCERT) to prevent and address cyber-attacks that were experienced by the UAE federal entities only. The team responded to approximately 77,000 cyber-attacks, during the month of May, varied between malware (70 percent), vulnerabilities (22 percent) and phishing attacks (8 percent). The team also handled 285 cyber incidents. The Computer Emergency Response Team was established by Resolution 5/89 of 2008 issued by the Ministerial Council for Services. The team was established to improve practices of information security, and protect the IT infrastructure in the UAE from risks and violations, in conformity with the TRA strategy that aims at supporting and ensuring a safer cyberspace for the residents of the UAE. (June 3, 2020) zawya.com



5G Solutions 4 Enterprises

Suite of Pre-Integrated Production Ready Secured end to end IoT centric Enterprise solutions with high 4G LTE & 5G and B2B relevance

INDUSTRIES



IOT SENSOR CLOUD EDGE AI

SOLUTIONS

Remote Healthcare

Fleet Management

Over The Air Update

Smart Retail

Connected Workers

Connected Mines

Smart Micro Grids

Smart Venue

Consulting

Implementation

Support

ARTICLE

Making 5G Successful 4 Enterprises

5G has several distinctive enablers, which will not only accelerate new applications and services adoptions, but also create an opportunity for Telecom Operators to transform their role and business models for enterprises.

As enterprises continue on the journey of Industrial Revolution 4.0, it's important to be aware that it is not just about investing in new technology and tools to improve productivity and efficiency, but revolutionizing how businesses leverage every aspect of their operation and are able to collect data, analyze and advise upon it.

The initial adoptions have mostly been, Silos based IoT implementations based on static sequential systems by enterprises verticals like Manufacturing, Transportation/Roadways, Ports, Oil & Gas, Energy & Utilities. Those "Smart" Initiatives are well recognized and have essentially achieved "clever" outcomes by mostly focusing on Digital deliverables for automating the Non real time - Next best actions.

The future use case adoptions require that the architecture for any enterprise progressing on IoT implementations should be designed for achieving large bandwidth, with a scalability to connect millions of devices, whilst delivering on real-time monitoring and analytics, The present implementations have been mainly constrained due to Network connectivity with Fiber Optics which are cost prohibitive as well as lead to operational roadblocks. 5G Technology and especially 5G NR Adoptions will be the solution for Industry 4.0 use cases to come to fruition for enterprises.

Network Transformations with 5G will ensure:

- 5G adoptions will enable Optimization and Scalability of assets with use cases tailored for specific QoS (Slicing), Latency definitions for industrial applications.
- URLLC with Spatial diversity with 5G will achieve 99.9999% Reliability which is a key enabler for adopting challenging industrial IoT applications.
- Flexibility with wireless Ethernet, Replace wireline industrial Ethernet for reconfigurable factories
- On-device processing and sensing



Abhishek Malhotra

Vice President - Network Services Business
Middle East and India
Tech Mahindra

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Operators & Industry groups across SAMENA should continue collaborating with the respective country regulators to explore spectrum strategy for the adoption of 5G for enterprises, ex: Germany has earmarked 3.7-3.8 GHz as the "Dedicated Enterprise Spectrum" at a very nominal fee.

- 5G will supplement or complement the Dedicated Local network with an ease to deploy and manage operationally
- 5G will achieve cellular grade Security and allow keeping sensitive data local

Thus with 5G, industrial IoT applications will be able to process massive amounts of data with a High speed Bandwidth, low latency, high Reliability and cellular grade Security.

5G for Enterprise- A Business perspective

5G has several distinctive enablers, which will not only accelerate new applications and services adoptions, but also create an opportunity for Telecom Operators to transform their role and business models for enterprises.

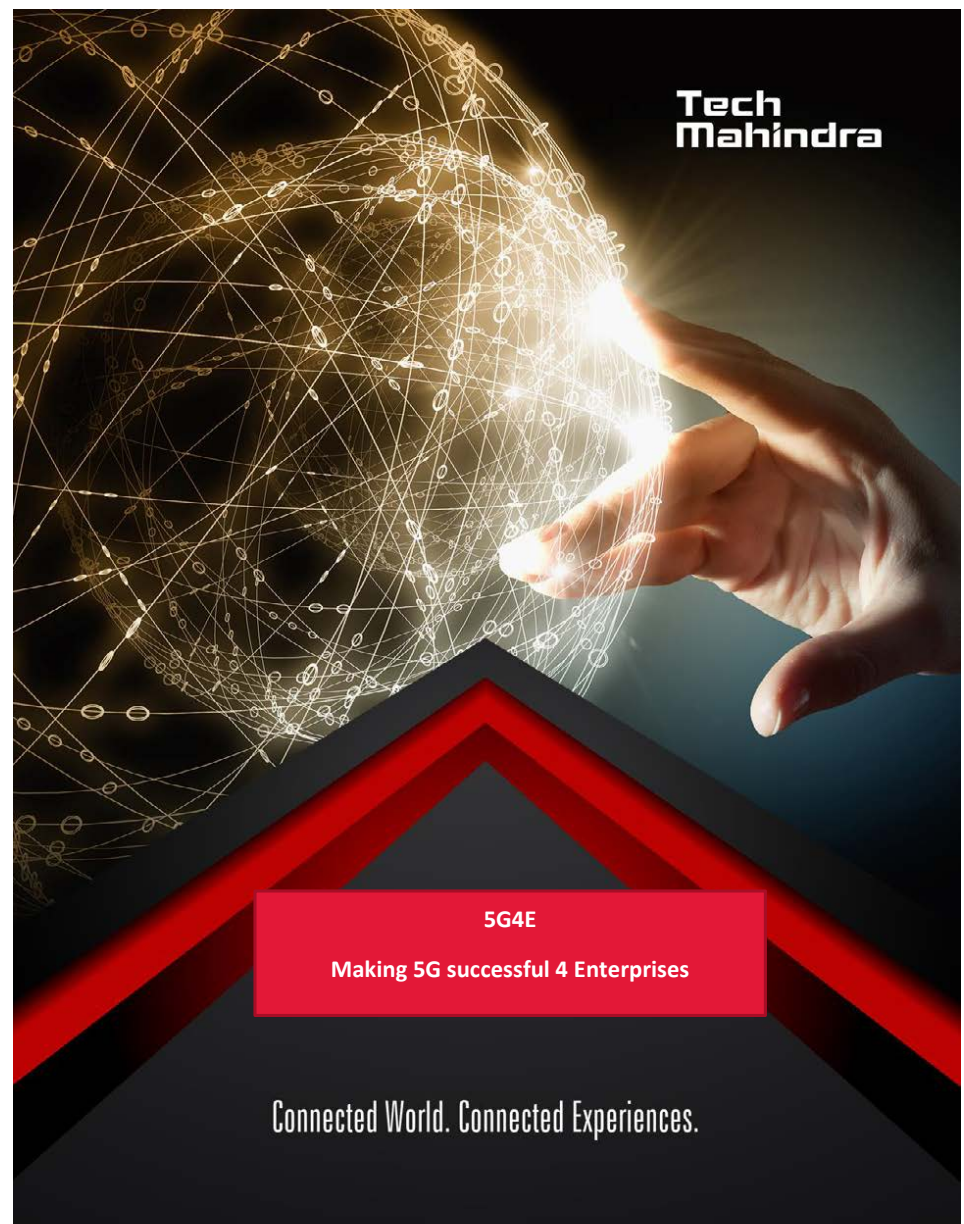
With Telecom Operators enabling 5G deployments with functionalities like Slicing, URLLC, TSN etc., Operators shall be able to explore business models of assigning a portion of their licensed spectrum in a specific area. Such models shall essentially achieve a Private Network for an enterprise. Ex of such scenarios are for Manufacturing Plants, Factories or even Mines

Also with 5G, the Telecom Operators enterprise Business units will continue to see growth opportunities of Fixed Broadband growth to be complemented with 5G Fixed Wireless Broadband. Additionally, 5G with Rel 16 will accelerate opportunities for replacing the legacy wireline industrial Ethernet with "Ethernet over 5G".

Operators & Industry groups across SAMENA should continue collaborating with the respective country regulators to explore spectrum strategy for the adoption of 5G for enterprises, ex: Germany has earmarked 3.7 – 3.8GHz as the "Dedicated Enterprise Spectrum" at a very nominal fee. This could be an opportunity for existing Operators as well as New MVNO's to get established. Also, 5G with 3GPP Rel-16 will support unlicensed spectrum (5G NR-U) enabling standalone operation. Based on Regulatory clearances for Unlicensed Band use of 5G has the potential to create a disruptive business opportunities as well It is a growing recognition that 5G transformations across enterprises will remain a significant investment area for all involved with an estimated 200 bil\$ annual

investment which will keep on growing across this decade. Global studies specific to how Industrial 5G will contribute to the global economy highlight that in 2035, 5G will enable ~ \$5 Trillion global economic output, of which \$3,364B will be contributed by Manufacturing, \$742B Construction, \$659B Transport, \$249B Mining, \$273B Utilities.

As per The World Economic Forum, 5G will drive economic growth in the SAMENA region like no previous generation of mobile technology. The domain choice of IoT connectivity for industries will be 5G. What we see as the investment trends across MEA for the coming few years are primarily driven by industry verticals of Oil & Gas, Health, education, energy,



environmental management, Agriculture, Transportation and Smart cities.

Specific to 5G for enterprises, what we have seen in the recent years by Telecom Operator across Middle East, are investments on 5G by Ooredoo in Qatar as the technology of choice for smart-city developments besides developing 5G use cases for soccer World Cup -2022 customer experience. UAE is a strong proponent for 5G adoption and Initiatives like Smart Dubai, are envisioned to achieve outcomes like autonomous vehicles, intelligent traffic systems, and energy and environmental monitoring. Even in KSA, 5G lead transformations are central to flagship smart city projects like Neom. The Saudi government is working towards

improved regulations to promote 5G lead IoT transformations.

The Evolution of the enterprise Use cases

As the maturity of the ecosystem and Technology readiness has evolved, so has the demand of Digital services / Use cases calibrated. To share a perspective of such a demand evolution, let's review a few Use cases that are under execution by Tech Mahindra across enterprise/industry verticals like Automotive, Manufacturing, E&U, Healthcare, O&G, Transport & logistics.

- Asset Track and Trace
- Cognitive Quality Control
- Connected workforce
- Vision based Picking
- Asset Performance Management – CBM & Predictive Maintenance (Specific ex for Oil and Gas)
- Digital Asset & Work Instructions (Specific ex for Oil and Gas)
- In-Hospital Door to Treatment Time Reduction (Specific ex for Healthcare)
- Patient Monitoring inside Ambulance (Specific ex for Healthcare)
- Automated Container Identification at Gate/Crane/Yard (Specific ex for Smart Ports)
- Empty Container Identification (Specific ex for Smart Ports)

An introduction to Tech Mahindra 5G for Enterprises- "Catamaran Solutions"

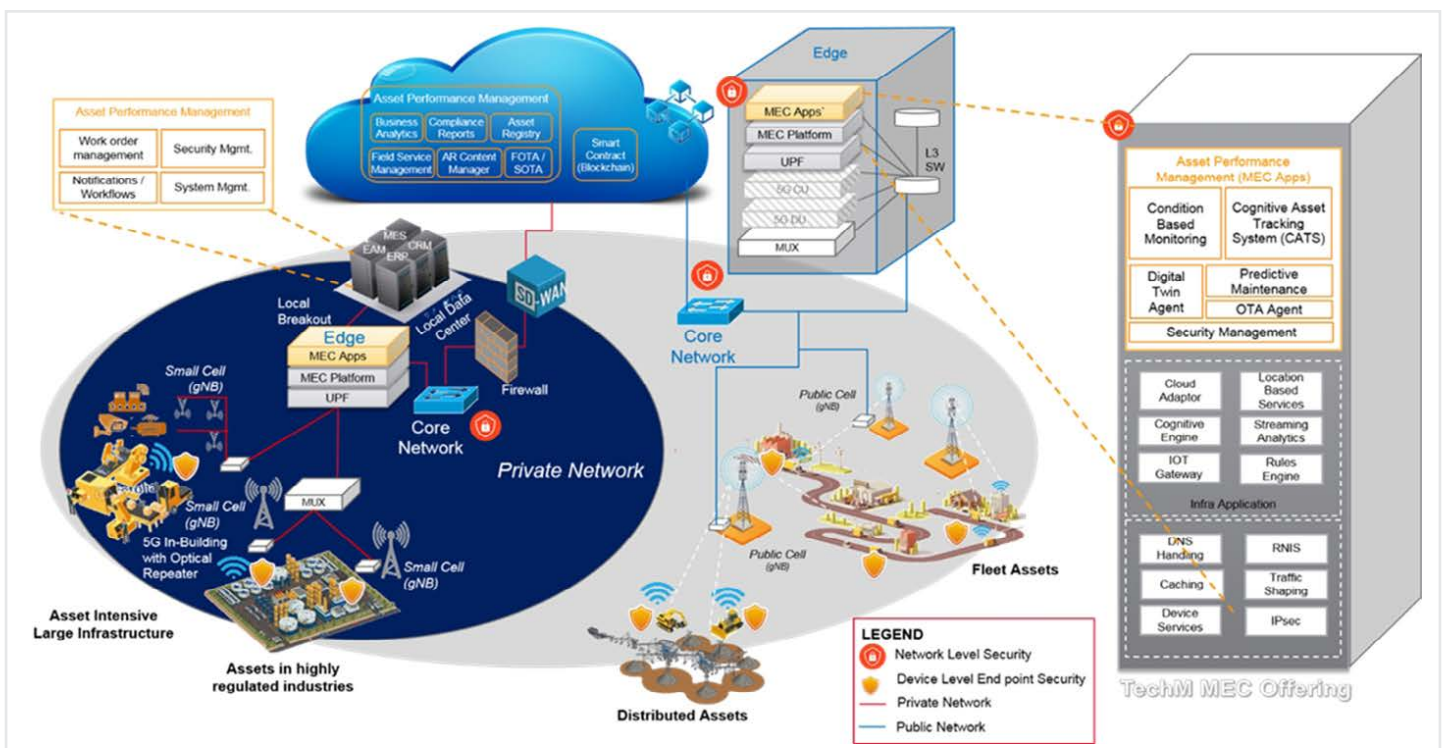
In order to ensure the correct approach for the Industry 4.0 Transformations @ enterprise verticals, we need to ensure the correct Architecture is in place. Tech M's "5G for Enterprise" Solutions provides a range of services to Telecom operators and enterprises for implementing 4G/5G wireless networks or WAN/SDWAN Transformations to enable a plethora of IOT use cases.

Tech Mahindra' experience ranges from industry 4.0 floor-to-floor automation, to control of autonomous trucks in open cast mines to logistics and warehousing, to electricity distribution grids, to venue services and much more. Our services remove inefficiencies related to slow, insufficient wireless connectivity and have a strong roadmap to support growing traffic demands for 5G establishment.

To Share a Typical deployment for Industry 4.0 adoption: The Architecture can be understood across 4 primary layers-

- Connectivity -4G/5G private wireless network
- Edge Computing Platform with Real time Analytics
- IoT platform with analytics capabilities
- Cloud/ DC Infra with Applications

Tech Mahindra' experience ranges from industry 4.0 floor-to-floor automation, to control of autonomous trucks in open cast mines to logistics and warehousing, to electricity distribution grids, to venue services and much more.



A High Level Architecture shown above is a framework for enterprise Private LTE network, which highlights the essential parts or domains of an end-to-end system. It is not meant to be a detailed architecture in itself but describes the functional description of the various logical nodes. MEC may host some part of the EPC user plane, Distributed S/PGW deployment model. In contrast to deployment in the above figure, EPC core can be located in the provider cloud, at the far side of the Firewall. In this case, the Home Subscriber Server (HSS) is co-located with the EPC as well and requires a working backhaul to keep the services running.

Tech Mahindra's Private Network offering provides an end to end communication solution to enable digitalization of any enterprise. The reference architecture can be customized for any vertical market with minimal impacts to the existing legacy infrastructure. The existing industrial devices, sensors can be retrofitted with wireless data communication modules connecting the PLCs to the wireless network. This network can be extended further to connect other moving parts for any enterprise use cases.

Overview of the Tech Mahindra Solution Offerings:

- LTE, P-LTE, WIFI (6) and 5G Planning, Design and Deployment Services
- Access (small Cells) & Core (virtual EPC) setup for a factory or an enterprise
- Industry Vertical - Specific Custom Application Integration services over Edge and Cloud Compute
- Re-purposing existing on-prem applications for edge and cloud residency
- Rationalization with Corporate SDWAN and Security architecture
- End to End Managed Infrastructure, Applications Services and Network Operations

In Summary: Through this decade, we shall view the Industry 4.0 revolution from a Vantage Point that never existed earlier. This phase of revolution fueled by the adoption of 5G, Hyper-Automation, etc, has challenges that cannot be solved with traditional processes and redundant practices, instead requires skilled partners who can provide Vendor neutral and Technology experienced solutions. Our team at Tech Mahindra is humbled to be recognized as the world's largest independent network services provider.

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REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



Angola

The Ministry of Telecommunications & Information Technology (Ministerio das Telecomunicacoes e Tecnologias de Informacao, MTTI) released a statement yesterday confirming the government's selection of Africell Holding to receive the country's fourth Unified Global operating license, permitting infrastructure-based mobile, internet, fixed telephony and pay-TV services, which was first announced in May. The Interministerial Working Group reached its final decision 'after a thorough analysis and evaluation process of the proposal documents presented, considering the observations made by the Evaluation Committee,' the latter having concluded that 'Africell's proposal responded satisfactorily to the requirements of the [tender], as well as to the interests of the Angolan State, and is expected to bring transversal benefits to all economic sectors of the country, as well as for

the population in general and will be a relevant factor for international projection and for the continuous capture of relevant foreign direct investments for Angola.' The MTTI added that after the conclusion of negotiations on final terms, Africell will be granted its national license and will enter into a concession contract with the telecoms regulator, Angolan Institute of Communications (Instituto Angolano das Comunicacoes, INACOM). Angola's mobile market is currently a duopoly of Unitel and Movitel, while state-backed fixed line operator Angola Telecom holds the third Unified Global license and is planning a mobile launch in partnership with Egyptian-backed Angorascom, TeleGeography notes. Lebanese-backed, UK-headquartered Africell operates mobile networks in Gambia, Sierra Leone, Democratic Republic of Congo and Uganda. (July 7, 2020) commsupdate.com



Australia

A new Statutory Infrastructure Provider (SIP) regime has come into effect in Australia, underpinning the country's Universal Service Guarantee and ensuring that as far as the government is concerned, 'there is now a legislated framework for access to broadband as well as voice telephone services and payphones'. Confirming the development, the Department of Infrastructure, Transport, Regional Development and Communications (DITRC) noted that, under the new laws, NBN Co will have a statutory obligation to provide networks that allow end-users to receive broadband with peak download and upload speeds of at least 25Mbps/5Mbps. Further, that company must also make sure that at least 90% of premises on its fixed line network can receive peak broadband speeds of 50Mbps/10Mbps down/up. Meanwhile, in those areas where NBN Co is not the default network provider – for example, where other network operators have contracts to service new developments – those other operators must meet these requirements. In addition, the DITRC confirmed that the Regional Broadband Scheme (RBS), which is part of the same package of reforms and will provide funding of more than AUD700 million (USD485 million), will commence from 1 January 2021, with this designed to provide 'transparent, sustainable and ongoing funding for rural, regional and remote broadband'. Commenting, Minister for Communications, Cyber Safety and the Arts, Paul Fletcher, said: 'These historic laws mean that all Australians can access high speed broadband, no matter where they live or work.' He added: 'The existing Universal Service Obligation mandates access to voice

services only. The new Universal Service Guarantee expands the mandate to give Australians guaranteed access to broadband as well as voice services, while also ensuring current fixed telephone and payphone services are maintained in rural and remote areas.'

(July 3, 2020) commsupdate.com

The Australian government has launched a consultation on reforms designed to modernize the country's spectrum management framework. With the state seeking to update the Radiocommunications Act 1992, it said that the proposed reforms 'aim to provide spectrum users with greater certainty and support longer-term investment in new and innovative mobile technologies'. Specifically, the amendments are intended to clarify the purpose of the Act and streamline spectrum allocation and reallocation processes, and include: an extension of maximum spectrum license terms from 15 to 20 years and maximum apparatus license terms from five to 20 years; the provision of greater flexibility in decision making for allocating spectrum and apparatus licenses; the modernization of the compliance and enforcement regime through increased regulatory options; and additional information gathering powers for the Australian Communications and Media Authority (ACMA). Following the consultation, submissions to which are being accepted until 17 July 2020, draft amendments are expected to be finalized for consideration by the government and introduction into Parliament 'by the end of 2020'. Commenting, Paul Fletcher, Australia's Minister for Communications,

Cyber Safety and the Arts, said: '[The] Government has a clear reform pathway to modernize our spectrum management framework, which will deliver benefits to the telecommunications industry by cutting red tape ... A more flexible framework that provides a longer-term investment horizon will allow industry to better adapt to future innovations and changing demand for spectrum, including the rollout of future generation mobile technology.' (June 24, 2020) commsupdate.com

Federal Court proceedings have been instituted against broadband providers Dodo and iPrimus, both part of Vocus Group, by the Australian Competition and Consumer Commission (ACCC), with the agency contending that the pair made 'false' or 'misleading' claims about the broadband speeds their customers could achieve during busy evening hours over the National Broadband Network. In a press release regarding the matter, ACCC alleges that between March 2018 and April 2019 Dodo and iPrimus made false or misleading claims on their websites about the speeds consumers could expect if they signed up to their NBN-based broadband services. Commenting, ACCC chairman Rod Sims said: 'We believe many of Dodo and iPrimus' NBN customers would have been unable to regularly receive the advertised speeds during the busy evening period of between 7pm–11pm ... ACCC will argue that Dodo and iPrimus used a fundamentally flawed testing methodology, developed by Vocus, which was not a reasonable basis for their advertising claims about certain typical evening speeds.' With the regulator saying that since February 2019, its Measuring Broadband Australia (MBA) program has shown that Dodo and iPrimus' broadband speeds have 'consistently performed towards the lower end of the nine NBN providers measured and reported on', it said

it is seeking declarations, penalties and costs.

(June 23, 2020) commsupdate.com

A consultation has been launched by the Australian Competition and Consumer Commission (ACCC) related to the Telecommunications Legislation Amendment (Competition and Consumer) Act 2020 (the 'TLA Act'), which received Royal Assent on 25 May 2020. In a statement, the ACCC noted that among other provisions, the new legislation amends the Telecommunications Act 1997 to enable superfast fixed line broadband networks serving residential customers to operate on a functionally separated basis, rather than a structurally separated basis. Specifically, the TLA Act inserts a process in to the 1997 law under which network operators will be able to voluntarily submit functional separation undertakings to the regulator for approval, with the intention that this will provide greater commercial flexibility for superfast network operators and promote infrastructure-based competition. In addition, the ACCC is empowered to determine a standard functional separation undertaking – known as a 'deemed' undertaking – that an eligible corporation can choose to be bound by, instead of submitting its own customized voluntary undertaking. With the new laws scheduled to come into effect on 26 August 2020, the ACCC is now seeking views from stakeholders on: a draft instrument for the exemption for small networks, including the class of persons to whom it should apply and any other conditions and limitations; the nature and extent of potential functional separation provisions for deemed undertakings; and the classes of corporations to which deemed undertakings should apply. A deadline of 17 July 2020 has been set for submissions.

(June 5, 2020) commsupdate.com



Belgium

Following a public consultation, Belgian telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has granted temporary user rights to spectrum in the 3.6GHz-3.8GHz band to five operators, namely Telenet, Proximus, Orange Belgium, Cegeka and Entropia. The rights will enable the operators to proceed with 5G deployments using the band and will remain valid until a traditional auction procedure can be organised for the 3.4GHz-3.8GHz band. The BIPT has allocated the frequencies as follows: Telenet, 3600MHz-3640MHz; Entropia, 3640MHz-3680MHz; Orange Belgium, 3680MHz-3720MHz; Cegeka, 3720MHz-3760MHz; and Proximus, 3760MHz-3800MHz. As part of the European rollout of 5G technology, member states are required to provide frequencies in the 3.4GHz-3.8GHz band by 31 December 2020. With the federal and regional governments unable to agree how to distribute the sale proceeds, the BIPT decided to proceed with a provisional arrangement. The regulator noted that a public consultation held in April elicited several thousand

responses, many relating to the perceived health risks posed by 5G radiation. It stressed, however, that the protection of public health is not within its remit and that operators will need to comply with all existing regional regulations governing radiation standards and antenna installation. (July 16, 2020) commsupdate.com

Belgian telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has extended Citymesh's user rights in the 3.5GHz band to the municipalities of Kortrijk and Zaventem. The BIPT had initially refused the company's application in 2019, as it was preparing to award spectrum in the 3.4GHz-3.5GHz band for 5G. However, the regulator has since decided to issue preliminary 5G licenses using frequencies in the 3.6GHz-3.8GHz band. Citymesh, which is mainly active in the B2B sector, has user rights for 2x20MHz in the 3.5GHz band (3430MHz-3450MHz/3530MHz-3550MHz).

(June 26, 2020) commsupdate.com



Bosnia and Herzegovina

The Communications Regulatory Agency of Bosnia and Herzegovina has launched the RAK "NetTest" application, which enables end users to examine the quality of their broadband internet access service. In addition to the basic speed, ping download and upload

indicators, the application measures 84 unique tests based on which it assesses the quality and satisfaction with the internet access service. The results from the measurements will serve as evidence when complaints come in about a service. (July 12, 2020) telecompaper.com



Brazil

Leonardo Euler, the President of Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel), has stated that the country will not hold a 5G mobile license auction until sometime in the first half of next year. In a conference call, Euler said: 'We are working [to carry out the auction] in the first semester, at best, in the first quarter [of 2021].' He noted that a crucial 3.5GHz testing program focused on the coexistence of mobile broadband and TV services in the band has been delayed due to the COVID-19 pandemic, ruling out any possibility of meeting an original target of holding the auction in 2020. The 5G auction is expected to include frequencies in the 700MHz, 2.3GHz, 3.5GHz and 26GHz mmWave bands. Brazilian operators already possess some

700MHz spectrum, and Euler reiterated the possibility of refarming 4G frequencies to launch first-phase 5G networks under new protocols established by Anatel for multi-technology usage of pre-existing spectrum, although he also acknowledged that the 5G device ecosystem remains underdeveloped in the country. He stated: 'So the beginning of 5G in Brazil does not depend only on the [upcoming 5G auction], companies already have the necessary [spectrum resources], whether in the 700MHz, 1800MHz or 2.1GHz [bands]. Evidently, there is still a lack in the ecosystem in terms of [user] terminals in the range. And the network's development itself depends on the existence of this equipment.'

(June 26, 2020) Tele Time



Cambodia

The Ministry of Posts and Telecommunications (MPTC) has withdrawn the operating license and spectrum of Cambodia Advance Communications (CadComms), which provided services under the brand name qb. Khmer Times cites Im Vutha, a senior official from the Telecommunication Regulator of Cambodia (TRC), as saying that the license was revoked because the firm no longer had any 'business activities', despite indications that it planned to deploy a 4G network. He added that the government has taken back the spectrum and

could reallocate it through a competitive bidding process in the future. According to TeleGeography's GlobalComms Database, CadComms was licensed by the MPTC in 2006 and launched a W-CDMA/HSDPA network in March 2008 using 2x10MHz of spectrum in the 2100MHz band. In order to expand its coverage, the operator went on to sign a network infrastructure sharing agreement with CamGSM (Cellcard).

(June 24, 2020) commsupdate.com



Canada

Innovation, Science & Economic Development Canada (ISED) has announced a six-month postponement to the country's 3500MHz 5G spectrum auction, which will now start on 15 June 2021, with a deadline for receipt of applications and pre-auction financial deposits set for 6 April. Minister Navdeep Bains said in a statement on Friday that the delay will 'allow the telecommunications industry to maintain its focus on providing essential services to Canadians during the COVID-19 pandemic' while ISED 'will continue to monitor COVID-19's impact on the telecom industry and remains open to further changes to the timelines

for spectrum auctions if necessary.' In a parallel process, a deadline of 6 October 2020 has been set for applications to transfer existing fixed-wireless licenses in the 3500MHz band to flexible licenses, or to return licenses to ISED for inclusion in the upcoming auction. The final lists of 3500MHz licenses being auctioned/retained will be published by mid-February 2021. New 3500MHz licenses will be valid for 20 years (see link below for full 3500MHz licensing conditions). In addition, Bains announced that a consultation on prospects for 5G licensing in the 3800MHz band would be launched in August 2020. (June 8, 2020) commsupdate.com



Chad

The Chadian government has officially launched a new network modernization program, through which it hopes to improve accessibility to ICT services for the population and to drive socio-economic development, local news portal Tchadinfos.com reports. The program consists of three major components, the first of which is the construction of a national data center in the capital. Second is the construction of 1,200km fiber-

optic network connecting Doba in the south to Iriba in the east via Koumra, Sarh, Kyabe, Am-timan, Abeche, Amzoer and Guereda. Alongside the national fiber rollout, the government will also install an additional 50km of fiber in N'Djamena. Finally, the project will see the construction of 200 new GSM sites nationwide.

(July 8, 2020) [commsupdate.com](#)



Chile

The Supreme Court has issued a ruling on spectrum holding limits, broadly in line with proposals put forward by the Antitrust Tribunal (Tribunal de Defensa de la Libre Competencia, TDLC), which had in turn been based on recommendations from sector watchdog the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel). Diario Financiero writes that the apex court's ruling allows a provider to hold a percentage of the available spectrum within 'macro bands' comprising groupings of spectrum bands. For the 'Low' macro band (sub-1GHz frequencies), the court ruled that a provider could hold up to 32% of the available airwaves (the TDLC's recommendation had been for 35%), whilst for the 'Low Middle' (1GHz-3GHz) and 'Middle' (3GHz-6GHz) macro bands the limit was set at 30%, and holdings in the 'High' (mmWave, over 24GHz) macro band were capped at 25%. Alongside

these limits, the court's decision featured several additional measures. These include the establishment of a temporary national roaming obligation, under which incumbent cellcos Entel, Claro and Movistar would provide national roaming for new entrants whilst they deploy their own networks. This requirement would be a general stipulation, independent of specific spectrum auctions or a particular set of frequencies. Similarly, the court mandated that the incumbents must also ensure that their networks are available to MVNOs, with the requirement that they make and keep updated a reference offer that is approved by Subtel and the National Economic Prosecutor (Fiscalia Nacional Economica, FNE). Further, Subtel and the FNE must monitor the incumbents and are empowered to adjust the conditions of offers and contracts for national roaming and for MVNOs. (July 14, 2020) [commsupdate.com](#)



Colombia

The Ministry of Information Technologies and Communications (Ministerio de Tecnologias de la Informacion y las Comunicaciones, MinTIC) has announced that President Ivan Duque signed Decree 825 into law on 8 June, substituting certain spectrum payment fees for an obligation to extend mobile

broadband coverage to some of the country's most remote rural areas. The watchdog notes that the measure has been designed to assist 'the vulnerable, low-income rural population' and will also benefit libraries, schools and rural health centers.

(June 11, 2020) [commsupdate.com](#)



Croatia

The Croatian Postal & Electronic Communications Agency (HAKOM) has postponed its planned auction of 5G-capable frequencies until the first half of 2021. The authority was looking to allocate spectrum in the 700MHz, 3.6GHz and 26GHz bands by the end of this year but says the COVID-19 outbreak caused a delay

to the migration of TV broadcasts from the 700MHz range and has also impacted operators' finances. The regulator has opened a new consultation into the allocation of the above spectrum alongside 800MHz and 900MHz frequencies.

(June 26, 2020) [commsupdate.com](#)



Cuba

The state-owned telecoms operator Empresa de Telecomunicaciones de Cuba (ETECSA) has announced on social media that the number of customers using its 4G LTE network has exceeded one million. The milestone follows the opening up of 4G for pre-paid

customers in October last year and the launch of 3G services in December 2018. ETECSA's LTE network, which operates in the 1800MHz frequency band, is available in 52 municipalities across all 15 provinces of the island. (July 8, 2020) [commsupdate.com](#)



Denmark

The Danish Energy Agency (DEA, or Energistyrelsen) has approved the award of a 16-year nationwide 450MHz spectrum license to Net 1 Denmark (registered as Ice Denmark), the current holder of the frequencies. Last month the DEA announced an auction for the single national license – effective from 24 January 2022 to 31 December 2037 – which would have taken place on 23 June 2020, but as Net 1 was the sole applicant, the regulator offered it the frequencies for the minimum bid price of just DKK50,000 (USD7,600). Terms and conditions of the concession aim to ensure that the spectrum is used effectively throughout

the country, suitable for the provision of IoT/M2M and wireless broadband services. TeleGeography's GlobalComms Database shows that Net 1 Denmark operates a 4G LTE 450MHz cellular network covering 98% of the population and has repositioned itself as an M2M/IoT provider. The operator specializes in critical communications services for companies and organizations, providing M2M connectivity on the national LTE network alongside LoRaWAN and fiber connections. Net 1 Denmark has just been acquired by Cibicom.

(June 17, 2020) commsupdate.com



Estonia

The IT Minister has moved to get the country's 5G spectrum auction back on track after it was cancelled due to legal action. In February 2019 telecoms watchdog the Consumer Protection and Technical Regulatory Authority (Tarbijakaitse ja Tehnilise Järelevalve Amet, TTJA) announced an auction for three licenses in the 3.6GHz (3410MHz-3800MHz) band for future 5G services. A reserve price of EUR1.597 million (USD1.8 million) was set per license, with 130MHz of TDD frequencies available under each concession. The country's trio of cellcos – Telia, Elisa and Tele2 – signaled their intent to take part in the auction, but the sale was derailed a month later following a legal challenge by wireless ISP Levicom, which said the auction favored the incumbents and should have

included a fourth license to allow for the entry of a new player. IT minister Raul Siem has now proposed that the auction be expanded to include a fourth permit. A statement from the Ministry of Economic Affairs and Communications (Majandus ja Kommunikatsiooni Ministerium, MKM) cites the Minister as saying that this move would encourage competition while also helping to ensure the efficient use of frequency resources. 'We need to keep the market open to as many new developments and providers as possible. This helps to ensure a sustainable and diverse choice of services even in today's significantly changed economic environment,' Siem said. Applications for the revised auction are open until 18 June.

(June 4, 2020) commsupdate.com



Ethiopia

Ethiopia said 12 foreign companies have submitted bids for a partial stake in the country's giant telecommunications monopoly. In a press release, the Ethiopian Telecommunications Authority (ECA) said it has received complete information and expression of interest from nine international telecom operators and two non-telecom companies. According to the ECA, the bidders from the telecom sector are Etisalat, Axian, MTN, Orange, Saudi Telecom Company, Telkom SA, Liquid Telecom, Snail Mobile, and Global Partnership for Ethiopia, a consortium of telecom operators

comprising Vodafone, Vodacom, and Safaricom. The two non-telecom companies are Kandu Global Telecommunications and Electromecha International Projects. One company's bid submission was incomplete, the ECA said. It is not yet clear when the winners will be announced. As part of a multifarious reform program launched after Prime Minister Abiy Ahmed assumed power in 2018, Ethiopia rolled out a privatization drive that amounts to 40% of the country's telecom sector.

(June 27, 2020) aa.com.tr



Finland

Finland's Ministry of Transport and Communications (Liikenne- ja viestintäministerio, MoTC) has outlined proposed reforms to the Act on Electronic Communications Services, with a view to implementing the requirements of the EU Directive on Audiovisual Media Services (the so-called 'AVMS Directive') and the European Electronic Communications Code (the EECC, or the Telecoms Package Directive). In a press release regarding the matter, the MoTC noted that among the key proposals being made are: a reduction of the maximum

duration of fixed-period mobile subscriptions, from 24 months to twelve; the raising of the minimum speed of the universal service broadband from 2Mbps to 5Mbps; and a capping of the rate for calling universal access numbers at no more than the cost of calling mobile or local fixed line numbers. Further, the MoTC has also proposed a requirement for operators to notify the Finnish Transport and Communications Agency (Liikenne- ja viestintävirasto, Traficom) six months before they intend to remove or replace legacy networks,

such as copper infrastructure. With regards to plans designed to bolster network investment, the revised Act will reportedly provide for 'new network license procedures that are applicable to certain frequencies', although 'the possibility to continue the validity of the network licences granted would be added into the Act'. Additionally, the MoTC has proposed that the updated legislation enable the renewing of a network license without an open application procedure, and a proposal designed to facilitate the construction of 5G base stations – as per the updated Act. Here it suggests that no administrative license granted by an authority would be needed for the construction or deployment of a 5G base station in a subregion, 'unless otherwise required by reasons related to either general safety or the protection of buildings or areas with valuable architecture, history or nature'. The MoTC's proposals were presented to Parliament last week (on 11 June), and will now be considered in a preliminary debate in a plenary session at a date yet to be announced. After the preliminary debate, the proposal will be referred to a committee, which in turn will draft a report to then be discussed in a plenary session. As it stands, the

proposed revisions to the Act are scheduled to enter into force on 21 December 2020.

(June 16, 2020) [commsupdate.com](#)

Finland's auction of spectrum in the 26GHz band was completed on the same day with three companies walking away with new frequencies. In a press release the Ministry of Transport and Communications (Liikenne- ja viestintäministerio, MoTC) confirmed that the sale process generated a total of EUR21 million (USD23.7 million) for the state, with all three of the available blocks – which each comprised 800MHz of spectrum – selling at their starting price (EUR7 million). According to the MoTC, the winning bidders were as follows: Elisa Corporation, which won the 25.1GHz-25.9GHz block; Telia Finland (25.9GHz-26.7GHz); and DNA (26.7GHz-27.5GHz). With the ministry saying it will now grant these companies their licenses 'in accordance with the end results of the auction', it confirmed that 26GHz spectrum can be used for the construction of 5G networks from 1 July 2020. All three concessions are valid until 31 December 2033.

(June 9, 2020) [commsupdate.com](#)



France

French telecoms regulator Arcep moved to get a 5G spectrum auction delayed by Covid-19 (coronavirus) back on track, setting out a schedule to begin the process in September. In a statement, the regulator said it plans to run a sale of spectrum in the 3.4GHz to 3.8GHz bands between 20 September and the end of the month. This will be followed by a positioning auction in October to determine bidder positions in the bands, with licenses due to be issued later that month or November. The auction was originally scheduled for April, but Arcep postponed the process due to Covid-19 containment measures. Due to the delay Arcep, lifted obligations for operators to launch 5G services in a minimum of two cities by the year-end. In February, Bouygues Telecom, Free Mobile, Orange and SFR took up a fixed-price offer covering 50MHz of compatible spectrum priced at €350 million. They are all due to participate in the rescheduled auction, with Arcep aiming to raise €2.2 billion from 11x10MHz blocks.

(June 12, 2020) [mobileworldlive.com](#)

France is aiming to commence a 5G spectrum auction in September, Junior Economy Minister Agnes Pannier-Runacher told. The official was cited as saying: 'Our objective, and I have communicated it to Arcep, is that the auctions be launched quickly. September is a reasonable objective... for a launch of 5G before the end of the year.' As previously reported by TeleGeography's CommsUpdate, Arcep revealed in February 2020 that four companies submitted applications for the allocation of frequencies in the 3.4GHz-3.8GHz band in mainland France, namely Bouygues Telecom, Free Mobile, Orange France and Altice France (previously SFR). In March 2020 however Arcep postponed the 5G spectrum auction to an unspecified date due to the COVID-19 outbreak. A spokeswoman for the authority was quoted as saying that Arcep 'won't be able to maintain the auction planned for mid-April', and plans to 'organize the frequency sale for a later date once more information is available.' (June 9, 2020) [Le Figaro](#)



Germany

The Federal Network Agency (FNA, known locally as the Bundesnetzagentur) has announced that Telefonica Deutschland failed to meet the first interim deadline to fulfil the coverage requirements of the 2015 multi-band spectrum auction. Telefonica failed to cover at least 40% of 7,600 unserved locations by 30 June 2020 and faces a penalty of EUR600,000 (USD679,000) if they are still not covered by the end of this month.

Telefonica attributed the delay to the effects of the COVID-19 pandemic, which has led to restrictions in the supply chain. According to TeleGeography's GlobalComms Database, earlier this year the FNA completed the review of reports submitted by mobile network operators (MNOs) to determine whether they met the coverage requirements of the 2015 spectrum auction. These included an obligation to provide mobile

data speeds of at least 50Mbps to 98% of households nationwide and 97% of households in each federal state by 1 January 2020, as well as fully supplying the main traffic routes. All three MNOs did not fully meet the coverage requirements on time but the watchdog gave Telefonica, Vodafone Germany and Telekom

Deutschland until the end of this year to fulfil the obligations, or face being fined. The companies were also given interim deadlines in June and September in order to counteract further delays as early as possible.

(July 10, 2020) commsupdate.com



Ghana

The National Communications Authority (NCA) has announced its intention to classify MTN Ghana as a dominant or significant market power (SMP), in accordance with its mandate under Section 20 (13) of the Electronic Communications Act of 2008. According to a statement published on Saturday, 'the NCA will in the coming days begin the implementation of specific policies to ensure a level playing field for all network operators within the industry.' These measures will include an asymmetrical interconnection rate to benefit

disadvantaged operators, the setting of floor and ceiling prices on telecoms and mobile money services, and a review to ensure MTN's rivals are not subject to exclusionary pricing or behavior, or disadvantaged by MTN's access to information. Operators will also be required to present plans for the implementation of national roaming services in the next 30 days, for execution within the next 90 days.

(June 9, 2020) commsupdate.com



Greece

The National Telecommunications & Post Commission (Ethniki Epitropi Tilepikoinonion kai Tachydromeion, EETT) has opened a consultation into the planned sale of spectrum in the 700MHz, 2GHz, 3.4GHz-3.8GHz and

26GHz bands. The regulator is inviting submissions by 4 August. The authority revealed in May that it was expecting to complete the 5G spectrum sale by the end of this year. (June 17, 2020) commsupdate.com



Hong Kong

Hong Kong's Office of the Communications Authority (OFCA) says it has received an 'enthusiastic' response to its subsidy scheme for encouraging the development of 5G projects which was launched on 5 May. The regulator says it has so far received 81 applications for subsidies, with three of these already approved. The government will subsidize 50% of the project costs directly relevant to the deployment of 5G technology, subject to a cap of HKD500,000 (USD64,500). It is anticipated that around 100 qualified projects will be subsidized. The scheme aims to promote projects such as smart city applications. (June 15, 2020) commsupdate.com

The Office of the Communications Authority (OFCA) in Hong Kong has awarded its sixth and final subsidized fiber network rollout contract to HKT. The award is part of a wider project which aims to deliver fiber-based services to 235 remote communities across nine districts in the New Territories and outlying islands, while at the same time improving inter-island connectivity by deploying three submarine cables. The first five contracts under the tender were awarded earlier this year, with two going to HKT and three to HGC Global Communications. The sixth project – covering Lantau Island, Cheung Chau and Peng Chau – did not receive any bids so was put out to tender again.

(June 2, 2020) commsupdate.com



India

Telecom regulator TRAI strongly advocated domestic manufacturing of telecom equipment and "digital sovereignty", as it stressed on the importance of providing opportunities for local players in the sector and called for sharp focus on digital infrastructure investments. Telecom Regulatory Authority of India (TRAI) Chairman R S Sharma said government policies relating to electronics and local handset manufacturing have "paid rich dividends", and added that more needs to be done, particularly to push domestic

manufacturing of telecom equipment and ensure value addition. He warned against dumping strategies resorted by countries to kill domestic industry before raising prices, and added that such "tactics" need to be countered with preferential market access policy. "Ultimately countries have strategies where they actually dump things and they try to kill the domestic industry and then they raise the prices...essentially we need to realize this tactics and we need to appropriately give preferential market access policy which has been

there...need to ensure we implement them", he said. Addressing a PHD Chamber of Commerce and Industry (PHDCCI) webinar on 'Telecom sector in COVID-19', the TRAI chief stressed on the need to promote domestic manufacturers of hardware, signaling equipment, fiber and other equipment. Clear targets need to be set on how to proceed in this sector, he asserted, adding that telecom being a "sensitive sector" makes it imperative for India to become sovereign in terms of information security. "The National Digital Communication Policy of 2018, where TRAI had given lot of inputs, we have three areas...one is connecting India, second having software and services on top of that, and third digital sovereignty, and therefore domestic manufacturing of telecom equipment must take place...that has not happened," he said. Sharma noted that while the country had performed well on software front, building strong and unmatched platforms for digital identity and digital payments, there is a need to ensure flow of investments into digital infrastructure in the country. "I agree, that unless we provide opportunities for our own domestic players, we will not go anywhere," he said.

(June 29, 2020) m.economicstimes.com

India's top telcos -- Reliance Jio Infocomm, Bharti Airtel and Vodafone Idea -- have sought finance minister Nirmala Sitharaman's urgent intervention, urging the government to boost the liquidity levels of the debt-laden telecoms industry by offering a combination of soft loans against GST input credits and cutting key levies such as license fees and spectrum usage charges (SUC). The Cellular Operators Association of India (COAI), in a letter to Sitharaman, dated June 26, has underlined the criticality of such pending relief measures, saying these are absolutely essential for the cash-strapped sector to grapple with the adverse economic fallout of Covid19, which continues to spread rapidly across the country. The COAI represents Jio, Airtel and Vodafone Idea. "Given the adverse impact on the economy and operations of the digital communications industry due to Covid-19, we request

that soft loans at a marginal cost lending rate (MCLR) be given to telecom companies using GST input credits as collateral and that the high burden of regulatory levies also be rationalized by reducing license fee and SUC payouts immediately," COAI director general Rajan Mathews wrote in a letter to Sitharaman. ET has seen a copy of the letter. The telcos have urged the FM to expedite steps to cut SUC to 3% of a telco's adjusted gross revenue (AGR) and reduce license fees to 3% of revenue from 8% now. Further, the phone companies, in their letter to the FM, have reiterated their demand that all telco payments towards spectrum debt, license fees and SUC should not be classified as 'services', and accordingly, must not attract any goods & services tax (GST). In addition, they have sought exemption from service tax on the amounts of license fees and SUC payable in compliance with a Supreme Court order. Mathews has pointed out to the FM that since the outbreak of Covid19, the load on telco networks has seen an exponential surge, especially as vast swathes of corporate staff continue working from home and both government agencies and private companies also extensively use wireless internet networks to stay virtually connected. "Ensuring continuity of these (telecom) services is of utmost importance in these challenging times, which is why, the criticality of immediate relief measures from the government," Mathews said. The telecom industry's call for relief from the finance ministry comes even as the Supreme Court's final views on the AGR case is awaited. The nation's top court will hold the next hearing on the AGR case in the third week of July, by when the telcos -- Bharti Airtel, Vodafone Idea and Tata Teleservices -- and the government have been directed to finalize a roadmap for payments of balance license fee and SUC dues, which may also include an upfront payment clause. The impacted operators have sought 20 years to clear their AGR dues, but the apex court has said they need to make some upfront payments to avail of a deferred payment mechanism.

(June 28, 2020) m.economicstimes.com



Italy

The Italian Prime Minister Giuseppe Conte has said the government could raise its stake in Telecom Italia (TIM) as it looks to encourage a tie-up with wholesale network operator Open Fiber. The government has an interest in both firms via state lender Cassa Depositi e Prestiti (CDP). Open Fiber is a joint venture between CDP and utility group Enel, but investment fund Macquarie has put forward an offer for Enel's stake. Italian MP Beppe Grillo recently called on CDP to increase its interest in TIM to around 25%, which would be roughly the same as TIM's current largest shareholder, Vivendi of France. CDP could then be used as a 'pivot' to unite TIM and Open Fiber and create a single nationwide broadband

infrastructure company, which would lease capacity to service providers on an equal basis. Responding to a query about Grillo's suggestion, the Prime Minister is cited by Reuters as saying that the 'idea is good ... it is one of the options we may consider'.

(June 23, 2020) commsupdate.com

Italian wireless ISP GO internet has launched an appeal with the Council of State (Consiglio di Stato, CdS) in an attempt to overturn a decision to not renew its 3.5GHz wireless broadband license. In July 2018 3.5GHz concessions held by GO and others including Linkem and Tiscali (since sold to Fastweb) were renewed

by regulator Agcom and the Ministry of Economic Development (MiSE), with the expiry date pushed back six years to end-2029. Cellcos TIM, Vodafone and Iliad, which paid large sums for 5G licenses in an October 2018 auction, protested against the planned extension, arguing that companies such as GO were getting spectrum for free when they had spent billions of euros on their own licenses. In November 2019 the regional administrative court (Tribunale Amministrativo Regionale, TAR) in Lazio found in favor of the cellcos, although it added that its finding did not rule against

the extension itself but solely the financial aspect of the renewal. GO internet, which uses its 3.5GHz spectrum to provide wireless broadband services in the Marche, Emilia-Romagna and Umbria regions of Italy, says its case is due to be heard by the CdS in March 2021. A report from Mondo Mobile Web sites GO as saying that it 'considers the criterion established for the contributions fair and correct' and that it is 'confident of the positive outcome of the degree of judgment'.

(June 3, 2020) commsupdate.com



Latvia

Latvian multi-sector watchdog the Public Utilities Commission (Sabiedrisko Pakalpojumu Regulesanas Komisija, SPRK) has approved regulations for the establishment of an advisory council that will provide recommendations on the SPRK's operational strategy and suggest improvements for sectoral regulation. The council will feature representatives from the ministries of the regulated sectors as well from non-governmental organizations to advocate the interests of consumers and industry stakeholders. According to the regulator, the formation of the body aims to foster closer cooperation and improve the exchange of information and views between the SPRK, other supervisory authorities and social partners. Commenting on the move, SPRK Chairman Rolands Irlkis was quoted as saying: 'In our opinion, the idea of establishing an advisory council is to be welcomed. We also look forward to the active involvement of our partners in receiving suggestions for improvements in

our daily work. At the same time, it will be a common platform to jointly discuss issues that are relevant to the SPRK in the regulated sectors. This is especially important at times when significant changes in the regulation of sectors are planned, which affect the activities of merchants and the interests of service users.' Separately, meanwhile, the SPRK has extended mobile provider Bite Latvia's rights to use a 5MHz block of spectrum at 1900MHz-1905MHz until 28 June 2030. The extension is conditional on Bite's continued usage of the frequencies, however. Under the terms of the extension, on 1 February every year the cellco must have at least one valid usage permit from the Electronic Communications Office (Elektroniskie Sakari, ESD) in each Latvian city with more than 20,000 permanent residents, i.e. the provider must have at least one site either active or under construction in each of the country's major towns and cities.

(June 10, 2020) commsupdate.com



Luxembourg

Sector watchdog the Luxembourg Institute of Regulation (Institut Luxembourgeois de Regulation, ILR) has announced that the auction to allocate 5G-suitable frequencies in the 700MHz and 3600MHz bands began on 13 July. The ILR is auctioning 2x30MHz in the 700MHz band (703MHz-733MHz/758MHz-788MHz) with a reserve price set at EUR5.62 million (USD6.4 million) for each 2x10MHz block, and 330MHz in the 3600MHz band (3420MHz-3750MHz) with a

reserve price of EUR300,000 per 10MHz block. Usage rights will be granted for an initial period of 15 years and the licenses will be renewable at least once for a period of five years. The five qualified bidders are Eltrona, Luxembourg Online, Orange Luxembourg, Post Luxembourg and Proximus Luxembourg. The ILR notes the auction could take 'several days'.

(June 14, 2020) commsupdate.com



Malaysia

The Malaysian Communications and Multimedia Commission (MCMC) will work closely with the Sarawak Multimedia Authority (SMA) to improve 4G broadband connectivity in the state. Communications and Multimedia Minister Datuk Saifuddin Abdullah said the MCMC was targeting achieving at least 90 per cent broadband connectivity compared to 71 per cent now. "This was discussed today in a brief meeting with the SMA, looking at how to improve MCMC's achievements

in Sarawak, especially in 4G connectivity. "There will be further discussions after this on how to speed things up as well as collaborations between the MCMC and SMA," he told reporters after visiting and officiating the Sarawak MCMC office here. Also present were secretary-general of the Ministry of Communications and Multimedia, Datuk Suriani Ahmad, SMA board member Tan Sri Morshidi Ghani, and MCMC chairman Dr Fadlullah Abdul Malek. (July 12, 2010) www.bernama.com

Malaysia swiftly backtracked on a plan to bypass a 5G tender process and hand out spectrum to five companies, citing legal and technical issues, along with a lack of transparency for the about turn. In a statement, the Ministry of Communications and Multimedia said it was cancelling its order for regulator Malaysian Communications and Multimedia Commission to allocate the spectrum to Celcom Axiata; Maxis; Digi; Telekom Malaysia; and Altel Communications. Minister for Communications and Multimedia Saifuddin Abdullah had issued the directive to assign blocks of

700MHz to the five companies on 15 May. However, in its statement, Saifuddin said to ensure a transparent process, he directed the MCMC Chairman to cancel the ministerial directive and review the decision. In early January, MCMC said it was considering allocating spectrum to a consortium of licensees through an open tender. Bloomberg reported the decision in May had surprised the market, as it was an "abrupt departure" from the regulator's original plan, which has seemingly led to the move being abandoned.

(June 3, 2010) [mobileworldlive.com](#)



Myanmar

The Ministry of Transport and Communications (MOTC) has issued a statement reminding users to re-register their SIM cards by the 30 June deadline, when unregistered SIMs will be deactivated. The Ministry launched the re-registration drive in February this year to help protect the security of mobile financial services, prevent phone-related crime and to crackdown on incorrectly registered SIMs. The MOTC noted at the time that sellers frequently pre-registered SIMs to

simplify sales, particularly in cases where prospective customers lacked the necessary identification card, and consequently many SIMs were not properly linked to the user. As part of the move, the MOTC imposed a limit of two SIMs per operator per national identification card. Unregistered SIMs were partially blocked from 30 April, with outgoing calls limited to the SIM registration call center.

(June 24, 2020) [commsupdate.com](#)



The Netherlands

The Netherlands' telecoms regulatory body has announced that it will begin auctioning the country's first 5G spectrum. The country's mobile network operators can begin bidding on 5G spectrum in the 700 MHz band which will allow them to launch their 5G networks in earnest. Official auctioneer, Martijn Meijers of the Telecom Agency, told journalists at the country's national broadcaster, NOS, that the auction was expected to fetch more than €900 million, saying that he expected strong demand from the country's telcos. "This is because mobile internet is used more and more. As a result, demand exceeds supply and bands are given to the parties who value it most," he said. The first phase of the auction will continue until all bids have been submitted. After that, winning bidders will be allocated their spectrum during the second phase of the auction. To date, only one mobile network operator has managed to launch 5G services in The Netherlands. Vodafone Ziggo became the first operator to launch 5G earlier this year. Despite the fact that the Dutch telecoms regulator had not yet made 5G spectrum available for auction, Vodafone launched 5G services using Ericsson's Dynamic Spectrum Sharing (DSS) technology over its existing 1,800 MHz spectrum. "5G is an evolution that opens doors to new possibilities. Today we are introducing 5G via 'Ericsson Spectrum Sharing' in our GigaNet. We are making use of the latest innovative technology to apply 5G in existing frequency bands, using our existing antennas. With the addition of 5G, we want to offer the Netherlands the best fixed and mobile digital infrastructure in the

world which will result in a new form of connectedness. Keeping our customers connected is at the core of what we do, and we know this partnership with Ericsson will ensure that we do just that," said Jeroen Hoencamp, CEO of VodafoneZiggo. By using the DSS technology, Vodafone claims that it will be able to offer its 5G customers download speeds of 1 Gbps and reduce latency by around 30 per cent. Vodafone said that it will make 5G services available to 50 per cent of the population by the end of July 2020. The Netherlands is set to auction off additional 5G spectrum later in the second quarter of 2020, with lots in the 3.5 GHz and 26 GHz bands set to go under the hammer. (June 29, 2020) [itp.net](#)

The telecoms regulator the Authority for Consumers & Markets (ACM) has published for consultation its draft guidelines for sharing mobile networks, clarifying how cellcos may cooperate in their rollouts. ACM notes that cooperation between telecom providers can help ensure that investments are made in a responsible manner, whilst not at the expense of mutual competition. The guidance explains that cellcos may collaborate 'at an earlier stage' in finding new antenna locations to improve coverage and capacity of 4G and 5G mobile networks faster and more efficiently, as ACM highlights that it is becoming increasingly difficult to find antenna locations due to the growth in the number of mobile antennas and the decreasing availability of locations. The gradual phasing out of 2G/3G and legal rules for the rental of frequencies also offer opportunities to cooperate more, the watchdog added (stating that rental

of frequencies to, for example, a provider of local business networks can provide new services and additional competition). ACM will take industry stakeholders'

responses into account when adopting a final set of guidelines.

(June 23, 2020) commsupdate.com



New Zealand

The Commerce Commission is seeking feedback on its draft review findings that the Mobile Termination Access Service (MTAS) should remain regulated. 'While early indications show that there may be reasonable grounds to commence an investigation into removing SMS regulation due to the popularity of competing over-the-top messaging services such as Facebook

Messenger and WhatsApp, our preliminary view is that regulation of MTAS for voice calls remains important due to a lack of competitive alternatives,' Simon Thomson, the regulator's Head of Telecommunications, stated in a press release. Feedback on the draft review is due by 1 July 2020 with a final decision issued by 23 September 2020. (June 11, 2020) commsupdate.com



Niger

The World Bank's International Development Association (IDA) has approved the disbursement of USD100 million to help Niger accelerate digital transformation projects, reports Ecofinagency.com. The funding – incorporating a USD50 million grant and a USD50 million loan – will support projects aimed at deploying more resilient infrastructure and innovations to improve citizens' access to essential social services, with a particular focus on the poorest and most vulnerable regions. One aspect of the funding will contribute to the Smart Villages project, which aims to improve access to mobile telephony and broadband services in rural areas alongside the introduction of paperless financial services to underserved regions. Tim Kelly, Senior Digital Development Specialist at the World Bank, stated: 'The [COVID-19] pandemic

has revealed the urgency of accelerating the digital transformation to enable countries like Niger to keep the private sector active and save lives and jobs. By ensuring that all citizens have access to quality and affordable internet connection, that online public services are easily accessible, and that the digital economy drives growth, innovation, and job creation, this new project will help Niger harness its potential for digital development.' According to TeleGeography's GlobalComms Database, at the end of March 2020 Niger ranked 45th out of 57 African countries in terms of mobile service population penetration with a take-up rate of less than 55%, while the country placed 42nd in fixed broadband internet household penetration (with a figure of roughly 0.7%).

(June 13, 2020) commsupdate.com



Nigeria

The Nigerian Communications Commission (NCC) is requesting input from industry stakeholders to feed into its 5G deployment policy framework. In a public notice, the commission stated that it has a mandate under the Communications Act (2003) to implement plans that promote and ensure the development of the communications industry in Nigeria. And it is working within this mandate to put through a policy for the deployment of 5G networks and services. According to Mr. Henry Nkemadu, NCC's Director of Public Affairs, "5G deployment would drive applications - such as Internet of Things (IoT), Artificial Intelligence (AI), Robotics, Drones, Advanced Communication Systems, Cloud, 3D Printing, Mixed Reality, Simulation / Imaging, Gamification" and this would help promote a viable digital economy, improving the way Nigerians live and work. After the conclusion of the Proof of Concept (trial) with MTN, the commission now seeks a broader contribution to policy framework from a variety of stakeholders. (June 19, 2020) techeconomy.ng

The Nigerian Communications Commission (NCC) has announced that it is developing a policy for the deployment of 5G technology in the West African country. The move follows the launch of 5G trials in cooperation with MTN Nigeria in six areas in November last year. The three-month tests involved different equipment vendors and utilized spectrum in the 3.5GHz and 26GHz bands in order to assess the performance of the technology in comparison with existing platforms and ensure that it is in compliance with health and safety guidelines. Following the successful conclusion of the trials, the NCC has begun developing a policy for the deployment of 5G more widely, and this will be followed 'in due course' by a public consultation with relevant stakeholders, including the Ministry of Communications and Digital Economy, the Ministry of Health and mobile operators. The watchdog added that 5G will not be deployed until the policy is concluded and approved.

(June 15, 2020) commsupdate.com



Norway

The National Communications Authority (Nasjonal kommunikasjonsmyndighet, Nkom) has sent two new draft decisions related to the regulation of Telenor Norge to the EFTA Surveillance Authority (ESA). As per these proposed decisions, Telenor will be required to maintain wholesale access to its copper network for a further five years from the date of any final ruling, while it will also be compelled to offer wholesale customers access to its fixed-wireless broadband infrastructure. According to the Nkom, such measures will strengthen competition with predictable framework conditions for wholesale customers and give end users a greater choice of service providers to choose from. With Telenor having previously announced its intention to shutter its copper network by the end of 2022, the Nkom has argued that this timeframe is too short. It has also suggested that the telco's wholesale customers have not been given sufficient information or the opportunity to safeguard their interests. However, the regulator could allow for a faster shutdown of Telenor's copper network; to that end, the Nkom noted that, should it offer its wholesale customers relevant replacement products for copper-based access, it could then draw up a plan for migration for copper to fiber/mobile infrastructure. It did though stipulate that any such plan would need to accept input from wholesale customers, while it would also require final approval from the Nkom. Meanwhile, with regards to fixed-wireless broadband, the Nkom has said that it considers wholesale access as being important for competition in parts of the broadband market, being that such services are increasingly being used by customers in areas where copper-based services have been discontinued. As a result, the regulator has confirmed its intention to impose on

Telenor the obligation to give other companies access to its fixed-wireless broadband infrastructure. The ESA now has one month to comment on the Nkom's draft decisions, following which the Norwegian regulator has said it will consider any comments made by that body and take these into account before publishing its final decisions. (July 6, 2020) commsupdate.com

Norway's National Communications Authority (Nasjonal kommunikasjonsmyndighet, Nkom) has launched a consultation on its plans for allocating frequencies in the 5G-suitable 2.6GHz and 3.6GHz (3400MHz-3800MHz) bands, the former of which is currently used by cellcos to offer 4G connectivity. The regulator has set a deadline of 8 September 2020 for submissions to its consultation, ahead of which it noted that, having already presented its recommendations to the relevant government bodies, the Ministry of Local Government and Modernization (Kommunal- og moderniseringsdepartementet, KMD) has evaluated the suggestions and offered its feedback on the matter. In terms of the Nkom's proposals, it is envisaging auctioning off spectrum in the 2.6GHz and 3.6GHz in a single auction in 2021. A total of 120MHz is to be offered in the lower band, broken down as 14 2x5MHz blocks (FDD) and single block of 50MHz (TDD). Further, the watchdog is setting a starting price of NOK25 million (USD2.6 million) per block and a frequency cap of 80MHz. Meanwhile, in the 3.6GHz band the regulator has proposed offering a total of 400MHz, broken down as 40 blocks of 10MHz, with a frequency cap of 120MHz to be set in this band, and the starting price again set at NOK25 million per block.

(June 23, 2020) commsupdate.com



Philippines

The Department of Information and Communications Technology (DICT) issued the guidelines for sharing by telcos of cell towers, marking the beginning of a new era in the telecommunications sector. Years in the making, the rules on the sharing of tower infrastructure will res Filipino newcomer DITO has been granted an additional six months to complete an obligatory technical audit. Earlier this week, the Philippines' incoming third operator stated that due to the current pandemic it expected to miss the 8th July deadline for the audit, which is stipulated by the government under the terms of DITO's operating license. Subsequently, the Department of Information and Communications Technology (DICT) instructed the country's regulator the National Telecommunications Commission (NTC) to extend DITO's timeframe for carrying out the inspection. A statement from DICT read: "In relation to the delay caused by the COVID-19 crisis, the NTC issued a resolution extending the July 2020 technical audit under the CPCN [Certificate of Public Convenience

and Necessity, granted to DITO on 8th July 2019] provisions." "Under the current extension, DITO is given within six months to deliver the commitments for the technical audit requirements – that is to provide a speed of 27Mbps to cover 37% of the population."

(July 5, 2020) developingtelecoms.com

have the prevailing business models of telcos, which build and use their own cell sites for their mobile networks. The guidelines will also strengthen the government's overall goal to improve service quality by encouraging the construction of tens of thousands of new towers across the Philippines, where vast areas remain underserved or unserved. The Inquirer has seen a copy of the rules, which were issued last May 29 and signed by Information and Communications Technology Secretary Gregorio Honasan II. It coincided with the relaxing of strict lockdown rules, which confined millions of people inside their homes and caused internet demand to surge. The DICT had said

the Philippines needed another 50,000 cell towers on top of the roughly 18,000 sites that telco incumbents PLDT Inc. and Globe Telecom had already built or acquired over the past two decades. More towers will decongest their mobile networks, translating to better signal quality and faster internet speeds. Under the guidelines, the DICT allowed qualified independent tower companies to build cell sites to be leased to the telco companies on the “same or reasonably equivalent terms, conditions, fees and charges.” The telcos themselves will no longer be barred from building new towers—a contentious proposal that was earlier made by presidential adviser and now Information and Communications Technology Undersecretary Ramon Jacinto. However, all passive telecommunications tower infrastructure that they build after the affectivity of guidelines must provide ample space for sharing with other telcos. All new installations of equipment such as transmitters and radio systems must also be located in shared towers, although the DICT said it will provide exceptions for cases with clear “meritorious grounds.” The DICT said independent tower companies must be registered with the department. The companies should also show relevant construction expertise and financial

capacity equivalent to “category A” contractors. Companies with previous agreements signed with the DICT will be deemed registered under the rules provided they file completed documentary requirements such as business permits and certification that they are not a related party to a mobile network operator. Beyond spurring the construction of new infrastructure, a tower sharing regime will also aid the rollout of telco startup DITO Telecommunity, which is backed by China Telecom and Davao-based businessman Dennis A. Uy. Layers of requirements from local government units (LGU) have been a constant drag on the construction of new towers. But the DICT reminded the LGUs that they should adhere to the timelines indicated by the Ease of Doing Business and Efficient Government Service Delivery Act of 2018. It said the maximum time for processing and approving permits and clearances for tower construction should be a total of seven working days for village governments, seven working days for LGUs and seven working days for national government agencies. Still, the telcos say it takes anywhere from six to eight months and dozens of permits to build a single tower.

(June 9, 2010) technology.inquirer.net



Paraguay

Juan Carlos Duarte, the Head of Paraguay’s National Telecommunications Commission (Consejo Nacional de Telecomunicaciones, Conatel), has clarified that he will not initiate a tender for 5G mobile licenses until at least 2024. The official told: ‘As for 5G technology, in the short term there is no possibility that it will be tendered or awarded to any operator before 2024.’ The

comments were made after residents in the town of Villarrica set fire to a cell tower with the intention of destroying it, mirroring scenes elsewhere in the world. The baseless conspiracy theories linking 5G rollouts to COVID-19 continue to circulate on social media and have led to widespread vandalism of cell sites in Europe and beyond. (June 15, 2020) hoy.com.py



Portugal

The National Communications Authority (ANACOM) has confirmed that its 5G auction consultation process has now concluded, generating around 500 responses from industry stakeholders, government agencies and manufacturers. As such, the watchdog has released an ‘indicative calendar’, which foresees the spectrum sale commencing in October, and the frequencies being distributed in January or February 2021. As previously reported by TeleGeography’s CommsUpdate, on 30 December 2019 ANACOM issued its final approval regarding the frequencies it intends to distribute for 5G use. As a result, the regulator will auction spectrum in the following bands: 700MHz, 900MHz, 1800MHz, 2100MHz, 2600MHz and 3.6GHz. The spectrum sale was originally expected to take place this summer but was delayed due to the COVID-19 pandemic.

(July 14, 2020) commsupdate.com

The National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM) has confirmed

that its unfinished 5G consultation process has resumed, as the country’s ‘state of emergency’ is no longer in force. The new consultation deadline has been set at 3 July, after which date the watchdog hopes to proceed with its delayed sale of 5G-suitable spectrum. As previously reported by TeleGeography’s CommsUpdate, on 30 December 2019 ANACOM issued its final approval regarding the frequencies it intends to distribute for 5G use. As a result, the regulator will auction spectrum in the following bands: 700MHz, 900MHz, 1800MHz, 2100MHz, 2600MHz and 3.6GHz. The spectrum sale was originally expected to take place this summer but has been delayed due to the COVID-19 pandemic. In other regulatory news, the mobile termination rate (MTR) in Portugal will drop to EURO.0036 per minute from 1 July 2020, down from the EURO.0040 per minute rate which has been in effect since July 2019. Going forward, the fixed termination rate (FTR) will decrease to EURO.00046 per minute from 1 October 2020. (June 21, 2020) commsupdate.com



Romania

Romania's Competition Council has begun a public consultation on the commitments made by RCS&RDS in return for approval to take over the customers of rival network operators AKTA and ATTP, reports local news agency Agerpres. To allay the competition watchdog's concerns, RCS&RDS, which has a share of over 50% in the fixed broadband and cable TV markets, has pledged to migrate AKTA and ATTP's customers to fiber-optic infrastructure and reduce their tariffs by between 10% and 15%, with no increase to subscription charges for three years, to bring them into line with its own standard prices. In addition, the transition to the RCS&RDS network must be completed within three years of receiving clearance. Interested parties are invited to submit their comments before 29 June. RCS&RDS, which is owned by Digi Communications, announced a deal in December 2019 to operate networks owned by Digital Cable Systems (operating under the AKTA brand) and ATTP Telecommunications. Under the agreement, RCS&RDS will pay up to EUR77 million (USD86.6 million) to control the networks and provide internet access, cable TV, fixed and mobile telephony services to around 540,000 residential clients for an initial three-year period, with an option to extend for a further three years. The deal could also see RCS&RDS acquire ATTP's infrastructure and clients if certain conditions are met.

(June 18, 2020) commsupdate.com

The telecoms regulator the National Authority for Management and Regulation in Communications (ANCOM) has opened a public consultation on the wholesale fixed markets, after its review failed to reveal any competition issues that would justify the imposition of specific regulation for the wholesale or retail markets. Interested parties have until 13 July to submit their comments. ANCOM's review, which covered the period 2015 to 2019, found the market for fixed broadband remains competitive, due to the insignificant use of the local loop at the wholesale level in Romania, while the retail market is dynamic and steadily growing. The regulator noted fixed internet tariffs are declining, especially for higher transmission speeds, while maximum speeds are constantly improving, and end-users are satisfied with the accessibility and quality of the offered services. Moreover, Romania was considered to have one of the most competitive infrastructure sectors in the EU, with over 480 providers of fixed broadband internet access services in 2019 and a very heterogeneous market structure. ANCOM believes the relatively low penetration rate of fixed broadband is caused by factors outside the telecom market, such as the small number of personal computers and terminals that allow internet access in households, poor digital literacy, as well as the low level of average per capita income, especially in rural areas. (June 16, 2020) commsupdate.com



Singapore

The Infocomm Media Development Authority (IMDA) has issued the 'final awards' to Singtel and the joint venture consortium (JVCo) formed by StarHub and M1, at the close of what it describes as 'a rigorous and holistic 5G call for proposal (CFP) process'. Singtel and JVCo were issued the 'provisional awards' in April this year. Each party will be assigned 100MHz of 3.5GHz spectrum, alongside 800MHz of millimeter wave (mmWave) spectrum. The final awards were issued to Singtel and JVCo after they completed the required regulatory processes, including the selection of their preferred frequency spectrum lots, vendor partners and other technical and legal matters. Both Singtel and JVCo have also satisfied other CFP requirements,

including on network rollout and performance, coverage, resilience, Cybersecurity and vendor diversity. Singtel and JVCo can now proceed to deploy nationwide 5G standalone networks that deliver fully-fledged 5G capabilities. Singtel will reportedly use Ericsson 5G equipment, while the StarHub-M1 consortium has opted for Nokia gear. TPG Telecom has also applied for – and is being allocated – the remaining 26GHz/28GHz spectrum in the mmWave band to roll out 5G networks on a localized basis. TPG informed shareholders: 'The terms of allocation do not require TPG Singapore to incur any material upfront payment for the mmWave spectrum.'

(June 24, 2020) commsupdate.com



Slovakia

The Office for Regulation of Electronic Communications & Postal Services (Regulacny urad, RU) has postponed the country's auction of 5G-capable frequencies which was scheduled to begin today (22 June). No reason was given for the delay. The watchdog said that 'the

selection process continues' and that information regarding a new auction date will be given 'in time'. Spectrum is being offered in the 700MHz, 900MHz and 1800MHz bands.

(June 22, 2020) commsupdate.com



South Africa

Despite recent news that at least three South African operators have recently launched 5G services, much of the spectrum used is temporary and much remains to be awarded. However, that may be about to change. The telecommunications regulator, the Independent Communications Authority of South Africa (ICASA), now seems to be ready to make 5G spectrum available at auction. According to Reuters and local press reports, ICASA said on Thursday that it is preparing to issue what is called an 'invitation to apply' (ITA) for high demand spectrum and the so-called wireless open access network (WOAN). The ITA, due in June but apparently slightly delayed, is for licenses in the 700MHz, 800MHz, 2.3GHz, 2.6GHz and 3.5GHz bands. Mobile operators MTN and Vodacom have already started rolling out 5G networks in major South African cities using temporary spectrum assigned by the regulator during the coronavirus pandemic and

consequent lockdown to meet increased demand. The spectrum is, however, only valid until November. Mobile data-only operator Rain also took advantage of the spectrum bonus, although it had already deployed a 5G wireless data network in certain parts of Johannesburg and Tshwane late last year, apparently by leveraging its 4G data networking infrastructure. ICASA has committed to holding an auction to issue permanent high-demand spectrum licenses by December. However, it did not give an exact date for when it will publish the ITA. MTN South Africa reiterated its call for the auction of 5G spectrum as it launched its next-generation network earlier this week using temporary spectrum. MTN, Rain and Vodacom are no doubt eager for the regulator to auction the spectrum, which, it is argued, could help to bring down data prices and expand broadband services.

(July 4, 2020) developingtelecoms.com



Spain

The Council of Ministers has approved the new date for the completion of the release of the 694MHz-790MHz (700MHz) band – known as the 'Second Digital Dividend' – which will now be 31 October 2020. This new date has been set as a result of the 'exceptional situation' caused by the COVID-19 pandemic, as social distancing and mobility restriction measures implemented during the state of alarm forced the government to slow down the release process.

Consequently, the government has also confirmed the postponement of the tender for the 700MHz frequency band for 5G services, which will now take place in the first quarter of 2021. On 30 March this year Spain communicated to the EU that the situation caused by COVID-19 would prevent it from completing the release process by the 30 June 2020 deadline established by Decision 2017/899.

(June 24, 2020) commsupdate.com



Sweden

The Swedish Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a consultation to review the possible co-ordination of licensing in the 2.1GHz and 2.6GHz bands. At the moment, 2.6GHz licenses used for 4G services are due for renewal at the end of 2023, while 2.1GHz concessions for 3G expire at the end of 2025. The regulator has put three options on the table: extend existing 2.6GHz licenses for two years to end-2025, after a new law on electronic communications has been adopted and entered into force; bring the renewal of 2.1GHz permits forward to end-2023; or stick with the current staggered timetable. PTS says that a coordinated allocation could result in more efficient frequency use and, ultimately, lower costs for operators and thus a higher rate of expansion. Interested parties have until 1 September

to submit their responses. (July 9, 2020) commsupdate.com

The Swedish Post and Telecom Agency (Post & Telestyrelsen, PTS) has decided to amend incumbent operator Telia's obligations in the market for local access to network infrastructure (Market 3a). The changes include the cancellation of the obligation to provide access and virtual access to copper networks and to channelization. The PTS has also adopted a new pricing structure for access to copper infrastructure. The changes will take effect on 1 July 2020. In February this year the EC rejected a PTS move to implement a single national market regulation for wholesale local access to fiber-optic services. The regulator subsequently resumed its market analysis in light of the EC's ruling and the latest decision is the result of that. (June 9, 2020) commsupdate.com



Taiwan

Chunghwa Telecom has reportedly been issued with its 5G operating license, making it the first of the five companies that secured 5G-suitable spectrum earlier this year to be officially awarded its concession. Confirming the development in a press release, the National Communications Commission (NCC)

noted that, with Chunghwa having met the statutory obligations of its business plan, it had been decided to issue it with a concession which allows for the launch of a commercial 5G offering. On the back of the decision to award the license, local news outlet Focus Taiwan reported that Chunghwa is targeting 1 July

2020 for a commercial switch-on, though it noted that it is still considering pricing models for subscribers. Meanwhile, the report notes that – according to NCC Chief Secretary Hsiao Chi-hong – the cellco has already deployed 5G-enabled base stations across the country's six special municipalities: Taipei, New Taipei, Taoyuan, Taichung, Tainan and Kaohsiung. Chunghwa emerged as the biggest spender in the frequency sale that closed in January 2020, securing

a total of 90MHz in the 3.5GHz band for TWD45.675 billion (USD1.5 billion), and 600MHz in the 28GHz band for TWD618 million. Subsequently, in March 2020 the cellco at selected Nokia to oversee its 5G radio network deployment in the Central and Southern Region of the country, while another vendor, Ericsson, announced it had been contracted 'to provide the 5G platform to support [Chunghwa's] future network'.

(June 4, 2020) [commsupdate.com](#)



Uganda

MTN Uganda has confirmed that it has completed its license renewal, which was agreed in March this year after lengthy negotiations with the government. The cellco is paying USD100 million to extend its

concession for a further twelve years, effective from 1 July. MTN is Uganda's largest cellular operator by subscribers, accounting for around 50% of all users.

(June 16, 2020) [commsupdate.com](#)



Ukraine

The National Commission for State Regulation of Communications & Informatization (NCCIR/NKRZI) issued a decision on 14 July 2020 to cut the unified wholesale mobile termination rate (MTR) and long-distance voice call termination rate from UAH0.12 (USD0.0044) to UAH0.08 per minute from 1 October 2020. As published on the watchdog's website, the

decision (No. 270) requires approval from the Ministry of Justice. Earlier in the month the NCCIR was forced to cancel a similar decision (issued in May) to cut the termination rates, after the Ministry refused to register it. The NCCIR's latest decision brings forward the date of effectiveness by three months from its original proposal of January 2021. (June 16, 2020) [commsupdate.com](#)



United Kingdom

British telecoms regulator Ofcom has published a consultation seeking views on its plan to defer a decision on proposals to remove copper wire regulations until after it publishes its final decisions in its Wholesale Fixed Telecoms Market Review (WFTMR). Having originally set out its proposed policy on copper retirement as part of the published in January this year, Ofcom said that instead, it will now canvas WFTMR consultation opinion on a revised proposal to wait until after it makes its final decisions in the WFTMR statement to consider how to define the circumstances in which premises can be excluded from the definition of a completed ultrafast exchange area. Based on the regulator proposals at the start of the year and Openreach's announced plans, it anticipates that the earliest that the copper charge control will be removed

will be in December 2022 in Salisbury, and in June 2023 in a further 117 exchange areas. The watchdog's WFTMR consultation had clarified too that the aim of the copper retirement proposals is designed to promote fiber investment by shifting the focus of regulation from copper to fiber, and to support the migration to fiber services. An important aspect of those proposals included a period of regulatory transition after which, when Openreach has completed ultrafast coverage of an exchange area, Ofcom would lift the existing charge control on the anchor copper service. However, the regulator has noted that there may be 'very limited circumstances' in which Openreach may not be able to connect some premises in an exchange area with ultrafast services, 'despite all reasonable efforts'.

(June 26, 2020) [commsupdate.com](#)



United States

The Federal Communications Commission (FCC) has approved its 13th and 14th sets of COVID-19 telehealth program applications, expending the total \$200 million in funds provided by the CARES Act. Since the first set of awards were announced on April 16, 2020, the applications of 536 providers in 47 states plus Washington, D.C., and Guam were approved. Specifically, 74 New York State organizations were

awarded a total of \$32.5 million. Below are the recent awards for New York organizations. Association to Benefit Children—Children's Mobile Mental Health Clinic in New York, New York, was awarded \$174,270 for laptop computers, tablets, smartphones, and videoconferencing equipment and software for the remote treatment of mental health conditions, including a range of pediatric conditions, such as anxiety and

depressive disorders in at-risk children. BMS Family Health and Wellness Centers in Brooklyn, New York, was awarded \$1 million for desktop and laptop computers, smartphones and data plans for patients, remote monitoring equipment, a remote monitoring platform, and videoconferencing equipment to provide care for the low-income patient population, provide access to specialists, educate patients about self-management practices, and monitor patient health remotely. The remote monitoring equipment and platform include devices that measure and wirelessly transmit information such as blood pressure, blood glucose and lung function to providers. Erie County Medical Center in Buffalo, New York, was awarded \$98,435 for laptop computers, tablets, and videoconferencing equipment and software to enhance virtual emergency department capabilities and telephone and video visits in multiple outpatient primary and specialty care departments. Long Island FQHC in Westbury, New York, was awarded \$636,834 for remote diagnostic and examination equipment and a platform subscription, tablets, laptop computers and desktop computers to enable telehealth services for patients across all sites for COVID-19 care and non COVID-19-related routine care, to conduct remote monitoring of vital measures to help monitor COVID-19 symptoms using devices, and to offer patients loaner smart devices to effectively engage in telehealth services. Metropolitan Center for Mental Health in New York, New York, was awarded \$22,708 for videoconferencing equipment and software to support voice and video consultations and other diagnostic services used to continue licensed psychiatric services and maintain critical treatment for the patient population. Montefiore Medical Center in Bronx, New York, was awarded \$1 million for a telehealth platform, telehealth intensive care monitoring equipment, telehealth workstations, laptop computers, tablets and videoconferencing equipment to be able to triage patients concerned with symptoms related to COVID-19, to assist physicians from multiple specialties in treatment of patients with COVID-19, and to consult with and treat non-COVID-19 patients remotely and monitor chronic diseases. Oak Orchard Health Center in Brockport, New York, was awarded \$454,916 for laptop computers, desktop computers, videoconferencing equipment and remote monitoring equipment to increase access to healthcare providers via telehealth that will improve quality care outcomes for primary, dental, vision, pediatric and behavioral healthcare services. Ryan Health West 97th Street in New York, New York, was awarded \$749,766 for network upgrades, desktop and laptop computers, videoconferencing equipment, telehealth platform subscriptions, and remote monitoring equipment and software to expand telehealth services to reduce close contact and avoid risk of community spread of COVID-19 among patients, staff and providers, as well

as begin remote patient monitoring to increase access to primary care and subspecialty health services. St. John's Riverside Hospital in Yonkers, New York, was awarded \$923,989 for telemedicine carts, a telehealth platform, tablets, videoconferencing equipment and network upgrades to institute mobile communications between patients, families and doctors; telehealth equipment for primary, specialty and subspecialty care, and psychiatry and behavioral health services; video capabilities and monitoring technology for inpatient services and remote patient monitoring for outpatient sites; and infrastructure equipment to support the telehealth services. Syracuse Community Health Center in Syracuse, New York, was awarded \$247,510 for tablets and a telehealth platform for medical and mental health providers to continue providing access to essential primary care and mental health services remotely while avoiding the need for patients to come to the primary location for COVID-19 screening and testing in Onondaga County. New York Presbyterian Hudson Valley Hospital in Cortland Manor, New York, was awarded \$713,611 for telemedicine carts, tablet computers and a telehealth platform to establish a telehealth intensive care unit that provides clinicians access to real-time patient data for multiple patients, to support healthcare staff with remote patient care during daily rounds, and to increase specialty care access via telehealth consultations to inpatient and outpatient sites. (July 14, 2020) [jdsupra.com](#)

The US Department of Commerce (DoC) cleared domestic companies to work with Huawei on 5G standards, removing uncertainty about whether this was prohibited under trade restrictions imposed on the Chinese vendor in 2019. In a statement, Secretary of Commerce Wilbur Ross (pictured) encouraged national industry "to fully engage and advocate for US technologies to become international standards", adding the DoC "recognizes the importance of harnessing American ingenuity to advance and protect our economic and national security". US trade restrictions on Huawei require domestic companies to apply for a license to do business with the vendor. But, in a new rule, the DoC states US companies will not need clearance to share information about their technology during the standards development process if they would not have needed a disclosure license to share the technology before the Huawei sanctions. US companies are still prohibited from sharing information about their technology with Huawei for commercial purposes without clearance. Reuters reported last month the DoC was considering the move on standards to alleviate confusion. The DoC acknowledged international standards as "critical building blocks for technological development", with Ross adding the US "will not cede leadership in global innovation".

(June 16, 2020) [mobileworldlive.com](#)

The Federal Communications Commission (FCC) has confirmed that it has received 348 applications from companies interested in taking part in its auction of 5G-suitable (3550MHz-3650MHz) 3.5GHz spectrum, which is scheduled to commence on 23 July. Of the applications received, the FCC said that 106 were 'complete', while a further 242 were 'incomplete'. To become a qualified bidder for Auction 105, each applicant in the latter category must resubmit its application, having corrected any deficiencies, and make the required upfront payment by 19 June 2020. Registered bidders with 'complete' paperwork include: AT&T Spectrum Frontiers, Cincinnati Bell, Cox Communications, Frontier Communications, Mediacom, Puerto Rico Telephone Company (Claro), Shenandoah Cable Television, TeleGuam Holdings (GTA), United States Cellular Corporation and Windstream Services. Meanwhile, registered bidders with 'incomplete' documentation include: Aeronet Wireless Broadband, Cable ONE, Consolidated Communications Enterprise Services, DOCOMO Pacific, T-Mobile License and Verizon Wireless Network Procurement. In addition, Fierce Wireless notes that satellite TV giant DISH Network is on this list, bidding as Wetterhorn Wireless. In March this year the FCC confirmed that it had rescheduled its planned auction of frequencies in the 3.5GHz band as a result of the COVID-19 pandemic. The spectrum sale – which had been scheduled to commence on 25 June – will now start on 23 July. The auction will offer seven Priority Access Licenses (PALs) in each county-based license area, for a total of 22,631 PALs nationwide. Each PAL will be a ten-year renewable license, consisting of an unpaired 10MHz channel. (June 10, 2020) commsupdate.com

Federal Communications Commission (FCC) Chairman Ajit Pai has announced that the repurposing of 3.7GHz C-band spectrum for 5G services will move forward on an accelerated timeline. In a public notice, the FCC's Wireless Telecommunications Bureau confirmed that it has secured commitments from all eligible satellite operators to meet an accelerated clearing timeline that will make way for faster 5G deployment in the 3.7GHz band. In February, the FCC adopted rules designed to free up 280MHz of C-band spectrum for 5G use. Specifically, the rules required existing satellite operators to 'repack' their operations from the band's entire 500MHz into the upper 200MHz; allocated the lower 280MHz for terrestrial flexible use; and provided for a 20MHz guard band in between. Moreover, the FCC has provided five eligible space station operators serving the contiguous United States with the opportunity to clear the lower 300MHz of the band on an accelerated timeframe in exchange for accelerated relocation payments. With all five eligible satellite operators – Eutelsat, Intelsat, SES, Star One, and Telesat – having voted for 'accelerated relocation', the accelerated timeline has been triggered. Specifically, these companies must first clear 120MHz of spectrum in 46 Partial Economic Areas (PEAs) by 5 December 2021. In a second phase, they must clear the lower 120MHz in the remaining PEAs, plus an additional 180MHz nationwide, by 5 December 2023. If the companies fulfil these commitments, they will be eligible for up to USD9.7 billion in accelerated relocation payments plus reasonable relocation costs, paid for by the new flexible use licensees. Had the satellite operators not chosen to accept accelerated relocation payments, the deadline for clearing the lower 300MHz of the band would have been 5 December 2025.

(June 3, 2020) commsupdate.com



Uzbekistan

The Ministry of Information Technologies & Communications (MITC) gave an update yesterday (8 June 2020) on the country's 'Digital Economy' 2020 telecoms goals. The MITC reported that in the period of January to early June, 281,000 new fixed broadband internet ports were installed (with equipment for 340,000 ports delivered), towards an annual target of 800,000 new ports. In the mobile sector, the ministry stated that 1,148 new 3G/4G base stations were deployed and put into operation throughout the country in the year to-date – aiming for a total of 2,200 new 3G/4G base stations in FY20 – alongside 1,483 upgrades to existing base stations to provide mobile broadband services. Furthermore, in the same period 6,500km of fiber-optic cabling was installed, out of a total 12,000km expected in full-year 2020, supporting both fixed and mobile network expansion/upgrades.

While the MITC did not mention specific operators in its national progress report, TeleGeography's GlobalComms Database notes that state-owned Uzbektelecom is the dominant provider of fixed broadband access, while the government currently owns three of the country's five mobile network operators – namely Ucell, Uzmobil (Uzbektelecom's cellular arm) and Mobiuz – all of which are expanding 3G/4G networks. The trio compete against Russian-backed cellco Beeline and smaller CDMA provider Perfectum (itself partly owned by Uzbektelecom). In recent individual announcements, Uzmobil has completed a project to expand LTE to all its existing 2G/3G base station sites in the capital Tashkent as well as other regions, while Mobiuz alone is aiming to install over 1,000 base stations nationwide during 2020.

(June 9, 2020) commsupdate.com



Vietnam

The Ministry of Information and Communications (MIC) has said it plans to deal with telecom waste and continue large-scale inspections of junk SIM cards. Clearing up telecom waste would also pave the way for new telecom services like mobile money, which uses telecom accounts to pay, said Deputy Minister of Information and Communications Phan Tam at a recent conference. Previously, the MIC's Viet Nam Telecommunications Authority (VNPT) worked with Viettel, VNPT and MobiFone to deploy technological solutions to filter and disconnect subscribers who spread spam. Telecommunications businesses will apply technology solutions like big data and machine learning to identify subscribers suspected of distributing spam calls. Viettel will deploy the solution from July 1, while VinaPhone and MobiFone will start before August 1. The remaining six telecommunications businesses, including Vietnamobile, Indochina Telecom, Hanoi Telecom, CMC, Saigon Postel and FPT Telecom, will deploy the solution before October 1. Preventing subscribers from making spam calls will be based on responses from customers. Carriers will block the outgoing call of subscribers determined to be distributing spam calls. This is the latest solution in the roadmap to wipe out junk SIM cards, messages and spam calls from telecom authorities and network operators. Earlier, the MIC inspectorate proposed users should enter their identity card number when topping up to tighten the management of junk SIM cards and update subscriber information. (July 11, 2020) bizhub.vn

Vietnam's Ministry of Information and Communications (MIC) penalized the four largest mobile operators in the nation for illegally registering prepaid subscribers, issuing fines totaling VND777 million (\$33,377). An audit by the ministry conducted in October 2019 and November 2019 found Viettel, Vinaphone, Mobifone and Vietnamobile used fake information to register new customers, the newspaper wrote. SIM registration requires a user's full name, date of birth and national ID number. The ministry confiscated 6,900 SIM cards during the inspection. The operators apparently used information from existing SIM card holders to sign

up new subscribers, which were often sold to tourists who were not aware of registration requirements. Each operator was fined VND90 million, with retailers also penalized. A total of five MNOs and two MVNOs operate in Vietnam following the launch of a virtual service by Mobicast last week. GSMA Intelligence figures showed the country had 146 million mobile connections at end-March. (June 8, 2020) Tuổi Trẻ News

The Authority of Telecommunications under the Ministry of Information and Communications (MIC) revealed that a second mobile virtual network operator (MVNO) will soon debut in Việt Nam. The seventh telecom provider in the country will be launched with a new prefix number and use the mobile phone infrastructure of the State-owned Việt Nam Posts and Telecommunications Group (VNPT), which boasts among the best coverage and quality in the country. Việt Nam is one of the youngest MVNO markets in the world, with its first virtual operator - the Indochina Telecom Company (Itelecom) - launched in April this year. A virtual network operator does not own network infrastructure but rather purchases telecommunications services from traditional mobile network operators (MNO) and resells network services after repackaging at lower prices. The pioneering Itelecom has entered into an agreement with Vinaphone, a mobile subsidiary of VNPT, which gives it access to the company's network services and allows it to offer its own. The prefix of its mobile service is 087. In its initial phase, Itelecom is being introduced to workers at industrial zones in Hà Nội and HCM City, and provinces of Thái Nguyên, Vĩnh Phúc, Bắc Giang, Bắc Ninh, Bình Dương, Long An, and Đồng Nai. According to MIC, a legal framework has been established for virtual telecommunications networks. The MVNO model will help save investment costs for businesses and avoid any waste of social resources as unused traffic and infrastructure of MNOs can be exploited by carriers that do not have their own infrastructure, said Nguyễn Phong Nhã, deputy general director of the MIC's Authority of Telecommunications.

(June 3, 2020) vietnamnews.vn



Zambia

The Zambia is said to be looking for a new mobile network operator (MNO) to compete with the nation's incumbent cellcos, after UZI Zambia Mobile - which acquired a concession to operate in the African country back in February 2018 - failed to make it to market. In February this year it was revealed that UZI's 'investment' license had been extended and that it had been given until May 2020 to secure the funding it needed to underpin a commercial launch. The announcement came after Misheck Lungu, permanent secretary at Zambia's Ministry of Transport and

Communication (MoTC), disclosed to local media that a lack of resources had delayed the MNO's commercial launch and that it was looking to ensure its investment was not interrupted once it became operational. UZI's launch failed to come to fruition, however, prompting the authorities to consider their next move. Here, Bloomberg cites Lungu as saying: 'we respect the rule of law and that's why we followed the tender process to the letter ... Now that UZI has not come, we are going back to plan [again].'

(June 19, 2020) commsupdate.com



Zimbabwe

The government of Zimbabwe has pulled back from a threat to shut down all mobile money services in the country as it looks to target 'malpractices, criminality and economic sabotage perpetrated by the wolves in sheep skins amongst our population'. Following an initial statement from Information Secretary Nick Mangwana at the weekend which caused uproar among the millions of mobile money users, the Reserve Bank of Zimbabwe (RBZ) quickly moved to clarify the government's position. Rather than targeting all users, mobile money agents and bulk payer lines are being closed, with merchant-to-merchant transactions also suspended, but other forms of transaction, including payments for utility bills, can still be carried out. As part of its temporary measures to combat fraud and corruption, the government has also banned trading on the Zimbabwe Stock Exchange (ZSE). According to industry regulator POTRAZ, the total number of active mobile money subscriptions grew by 2% in the final three months of 2019 to reach 7,334,639 as of end-December, with Econet's EcoCash service accounting for 93% of all users. (June 29, 2020) commsupdate.com

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), says it cancelled nearly 10 licenses for Internet access providers who failed to roll out their businesses. Speaking during the third edition of an online economic development outlook seminar hosted by Global Renaissance Investments (GRI), Potraz Technical Services Director Nicholas Muzhuzha, said some aspiring operators applied for licenses but failed to take off due to lack of adequate investment. The sector is capital intensive. Mr. Muzhuzha said failure to operate attracted cancellation by the regulator. "We cancelled close to 10. We had quite a number of licenses for Internet access providers at some point, but Potraz had to cancel most of them for failing to operate. When you get a license you should roll out and provide service to the consumers. "Potraz has not created monopolies

in this area, but the ones that are operating now have made significant investment into this service. The investment required in this sector is significant and some fail to attract meaningful investment to roll out," he said. Mr. Muzhuzha, however, could not be drawn into disclosing the names of the affected companies for client confidentiality reasons. According to a Budd Comm report on Zimbabwe- Telecoms, Mobile and Broadband Statistics and Analyses, limitations in international bandwidth for the country – landlocked – has for many years held back development in Internet and broadband sectors, but this has changed since fiber optic links to several submarine cables were established via neighboring countries. The report further notes that the expansion of 3G and LTE-based broadband services have meant that more than half of the population can now access the Internet. With the outbreak of the Covid-19 pandemic and its effects on businesses, the sector will not be spared at both operator and consumer level. For an economy that was already facing challenges prior to the pandemic, it is anticipated network service providers will have difficulties maintaining and upgrading existing infrastructure due to foreign currency shortages, while on the part of consumers side, disposable incomes will continue to dwindle. However, Potraz says it is working on a regulatory framework that among other issues, will enhance interoperability, which will in turn make telecommunications services affordable to consumers while remaining viable for the operators. "You find in some instances three towers on a hill by the mobile network providers. This doesn't make sense. "We have agreed with operators that in such cases, we remove the other two and relocate them elsewhere and Potraz will fund the relocation exercise. "This will ensure there is no duplication of infrastructure. "If infrastructure is shared, operators will compete to provide services which will be cheaper to consumers as well," said Mr. Muzhuzha. 📍

(June 8, 2020) herald.co.zw

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