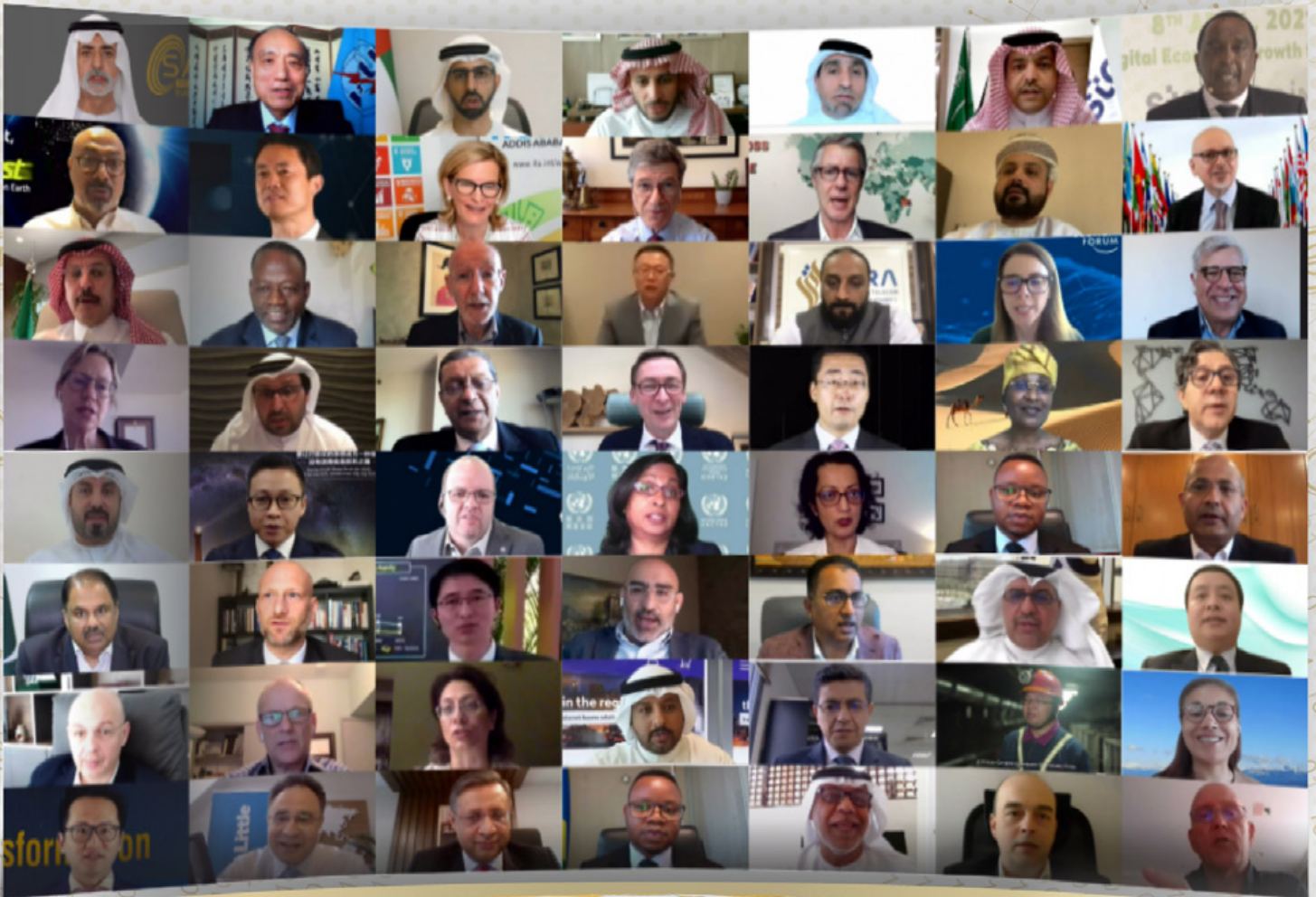www.samenacouncil.org

SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES

Featured

Annual Leaders' Congregation Organized by SAMENA Council in April 2021...

SAMENA
TELECOMMUNICATIONS COUNCIL
BUILDING DIGITAL ECONOMIES

THIS MONTH

DIGITAL INTERDEPENDENCE AND THE 5G ECOSYSTEM

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CONTENTS

Digital Interdependence and the 5G Ecosystem

In the now digitally-powered world, ubiquitous connectivity, computational power, and comprehension capabilities are now driving technology development, with reduced cycles of adoption and with a greater possibility and need for multi-lateral stakeholder and industry-to-industry cooperation. It is now time to fully recognize, appreciate, and foster digital interdependence, and use this interdependence to overcome divides and promote digital inclusion and innovation.

Recognizing interdependence is central to effective digital cooperation, strengthening multilateral approaches, and multi-stakeholder participation and contributions. In this regard, partnership, collaboration, digital capacity-building and innovation carry immense weight and are crucial for sustaining the digital development momentum created over the past year. This momentum is essential for recovery efforts around the world, and must be utilized effectively to propel a new wave of digitally-driven and digitally-inclusive economic development. In the post-pandemic times, new socio-economic and business paradigms, which, in many ways, are very different from those of the past, are the way to a sustainable digital future, which rests on the creation of a sustainable digital economy and, ultimately, a knowledge society.

This calls for new initiatives and fresh new efforts in the alignment of the Industry's and the governments' priorities and merits a paradigm shift in policy-making and regulations. On our way to economic recovery, from the technology front alone, increased network capacity and greater resilience are some of the key pre-requisites. On the other front, key enabling factors, such as public-private collaboration, improved policy and regulatory enablement steps, aligned well with digital transformation goals set by Operators and the Private Sector, at large, and sustainable influx in investment in both infrastructure and incubation of innovation and ICT talent, will play a central role in catalyzing economic growth opportunities for both existing and new businesses. Quite possibly, if we do it right, this may help uplift standards of living for billions all around the world.

Recognizing the needs of the evolving 5G ecosystem and finding it necessary to celebrate digital interdependence, SAMENA Council has congregated ICT leaders driving change and setting into practice new norms in regulation and policy-making at its world-class stakeholder communication platforms to focus on the need to transform policy to reality, while addressing the critical need to ensure cross-industry and cross-stakeholder inclusion is also achieved. The Council has brought to light the need to align public-private priorities, so that investment is maintained in building the required broadband infrastructure and in realizing an inclusive digital economy in the region. The Council has also voiced the need for taking into consideration international practices and implementing the ITU's collaborative regulation model, which will be further promoted with the G5 Benchmark on collaborative regulation, which SAMENA Council is pleased to contribute to and which will come to limelight in the next GSR.

Digital interdependence now demands championing innovation in the creation and adoption of new digital services by the governments, and it all fundamentally requires updating mechanisms for global digital cooperation, which should help

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

ensure that future policy-making and regulation are driven by agility, adaptive mindsets, and inclusion.

There are now ever more possibilities to put into effect human-centric, data-driven, and evidence-based policies, increase economic competitiveness, create more jobs, enhance provision of improved public services throughout the SA-ME-NA region's urban and rural communities, and to create more capital. As we better recognize the inevitability of digital cooperation, digital interdependence, and taking everyone alone the way, we can be hopeful that lesson learned over the past year and a half would support our moment forward in creating a sustainable 5G ecosystem and keeping our digital supply chains ever more integrated and efficient.

Leaders' Summit 2021

Annual Leaders' Congregation Organized by SAMENA Council in April 2021 Demonstrated the Necessity of Global Dialogue and Multi-Stakeholder Inclusion for Addressing Key Issues for the Business Community, Governments, and Citizens

Stakeholders' Dialogue during the Leaders' Summit 2021 also Substantiated the Importance of Digital Interdependence, Sustainability of Digital Supply Chains, ICT Leaders' Commitment, and Prompt Decision-making for Innovatively Exploiting the Power of Digital Technologies and for Setting New Socio-Economic Milestones

SAMENA Telecommunications Council held one of the world's premier ICT Industry leadership congregations, the Leaders' Summit 2021, on April 8th, made possible with the patronage of the Telecommunications & Digital Government Regulatory Authority (TDRA) of the UAE, strategic partnership of stc Group and Zain Group, and with Huawei as the host for the eighth consecutive year. Corroborating the need for multi-stakeholder inclusion and active participation, two of the UAE's honorable ministers as well as the head of the International Telecommunication Union, along with several excellencies and top decision-makers from around Europe, Central Asia, and the SA-ME-NA region, addressed the virtual congregation of the Leaders' Summit, organized under the theme *"Championing Digital Economic Growth from Policy to Reality"*. As the year 2021's premier and one of the world's foremost virtual collaboration platforms for global dialogue among the world's and the SA-ME-NA region's topmost organizations and decision-makers, the SAMENA Council Leaders' Summit 2021 was a power-packed one-day virtual journey through different time zones around the globe as well as a display of leadership

As the year 2021's premier and one of the world's foremost virtual collaboration platforms for global dialogue among the world's and the SA-ME-NA region's topmost organizations and decision-makers, the SAMENA Council Leaders' Summit 2021 was a power-packed one-day virtual journey through different time zones around the globe as well as a display of leadership power and commitment toward addressing important industry issues in the "Final Decade of Action".

power and commitment toward addressing important industry issues in the "Final Decade of Action".
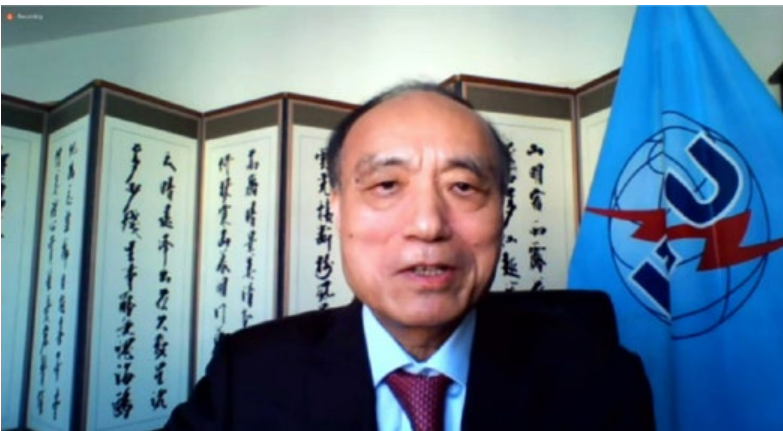
As an annually anticipated leadership event, the Leaders' Summit 2021 congregated Public and Private sector Leaders with diverse industry backgrounds from across the world and encompassed proactive ICT as well as cross-industry stakeholder participation, experience exchange, and intellectual discourse among key decision-makers and innovators. Encapsulating a multi-dimensional agenda, ranging from policy statements, discussions on a complex subject matter, to live insights from renowned personalities in the world, Leaders' Summit 2021 welcomed Chairmen and CEOs from the ICT Private Sector, and top decision-makers from various Regulatory Authorities, and Thought Leaders from across developed and developing economies, and Leaders who are demonstrating progressiveness in policy and regulatory reforms, digital transformation, and in driving cross-industry synergies. To this effect, the Summit included participation of global leaders and entities focused on institutionalizing and fostering cross-sector collaboration with Finance, Education, and Healthcare sectors under the "EDISON Alliance" initiative, launched by the World Economic Forum. Special focus was casted on the ITU's upcoming WTDC-21 conference, on Intelligent Connectivity, Technology Demonstration, Global Action & Collaboration, Vertical Industry Segments, Interview Sessions with Media, Digital Application & 5G Ecosystems, Digital Sustainability, and the Internet Economy. Other key technology subject matter that came under discussion during the Leaders' Summit 2021 included the role of broadband networks and advanced digital technologies, such as cloud communications, IoT, AI, with a particular emphasis on understanding their implementation in correlation with emerging social and business value ecosystems as well as thriving digital application ecosystems.

The diversity of leaders at the Leaders' Summit 2021 was made possible with the trust, commitment, and participation of both global and regional decision-makers as well as decision-influencers, who perceive SAMENA Council as a trusted voice of the Industry and as a sector-development partner to regional Governments and global ICT institutions. This trust, commitment, and participation of both global and regional decision-makers has established the SAMENA Council Leaders' Summit as a go-to platform, which, through its virtual organization since 2020, has provided new possibilities for the Global Audience, Business Leaders, Policy & Regulatory Decision-makers, and Global Thinkers to participate, deliberate, and align common visions on the realization of a beneficial digital future for the whole of humanity, and for achieving better business gains for the Private Sector.

> *Messages from the Policymakers, Regulators, the Private Sector, Renowned thought-leaders, and thinkers representing the world's leading organizations touched upon the core of where our focus needs to be: making reality possible with the right policy and technology-deployment decisions. Such messages were delivered in the context of economic development in the digital age; in view of the requirements for a fully inclusive and equitable future for all; to address the necessity for advanced ICT infrastructure and digital technologies and platforms; and to fulfill the need for identifying key stakeholder engagement...*

Huawei's participation and its real-life technology use-case demonstrations, as done live from its DigiTelligent Forest in China during the Leaders' Summit, as well as the presence and exchange of insights from the champions of connectivity (namely, stc Group, Zain Group, among others), champions of digital transformation (especially, Etisalat) in the region, as well as champions of cross-sector collaboration (EDISON Alliance members), and champions of multilateralism, and in-depth discussions held against the backdrop of technology availability and sustainability of digital supply-chain and thriving 5G and digital application ecosystems, corroborated the need for revamping and revitalizing policy approaches to mitigate and overcome challenges that impede the progress on the 17 SDGs and the world's Connect 2030 Agenda.

The SAMENA Telecommunication Council Leaders' Summit 2021 has been conducted in the "year of recovery", with nine year remaining to the completion of the Final Decade of Action, and at a time when the intrinsic value of 5G and other allied digital technologies are being assessed against the social and business values they create. Much collaboration has begun to shape up among Telecom Operators and Education, Healthcare, and Finance sectors, and various industries such as Ports & Shipping, Mining, Oil&Gas, are being more vocal about their needs for digital transformation through 5G, AI, Cloud, and other allied technologies. This demonstrates the importance and necessity of industry-wide and cross-industry digital transformation not only for commercial and economic reasons but also for health, overall well-being, and sustainability causes.

Messages from the Policymakers, Regulators, the Private Sector, Renowned thought-leaders, and thinkers representing the world's leading organizations touched upon the core of where our focus needs to be: making *reality* possible with the *right policy and technology-deployment decisions*. Such messages were delivered in the context of economic development in the digital age; in view of the requirements for a fully inclusive and equitable future for all; to address the necessity for advanced ICT infrastructure and digital technologies and platforms; and to fulfill the need for identifying key stakeholder engagement areas and priorities that can help the Industry as well as the world community

SAMENA Council's CEO reiterated that through collaboration and by fostering inclusion and participation of everyone, we can ensure that we will take into account different needs and issues into consideration in a timely fashion--and we should waste no time and no effort should go in vain. Championing Digital Economic Growth is boosted through businesses and investments.

in materializing its dreams, set forth as "Sustainable Development Goals", into implemented reality. Furthermore, the realization that a significant part of the ICT Industry's future-building endeavors now demands Telecom Operators and their leaderships to take on a frontal, transformed role as the enablers of digital economic development was reinforced. A similar realization that the Private Sector simply cannot fund everything and single-handedly overcome the digital divides, internet usage gaps, and the ICT funding gaps, was also pressed upon. Overcoming multi-dimensional gaps requires innovative and better-incentivized approaches, which the Public Sector needs to champion in collaboration with the Private Sector. This is especially needed in consideration of the fact that, based on a recent UNCTAD report, for the last almost 200 years, each time there has been progress, the divide between the haves and have-nots has increased. In our lifetime, the Covid-19 pandemic has highlighted this context and sufficient evidence proves that people with access to the Internet are doing well, while those who do not have access are left even further behind.

To ignite future digital-led economic growth that should be inclusive, the Leaders' Summit 2021 highlighted the need for ensuring internet access as a critical means for making progress on the SDGs, and to build on innovation, information, and incentives as the fundamental pillars. While new forms of partnerships can serve as accelerants to address the connectivity gaps, we also need to overcome the usage gaps and create a sense of relevance for those who are still not using the Internet. A global global campaign to explain and realize new ICT funding avenues is needed as are multilateral approaches in ensuring

sustainable digital supply chains, in overcoming issues such as Cybersecurity and privacy protection, and in leveraging digital inter-dependence—which should be valued and not taken for granted.

While the participating industry leaders shared their insights, the Leaders' Summit's global audience also provided its understanding of the definition and understanding of "intelligent connectivity" with 50% respondents considering personalized experiences to be the most important aspect of intelligent connectivity. The audience (71%) suggested to key decision-makers to address policy and business enablement gaps, and reduce

What is your main suggestion to key decision-makers to help accelerate "intelligent connectivity"?

- 29%
- 71%
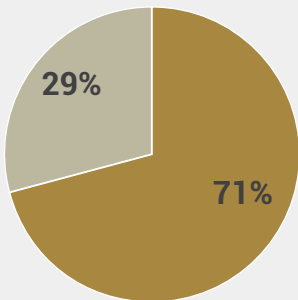
- Address policy and business enablement gaps, and reduce financial burdens
- More effectively interface with the Private Sector
- Implement technologies to improve governance

Which of the below mentioned Sustainable Development Goals (SDGs) can be more quickly achieved with ICT development in the "Final Decade of Action"?

- 20%
- 40%
- 40%
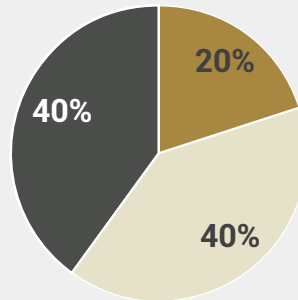
- SDG 1: No Poverty
- SDG 5: Gender Equality
- SDG 10: Reduced Inequalities among Nations
- SDG 16: Peace Justice & Strong Institutions
- None of these

Which effect of "intelligent connectivity" resonates with you the most?

- 50% Personalized experiences
- 40% New revenue streams
- 10% Digital divides
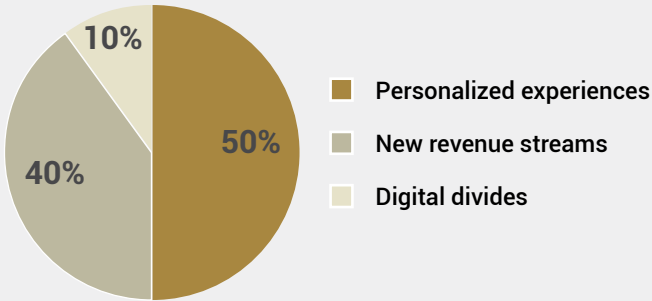
Which stakeholder group below, in your opinion, is more likely to fund the next infrastructure development wave worldwide, to connect the remaining 3 billion unconnected citizens of the world?

- 50% Governments
- Telecom Operators
- Internet companies & Governments
- 50% Internet companies & Operators
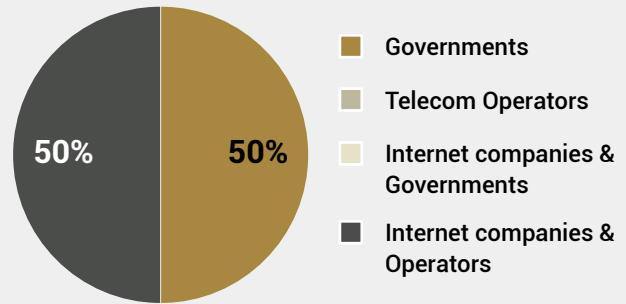
How strongly do you agree with the statement: Without "multilateralism" issues such as Cybersecurity and sustainable digital supply chains cannot be addressed.

- 100% Strongly Agree
- Somewhat agree
- Do not agree
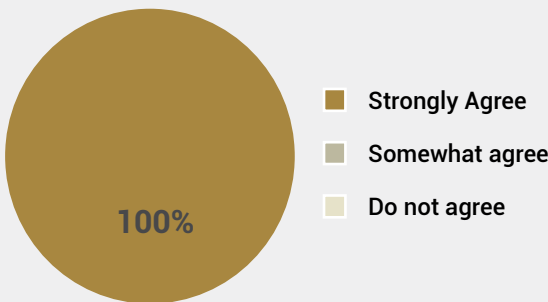
Which "X-to-ICT" collaboration initiatives should SAMENA Council focus on to help foster collaboration among the connectivity ecosystem players and essential sectors?

- 33% Education-to-ICT
- 33% Health-to-ICT
- 33% Finance-to-ICT
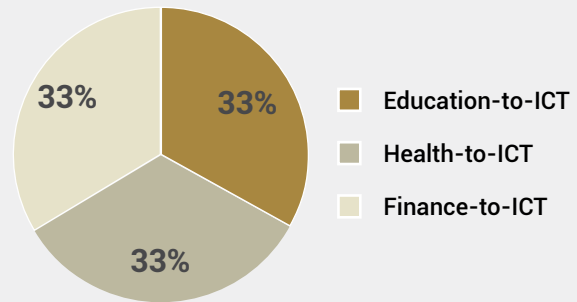
financial burdens, to help accelerate "intelligent connectivity". Reflecting on their understanding of global imperatives, especially SDGs and which SDGs may be more quickly and directly achieved through ICT development, 40% felt that SDG 10 (Reduced Inequalities among Nations) may be more quickly achievable, with 40% feeling none can be achieved quickly. 100% of the respondents strongly agreed that without "multilateralism",

challenges such as Cybersecurity and sustainable digital supply chains cannot be addressed. Regarding the priority sectors that should benefit the most from 5G and related technologies, the audience expressed a divided view on Finance (50%) and Education (50%) sectors. The audience, similarly, expressed a divided view on new "X-to-ICT" collaboration initiatives that SAMENA Council should focus on to help foster collaboration

among the connectivity ecosystem players and essential sectors, with the audience equally divided on Education, Finance, and Healthcare focus. Concerning the stakeholder groups more likely to fund the next infrastructure development wave worldwide, to connect the remaining 3 billion unconnected citizens of the world, 50% of the audience felt that Governments will lead, while the remaining 50% considered the involvement of Internet Companies as key finance contributors in the future.

Through its Leaders' Summit 2021 platform, SAMENA Council has again drawn parallels between sustainability and inclusiveness and in being able to build successful digital economies. SAMENA Council's CEO reiterated that through collaboration and by fostering inclusion and participation of everyone, we can ensure that we will take into account different needs and issues into consideration in a timely fashion-- and we should waste no time and no effort should go in vain. Championing Digital Economic Growth is boosted through businesses and investments. Therefore,

it is integral to address priority areas that can help bring about greater investments, to help drive sustainable economic growth and better business gains. Some of these key areas, at a higher level, include but are not limited to the need for reduction in taxation and incentives in investment, future-friendly spectrum allocation approaches and rectification of spectrum interference issues, data regulation with an emphasis on cross-border access to data for regional Operators, and fostering ICT-led innovation, with Governments championing the adoption of new digital services.

Since the prevailing global health crisis, while the Leaders' Summit 2020 and Leaders' Summit 2021 have been held virtually, with much appreciation and availability of time and space provided for multiple stakeholders and globally-renowned personalities to conveniently take part in the leadership dialogue on important global ICT development matters, SAMENA Council anticipates that the Leaders' Summit 2022 will be held physically from Dubai albeit remote, time-zone specific participation of leaders from across the world will remain a significant part of the Summit for the foreseeable technology-led future

Which of the priority sectors do you believe should benefit the most from 5G and related technologies?

50%   50%
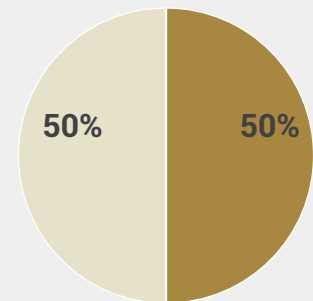
- Education
- Healthcare
- Finance
- Agriculture
- Manufacturing
- Entertainment

As a Fortune 500 company, it produces nearly 70 million tons of coal every year.

LEADERS' SUMMIT 2021
8TH APRIL, 2021
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LOCAL MINUTES

INTERNATIONAL MINUTES

ROAMING DATA

T&C apply

Etisalat Group-Digital Transformation is at the core of 'Customer Excellence' and a 'Sustainable Economy'

Digital transformation is the at the core of Etisalat's strategy and encompasses a broad spectrum of initiatives, including new cloud-based products and services, the enhancement and development of its digital channels and the transformation and automation of internal as well as customer-facing processes through the adoption of Robotic Process Automation (RPA) or AI-driven platforms. Digital channels such as mobile apps, websites or customer portals will continue to play a major role in both distribution channels and the maintenance of our brand relevance. Etisalat is also committed to accelerating digital innovation to contribute to a more sustainable economy. Through sustainable digital innovation, the company aims to meet stakeholders' evolving needs and enable them to achieve their goals. Here below are the key areas of focus which helped in bringing this to reality,

> *Robotic process automation to drive the digital future and empower society in line with the UAE Vision 2021*

Robotic centre of excellence

Etisalat's Robotic Centre of Excellence is aimed at delivering a wide variety of automated solutions to boost efficiency and improve productivity leading to greater customer satisfaction.

The centre currently has 141 robots that has saved over 171,000 manhours. The introduction of Robotic Process Automation (RPA) is part of Etisalat's endeavour to drive the digital future and empower society in line with the UAE Vision 2021.

In the digital age there is a growing need to turn towards emerging technologies to streamline operations and inject greater efficiency into business processes. The opening of the centre addresses the evolving needs of customers, with RPA services improving overall efficiency, speed, and accuracy of our back-office teams enhancing customer satisfaction. Software robots are supporting back-office agents to complete repetitive tasks 70 percent faster.

Digital customer care

All traditional human-supported customer care channels were digiticised with AI-Driven Virtual Assistant Bots, Self Help Etisalat Mobile App and "Be-Proactive" channels.

The AI-powered virtual agents, whereby 100 percent of the SME segment customer's calls, as well as consumer segment calls, engineering, and Central Information Technology (CIT) related calls, were handled by a virtual agent. The Etisalat AI-powered virtual agent is capable of handling 1.5 million transactions on monthly basis

Digital solutions

The COVID-19 circumstances have heightened the demand for digital solutions across various areas of businesses and processes. In 2020 Etisalat launched a series of tools and services to cater to the market demand and provide means to ease activities and processes through digitisation efforts.

> *More than 300,000 users registered on the Etisalat Consumer Mobile App and Etisalat Business Mobile App*

Cloudtalk meeting platform

Due to the high demand for teleconferencing and videoconferencing tools, Etisalat launched the CloudTalk Meeting platform which provides completely secure virtual meetings and online collaboration sessions.

Business edge

In 2020, Business Edge was launched as an innovative and adaptable platform offering a variety of essential products and services such as smart connectivity tools, communication and collaboration mechanisms, office productivity tools, security and analytics, business devices for employees, and digital marketing

solutions, all designed to strengthen the various aspects of any business.

Telemedicine platform

The introduction of the cloud-based 'Telemedicine Platform' provides solutions by integrating essential functions within a patient-doctor journey, such as secure video, audio, and chat over internet protocol to support the entire workflow from patient registration, appointment booking, payment collection and remote medical consultation. American Hospital, one of the leading hospitals in the region was the first to utilise the platform hosting more than 2,000 teleconsultations with more than 100 doctors activated to date.

Malaffi Software-Defined networking in a Wide Area Network (SDWAN)

Malaffi is the region's first health information exchange platform that safely and securely connect all public and private healthcare providers across Abu Dhabi. Etisalat has taken up the ambitious task of connecting 2,000 clinics in Abu Dhabi on a single SD-WAN fabric.

Etisalat cloud express

This is a secure private connection between the customer's corporate network and their public clouds, in partnership with Amazon Web Services and Microsoft Azure giving customers variety of connectivity options to build a high-speed hybrid network for businesses.

Digital Open Innovation centre

In 2020, the Etisalat Digital Open Innovation Centre was one of the first locations in which customers could experience 5G through holographic communications, and the Etisalat Video Cloud Platform was displayed for the first time. During the Etisalat Innovation Month several universities and organisations were invited to explore innovation in today's business

> *Etisalat Digital Open Innovation Centre received 180 visits in 2020, 77% were virtual tours, and 27 % were returning customers.*

environment.

With the pandemic the experience was shifted to a virtual digital online platform. The Etisalat Digital Open Innovation Centre received 180 visits in 2020, of which 77 percent were virtual tours, and 27 percent were returning customers. Since opening in 2018, Etisalat has received a total of 812 customers of which 63 percent of visitors were C-level executives during 2020.

UAE trade connect (UTC)

The trade finance platform addresses the risk of double financing and fraud across the UAE. The joint venture currently includes seven local banks, including Commercial Bank International (CBI), Commercial Bank of Dubai (CBD), Emirates NBD, First Abu Dhabi Bank (FAB), Mashreq Bank, National Bank of Fujairah (NBF), and RAKBANK to develop a new blockchain based trade finance solution.

Amazon Web Wervices (AWS) direct connect partnership

Businesses in the UAE can now transfer
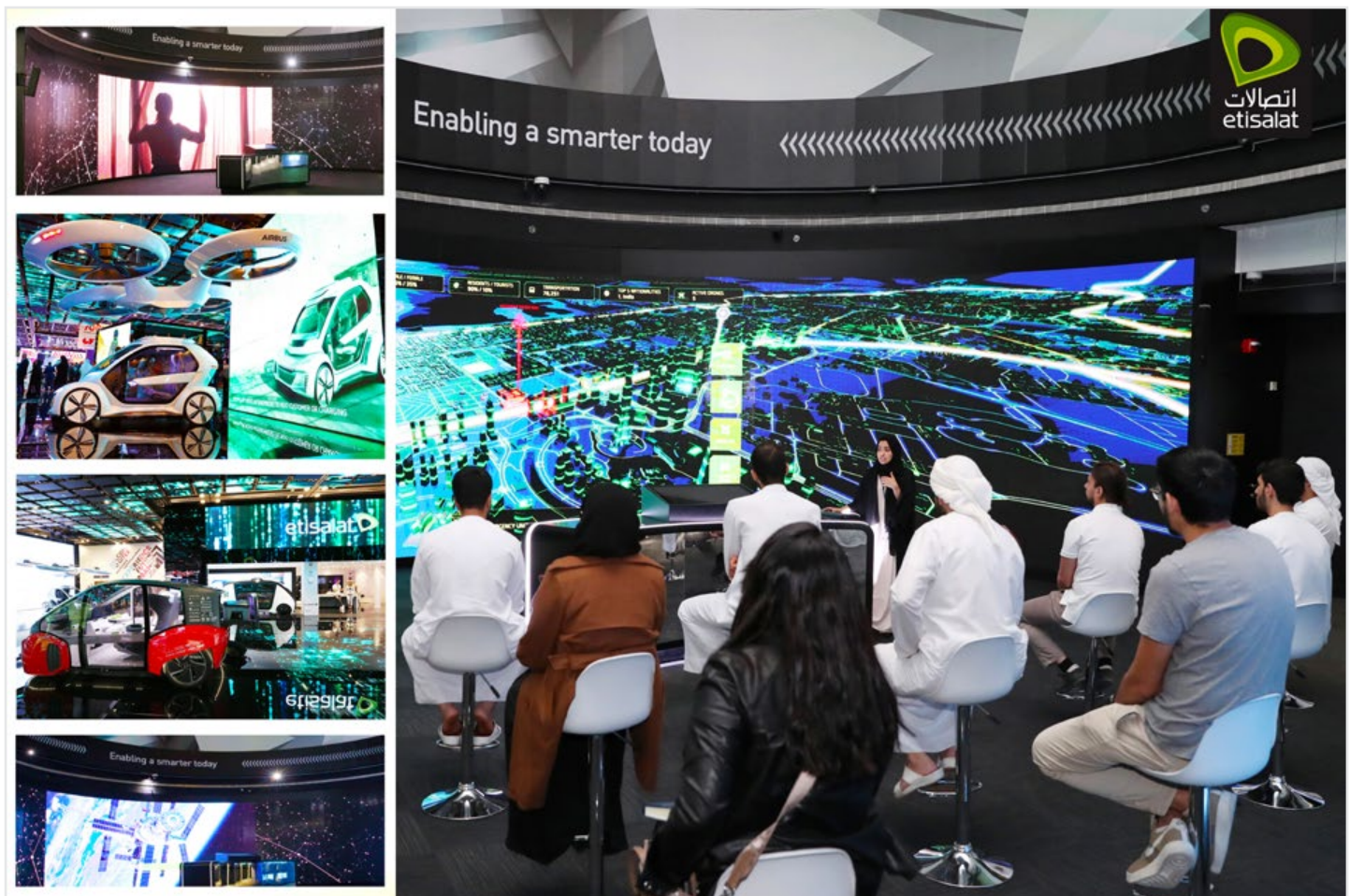
critical data directly to the cloud using AWS Direct Connect from their data centre or colocation environment and bypass the public internet.

applications for business users and customers. Etisalat apps includes digitisation of processes, product integration, and new features within the app. There is an integrated 'Central Feedback Management system' and through its self-serve options customers can control their usage and consumption of data and minutes as well as set limits and data caps.

By 2020, Etisalat achieved a total of 300,000 users registered on the Etisalat Consumer Mobile App, 321,000 users registered on the Etisalat Business Mobile App and 55,000 new users on the B2B Portal.

Smart stores
The Smart Store initiative has digitally and ergonomically transformed existing stores and those opening in new locations across the UAE. These stores allow our customers to undertake end to end transactions digitally, while enjoying a unique shopping experience via our latest digital touch points. In 2020, Etisalat opened 10 new digital stores across the UAE.

> *Smiles App exceeded two million unique users.*

Smiles app
Etisalat Smiles App is a powerful loyalty programme that also launched a block-chain powered rewards exchange feature enabling customers to keep track of their loyalty points and exchange points between one another. Smiles App has exceeded two million unique users and has continued to expand its reach with over 1,000 partners across

Etisalat digitally transforms customer experience
The end-to-end customer experience was transformed with all the various

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SAMENA COUNCIL ACTIVITY

SAMENA Council Contributes toward Arab Regional Priority Alignment; Advocates for Coverage & Capacity Spectrum Bands to Accelerate Standalone 5G

As a complement to WTDC-21 preparatory session later held during the Leaders' Summit 2021, SAMENA Council has contributed to the Arab Regional Online Workshop on *"Crystallizing Regional Priorities in the Arab Region"* and voiced perspectives on what the Private Sector requires in order to continue playing its much-needed role in fulfilling the Arab region's digital transformation goals.

> *Advocating for a clear way forward on aligning government and pri-vate-sector priorities and industry areas to focus on as an immediate imper-ative, SAMENA Council highlighted the popularity of high-speed data ser-vices, especially 5G ser-vices, in the region.*

CEO of SAMENA Council, Bocar BA was of the view that *"Stakeholder priority alignment is happening at a time when economic growth and sustainability are among the greatest needs of the hour, and thus collective efforts are in dire need of producing fulfilling outcomes, which are as equally connected to the success of the Public Sector as they are to the business and sustainability of the Private Sector. With its global aspiration of achieving Universal Digital Access and to materialize Meaningful Connectivity, it is important that the region account for its digital gaps that do exist. Thus the region's stakeholders must first pinpoint those gaps, be vocal about their impact if they're left un-addressed, implement the ITU's key*

recommendations, and mobilize concerted partnerships between Private Sector and the Policymakers & Regulators, and set incentives to build the digital infrastructure required to overcome those gaps."

Advocating for a clear way forward on aligning government and private-sector priorities and industry areas to focus on as an immediate imperative, SAMENA Council highlighted the popularity of high-speed data services, especially 5G services, in the region. Drawing stakeholder attention to the need to digitally transform as a function of investment and close collaboration between governments and the Private Sector, especially Telecom Operators, the Council reiterated that it is *investment* in digital transformation and meaningful proliferation of the ICTs which holds the promise of fulfilling the SDGs, to which the Private Sector has expressed its full commitment. It is sustainable, incentivized and partnered investment, which will aid in expediting technological development and digital innovation both within the ICT Industry as well as other priority sectors, such as Health, Finance, Education, among others. In order to create new jobs, sustain ICT development and human capital development, and overall socio-economic progress, investments must be incentivized and market predictability should be ensured. This, in turn, requires agility in policymaking and a positive, enabling regulatory environment across the Arab Region.

SAMENA Council emphasized that while the Arab region, on several accounts, has been relatively quick in the alignment of Private Sector stakeholder and national priorities, and hence can now reap the benefits of their astutely defined ICT visions, foresightedness, and the political will to transform policy into measureable

actions, in light of certain ground realities and trends -- such as expansion of digital channels and e-commerce, emergence of OpenRAN and Autonomous Driving Networks, Cloud communications and AI-based capabilities, greener and more efficient data center operations and initiatives such as carbon neutrality, etc. -- there are certain areas that remain central to the future efforts on expanding connectivity and in accelerating digital transformation and development.

These areas include devising new mechanisms for reducing high industry fees and taxation, taking into consideration international practices. In this regard, and to address various other challenges, ITU's "collaborative regulation model" for inclusive stakeholder participation and inclusive digital future should be put into effect on an accelerated basis. Next, the issue of data regulation has important implications for Operators, and thus cross-border flow of data for Operators should be allowed, and its implementation should be started with immediate pilot projects if necessary, with Operators given the free-hand to demonstrate and work with Regulatory Authorities to ensure mutual requirements are met. Moreover, licensed Operators, which require support to help meet their financial targets through improved revenue-generation and to be able to invest in the drive toward achieving Universal Digital Access in the Arab Region, should benefit from Policymakers' and Regulators' "non-Telecom" approach whereby a level-playing field for Operators is created, so that all Digital Space Players contribute to the development of ICT Infrastructure and in ensuring that "no one is left behind". In striving toward bringing meaningful connectivity to everyone, innovation in the creation, adoption, and championing by the government sector of

As an overarching priority, the proliferation of 5G networks in the region, in great part, rests on contiguous spectrum that ensures both coverage and capacity and allows for Standalone 5G to materialize, so that the region is able to benefit fully from 5G in its truest form. Stand Alone 5G, which may be referred to as "Real 5G", with its network-slicing features, will support all use-cases including making the most of Cloud Communication, Artificial Intelligence, IoT, Industrial IoT, etc., and will truly unlock the power of the next-generation mobile technology in its ultimate sense.

the adoption of new digital services will also have a tremendous role.

However, being able to effectively meet the pre-requisite requirements for the aforementioned priority areas, necessitates ensuring that spectrum resources are made available to Telecom Operators. To this effect, allocation of affordable and contiguous spectrum as well as rectification of spectrum interference with effective regulatory approaches are among the key steps that can be taken to address the future connectivity requirements and thus should be treated as a dire priority, with expedited steps taken toward cross-border cooperation and information exchange. As an overarching priority, the proliferation of 5G networks in the region, in great part, rests on contiguous spectrum that ensures both coverage and capacity and allows for Standalone 5G to materialize, so that the region is able to benefit fully from 5G in its truest form. Stand Alone 5G, which may be referred to as "Real 5G", with its network-slicing features, will support all use-cases including making the most of Cloud Communication, Artificial Intelligence, IoT, Industrial IoT, etc., and will truly unlock the power of the next-generation mobile technology in its ultimate sense. Moreover, Stand Alone 5G can allow different qualities-of-service and Service Level Agreements to to be offered to different

user groups on the same 5G band. With some innovation and great collaboration with digital ecosystem partners, this can be easily translated into new revenue streams and beneficial impact to consumers and to the overall economy of the Arab region.

Granted balancing flexibility, availability, allocation, and region-wide harmonization, while making a strong case for 5G investments and socio-economic growth is a major challenge, it is highly important that a combination of sub-1 GHz harmonized spectrum and larger blocks of high frequency spectrum (such as at 3.6 GHz) be made available to enable the boost-up of mobile broadband speeds in an economically efficient manner. Such a combination can decisively and positively impact fulfillment of SDG 9 by accelerating resilient rural broadband infrastructure, quality of service, and industrialization.

A key part of the sub-1 GHz spectrum, the 600 MHz band in the region, in particular, is a clean coverage frequency range that can open up many new options for Telecom Operators, and can effectively meet the region's need for good 5G coverage plus capacity. Specifically, 617 – 652 MHz paired with 663 – 698 MHz, which provides 2 times 35 MHz bandwidth, is an ideal "clear band" for 5G deployment and using 600 MHz to launch Standalone 5G in the region

would be a global leadership opportunity for the regional governments. Therefore, to move forward in making the best use of 600 MHz, priority should also be given to the need to improve harmonization of the 600 MHz band for mobile broadband and to prioritize 600 MHz in broadcast re-planning. Not only 600 MHz, but other sub-1 GHz bands should also be prioritized for efficient and most relevant utilization.

Connectivity now demands increased investment in order to expand broadband deployment as it has never been witnessed before. There is consensus that connecting the remaining unconnected 47% of the world's population will not at all be as easier as it has been connecting the current 53%. Therefore, aligned and concerted efforts should be refocused to frame region-wide policies targeting broadband deployment through fresh, future-proof approaches. This almost instantly necessitates building better mechanisms and corridors of enhanced collaboration between the Private Sector and the Governments, and one of the crucial means to realize such collaboration is via alignment of priorities and seeing 5G as an ecosystem instead of just as another mobile broadband technology.

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Spectrum Auction in Planning in Saudi Arabia

Saudi Arabia aspires to be among the top 20 digital economies in the world. To this effect, the Communications and Information Technology Commission of Saudi Arabia (CITC) has expressed its plans to allocate or improve access to more than 23 GHz of spectrum for a wide range of digital communication uses as Saudi Arabia's digital transformation accelerates. This important development underpins the Commission's aim to expand the range of resources and services in the country, while ensuring that the digital ecosystem will thrive and Telecom Operators have access to more spectrum resources for incentivizing further investment. Such availability of spectrum makes Saudi Arabia the country with the most spectrum allocated for mobile use globally in the Sub-6 GHz and Sub-30 GHz frequency ranges.

The Communications and Information Technology Commission (CITC) has now published a public consultation on its Spectrum Auction 2021 as a part of the implementation process for 'Spectrum Outlook for commercial and Innovative use 2021-2023', which was published earlier this year. The auction consultation is a key step towards releasing multiple critical bands for a wide range of digital radio services. The auction aims to allocate a wide range of bands, including 600 MHz. Moreover, the published document consults about releasing UHF spectrum bands to provide specialized broadband services and enable industrial IoT applications for enterprises.

CITC seeks to efficiently allocate spectrum in the Kingdom to enable a broad range of market-driven use cases, and aims to enable innovative use cases across different industries and verticals as part of Saudi Arabia's drive to build a digital society using IoT, 5G, and new generations of satellite technologies.

The recent spectrum decisions in Saudi Arabia are a good way to respond to the 30% to 50% annual increase in mobile data consumption in the region, and are a demonstration of regulatory enablement to support the Private Sector. The plan to allocate licensed spectrum in the bands 600 MHz, 700 MHz, 1,500 MHz, extended 2,100 MHz, 3,800 − 4,000 MHz and 26 GHz frequency bands for mobile use between 2021 and 2023, would set a new precedence in the world, and it may also help achieve a balance between complementary technologies in cases where the market cannot deliver, monitor spectrum utilization for improved decision making, and assist innovation by making a variety of bands available for new technologies from trial licenses to shared and short-term access.

CITC Publishes Spectrum Auction 2021 — Preliminary Public Consultation

About the auction

To be held in Q4 2021

Release a total of 370 MHz for competition between digital wireless providers

Enable multiple digital radio services

Bands include: 600, 700, 2100, 3800 MHz

Future outcomes

Improve wireless broadband services in the Kingdom

Enabling digital transformation

Adopting most recent wireless technologies:

New satellite generation · IoT IoT · 5G 5G

To submit your input

Submission deadline July , 8 2021

CITC is inviting all parties nationally and internationally, including wireless technology investors, ICT service providers and vendors, as well as industrial entities and spectrum users, to provide their feedback and engage in this process to better support the outcomes of this auction. Participants are invited to submit their comments by July 8, 2021.

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MEMBERS NEWS

stc Sustainability Platform Wins the Excellence Award At "The World Summit on The Information Society (WSIS) Forum 2021

stc's sustainability platform project wins the excellence certification at the "The World Summit on the Information Society (WSIS) Forum 2021" as one of the pilot projects for the "Ethical Dimensions of Information and Knowledge Societies " category. The sustainability platform project won over 72 other global projects that were nominated for the award in the 360 project shortlist, proving that stc is the only company out of the participating local telecommunications sector that could receive the excellence certification on its digital platform project for the Ethical Dimensions of Information and Knowledge Societies category. Stc's Compliance with the criteria and conditions of the competition which emphasize the importance of raising awareness of the ethical dimension of using information and communication technologies and the commitment to preventive measures against the abuse of information and communication technologies. "Based on its

strategic role as the digital transformation enabler of the Kingdom and the region, stc adopted the best responsible practices in the field of sustainability to maximize its economical, social and environmental positive impact. The digital sustainability platform was launched with the aim of enhancing the components of the Saudi society by employing the profound concept of sustainable development in all its business, and supporting its campaign that targets harness its human, material and technical potential to encourage society to adopt a sustainability-based lifestyle. "Through its programs, the platform aims to support and empower young people, qualify talents, enhance the role of women and job opportunities in the telecommunications sector, in addition to the expansion of objectives to include more features such as the introduction and delivery of cooperative training programs, digital reporting, and automated data collection units for sustainability and

financial KPIs, while adhering to the highest professional and competitive standards in the communications and information technology sector, in line with the programs and initiatives launched by the government in cooperation with its different partners, in order to maximize the positive economic, social and environmental impacts on society in alignment with the objectives of the Kingdom's Vision 2030" The platform also aims to offer its services to officially registered non-profit organizations (Sector III), by utilizing the skills of stc's volunteering employees to address the needs of the beneficiary charities. Thirty days into its launch, the platform registered 11 volunteering opportunities, 4 online knowledge sharing courses, and to promote 22 technical packages to empower and support charities, receive 22 volunteer hours from stc employees, and register (45) charities and (16) technical empowerment requests under (8) running sustainability initiatives.

Sustainability Commitment

To lead the digital transformation of our society by being an innovative, caring and inclusive company.

Take sustainability further

stc's Net Income for Q1 of 2021 Compared to the Corresponding Quarter Last Year Increased By 1.34%, and it Distributes SR 1 Per Share Dividends for the 1st Quarter

stc announced the company's preliminary financial results for the period ending at 31 March 2021:
• Revenues for the 1st quarter reached SR 15,695m with an

increase of 12.63% compared to the corresponding quarter last year.
• Gross Profit for the for the 1st quarter reached to SR 8,557m with an increase of 4.40% compared to

the corresponding quarter last year.
• Operating Profit for the 1st quarter reached to SR 3,482m with an increase of 15.91% compared to the corresponding quarter last year.

- Earnings before Interest, Taxes, Zakat, Depreciation and Amortization (EBITDA) for the 1st quarter reached to SR 5,841m with an increase of 9.59% compared to the corresponding quarter last year.
- Net Income for the 1st quarter reached to SR 2,952m with an increase of 1.34% compared to the corresponding quarter last year.

In accordance with the approved dividend policy for three years starting from the 4th quarter 2018, which was announced on 16 December 2018, and has been ratified during the Extra Ordinary General Assembly Meeting on April 24th 2019, stc will distribute a total of SR 2,000 million in cash dividend for Q1 2021, representing SR 1 per share. The eligibility of dividends shall be for the shareholders at the close of trading on Tuesday 04/05/2021 corresponding to 22/09/1442 H and as per the registered shareholders in the register of The Securities Depository Center Company at the end of the 2nd trading day following the eligibility date. Dividend distribution date will be on 31/05/2021 corresponding to 19/10/1442H. Commenting on these results, Eng. Olayan Mohammed Alwetaid, stc Group CEO, stated that the company's results for this quarter as compared to the comparable

quarter last year was distinct. The company was able to grow its top line by 12.6%, supported by the increase witnessed in Consumer Business Unite revenues due to the growth in the Broadband & Fixed Wireless Access subscriber base by 10.1%, FTTH by 26%, working lines by 3.1% and data revenue by 4.5%. Further, Enterprise Business Unite revenues also grew by 33.4%, as a result of the increased demand for the company's services & products along with its ability to swiftly respond to customers' request and demand in a competitive manner. As for Wholesale Sector, it managed to increase its revenues by 5.1%. Moreover, the revenues generated by stc's subsidiaries grew by 23.2%, which contributed positively to the group's overall results. Eng. Alwetaid also pointed out that stc surpassed its counterparts in the region to become the most valuable brand in the telecommunications sector, and the third most valuable brand in all sectors, according to Brand Finance. The company also celebrated being the region's fastest-growing brand, up an impressive 14% to US$9.2 billion and simultaneously jumping 51 positions to 189th, making stc the 2nd fastest-growing brand of the largest 20 global telecommunications companies. In addition, and as part of our journey for

digital transformation, stc has launched the digital operations control center, which is considered the largest integrated operating center in the region with an area of more than 42,000 square meters. The digital operations control center includes a system made out of advanced digital processes in several areas, such as simulation, digital infrastructure management, digital crises management and reinvention within a range of other digital solutions while abiding by high security standards. He also noted that the center will enhance Saudi Arabia's position as a leading regional business center or a" HUB". Which would help to achieve the objectives of the second phase of stc's "DARE" strategy, in order to enable digital transformation in various fields. Recently, stc Group announced the launch of the Advanced Technology and Cybersecurity Company; a new company dedicated to providing advanced cybersecurity services and solutions to the business sector. The recently announced launch comes to keep abreast of the growing demand for digital services in parallel with stc's DARE Strategy, which aims to foster digital transformation, pave new paths for development, and achieve the objectives of Saudi Vision 2030.

stc' Chairman and CEO Praise the Launch of Shareek and Commend its Objective of Achieving Sustainable Development

His Royal Highness Prince Mohammed bin Khaled Al-Abdullah Al-Faisal, Chairman of the Board of Directors of stc, praised the launch of the Shareek private sector partnership program at the initiative of His Royal Highness Prince Mohammed bin Salman bin Abdulaziz, Crown Prince, Deputy Prime Minister and Minister of Defense, may God bless him. Al-Faisal praised the program's goals of enhancing the contribution of local companies to the sustainable development of local economy, noting that Shareek will have a great impact on supporting local companies, especially by enabling them to capture local investments of more than SAR 5 trillion by the end of 2030. His Royal Highness

affirmed the company's continued endeavors to enhance its leadership in the digitization of various public and private sectors, enhancing Saudi Arabia's position as a regional digital services hub. He noted that stc is committed to harnessing all its human, material, and technological capacities to support the Shareek Program as a partner, to promote cooperation between the private and public sectors and achieve the objectives set by the ambitious Vision of HRH Prince Mohammed bin Salman. He added that stc's strategy has focused primarily on alignment with the objectives of Saudi Vision 2030, especially in terms of digital transformation and approval of initiatives and projects that have a lasting impact on the

economy, society, and the environment. This was reflected in the launch of its DARE strategy for growth in new non-traditional paths, including digital payments, digital media, cybersecurity, AI-based solutions, the Internet of Things, and G5. For his part, the CEO of stc Group, Eng. Olayan M. Alwetaid, thanked His Royal Highness the Crown Prince for his initiative of launching the Shareek Program, noting that this program along with other recent initiatives launched by His Highness confirm his belief in the private sector and its pivotal role in the growth of the Saudi economy, "as we felt through our participation in this

initiative the importance of aligning roles and responsibilities between the private and public sectors". The CEO noted the important role of the communications and information technology sector in digitization to achieve the Saudi vision and its positive impact on the Saudi economy. He pointed out the role of this sector in keeping pace with the future. This is best evidenced by stcpay's success as the first fintech unicorn in Saudi Arabia and the region. In addition, stc supported entrepreneurship projects through the inspireU incubator, which has produced dozens of projects referred to today as a true

success story to be told. The company's strategy has also included a framework in line with the sustainable development areas and goals in accordance with the United Nations Sustainable Development Goals, especially through the fair practice of business, enhancement of economic impacts, enrichment of life and experiences, expansion of access to technology and communication, promotion of innovative digital opportunities, as well as caring for the environment, empowerment of human resources, especially women, and promotion of gender equality of opportunity.

stc is Among the Top 44 Digital Companies in the World and the Most Powerful Telecommunications Company in the Middle East For 2021: Forbes

stc has topped the list of the best telecommunications companies in the region according to the ranking by the global magazine Forbes. In fact, stc ranked first as the strongest telecommunications company in the Middle East and North Africa with a market value for the current year amounting to USD 64.3 billion, an increase of 37.7 percent. stc is among the top 44 digital companies in the world. Forbes announced its annual Global 2,000 list of the world's 2,000 most powerful companies, as it relied on 4 main criteria: revenue, profit, asset size, and market value. stc sustained its technology strategy as a major enabler of digital transformation in Saudi Arabia, allowing it to pursue its pioneering journey in the

field of communications and information technology, by working to develop its infrastructure and follow technological developments. stc reinforced its lead in diffusing the Fifth Generation (5G) network around the Kingdom as part of its plan to enhance reliable mobile coverage and diffuse the largest advanced 5G network in the Middle East. stc will continue to lead the market in the next stage in the field of new and advanced technology, including achieving a significant expansion in the 5G network, which contributed to the Kingdom ranking fourth in the world in diffusing the 5G network according to the classification of the International Telecommunication Union. stc is also working on enhancing customer experience and continues to

develop a reliable and advanced digital network and infrastructure that represent the backbone of various sectors and industries, in parallel with the company's strategy that is in line with the Kingdom's Vision 2030. stc continues working on making the Kingdom of Saudi Arabia a leading regional center for digital services through innovative projects and global partnerships. It is also working on enabling the digital transformation of both the public and private sectors and strengthening the cloud infrastructure for the local digital economy in the fields of digital payments, Artificial Intelligence (AI), the Internet of Things (IoT), and cloud computing. stc is crowned as the strongest telecommunications company in the region as a result of the Kingdom's qualitative shift in the field of communications and information technology, as the Kingdom ranked fifth in the world, out of 140 countries, in the Mobile Speedtest Global Index, and advanced 7 ranks for the current year 2021 compared to its performance for the past year 2020. The Kingdom has also made remarkable progress over the past years in the e-government development index.

Batelco is Making Bahrain the Most Connected Island in the World

Batelco announced that it has completely redesigned its Fiber packages to offer higher speeds and boosted usage, which will see maximum speeds of 1Gbps and a minimum of 50Mbps, under the campaign slogan of "Batelco is making Bahrain the most connected island in the world." Batelco's new Fiber packages start from 50Mbps speed with 750GB usage, compared to the previous 10Mbps, representing a significant boost in both speed and usage for the entry package. Speeds of 250Mbps and 1Gbps have also been introduced to the new Fiber packages range, both featuring unlimited usage. The big news for many users who depend heavily on the Internet such as gamers and content creators is that Batelco has increased the maximum Fiber speed from 500Mbps to 1Gbps at a lower price than the previous top package, from BD150 to BD125. Commenting on the new Fiber packages, Batelco GM Consumer Division Maitham Abdulla said, "We are committed to revolutionizing our offerings and making Bahrain the most connected island in the world. The new Fiber packages will mark a new era of Fiber Internet experience at home." "We are extremely excited to offer this new line-up of fast Internet packages to both our new and existing Fiber customers as trends shift and customer expectations evolve. The team at Batelco worked on creating the new Fiber packages range with a minimum speed of 50Mbps

and a maximum of 1Gbps, providing customers with an unbeatable Fiber experience." Batelco existing Fiber customers will receive an SMS of the added benefits at no additional costs, as well as the planned migration date.

Batelco Launches 'Smart Property' to Deliver a True Smart Living Experience

Batelco, in collaboration with Elear, has launched 'Smart Property', an IoT based home automation product that benefits property owners, facility managers and tenants. Batelco is the first company in the GCC region to launch this innovative product which is designed to enable property owners to efficiently manage their properties, reduce costs and maximize revenues, through smart and intelligent solutions. The 'Smart

Property' product, a 360-degree smart living solution which features three main elements; Home Automation, Property Management and Smart Energy, is designed for a contemporary lifestyle, as it completely automates a property, making it more appealing to tenants. Home Automation embeds all the expected beneficial features of a smart home, allowing users to operate and control functions such as lighting and air conditioning, remotely or through enabling timer-based operation of equipment and devices, through an app. In the event that any equipment fault occurs, tenants can use the Property Management feature, which is a digital communication channel enabling direct contact between the tenant and property manager, helping to facilitate quick resolutions for any maintenance issues. The Property Management App allows scheduling of maintenance visits and access to data regarding previous maintenance history of equipment. The Smart Energy feature also plays an important role by helping to monitor and control energy usage leading to cost savings, and in initial tests carried out using AI analytics, energy savings of around 20% have been recorded. Speaking on the partnership, Elear Solutions CEO, Ashish Bajaj, said: "Elear Solutions, a technology products company that enables easier development of Edge Compute AI-driven Apps, Devices, and Services, is on a mission to simplify the development of low latency digital services in the 5G & IoT era. We are very excited to partner with Batelco as our lead customer in the GCC region. Their vision with the convergence of Smart Home, Smart Property, and Smart Energy exemplifies their market knowledge

Etisalat to Boost Abu Dhabi Small and Medium Businesses' Digital Transformation Journey

Etisalat announced its value propositions that address the varying requirements of Abu Dhabi's small and medium businesses (SMBs) in a bid to boost their digital transformation journey. This follows Khalifa Fund for Medium Enterprise Development's recent announcement of Etisalat and Microsoft being the latest industry leading organizations to come on board the e-Empower program ecosystem with innovative resources, such as webinars, workshops, preferential rates and digital support. Etisalat is committed to support the growth of UAE's SMB sector, which represents more than 94 percent of the total number of companies operating in the UAE and employs over 86 percent of the private sector workforce, according to the Ministry of Economy. Abu Dhabi's start-up community will have access to a dedicated platform that has all the

information of the initiatives. Registered e-Empower SMBs will gain access to Etisalat's one-stop destination 'Hello Business Hub'. The dedicated business hub offers tailored telecommunications as well as value added services to SMBs while providing them the ease and flexibility of kick-starting their operations in the UAE, whether it be registering their company, setting up a bank account, telecommunication services or another aspect of operational set-up. Etisalat's Hello Business Hub partners will provide exclusive trade license and banking offers for the startups to legalese their presence in Abu Dhabi. Esam Mahmoud, Senior Vice President, SMB, Etisalat, said: "We are honored to be a strategic partner of Khalifa Fund and be part of the e-Empower program, enabling us to cater to the requirements of small enterprises

and startups, while helping them to grow their business and accelerate their digital transformation." Khalifa Fund's SMBs will also have access to Etisalat's digital academy, providing a host of informative videos, interviews with subject matter experts, and webinars that will take their business to the next level. In addition, the start-up community can benefit from Etisalat's customized comprehensive digital platform addressing all their business needs, ranging from smart connectivity to office productivity, business devices, digital marketing solutions and Microsoft business applications. Etisalat is offering preferential rates for Microsoft 365 and digital support as well as educational webinars sponsored by Microsoft to help SMBs upskill, grow and run their business.

Etisalat Honors Top Sales Channel Partners of 2020 at a Virtual Awards Event

Etisalat honored its top performing partners of 2020 at the virtual 'Partner Awards Event 2021'. Each year, Etisalat holds an awards ceremony to recognize and reward the company's partners for their continued support and efforts in taking Etisalat to greater heights. The event was held virtually this year in line with Covid-19 protocols and safety standards. A total of 45 partners were awarded from different segments mainly retailers, franchisees and distributors. Omer Rashid, Senior Vice President, Sales Consumer, Etisalat, said: "Despite the unprecedented impact of the COVID-19 pandemic, Etisalat had a very successful 2020. Our consumer sales

partners played a very important role in these achievements. The 'Partner Awards Event 2021' reaffirms our commitment to building strong relationships with our partners in keeping with our slogan 'Together Matters'." Mohamed Al Zarouni, Senior Vice President, Distribution and Customer Registration, Etisalat, for his part, said: "We at Etisalat use this event as a platform to recognize as well as engage and motivate our partners and frontline staff. As we go from strength to strength, we look forward to working closely together, receiving feedback to maximize sales opportunities and hurdling challenges effectively so we can make 2021

yet another successful year." Etisalat's partners expressed their appreciation for the awards and declared their continuous support for the event, which serves as a cornerstone of their success. These entities take pride in partnering with Etisalat, one of the world's leading telecom groups in emerging markets, the fastest mobile network globally by Ookla, and the strongest brand across all categories in Middle East and Africa (MEA) region. Held since 2016, this annual event seeks to recognize the top performing partners to drive passion, motivate and create a competitive environment.

Mobily and Nokia Achieve the Highest Throughput with mmWave in its Live 5G Network in Riyadh

Nokia's compact AirScale mmWave radio provides extreme 5G capacity in densified locations Alaa Malki, CTO, at Mobily, said: "We are committed to proving world-class, pioneering services to our customers by bringing the latest innovations to the Kingdom of Saudi Arabia. This successful trial with Nokia is testament to our continued efforts in this direction, and the highest throughput achieved in the trial allows us to deliver high-capacity wireless broadband access to our subscribers in high-density areas." Tareq Khalaf, customer Team Head of Mobily, at Nokia, said: "Extreme network capacity and speed are essential to enable new 5G services in densified locations. We are proud to have collaborated with Mobily on the evolution of its 5G network through this mmWave trial, achieving the highest speed for them to enable innovative 5G services in busy locations for people and businesses."

Mobily Ventures Celebrates its Investment, Anghami, Becoming First Arab Technology Company to List on NASDAQ New York

Anghami Inc, the leading music streaming platform and service in the Middle East and North Africa (MENA) and Vistas Media Acquisition Company Inc. (NASDAQ: VMAC), a publicly-traded special purpose acquisition (SPA) company, announced that they have entered into a definitive merger agreement that will result in Anghami becoming the first Arab technology company to list on NASDAQ. The transaction implies a pro-forma enterprise value of $220 million. The combined company will operate under the Anghami name and will trade under the new symbol "ANGH." The transaction is expected to close in Q2 of 2021. Founded in 2012, by Eddy Maroun and Elie Habib, Anghami is the first music-streaming platform in the MENA region. Anghami has built a market-leading platform, offering more than 57 million songs to more than 70 million registered users with around 1 billion streams per month. With an Arabic speaking population of over 450 million globally, a listing on NASDAQ allows Anghami to scale its user base and invest in technology to build on its data play. Anghami's artificial intelligence (AI) and machine learning (ML) algorithms process over 56 million data points from its user base every day. Over nine years of user data enables the Company to predict user behavior and trends to focus its investments in areas delivering the highest return on investment - which helps improve monetization - and will continue to be a key driver of revenues going forward. The Company has long-standing partnerships with all major global labels including Universal Music Group, Sony Music and Warner Music Group. Anghami is a music app and platform that offers listeners in the MENA region unlimited Arabic and international music to stream and download. Anghami has licensing agreements with thousands of independent labels and distributors to provide users with legal access to a vast catalog of music. The Company is headquartered in Abu Dhabi, at the Abu Dhabi Global Market ("ADGM"), and has offices in Beirut, Dubai, Cairo and Riyadh. Anghami is currently backed by leading MENA VC firms and strategic shareholders, including media groups and telecommunications companies, including Mobily's corporate VC arm Mobily Ventures, that collectively own approximately 68% of Anghami, with the balance owned by the founders. Co-founder and CEO of Anghami, Eddy Maroun, commented, "Today is a very exciting day for all of us at Anghami and our partners globally. Elie and I co-founded the company in 2012 with a vision for Anghami to be a first of its kind, digital media entertainment technology platform in the MENA region. Today, we have taken a significant step forward in our growth plans in seeking to become the region's first Arab technology company to list on NASDAQ. Being a U.S. listed public company gives us access to growth capital and a global platform that is the best in the world." Elie Habib, Co-founder, Chairman and CTO of Anghami, added, "We're proud of the product and technology we've been able to build and now we will have the ability to invest more in R&D and innovate providing a product that goes beyond music to immersive experiences around media and entertainment while remaining relevant to our users and focused on our

ANGHAMI TO BECOME FIRST ARAB TECHNOLOGY COMPANY TO LIST ON NASDAQ NEW YORK
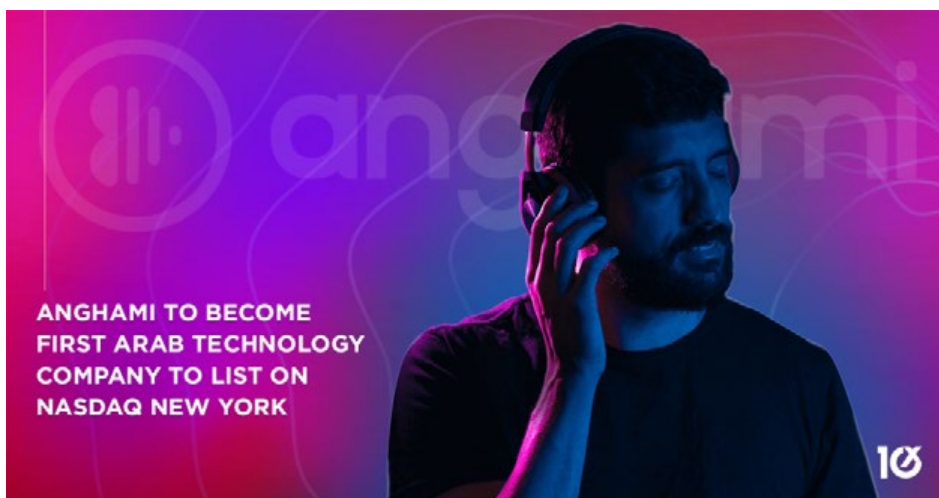
local edge." The Company expects to have approximately $142 million of cash on its balance sheet at closing to be used primarily to fuel additional growth. The transaction implies an initial pro-forma enterprise valuation of approximately $220 million, or 2.5x 2022 estimated revenues. This compares to Spotify's current revenue multiple of 6.5x revenue. Salman Abdulaziz Al-Badran, CEO of Mobily commented, "We are proud to be a shareholder in Anghami since late 2013 – we believed in them early on as it was our second investment through our VC arm, Mobily Ventures. Anghami's phenomenal success is owed primarily to their amazing team, who have re-defined the Arab music industry. We are pleased to see our investee, Anghami, achieve a NASDAQ listing and are confident that this is first of many more to follow the same trajectory, from both KSA and the region. At Mobily, we will continue to support the startup eco-system through investments and partnerships."

Mobily Partnered Nokia to Deploy NB-IoT1800MHz Network

Saudi Arabian cello Mobily has partnered Nokia to deploy NB-IoT 1800MHz network coverage connecting more than 4,000 sites with cell radius averaging 20km per cell, and offering new services to enterprise customers. NB-IoT has been enabled in central, north and east Saudi Arabia, where Nokia is the network vendor partner, providing IoT connectivity for enterprises in verticals such as energy, transport and health, enabling wider coverage ideal for rural and deep indoor locations. The partners highlighted a wide range of NB-IoT commercial uses such as smart metering for utilities, powering connected health and industrial appliances, and smart city infrastructure.

عمانتل
Omantel

Omantel and OOMCO Sign an Agreement to Launch Middle East's First Smart Ahlain Store

Omantel, the Sultanate's first and leading integrated telecommunications services provider, has signed a Memorandum of Understanding with Oman Oil Marketing Company (OOMCO) to accelerate digital transformation across Oman. The agreement will enable the first Artificial Intelligence and IoT-powered Smart Store in Oman and in the Middle East, with an enhanced queue-free, cashless, and grab-and-go shopping experience. The MoU outlines the strategic partnership between the two industry leaders. Omantel will supply the necessary smart technologies. OOMCO will bring a new mix of products compatible with the store's technologies, leading the retail and convenience store industry towards an enhanced, intelligent and cost-effective future. Commenting on the partnership, Talal Said Al Mamari, CEO Omantel said, "Innovation forms the core of all Omantel operations and services. Oman is on a fast track to digitalization on every front. For this to happen, superior connectivity, a solid infrastructure and technological know-how are imperative and Omantel boastsall these assets and more. The company is optimally harnessing the potential of emerging technologies like AI and IoT and is an enabler and an important catalyst in the metamorphosis of

important economic sectors into thriving, digitally interconnected ecosystems fueling overall economic growth. This MoU with OOMCO for the Smart Ahlain Store is one more step towards meeting Oman's long-term digital transformation goals. We are proud to be the first service provider to introduce this concept and invest in such technology in Oman and the Middle East as we continue our journey of innovations." Retail IoT is revolutionizing the way people shop, adding more ease to their experience as they do not have to wait at the billing counter or use cash or a card to check out. Combining Artificial Intelligence, smart shelf sensors, cameras and an app linked to a mobile wallet, the Ahlain Store concept is expected to become operational in the second half of this year. Hussain Jama Bait Ishaq, OOMCO's Acting CEO, said, "Our goal is to add value to all our customers' lives and enrich their shopping experiences across all our services. Being the first smart store of its kind in the Middle East, the Smart Ahlain store provides a unique shopping

experience where customers can pick up items off the shelves to be added to their virtual carts. Once they're done, they can pay as they leave from their mobile devices and receive the payment receipt shortly after leaving. No queues, no waiting, only the ultimate 'grab and go' experience. Located at the Omantel Headquarters in Madinat Al Irfan, the store will be equipped with in-store cameras that capture shoppers' movements in the aisles, while the smart shelf sensors will track products that shoppers put in their baskets. Items chosen by shoppers will keep getting added to their virtual cart through an App, which Omantel is developing.

Customers' mobile wallets will be debited for the items purchased as they walk out of the store and a receipt sent to them electronically. Omantel is helping virtualize the retail sector through its services expanding offerings to enable a digital economy functioning on the efficiency of smart technologies and improve user experiences. Powered by Omantel's tech capabilities, this project underscores OOMCO's values of innovation, customer-centricity, and mutual support, as well as its commitment to providing top-tier services and products to all its customer base. This move also shows the oil marketing company's efforts to offer a

safe one-stop shopping experience and build long-term partnerships with various industry leaders to support the country's economic diversification. 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. While striving to ensure optimum customer satisfaction, Omantel plays a key social role in providing the required support and subsidy to all sectors of the Omani society.

Omantel First to Launch 5G International Roaming in Oman
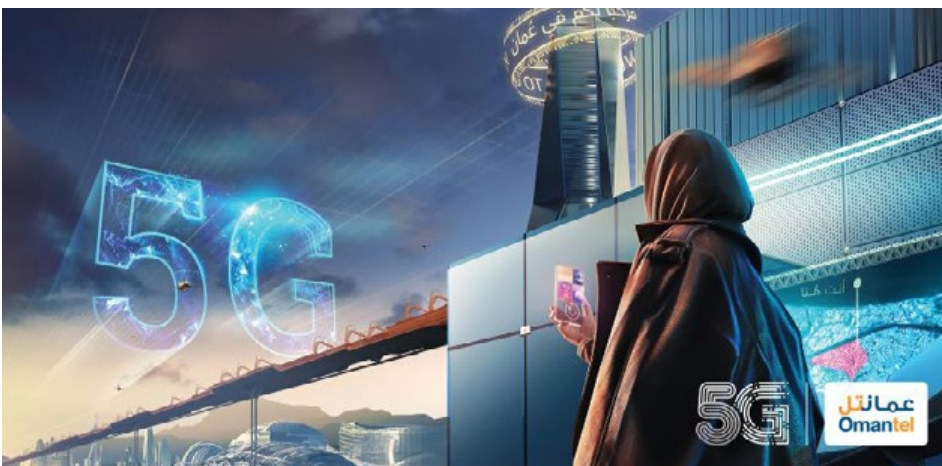
Omantel once again has pushed the boundaries of telecommunications technology access after the recent successful launch of the mobile 5G services. The leading and most innovative integrated telecom services provider in Oman announced the introduction of 5G international roaming, offering its customers a convenient and seamless experience to enjoy high speed data services while travelling abroad. As part of the initial phase in its push towards secure, consistent, and fast global 5G connectivity, Omantel has made this international roaming facility available in the GCC through regional partners, becoming the only mobile network operator in Oman to offer 5G international roaming. Omantel is working with its vast list of regional and global partners to announce more 5G international roaming destinations in the coming few weeks.

The launch underscores Omantel's drive towards customer satisfaction and its leadership of the telecom sector in the Sultanate, providing cutting edge ICT solutions besides further affirming its national, regional and international leading role in telecom infrastructure and service capabilities, which are a major differentiator in Oman's current competitive market. As 5G gains a more important role in how individuals, businesses and economies function, comprehensive solutions suite from Omantel will continue to meet subscribers' current and future needs as it has already proved by making the technology an integral part of its offerings. Awatif Al Mandhari, Manager of Roaming Services at the Wholesale Business Unit of Omantel, said "When we talk about 5G, Omantel is on the fast track. The company has proved its agility in bringing the best global telecom solutions to the people of

Oman. After being the first mobile network provider to launch 5G for mobile devices, Omantel is now taking its reach beyond the borders. The service will be beneficial for individuals and business travelers who need fast access to information and data on the go. At Omantel, we always keep our customers' convenience as our end-goal to ensure the highest level of satisfaction and best possible experience when enjoying our services." The 5G international roaming service introduction enforces Omantel's position as a key player in Oman's telecom sector, staying ahead of the game through foresight and investments in state-of-the-art infrastructure. The launch is the latest in a series of achievements by Omantel in adapting future technologies and further solidifying Oman's image as the region's ICT gateway. Besides 5G, Omantel is already offering an impressively wide international roaming coverage, reaching to more than 700 roaming partners in more than 200 countries. Being capable of offering such advanced services to its customers has always contributed in positioning Omantel as a telecom pioneer in the region and beyond. It is worth noting that Omantel's mobile network has been recently rated as the fastest in Oman by Ookla, a neutral online platform dedicated to measuring the performance of broadband networks around the world. This achievement yet another acknowledgement of the excellence Omantel has shown through innovative technologies and smart solutions.

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. While striving to ensure optimum customer satisfaction, Omantel plays a key social role to provide the required support and subsidy to all sectors of the Omani society.

Omantel Enters Channel Partnership with Huawei for State-Of-The-Art Enterprise Products

Omantel has taken another step to boost its valued enterprise customers' capacities and push Oman's digital transformation. The leading integrated telecom & ICT services provider in the Sultanate has entered into another channel partnership with Huawei, aimed at capitalizing on the enormous changes in the telecom and ICT sector in Oman in particular. The world in general is witnessing. Under this partnership, all of Huawei's enterprise products will be available to be sold by Omantel to provide advanced, safer, securer, simpler, and high-value end-to-end integrated solutions to enterprise clients, enhancing their operational abilities, productivity, and user experience. Several factors have created market disruptions that have made the need to adapt quickly and capitalize on the fast-paced changes. Huawei's next-generation solutions coupled with Omantel's ecosystem and its digital transformation vision will bring more innovative solutions that use new-age technologies, like Artificial Intelligence (AI), Robotics, Big Data and Analytics, Internet of Things (IoT), and 5G communications for enterprises. This step further solidifies Omantel's position as a provider of integrated telecommunication solutions for private and public organizations in Oman with the latest innovations and technologies. Omantel believes in the importance of offering simple yet practical solutions to enterprises for their applications. Omantel's robust infrastructural ecosystem will see the inclusion of high-end, technologically advanced, high-efficiency Huawei enterprise products, giving its enterprise clients across various sectors more efficiency through integration, more satisfaction and better support. One of the exciting new enterprise products under this partnership is IdeaHub. This productivity office tool can effortlessly turn conference rooms, executive offices, and open areas into smart spaces. They are designed like a sleek screen with an award-winning user-centric design, the IdeaHub bundles intelligent writing, High Definition (HD) video conferencing and wireless sharing. It facilitates video conferencing in full 1080p HD, with 4K content sharing and makes real-time collaboration a real-world reality by sending whiteboard content and fresh ideas from the hub to remote sites with just a single tap. IdeaHub's dual-System-on-a-Chip design combines independent graph computing, Artificial Intelligence (AI)-powered computing, and the audio and video codec engine. This results in quality conferencing supported by simplified meeting operations, an intelligent voice assistant. Users can use their smartphones to scan and join meetings. With 35ms ultra-low writing latency, users can enjoy a smooth, ultra-responsive writing experience. Innovative intelligent writing recognition automatically identifies words, figures, and flowcharts. Baha Al Lawati, Vice President of Omantel's Enterprise Business Unit, said, "We are leveraging Omantel's ecosystem by adding to it the latest technology from Huawei to offer our enterprise clients better and simpler solutions. As the ICT sector sees more significant reliance on newer technologies like 5G, IoT and AI among several others, it was only natural for Omantel to channel its advantages towards its esteemed customers who require support in the transition from traditional digital support to an evolving and more advanced landscape. This partnership with Huawei, which is recognized and relied upon for this technical prowess in the ICT sector, could not have come at a better time. We are confident that this partnership will significantly benefit our enterprise customers." Robin Chen, the CEO, Huawei Oman, said, "Omantel has been among our biggest partners in the Middle East. Oman's digital economy is showing great potential with its results already reflecting across sectors. Omantel is playing a prominent role in the Sultanate's digital transformation and Huawei has always been a proud partner in this vision. We at Huawei take great pleasure in offering our latest enterprise products to become part of Omantel's growing ecosystem, connecting not just Oman, but also different parts of our world. One of our exciting offerings is the IdeaHub, which will revolutionize the way organizations conduct their operations. Winner of the prestigious Red Dot Design Award 2020, the IdeaHub enables cross-network and cross-enterprise communication and collaboration. It provides Advanced Video Coding, Scalable Video Coding conference modes and abundant AI facilities."

Orange Jordan Launches the Purpose Campaign

As part of Orange Group's direction, Orange Jordan launched the Purpose campaign on its social media platform to raise awareness about its goal to enable everyone to access a responsible digital world, by providing various digital services designed to be used responsibly and comprehensively with all requirements and aspirations. The company will work to adopt this goal in its strategy, internal regulations, activities, and social responsibility programs. Given the influence of Orange as a leading and responsible digital provider in the lives of individuals and institutions, the company relied in formulating its goal on the visions and opinions expressed by customers, employees, partners, shareholders and all stakeholders. It was found that it is important to focus on two major commitments: digital inclusion and preserving the environment. As the Kingdom's digital partner, Orange Jordan will continue working on enhancing digital inclusion; by ensuring that digital services and products are available across the Kingdom and enabling everyone to benefit from digitalization. Due to the current crisis; the company strengthens its efforts in bridging the digital gap between individuals and sectors easily and safely, especially with the need to maintain social distance. In addition to the social commitment, Orange Jordan is making efforts to confront climate changes and protect the environment, by increasing reliance on clean and sustainable energy sources, which is proved by its massive solar farm project covering 65% of the company's electrical energy needs and reducing carbon emissions by 45 kilotons since 2018, as part of the Group's commitment to reduce the carbon emissions resulting from its operations by 30% by the end of 2025. Orange Jordan affirmed that this campaign embodies the values of transparency, attention and focus on results and excellence, which are part of the values that Orange adopts as a global company working in a local spirit, pointing to its keenness to express and raise awareness of what is the Purpose that everyone participated in for a responsible digital world.

Orange Jordan Launches SOS Emergency Button

Orange Jordan recently launched the SOS emergency button as part of the Smart Life solutions, which are in line with the recent home technologies, giving users peace and the ability to check on their loved ones, stemming from the company's continuous efforts to enhance the diverse services. The emergency SOS button from Orange Jordan gives individuals the chance to keep themselves safe by installing it, as its connected with the Smart Life app that will inform users once pressed. The button always has several usages due to its effectiveness and being easy to control with flexibility, to check on elderly and children, with its all-time connectivity, light weight and easy to wear. Orange Jordan seeks continuously to enrich the Smart Life platform, being the first provider in the Kingdom and the first from Orange Global Group to launch these supported solutions with high quality and speed internet, in comprehensive monthly offers starting from JD 3.28 for the Smart Life solutions, and JD 0.42 for the devices. Smart Life offers indoor home cameras, electronic alarm systems for doors & windows, and the smart plug that allows users to save energy usage and monitor it remotely, enabling users from the advanced digital solutions that fit their aspirations and needs. Chief Consumer Market Officer at Orange Jordan, Naila Al Dawoud, stressed that this addition embodies the company's commitment towards developing and updating the offers and services in line with the international developments and users' different needs and requirements, noting that the solutions that ensure safety are noticeably in demand due to life changes, and enhancing these services are part of its role as the Kingdom's responsible digital leader. She also noted that the Smart Life solutions are supported with Orange's strong network and its fast internet, as it remains the exclusive provider of the 4G+ and highest reach of Fiber networks, ensuring its effectiveness and reliability for users who seek to depend on it to protect their loved ones with convenience and ease.
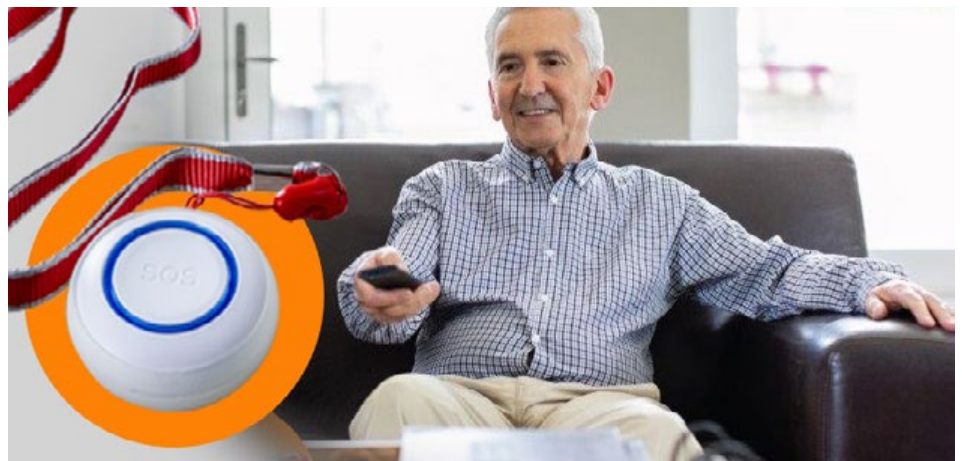
Orange Jordan Affirms on its Interest in the E-Gaming Industry

CEO of Orange Jordan, Thierry Marigny, affirmed on the importance of the e-gaming industry in the Kingdom, with e-games developers determination to develop their products continuously and in a speedy manner on a global level, during a roundtable held by the company to support the leadership of this important sector with the presence of media representatives, social media influencers and professional local gamers. Marigny added that the company realized the importance of e-games, as its one of the vital digital fields, noting that Orange Jordan took many steps to enhance its position in this field, whereas 35% of Jordanians play e-games. Marigny discussed Orange Jordan's efforts as a responsible digital leader to develop the e-gaming industry, by supporting talented youth by establishing Orange Gaming Hub, a series of activations in partnership with FATE E-sports, and the recent partnership with Subspace that aims to offer the best connectivity for the gamers on the Middle East server to enhance their experience, noting that Orange's strong infrastructure

supports e-gaming in Jordan. Orange Jordan is keen to include e-gaming within its comprehensive solutions, especially with YO platform, making its as integral part of the mobile offers, such as the partnership with Playwing to offer games without ads Or purchase transactions inside the games, in addition to added benefits, high speed internet to avoid

any lag while playing. Orange Jordan offers all mobile networks subscribers an opportunity to buy e-vouchers to enrich the gaming experience, through Orange Money e-wallet, in addition to offering everything new to Jordanian professional and armature players, to remain the leader in international developments and users' requirements.

Zain Leverages Its Unmatched MENA Footprint to Relaunch Its International Wholesale Business

Zain Group, a leading telecom innovator in seven markets in the Middle East and Africa recently participated in the virtual Capacity Middle East 2021 conference, where Kamil Hilali, the company's Chief Strategy Officer and the newly appointed CEO of Zain Global Services (Wholesale), announced a significant restructuring and new strategy of Zain Group's wholesale division, an essential part of Zain's '4Sight' strategy. Hilali was the subject of an engaging fireside discussion during the conference whereby he elaborated on Zain Group's new wholesale business vision and its enormous potential. Zain Global Services consolidates and manages the capacity, voice and roaming businesses across Zain operating companies and will ultimately evolve to become the single interface for all Zain operating

company requirements as well as for other international carriers having requirements within Zain's footprint. The aim of Zain Global Services is to become a truly regional carrier and open up new revenue streams for the Group through local, regional, and international activities. To this goal, the company has revamped its strategy and vision to create value for Zain operating companies by achieving efficiencies on their cost base. Zain's scale and aggregated demand is also set to allow the business to invest in new assets and better leverage existing ones across its operating footprint. Looking to transform to become a truly regional carrier and open up new revenue streams, Zain Global Services stands ready to work with regional and international partners to identify and create new opportunities.

During his fireside conversation at Capacity Middle East, Kamil Hilali commented, "Wholesale, and wholesale consolidation, offer a fantastic opportunity to face what has historically been a declining legacy business, and breath new, profitable life into it. Any telecom group willing to prepare for the future has to overcome underlying infrastructure challenges in order to become global in nature and establish vibrant international infrastructure that blends connectivity with computing power." Hilali continued, "Zain Global Services can be the perfect partner to any business seeking connectivity or a presence in the Middle East. In the coming months, we look forward to announcing our participation in some exciting global projects that will define the entity's new business paradigm which integrates a

distributed mesh architecture made up of subsea and terrestrial infrastructure with a state-of-the-art layer of hyperscale and edge Data Centers". Moreover, during Capacity Middle East 2021 conference, Hilali participated in keynote panel where leading regional figures in the Wholesale and Carrier arena discussed the future of Regional Connectivity, Innovation, Hyperscale Presence and the Competitive Landscape. Over the last several years, Zain has been evolving to become a fully integrated service provider and has been focusing on enterprise and B2B segments for additional synergies and growth. Given that the wholesale industry has at its core the transformation of the infrastructure enabling global connectivity, Zain considers the development of its wholesale business as a key area to the telco's overall transformation.

Zain Partners UNICEF to Launch Child Online Safety Booklet Promoting Safe Esports and Gaming to Schools & Universities

Zain Group announces its Zain esports gaming brand, has signed a memorandum of understanding (MoU) with Al-Bayan Bilingual School Kuwait to assist the institution in developing its esports club. The MoU is a first step for Zain towards working with schools and universities to educate students about the vast opportunities in the world of esports locally and regionally. This MoU coincides with the launch of a Child Online Safety Booklet that was developed by Zain Group Sustainability and Esports departments in collaboration with UNICEF. The booklet, available in both Arabic and English, tackles topics such as cyberbullying, scams and phishing, identity theft and data privacy, and much more, and is written in a manner that can be understood by children of all ages. Under the MoU, Zain esports will provide hardware for Al-Bayan Bilingual School to set up and operate its esports club, along with expertise and support for the school's staff to run tournaments and organize workshops to educate and enlighten students about the many opportunities in esports and gaming. Zain is one of the first telecom operators in the region to work

with local schools specifically on esports activities, and the company is taking the opportunity to also raise awareness on the importance of young people remaining safe while undertaking activities online. In this regard, the Child Online Safety Booklet will be shared with students at Bayan Bilingual School and other educational institutions Zain esports interacts with. The aim of the booklet is to educate children on the risks they may face while connected online or gaming. The booklet also provides recommendations on what to do and not to do while connected. It was developed for Zain esports to disseminate to any partner where children are key players, with the aim to communicate and instill the idea of playing online responsibly. The booklet also points to the Child National Helpline in Kuwait in a bid to raise awareness of the service in the country. Commenting on the collaboration of Zain esports with Al-Bayan Bilingual School Kuwait, Malek Hammoud, Group Chief Investment and Digital Officer at Zain Group said, "This first of many planned agreements with educational institutions across Kuwait and the region, fulfils the twin goals of expanding

awareness of esports among young people in Kuwait, while also teaching them how to enjoy the activity responsibly online. We foresee gaming as the single largest use case for 5G, and such we are dedicating a great deal of effort and resources to seeing Zain operating companies connect to the gaming community to drive this and similar high-value services." Zain remains one of the strongest advocates of raising awareness related to child safety online having previously launched a region-wide media campaign targeting over 40 million followers across all its social media channels and an internal announcement to all its 7,000 staff promoting tools and resources that offer advice on how to keep children safe online. Commenting on the launch of the Child Online Safety Booklet Jennifer Suleiman, Zain Group's Chief Sustainability Officer, "Zain takes the issue of child safety online extremely seriously and given the prominent position the company plays in the digital space, we believe it is imperative we spread this message loud and far. We are all well aware of the enormous benefits of digitization, but as a society as a whole we must take strong action to ensure the risks that arise for children through connectivity are known and avoided to the greatest extent possible." Tatjana Colin, Chief Early Childhood Development, UNICEF Kuwait, added, "Children are spending more of their time online than ever before and whilst the internet can be a fantastic resource for supporting education, access to information and recreation, it can also expose children to broad range of risks. It's essential that youth are equipped with the knowledge they need on how to stay safe whilst gaming online and where to go for support if you experience inappropriate behaviors online. violence. This booklet is designed to support sharing this knowledge

with youth and to encourage them to speak up and seek support if something makes them feel uncomfortable." In October 2019, Zain published a collective report on child online safety that highlights the risks children face and provides actionable recommendations to address abuse and exploitation that children may face online. The report was developed in partnership with Childhood USA and Zain Group leadership. Under the working group, Zain launched the Child Online Safety Universal Declaration, which confirmed the working group's commitment to protect and educate children on how to navigate digital technologies and protect their privacy, security and safety online. Zain's esports brand was first launched in late 2020 as part of Zain's concerted effort to evolve from being a mobile-centric operator to a digital services provider for consumers, businesses, and governments. Six months later, the enormous momentum being enjoyed by the Zain esports brand, has seen it host multiple successful events and garnered over 15,000 registered players, 30,000 followers on its Instagram page, and over 600,000 views and 25 million impressions on various Zain esports channels including YouTube and Twitch.

Zain Partners with PASS to Offer Safe Cities Solutions to 'Shamiya and Shuwaikh'

Zain, the leading digital service provider in Kuwait, signed a memorandum of understanding (MoU) with the Kuwait-based platform PASS. As part of this joint collaboration, Zain will offer a wide range of smart cities solutions that meet the Ministry of Interior's specifications, and the solutions will be integrated with the ministry's backend systems. The partnership will first commence at Shamiya and Shuwaikh Co-op with the aim of enhancing the efficiency of traffic safety in the country. The announcement was made during a press conference held at Shamiya and Shuwaikh Co-op's headquarters with the presence of Zain Kuwait's Chief Enterprise Business Officer Hamad Al Marzouq, Chairman of Shamiya and Shuwaikh Co-op Abdullah Al Othman Al Rashed, and PASS CEO Dhari Al Zayed, along with officials from the three partners. Commenting on the partnership, Zain Kuwait's Chief Enterprise Business Officer Hamad Al Marzouq said: "We are thrilled today to announce a new joint collaboration between Zain, Kuwait-based platform PASS, and Shamiya and Shuwaikh Co-op. This is yet another step towards our continuous efforts to empower digital transformation in the country under the umbrella of the New Kuwait 2035 vision". Al Marzouq explained: "At Zain, we are well aware of the vital role played by Small and Medium Enterprises in achieving economic and social development in Kuwait. SMEs represent a big part of the country's production channels, and they play an essential role in the growth of our nation's economy. That is why today we are proud to partner with PASS, a Kuwaiti tech startup success story and the first of its kind system to identify vehicles in the Middle East. This will enable us to implement the concept of smart cities with utmost efficiency". Al Marzouq added: "Without a doubt, today's announcement reflects the active collaboration between Kuwait's private sector companies and SMEs to achieve the nation's developmental goals. Through this partnership, we affirm our pivotal role as a leading national company in the Kuwaiti private sector by making our tech capabilities available to offer the latest and best world-class services and solutions. We are keen on meeting the digital needs and aspirations of the nation's various entities and empowering them towards digital transformation, especially during such unprecedented times". Al Marzouq further explained: "As part of this agreement, Zain will offer a wide range of smart cities services that will be first implemented at Shamiya and Shuwaikh areas. The services feature traffic CCTV solutions offered by PASS. These advanced solutions are able to identify vehicles based on their license plate data, brand, type, and color to automatically and instantly recognize various traffic offences such as red line crossing, solid line crossing, forbidden lane usage, prohibited turns, and more in an effort to enhance traffic safety and minimize fatal accidents". Al Marzouq continued: "The solutions offered by Zain in collaboration with PASS will also be able to identify speeding vehicles from a distance of 1 KM, recognize vehicles wanted for theft and other crimes, as well as offer a wide range of mobile tools that allow the authorities to view and analyze data from anywhere and at any time. This will both achieve faster response times and enhance the efficiency of safety systems. The solutions meet the requirements and specifications of MOI, and Zain will integrate them with the ministry's backend systems". Al Marzouq concluded: "Our collaboration with this unique Kuwait-based platform comes as part of our strategy that centers

around enriching our digital partnerships ecosystem. We also aim to expand the portfolio of services and solutions we offer to our business customers from both the public and private sectors, and we are proud to collaborate with PASS as part of our belief in the capabilities of Kuwaiti entrepreneurs in all areas, and especially the field of tech. I would like to also thank our colleagues at the Board of Directors of Shamiya and Shuwaikh Co-op for their active collaboration with us to make this partnership a success". Chairman of Shamiya and Shuwaikh Co-op Abdullah Al Othman Al Rashed commented: "We launched this initiative to secure the safety of residential areas, and it is considered the first of its kind in Kuwait and across the co-ops sector in the country. The initiative, which features installing security solutions at the entrances and exits around the co-op's area, received praised from the Ministry of Interior and the Ministry of Social Affairs, and will contribute to keeping the community safe and protecting properties". Al

Othman Al Rashed further explained: "The project costs nearly KWD 100,000, and we have coordinated with a number of companies to seek out implementing it and ultimately contributing to the area's safety in collaboration with MOI. We have reached an agreement with Zain, which expressed its interest and readiness to adopt and support the project, given the fact that it represents the Kuwaiti private sector, which is a strategic partner of the nation's developmental goals". Al Othman Al Rashed concluded: "Our gratitude goes to MOI, which coordinated with the Union of Consumer Cooperative Societies to call on implementing this initiative across co-ops in Kuwait in an effort to ensure the safety and security of all areas and protect public and private properties". Dhari Al Zayed, CEO of PASS, commented: "PASS is thrilled to collaborate with Zain, the leading telecommunications operator in the Arab region. PASS has joined forces with this telecom giant to provide a wide range of traffic safety and smart city solutions. We foresee beyond the immediate short-term

sales growth and look at the long-term investment in relationships that mature into even bigger opportunities. PASS offers a wide range of business models to accommodate the various business requirements. Being the proud sole supplier of ARH/SSK cameras that specialize in reading and recognizing license plates, the cameras will read license plate and vehicle specifications. PASS is confident about all the changes that they can collectively bring with Zain which will contribute to the Kuwait National Development Plan of New Kuwait 2035". Zain continuously offers the latest and most advanced services and solutions to showcase its capabilities as an active partner in empowering a smart life, a safe community, and an efficient business sector. The company considers itself a main partner in the achievement of the goals of the Kuwait National Development Plan (New Kuwait 2035), which is based on five expected outcomes and seven key pillars.

Arthur D Little

Unlock 5G Potential Across the Middle East: Latest Arthur D. Little Report

Cities face many challenges stemming from societal and technological changes, with population growth, urbanization, infrastructure provision, cybercrime, and environmental pollution driving the increasing necessity for new digital use cases. Looking ahead, projects based

on 5G, the next generation of mobile network technology, will help overcome these challenges and enhance economic development across industries. Arthur D. Little (ADL), the management consultancy firm with the longest-standing presence in the Middle East, expound this viewpoint

in their latest report entitled "Is your city ready to go digital? How 5G use cases will unleash your city's full potential." The report details how 5G is fundamentally changing the way by which cities can shape urban life for citizens and improve ecosystems for corporations, providing strategic

Selected 5G use cases

Mobility & public transport	Public safety	Healthcare	Energy & utilities*
Autonomous driving	HD real-time video surveillance	Telemedicine and telerehabilitation	Remote operation of smart grid
Remote monitoring of infrastructure	Improved disaster alert and response	Remote patient monitoring	Intelligent traffic-light systems
Real-time traffic management	Vulnerable road user (VRU) discovery	Connected ambulance	Virtual power plant
Education	Tourism & retail	Media & entertainment	Industry & agriculture
Virtual reality/augmented reality	Augmented reality guided tours	4k/8k mobile streaming	Extended IoT and M2M
Remote tutoring/learning	Automatic delivery robots and drones	Smart stadium	Autonomous plants
Virtual classrooms	Virtual reality visits	Virtual reality multiplayer games	Drones in agriculture and maintenance

Source: Arthur D. Little
*Energy & utilities use cases are already in use based on advanced LTE technology

insights and a comprehensive explanation of why cities must pursue the technology. ADL highlights that 5G implementation frameworks must address two main points. Firstly, cities must decide which 5G use cases are of strategic importance to them and whether they should be provided by the city itself. Secondly, cities must overcome 5G infrastructural challenges by building infrastructure or supporting telecom operators' efforts to carry out the same mandate. Should these areas not be addressed, people and businesses may view relocation as the answer to declines in competitiveness and quality of life caused by insufficient technological infrastructure coverage in their city. However, new applications based on 5G can make valuable contributions in tackling the challenges above, ultimately preventing residents and organizations from seeking opportunities elsewhere. "Across the Middle East, we see cities facing population, pollution, urbanization, and infrastructure issues. If they continue to exacerbate at current rates, many people are sure to look elsewhere to live, and economies will suffer from businesses going in the same direction," said Andrea Faggiano, Partner, Telecom, Information, Media & Electronics Practice Lead at Arthur D. Little Middle East & India. "Fortunately, this scenario hasn't yet transpired. There are plenty of reasons for us to be optimistic, and one of these is 5G. Because the technology can help cities overcome such problems, it can ensure they become attractive places to live and work not just for ourselves, but also for the next generation. What's equally encouraging is that 5G use cases are coming to fruition in numerous countries, serving as sources of inspiration for others to follow. As city leaders establish a 5G blueprint that helps achieve their

sustainability and digital transformation goals, they can take confidence that others are already paving the way for them to learn from and improve on." Cities defining well-grounded 5G strategies will significantly increase citizens' living standards, boost attractiveness for businesses, and drive industrial, public, and business-related use cases. In the United Arab Emirates (UAE), Jebel Ali Free Zone is transforming through the development and implementation of smart applications, including drone monitoring and employee geo-location systems. At the same time, Dubai Silicon Oasis has become a recognized proof of concept (POC) destination for several innovative city projects, with public and private sector collaborations continuing to yield positive impacts and outcomes. Besides such partnerships ensuring proper technological integration, the community has also served as a hub for successful autonomous vehicles testing with the provided 5G network. Similarly, in the Kingdom of Saudi Arabia (KSA), 5G is anticipated to play a major role in industry digitalization. Yanbu Industrial City and King Salman Energy Park (SPARK) are two developments that have announced new partnerships with ICT companies to build and integrate 5G infrastructure for advanced manufacturing purposes. Flexibility and the continued automation of robots for manufacturing and warehouse transportation hinges on cutting-edge capabilities, and 5G will be crucial to facilitating advancements and paving the way for this new wave of industrialization or what is known as Industry 4.0 where smart digital technologies transform traditional practices. "These examples mirror the futuristic roadmaps that Middle Eastern cities are pursuing," explained Dr. Raymond Khoury, Partner, Digital

Technology and Innovation Management Lead at Arthur D. Little MEI. "Besides addressing sustainability barriers, regional cities are advancing new needs and capability requirements, and in doing so, creating working opportunities for young talent and shaping a bright future for tomorrow's business ecosystems. Hence, the positive outcomes being delivered by such use cases are sure to help cities unlock 5G's full potential in due course. Some cities will bring similar projects to life based on their models, which will move them closer to a new era of sustainability." "Is your city ready to go digital? How 5G use cases will unleash your city's full potential" also sheds light on the extensive possibilities that accompany 5G, highlighting several use cases across critical national sectors such as public transport, public safety, healthcare, energy, education, tourism, retail, media, and agriculture. Furthermore, the report reveals the technical feature requirements of 5G-based solutions, including spectral efficiency, low latency, high device density, high data rates, lower power consumption, considerable bandwidth, and strong reliability. "Although cities may currently be facing daunting prospects in worst-case scenarios, unfolding 5G use cases are showing residents and businesses that promising prospects lay ahead in the coming years," concluded Dr. Khoury. "By promoting 5G use case development and providing all the necessary support, infrastructure advancements can be accelerated, and associated benefits capitalized on. 5G is without doubt a unique infrastructure gateway for cities to realize their full potential, and in doing so, transform digitally to the status of 'smart cities' in a more expedious manner."

Arthur D. Little Strengthens Digital Teams in France and Belgium to Support Post-COVID-19 Initiatives

Arthur D. Little (ADL) announced the expansion and strengthening of its digital teams in France and Belgium, with a number of new consultants having recently been appointed. The ongoing digitalization of services, communications and working practices is a key tenet of European companies' post-COVID-19

recovery strategies, and ADL believes there is a greater need than ever for expert guidance in this area. ADL's digital teams aim to help companies in every sector innovate by harnessing the power of new technologies. The new members of the French and Belgian teams bring a wealth of experience with them, including

the development of digital strategies; the design of data-enabled products, as well as data valorization and data-driven efficiency improvements; the set-up of customer-centric business models, customer and commercial excellence programs; and company transformations. Vincent Bamberger, Managing Partner of

Arthur D. Little's Paris and Brussels offices, comments: "ADL's digital teams are a specialist group of consultants focused on accelerating the digital transition within government, corporate and industrial sectors. Linking digital expertise with ADL's core skills in strategy and innovation is a key way in which we help our clients to succeed in today's world. I would like to extend a warm welcome to all new members of our digital teams, as their experience is sure to significantly reinforce both our capabilities and reach in this area." Michael Majster, Partner in ADL Belgium's digital team, adds: "Although we are currently living through challenging times, the COVID-19 situation has re-emphasized

the need for companies to have digital strategies that reinforce and complement their business models in the long term. In addition, the EU has recognized that the digital transformation across all sectors in Europe has to be accelerated in order for countries to remain competitive and not get left behind by the speed of change in other parts of the world. Digitalization can sometimes feel like a long tunnel fraught with peril, but ADL is committed to successfully moving its clients into the digital future as part of a value-led process, with its digital teams using their expertise to highlight how new technologies have helped companies to innovate and thrive." Marie-Catherine Patry Winckler,

Associate Director in ADL Paris's digital team, adds: "The pace and complexity of digital transformation increases along with technologies' maturity. Companies are now expected to have articulated understanding of their missions within a digital world, as well as a detailed roadmap to get there. The articulation of the long-term vision with quick wins and short-term use cases is paramount to bolstering teams' engagement and set up a virtuous financial circle. ADL relies on deep industry knowledge and experience in innovation to support its clients in seizing these new opportunities."

U.S. Dept. Of Homeland Security Awards AT&T 4 Task Orders On EIS

AT&T has been awarded 4 Task Orders from the U.S. Department of Homeland Security (DHS) to modernize and transform DHS' telecommunications infrastructure with IP-based networking services. The awards have a combined value of $306 million over 12 years if all options are exercised. The Task Orders were made under the General Services Administration's Enterprise Infrastructure Solutions (EIS) contract. The 4 Task Orders are for networking services in support of the department's Headquarters, Immigration and Customs Enforcement, Cybersecurity and Infrastructure Security Agency, and Science and Technology Directorate. Why is this important? The Department of Homeland Security has the extraordinary mission to secure the nation from the many threats we face, with more than 240,000 employees in jobs that range from aviation and border security to emergency response and from cybersecurity analyst to chemical facility inspector. To achieve its mission, DHS requires a technologically advanced communications platform that offers fast connectivity and data transport in a highly secure manner. DHS is using the EIS contract to procure innovations such as IP-based networking services. The Task Orders awarded to AT&T pave the way for DHS to access a full spectrum of flexible

products and services including data networking, voice collaboration, equipment, security and labor. They also provide DHS the option to access FirstNet®, Built with AT&T∗ – the only network built with public safety for public safety – to deliver reliable, always-on priority communications to its first responders and public safety personnel. Via these agreements, DHS will have options for mobility integration using FirstNet to connect beyond wires with wireless edge solutions for primary and failover connectivity. What is the scope of the network modernization? We will help DHS virtualize its networking capabilities on our platform. We will deliver advanced technologies to DHS such as our IP software-based networking capabilities, SD-WAN, cybersecurity protections that reduce the number of internet connections

for improved monitoring and zero-trust networking to help ensure only valid users have network access. These capabilities can help DHS transform and secure its network to meet current and future connectivity demands in the service of its mission. What is significant about this contract award? DHS seeks to benefit from capabilities it can acquire under the EIS contract, specifically the innovative and advanced communications capabilities AT&T can bring to it. These include the opportunity to benefit from AT&T's highly secure, reliable, networking capabilities in support of the broad and critical mission of public safety users across DHS agencies. With AT&T, DHS can modernize its technology platform in the service of its mission to safeguard the America people, our homeland and our values.

AT&T Launches New Managed Endpoint Security Solution

AT&T has launched a managed endpoint security solution through its alliance with SentinelOne. AT&T Managed Endpoint Security with SentinelOne correlates the detection of endpoint threats through a single software agent that consolidates Antivirus, Endpoint Protection, Endpoint Detection and Response, and IoT security functions. The new solution provides comprehensive endpoint protection against ransomware and other cyberattacks, while also detecting highly advanced threats within an enterprise network or cloud environment. AT&T Managed Endpoint Security with SentinelOne includes 24x7 threat monitoring and management by AT&T Security Operations Center (SOC) analysts. When used with AT&T Managed Threat Detection and Response, customers will benefit from one SOC team providing continuous monitoring of separate threat detection stacks for greater network visibility and faster endpoint threat detection.

Why is this important?

Businesses face expanding network perimeters in need of protection. Endpoint cyberattacks and the sophistication of adversaries are on the rise. As such, SOC teams can be overwhelmed with alerts and data providing limited context to identify issues. This can be especially challenging when monitoring endpoints for protection and detection in both on-premises and cloud environments. The SOC teams' ability to view threats holistically through a single agent is important for responding to threats quickly and with confidence. To

do this, threat detection and response on endpoints needs to be orchestrated and automated through correlated security alerts. AT&T Managed Endpoint Security scales and augments understaffed and overwhelmed security teams.

What makes this new cybersecurity solution different?

In a few words: greater visibility. AT&T Managed Endpoint Security with SentinelOne tracks every process that occurs on and between each endpoint, applying Artificial Intelligence (AI) and Machine Learning that reside on the agent to identify and counteract threats at machine speed. The autonomous agent provides protection even while an endpoint is offline, enabling today's remote workforce. As one of the world's top Managed Security Services Providers (MSSPs), AT&T understands that the network edge is constantly shifting and expanding, which can create security gaps

that need to be identified with greater visibility. AT&T Managed Endpoint Security with Sentinel One creates that visibility and works to protect you 24x7. AT&T SOC analysts are trusted advisors, providing expert threat hunting, monitoring, and response capabilities. AT&T and SentinelOne have integrated their platforms and enabled orchestrated and automated incident response to protect your endpoints. Additional integrations between AT&T Alien Labs, SentinelOne, and the AT&T SOC add layers of context for the SOC management team to gain greater insights that lead to better and faster threat detection and response.

When will this new cybersecurity solution be available?

AT&T Managed Endpoint Security with SentinelOne is available now to AT&T Managed Threat Detection and Response customers.
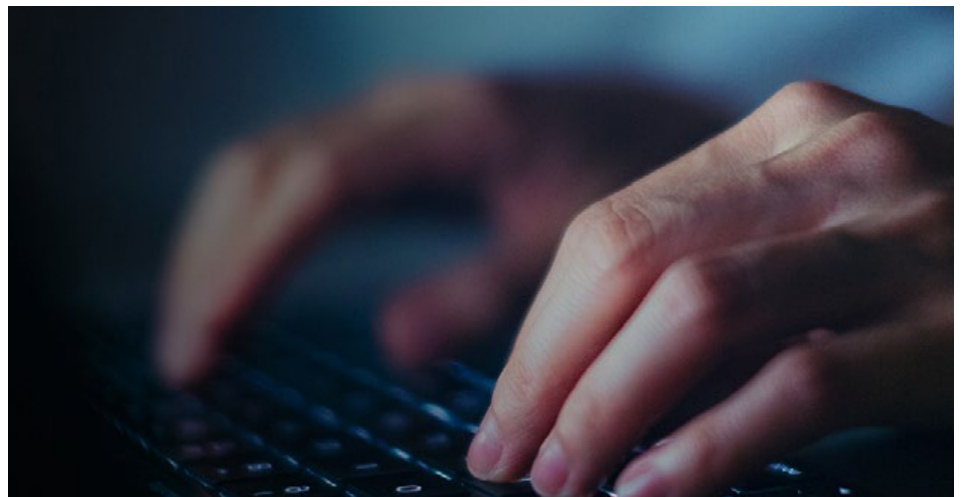
AT&T, Missouri University Team on 5G Use Case Research

US operator AT&T teamed with the University of Missouri to launch a 5G laboratory on its campus, targeting development of use cases including remote surgery and telemedicine, along with AR/VR technologies. The move expands on an earlier partnership which resulted in a dedicated course on connectivity and 5G being taught, with students developing use cases covering healthcare and campus security. AT&T VP and GM Alyson Woodard

stated the lab aimed to tap innovations from "across different disciplines" to create real-world solutions. She explained the University of Missouri is one of only six in the US offering courses on human and veterinary medicine, agriculture, arts and science, law, and nuclear research in the same site. Bimal Balakrishnan, associate professor of Architectural Studies at the university, said the facility will enable a swift transition of ideas "from

experimentation to implementation". Verizon and T-Mobile US are among rival operators which have recently stepped-up efforts to develop 5G use cases. In December 2020, AT&T opened an R&D lab at Purdue University to research services spanning manufacturing, agriculture, smart cities, rural broadband and IoT. The operator also runs a 5G content creation lab in New York City.

US DoT Taps AT&T for Upgraded Connectivity

AT&T won a contract to modernize and maintain voice and data networks for the US Department of Transportation (DoT) over the next 12 years, a deal the operator stated taps a growing trend of government bodies accessing cloud services. Chris Smith, VP for civilian and shared services in the public sector, said the $175 million contract will include cloud technologies, 5G and security systems. He predicted a trend of government departments migrating workloads to the public cloud will continue, noting each agency "constantly works through the balance of what's in their colocation private facilities and what's in public cloud and finding the right balance" for their needs. Personal communications will form a key part of AT&T's work with the DoT, which employs 55,000 people nationwide: the operator will provide virtual private networking, IP-based voice services and secure cloud access. Smith said wireless networks will be important for connecting vehicles as well as people, noting 5G and LTE have "great applicability" to "the management and control of drones, as well as autonomous vehicles". The executive highlighted AT&T's long experience in providing security services, with the operator set to enable the DoT to detect, monitor and respond to internal and external threats. AT&T sees "literally hundreds of millions" of network events each day, Smith explained. The DoT contract could give AT&T an advantage with state and local governments if Congress passes an infrastructure spending bill. Smith noted DoT unit the Federal Aviation Administration is likely to have a "large grant-making role" if the bill is approved, alongside the department's broader role in public transportation projects which may include network elements.

AT&T Recognized at 2021 DiversityInc Awards

After being inducted into the DiversityInc Hall of Fame in 2020, AT&T was once again recognized as a company that remains committed to ensuring its workplace is inclusive with a wide diversity of backgrounds and perspectives during the 2021 DiversityInc Top 50 Companies for Diversity event on Thursday, May 6. During the 20th anniversary event, AT&T was honored for its efforts to advance diversity, equity and inclusion with placements on these Specialty Lists:

- Top Companies for Executive Diversity Councils: #3
- Top Companies for Supplier Diversity: #4
- Top Companies for Mentoring: #4
- Top Companies for Employee Resource Groups: #6
- Top Companies for LGBTQ Employees: #10
- Top Companies for Black Executives: #14 – new Specialty List
- Top Companies for Environmental, Social & Governance (ESG) – not ranked

"At AT&T, we recognize we are people first, and if we all commit to listening, understanding and taking action to stand for equality, we will be one step closer to building a truly inclusive environment inside and outside the workplace. I want to thank our employees for living these values and making this recognition possible," says Corey Anthony, SVP Chief Diversity & Development Officer, AT&T. Prior to joining the DiversityInc Hall of Fame in 2020, AT&T has ranked in the Top 10 on DiversityInc's Top 50 Companies for Diversity list for the last seven years. The DiversityInc Top 50 is the leading assessment of diversity management in corporate America. Rankings are based on an empirical analysis of the performance of more than 1800 participating companies in six areas: human capital diversity metrics, leadership accountability, talent programs, workplace practices, supplier diversity & philanthropy.

AT&T Weighs in on Broadband Speed Definition, Argues Against Rural Symmetrical Fiber Broadband

The federal government should not use a broadband speed definition that precludes fixed wireless, argued AT&T Executive Vice President of Federal Regulatory Relations Joan Marsh in a blog post late last week. As Marsh notes, the definition is important because the federal infrastructure legislation that is expected to be adopted soon is likely to include a considerable amount of funding for broadband deployments. The current FCC minimum broadband speed definition of 25/3 Mbps is too low, Marsh argues in the blog post. "When zooming, streaming and tweeting is combined in an average household of four, it's easy to conclude that download speeds must increase," Marsh wrote. She goes on to say, though, that "what is less clear is whether we need to increase upload speeds to the same level as download speeds for the purpose of defining 'unserved' areas."

Marsh argues that a broadband speed definition built on symmetrical speeds could dramatically expand the locations deemed "unserved" and could lead to some areas being unnecessarily overbuilt while leaving fewer dollars to support areas in greater need. Fixed wireless technology can easily deliver 100 Mbps downstream when deployed using C-band spectrum, Marsh notes. (AT&T was one of the biggest winning bidders in that auction.) But she adds that "wireless networks are not built to deliver symmetrical speeds, so any mandate around symmetrical performance could undermine the delivery of these efficient and robust technology solutions in hard to serve areas of the country." One of the proposals for broadband infrastructure funding, known as the Accessible,

Affordable Internet for All (AAIA) Act, calls for $80 billion to be awarded through a competitive bidding process and would require funding recipients to deploy service supporting symmetrical gigabit speeds – a target that essentially would require fiber to the premises. The Fiber Broadband Association has argued that if the AAIA proposal is adopted, funding should only go to fixed wireless if no provider bids to deploy fiber broadband. Marsh argues, though, that requiring funding recipients to deploy fiber would increase deployment costs and "there is no compelling evidence that those expenditures are justified over the service quality of a 50/10 or 100/20 Mbps product." The Wireless Internet Service Providers Association (WISPA) took a position similar to Marsh's in a broad set

of policy recommendations that it made last week that included recommendations about broadband infrastructure funding. The association, which represents fixed wireless providers, also argued against a symmetrical services requirement for any broadband funding program and argued that priority should be given to communities that have no broadband over upgrades to existing broadband. AT&T's fixed wireless advocacy underscores the importance that the technology is gaining in providers' plans – not just the small rural WISPs but also major broadband providers. And those major broadband providers have considerable influence over federal policymakers.

BT To Increase and Accelerate FTTP Build to 25m Premises by the End Of 2026

Openreach, the wholly-owned, independent fixed access infrastructure arm of BT, is building Fiber-to-the-Premises ("FTTP") faster, at lower cost and higher quality than anyone else in the UK. In the last year Openreach passed a record 2m premises with FTTP. Openreach now believes that it has the capability to reach around 4m premises a year. Given this build confidence, encouraging take-up on the current FTTP footprint, the regulatory clarity provided by OFCOM's Wholesale Fixed Telecoms Market Review ("WFTMR"), coupled with the Government's recent cash tax super-deduction and the positive outcome from the recent 5G spectrum auction, BT has decided that the conditions are right to increase and accelerate its total FTTP build from 20m to 25m premises by December 2026. Openreach will start its ramp up to 4m premises a year with immediate effect. BT has the capacity to fund this additional build entirely from internal resources while continuing to stand by its other priorities, including investing in 5G and its modernization program, committing to a minimum credit rating of BBB flat, supporting the BT Pension Scheme and reinstating its dividend in the current financial year at 7.7 pence per share. BT believes it could

deliver further shareholder value by funding the additional 5m premises through a joint venture with external parties and will explore joint venture structures over the first half of the current financial year. Commenting on this additional FTTP build, Philip Jansen, Chief Executive, BT Group said: "BT is already building more full fiber broadband to homes and businesses than anyone else in the UK. Today we are increasing our FTTP target from 20 million

to 25 million homes and businesses to deliver further value to our shareholders and support the Government's full fiber ambitions. "This has three massive benefits: it allows us to go faster, beefing up our capacity to build fibre to households and businesses; it allows us to go further, getting fiber to more people including in rural communities, and; it will help fuel UK economic recovery, with better connectivity and up to 7,000 new jobs."

BT Labs' End-To-End Network Core Trial Marks Important Milestone for Standalone 5G

BT's mobile business, EE, was first to launch 5G in the UK and continues to expand its leading network. It offers customers faster speeds and greater capacity in the short term. And as the underlying structures of 5G continue to evolve, some of the bigger impacts of 5G-enabled technology will arrive in the years ahead. In line with BT's commitment to building the strongest foundations for the UK, our research teams at the BT Labs, Adastral Park, continue to innovate in communications and digital technology, helping to unlock 5G's future potential for customers and partners. One important strand of our 5G research is part of the Horizon 2020 program – an EU-led Research and Innovation program with nearly €80bn of funding available over its lifetime. Through this project, we've been able to accelerate 5G innovation on subjects that are still years away from the market, investigating everything from autonomous drones to 360o remote robotic control. One of the projects that we have helped build and test is called 5G-VINNI (5G Verticals Innovation Infrastructure), whose aim is to create a set of interconnected, open, end-to-end 5G testbeds across Europe. Once

rolled into the live network, this technology will help to realize the full performance potential of 5G technologies, enabling numerous economic opportunities for business across vertical industries like public safety, eHealth, manufacturing and logistics, transportation, media and entertainment, and automotive. In 2019, BT officially launched its own 5G-VINNI testbed at Adastral Park and opened the project to applications to use the facilities to demonstrate 5G innovation. And earlier this year, we made a significant step towards the future of 5G as the testbed's underlying infrastructure underwent a major upgrade – evolving its network core to a full 5G stand-alone (5G SA) architecture. As opposed to all current commercial 5G networks, 5G SA provides a fully 5G end-to-end solution without data traffic being redirected through a 4G network core, as is currently the case for all UK mobile networks. The underlying technology, is a proof of concept based on a Samsung-supplied commercial 5G NR SA solution, offering the possibility of greater flexibility, improved performance & stability, and a future-proof architecture

within 5G networks. The testbed continues to offer BT and its partners the opportunity to explore a number of 5G use cases and their application within a number of key strategic verticals. These include:
- eMBB (Enhanced Mobile Broadband) – providing high data rate services such as HD video or Virtual Reality (VR)/Augmented Reality (AR);
- URLLC (ultra-reliable, low-latency communications) – further minimizing network latency for mission critical services such as autonomous driving or remote diagnosis and surgery
- mMTC (massive machine-type communications) – powering 5G services with high density of connectivity, such as smart city grids or massive IoT networks.

In order to investigate these concepts, BT is currently using the 5G-VINNI testbed to engage in a series of experiments, tests and trials of different 5G Innovations. Watch this space for future details as we explore these exciting new technologies and continue to develop 5G to its maximum potential!

China Mobile Revenue Climbs on 5G Handset Growth

China Mobile warned gains fueled by its 5G business could prove a double-edged sword in terms of increased expenses, as it revealed growth in key metrics for the first quarter. In an earnings statement, chairman Yang Jie said following its large-scale 5G network deployment, it expects corresponding depreciation and electricity expenses to increase at relatively high rates. The operator ended March with 189 million 5G package customers compared with 31.7 million in Q1 2020 and for the first time revealed it had 92.8 million customers, defined as those using the next-generation network over the course of a month. Surprisingly its 4G use base also grew during Q1, up 36 million year-on-year to 788 million. Net profit increased 2.3 per cent to CNY24.1 billion ($3.7 billion), with total operating revenue rising 9.5 per cent to CNY198.5 billion. The revenue growth was fueled by a 67 per cent increase in handset sales to CNY20.8 billion, which the operator credited to a wider range of 5G models at more affordable prices. Telecoms service turnover increased 5.2 per cent to CNY177.7 billion. Total subscribers fell by 6 million to 940 million. ARPU edged up 1.1 per cent to CNY47.40, while average monthly data usage increased 34.9 per cent to 11.2GB. The volume of total voice minutes increased 8.3 per cent and SMS usage dropped 12.6 per cent.

China Mobile Zhejiang and Huawei Co-Awarded "Best Innovative Commercial Case in 5G Automation 2021"

China Mobile Zhejiang and Huawei were co-awarded the "Best Innovative Commercial Case in 5G Automation 2021" for their world-first intelligent 5G core network O&M project at the fourth 360° Network Automation Congress recently held online by Layer123. With the rapid construction and large-scale commercial use of NFV and 5G all-cloud networks, operator networks are facing O&M challenges such as complex O&M, high security risks, and difficulties in ensuring service quality, particularly for networks that cover large regions, with a large management scope, and from multiple vendors. Due to the lack of effective fault demarcation methods in NFV scenarios, operators need to coordinate cross-product and cross-vendor O&M experts to manually troubleshoot alarms when they are reported on the cloud-based network, which results in high communication costs, difficult demarcation, and

slow processing. Therefore, operators should give top priority to building cross-layer fault demarcation for NFV scenarios. China Mobile Zhejiang and Huawei jointly conducted a series of pilot projects to verify innovative intelligent O&M technologies in NFV scenarios, and built a troubleshooting center that uses 5GC fault management and O&M to quickly and precisely identify, demarcate and respond to cross-layer faults in live-network NFV scenarios, ensuring optimal user experience. As the world's first commercial project with NFV cross-layer fault demarcation, it adopts the Huawei iMaster MAE-CN intelligent O&M solution to provide panoramic, intelligent, automated O&M experience for the cloud core network of China Mobile Zhejiang. It combines expert experience and intelligent methods to enhance the entire fault handling process, including network fault prevention, precise fault demarcation, and intelligent fault recovery. These enhancements help China Mobile Zhejiang transform its passive O&M into proactive prevention so that faults can be detected within 5 minutes without manual intervention and demarcated within only 15 minutes. Intelligent O&M transformation cannot be achieved overnight and requires joint exploration and efforts from the entire industry. With its success, the NFV cross-layer fault demarcation project provides valuable experience and technology for the industry, which will greatly promote the digital transformation of global telecom network O&M. The Network Automation Congress is a professional event focusing on network automation, virtualization, and intelligence. The Network Automation Recognition Awards honor the organizations and projects that have made significant contributions to network automation and transformation, and encourage healthy and rapid development of the industry.

China Mobile Planning Shanghai Share Issue After NYSE Delisting

Chinese full-service provider China Mobile has unveiled plans for a listing on the Shanghai Stock Exchange after it was delisted from the New York Stock Exchange (NYSE) – along with its rival operators China Unicom and China Telecom – in line with a directive from US authorities. The proposed share issue would see China Mobile sell up to 964.813 million shares, equivalent to no more than 4.5% of its total issued shares and worth up to an estimated CNY38.95 billion (USD6.1 billion) – based on the price of its Hong Kong-listed shares. In a regulatory filing the operator it noted that the proceeds from the sale would be used for the development of its 5G mobile networks, infrastructure for cloud resources and gigabit broadband and smart home services, amongst others. As previously reported by TeleGeography's CommsUpdate, rival operator China Telecom has also set out plans for a Shanghai listing in the wake of its that could raise around USD4.1 billion.

Cisco and BT Join Forces to Help Small Businesses in the UK Bounce Back Stronger

BT is strengthening its support for UK small businesses by working with Cisco to introduce new collaboration tools aimed at helping firms to bounce back stronger following the Covid-19 pandemic. With hybrid working models becoming the norm and 87% of employees in the UK hoping for a choice in working location as restrictions ease, BT is making hybrid working easier and more productive for small businesses by adding Cisco Webex to its Cloud Voice solution. This makes BT one of the first major service providers in Europe to offer this advanced integrated Webex Collaboration experience to small business customers, and enhances BT's portfolio of Cisco-based solutions for UK small businesses, which already includes BTnet - the UK's leading dedicated internet leased line service. BT Cloud Voice is a cloud based digital phone system that works over the internet or a private network,

enabling employees to make and receive calls with the same number, regardless of location or device. With the launch of Cloud Voice with Webex, BT's small business customers can significantly enhance their productivity with advanced video conferencing services and online meetings, instant messaging, screen sharing and other business collaboration tools. The blend of services available through Cloud Voice with Webex allows businesses to adopt a hybrid working model, helping employees to work just as effectively at home, or another remote location, as they do in the office. As well as equipping staff with the tools they need to stay productive when working remotely, the solution can also support wider company ambitions such as reducing carbon emissions by enabling employees to maintain reduced levels of travel or supporting their wider digital transformation ambitions. The new

solution forms part of BT's IP product portfolio, replacing the legacy analogue phone systems that will be withdrawn by 2025 as part of the digital switchover. Firms which adopt BT Cloud Voice now will benefit from the next generation of digital voice services, allowing businesses to use the latest technology ahead of the switchover. "Small businesses are at the core of our communities and it is integral to address their specific challenges and needs, which is the core focus for both Cisco and BT", said Vaughan Klein, EMEAR Senior Director, Cisco Collaboration. "Webex helps enable productivity and recovery as we all consider an imminent safe return to the office, especially due to its scalable nature and flexibility. It means a small business can truly benefit from an enterprise-grade collaboration system at an competitive price, while maintaining their relationship with BT as their trusted Service Provider."

Cisco CEO Addresses World's Largest Cybersecurity Conference

Cisco, the leader in enterprise security, unveiled innovations to further its journey to radically simplify and deliver end-to-end security, across users, devices, networks, applications and data. Announcements improve Extended Detection and Response (XDR) with greater visibility across network, endpoint and cloud. New innovations expand Cisco's vision for Secure Access Service Edge (SASE) with enhanced threat detection in the cloud and redefine and simplify network security. Cisco continues to simplify customers' security, network and IT operations - empowering organizations to embark securely on digital transformation. The world has shifted towards a more distributed workforce, and with recent global events, hybrid work is here to stay. Users now expect to connect from anywhere and on any device, while security teams have the same complex, piecemeal and time-consuming solutions. It is time to rethink security. "Security has to be at the heart of everything in the new world we live in. We believe it needs to be done with a platform approach that is simple, comprehensive and based on

intelligence," said Cisco Chairman and CEO Chuck Robbins, addressing the virtual RSA Conference audience. "There is really no perimeter in the enterprise to defend anymore. We need visibility across endpoints, users and applications as well as securing critical control points with continuous passwordless authentication."
Improving Visibility and Simplifying Extended Detection and Response (XDR)
The erosion of the network perimeter and transition to work-from-anywhere have conspired to expose endpoint devices, users and applications to threats more so than ever before. Organizations continue to struggle with extending visibility and protection to endpoints, with more than 40 percent globally reporting a major security incident in the last two years, according to the new Cisco Security Outcomes Study: Endpoint Edition. Organizations that do not prioritize integrated solutions were almost twice as likely to have suffered a major security event. In response, Cisco continues to expand its XDR capabilities, integrating multiple security control points and applying analytics and automation to

reduce customers' time to detection and response. Cisco today announced:
· Industry-leading Vulnerability Management with Kenna Security: Cisco will combine threat and risk-based vulnerability management as part of the SecureX platform with its announcement of intent to acquire Kenna Security. This integration will help customers prioritize vulnerabilities, speed and automate decision making with tailored information, and accelerate response time for cyber readiness.
· SecureX Device Insights: Customers can quickly consolidate their device inventory from multiple sources within the SecureX platform to provide unsurpassed visibility and context for IT operations (ITOps) and security operations (SecOps) as well as automated threat enrichment and response.
· Simplified Transition to XDR from EDR: As the only endpoint security solution with a built-in platform, SecureX continues to help customers simplify the move from Endpoint Detection

and Response (EDR) to XDR with more than 30 pre-built workflows, 40 turnkey integrations and new orchestration capabilities. In addition, Cisco Secure Client, our single agent across user, cloud and endpoint protection, enables faster XDR while reducing agent fatigue.

- Expanded Investigation and Quicker Response: Cisco Secure Endpoint's advanced search technology now bolsters XDR value, offering more than 200 endpoint queries out-of-the-box to get real-time answers to support investigations, threat hunting, and IT Ops use cases such as tracking artifacts about endpoints.

- "Organizations are increasingly looking to adopt end-to-end security architectures to support this new way of working, and we think it's critical to take a platform approach to simplify security, network, and IT operations as customers embark on digital transformation," said Gee Rittenhouse, SVP and General Manager, Cisco Secure. "Since it was launched last year at RSA, more than 7,000 customers are using Cisco's SecureX platform to unlock value from existing security solutions and accelerate their migration to XDR." "SecureX device insights provides an instant view of all the endpoints and devices with details needed to assess compliance and health of all assets in my environment," said John DePalma, Cybersecurity Engineer, Sentara Healthcare. "SecureX device insights delivers welcome help to gain momentum on our Zero Trust journey at Sentara."

Delivering on a SASE Vision with Enhanced Cloud Security

Today's distributed and hybrid workforce necessitates delivering protection and performance wherever employees access the internet or cloud applications. Cisco's SASE architecture integrates multiple security and networking functions into a single, secure connectivity offer. This significantly simplifies security and reduces the cost, time, and resources previously required for deployment, configuration, and integration. Continuing to deliver on its SASE vision, Cisco today announced:

- Rapid Deployment of Cloud Security across SD-WAN: New integration between Cisco Umbrella and Cisco SD-

Chuck Robbins
Cisco Chairman and CEO

WAN powered by Meraki extends the SD-WAN fabric to the cloud with the click of a button and includes intelligent path selection to enable customers with secure access and the best user experiences when connecting to cloud applications.

- Intrusion Prevention System (IPS) in cloud-delivered firewall: Umbrella's cloud-delivered firewall now includes an additional layer of protection with Snort 3 IPS, backed by Cisco Talos, one of the largest commercial threat intelligence teams in the world.

- New Packages for Best Protection and Value: Umbrella's new Secure Internet Gateway (SIG) Advantage package reduces the complexities of purchasing and unifying point solutions by offering a complete set of security capabilities in a single subscription.

Redefining and Simplifying Network Security

Constantly changing application environments make network security more complex. Modern continuous integration and continuous delivery (CI/CD) applications necessitate tighter coordination among developers, security, and network teams to ensure application environments and workloads are secure, firewalls are appropriately configured, and policies are integrated. Otherwise, vulnerabilities and misconfigurations in these constantly changing environments leave doors open for potential threat actors. Redefining and simplifying network security, Cisco today announced:

- Industry-first Integrated Network and Workload Security: Cisco Secure Workload dynamically informs Cisco Secure Firewall of required policy changes and provides comprehensive

visibility and control, no matter where applications are located.

- Upgraded Threat Defense: Secure Firewall Threat Defense 7.0, delivers better efficacy with Snort 3 IPS, the world-leading threat protection platform which defined next generation intrusion prevention systems (NGIPS). Snort is now deployed across 800K+ Cisco devices, and the open-sourced Snort engine has seen over 8M+ downloads with 750K+ active users. It includes the flexibility to create robust policies in dynamic environments where fixed IP addresses don't exist, and performance gains up to 30 percent on most appliances. (Snort 3 is also now featured in Cisco SD-WAN powered by Meraki and Umbrella.) The addition of the SecureX ribbon to Secure Firewall Management Center also further simplifies detection and response.

- Introducing Cisco Secure Firewall Cloud Native: Purpose-built for Kubernetes environments, Cisco Secure Firewall Cloud Native is developer-friendly, and the most elastic firewall Cisco has ever built.

"At ePlus we strive to deliver effective, integrated cybersecurity centered on mitigating business risk," said Lee Waskevich, Vice President of Security at ePlus Technology, Inc. "Cisco is building on a strong portfolio and continues to innovate how they deliver a holistic platform approach focused on reducing complexity, and integrating security across the network, endpoints, users, apps and cloud through SecureX. As a Gold Master Certified Security Partner, ePlus is excited to partner with Cisco and help our customers recognize the advantages SecureX brings to their security operations."

Cisco Unveils New, Expanded SASE Architecture, Delivering Complete Protection from Endpoint to The Cloud

Cisco the leader in enterprise networking and security, launches a new, expanded Secure Access Service Edge (SASE) offer. This is the next important step in Cisco's journey to radically simplify enterprise networking and security by helping network operations (NetOps) and security operations (SecOps) teams securely connect users to applications. Additionally, Cisco announces enhancements to its cloud-native platform, SecureX to more quickly and effectively manage new and emerging and advanced threats. Work is no longer a location but an experience, and the global events of the last year have made working from anywhere the norm. At the same time, this trend increased the complexity of managing networks and security across an expanding attack surface of users, devices, applications, and data. As the hub shifts from the data center to the user, a SASE architecture has emerged as a top organizational priority to provide seamless connection to applications. Cisco introduces the ability to purchase all core SASE product components in a single offer with the flexibility to easily transition to a single subscription service in the future, enabling organizations to start using Cisco's integrated architecture immediately. Cisco provides all the building blocks of a SASE architecture, including best-in-class networking, remote access, cloud security, zero trust network access, and observability. Cisco's vision is to combine these capabilities into a single

subscription service, and deliver seamless, secure access to any application, over any network or cloud, anywhere users work. "As the workforce is increasingly hybrid, traditional network and security frameworks can no longer keep pace with this new way of doing business. There has never been a more critical time to deliver something radically different, as every customer is unique and needs flexibility when determining how a SASE architecture fits into their environment. When it comes to transformation, there is no one-size-fits-all approach and moving to a SASE framework is no different," said Osama Al-Zoubi, CTO, Cisco Middle East and Africa. "Today's announcement enables organizations to start using all of the core building blocks of a SASE architecture immediately, making it simpler than ever to continue your journey to SASE." In addition, Cisco continues to rapidly deliver features that unlock new SASE use cases, including:

- Data Loss Prevention: Cisco Umbrella data loss prevention (DLP) enables organizations to discover and block sensitive data being transmitted to unwanted destinations, while preventing data exfiltration and supporting compliance mandates.
- Remote Browser Isolation: Cisco Umbrella remote browser isolation enables users to safely browse websites while protecting end user devices and corporate networks from browser-based exploits.

- Cloud Malware Detection: Cisco Umbrella cloud malware detection finds and removes malware from cloud-based file storage applications. As more organizations move business-critical data to cloud-based applications, they need to ensure that users can access them, even from unmanaged devices, and that those cloud applications are safe.
- Expanding Cisco SD-WAN Cloud Onramp: The release of SD-WAN 17.5 powered by Viptela expands cloud onramp capabilities for predictable and secure application experiences. Cisco expands beyond AWS and Azure to now add new cloud integrations including Google Cloud and Megaport. In addition, Cisco SD-WAN powered by Meraki further extends connectivity from branch sites to resources in public cloud environments such as AWS, Azure, Alibaba Cloud.
- New SD-WAN and Cloud Security Integration: Expanding our current networking and security integrations, Cisco SD-WAN powered by Meraki and Umbrella now integrates with Cisco Umbrella to speed cloud-native security deployments across distributed locations with simplified Internet Protocol Security (IPSec) tunnel connectivity.
- Observability: Part of the new SASE offer, ThousandEyes' internet and cloud intelligence continues to enable organizations' visibility and actionable insights into every network, from any user to any application, so they can remediate incidents quickly and maintain reliable connectivity and digital experience.
- Passwordless Authentication: Duo unveiled infrastructure agnostic, passwordless authentication, available for public preview this summer. The vision is to enable zero trust with a frictionless login experience, ensuring that enterprises can seamlessly protect a mix of cloud and on-premises applications without requiring multiple authentication products or leaving critical security gaps.
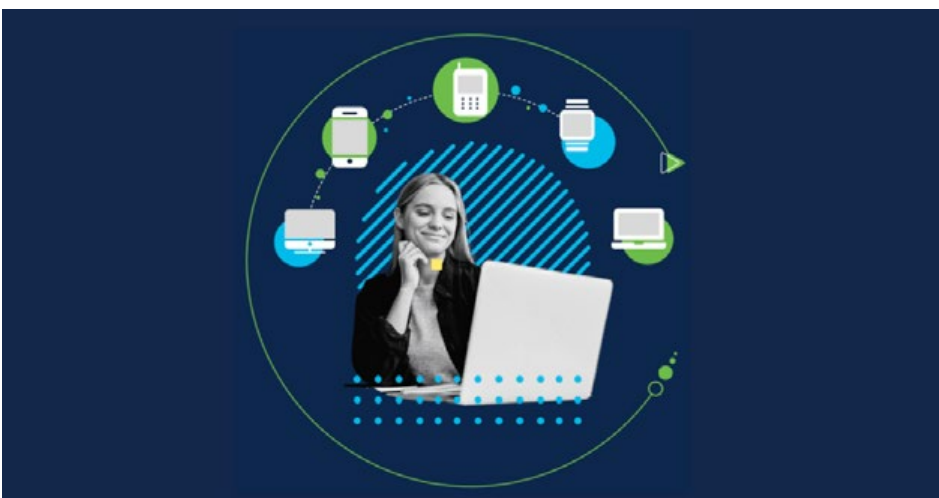
Comviva to Accelerate Etisalat's Digital Transformation Journey in Misr

Comviva, the global leader in digital solutions, today announced its strategic partnership with Etisalat Misr to offer media rich Caller Ring Back Tone (CRBT) services. With this new service Etisalat subscribers can reflect their personality and emotions by playing different ring back tones for different callers. The new service will help Etisalat to drive next phase of growth with digital adoption being key for new digital services. Comviva's media rich CRBT platform brings in innovation in digital journey and will allow Etisalat to drive deeper customer engagement with personalized ring back tones. With this new service, subscribers can replace the ring tone that callers normally hear with a personal choice of music or audio and video content, bringing a more enjoyable calling experience to callers. Music consumption has evolved to include use cases such as short videos and user-generated content. Comviva's CRBT solution brings in elements for integration with music streaming, user's self-recorded status and video ringback tone. It is a future ready solution supporting VoLTE/ViLTE ready software, innovative digital interfaces such as mobile app, OTT store-fronts, YouTube, Chatbot and integration with smart devices like Alexa. The platform is an end-to-end offering, including product planning, partner management, storefront management, revenue management, and business analytics. CRBT software houses innovative features and interfaces, aimed at enhancing revenue across the customer lifecycle. "We are looking forward to a fruitful partnership with Comviva on one of our leading VAS services. The Comviva

platform will allow us to digitalize the CRBT experience and enrich and enhance the user journey. Given that our community is evolving constantly, the options available on our new platform will surely be able to satisfy all customer needs through the countless personalization and customization options." Ahmed Yahia, Chief Commercial Officer at Etisalat Speaking on the partnership, Ramy Moselhy, Senior Vice President and Head of MENA region at Comviva said, "We are committed to bringing innovative digital services that enrich the lives of people across markets globally. We are excited to partner with Etisalat in their long term vision and strategy focused on digitalization. These new and exciting infotainment services will enable new experiences for their rapidly growing customer base. CRBT has enjoyed enormous success with operators across the globe and we are confident of replicating our success with Etisalat Misr." "Our new partnership with Comviva as this service will bring a livelier call experience

to our customers' at Etisalat Misr. Adopting new and exciting technologies and offering them to our customers has always been a core focus at Etisalat Misr, and that is why we are introducing this new service where the callers can change their ring back tone based on user mood and context, or use the diverse features to gift or copy a ring back tone. CRBT is yet another service that would elevate our calling experience to a whole new level," explained Amr Fathy, IT Vice President, Etisalat Misr. With Comviva's CRBT footprint spanning across two dozen deployments across the globe, the company has seen the volume of caller tunes increase on its platform exponentially. CRBT Platform is powering one billion caller tunes in India every day, constituting 86 percent of all the CRBT traffic originating in the region. Globally, the company is powering personalized music ring back tone for 224 million mobile users, constituting 45 percent share in worldwide market.

Eutelsat Reports Revenues for The Third Quarter and Nine Months

Eutelsat Communications (ISIN: FR0010221234 - Euronext Paris: ETL) reports revenues for the Third Quarter and Nine Months ended 31 March 2021.

Rodolphe Belmer, Chief Executive Officer of Eutelsat Communications, said: "This Quarter has seen some important operational milestones, notably the

outcome of the Spring renewal campaign with the US administration well above historical average, while the increase in our backlog reflects our important recent

commercial wins. Most notably, we are now seeing real momentum in our Fixed Broadband ramp-up with EUTELSAT KONNECT now at full coverage, enabling us to make tangible progress in Western Europe with retail operations extended to new territories and gross additions gaining pace. Distribution has also been strengthened in Africa, notably with a partnership with Facebook to roll out Express Wi-Fi hotspots across our African footprint. The outturn of our Third Quarter revenues performance is fully in line with our expectations and enables us once again to raise the bottom end of our objective range for the year as a whole, as well as to reconfirm all other elements of our financial guidance. From a strategic perspective, recent weeks have been marked by our entry into the LEO space through our investment in OneWeb, which represents a compelling entry point to address the considerable LEO opportunity as well as an additional growth engine for the Group's connectivity activities".

Eutelsat Expands Use of Express Wi-Fi in Partnership with Facebook to Extend Wi-Fi Connectivity Throughout Sub-Saharan Africa

Eutelsat Communications (Euronext Paris: ETL) is expanding its use of the Express Wi-Fi platform in partnership with Facebook to provide broadband services via satellite across several regions in Sub-Saharan Africa. With Express Wi-Fi, Eutelsat aims to connect thousands of people in rural and underserved communities spanning Democratic Republic of Congo (DRC), Nigeria, Côte d'Ivoire, Tanzania, Uganda, Zambia, Kenya, Madagascar, South Africa, Cameroon, Ghana and Zimbabwe. Express Wi-Fi is a platform developed by Facebook Connectivity that enables partners to build, grow and monetize their Wi-Fi businesses in a scalable way, while providing their customers with fast, affordable, and reliable internet access. Express Wi-Fi is used in more than 30 countries, including in multiple Asian, South American and African markets, helping millions of people connect over Wi-Fi. Eutelsat and Facebook have previously conducted successful pilots in rural and underserved areas of the Democratic Republic of Congo (DRC) enabling local businesses to offer affordable internet access to customers on a pre-paid basis. To date, Eutelsat's use of the Express Wi-Fi platform has enabled access to affordable broadband for thousands of individuals across the

DRC. Philippe Baudrier, General Manager of Konnect Africa commented: "We are delighted to partner with Facebook in this ambitious scheme, aimed at getting more people online in the most underserved areas of sub-Saharan Africa. This initiative is the perfect example of the power of satellite connectivity to bridge the digital divide, with unmatched economic and social benefits. We are proud once again to leverage the unparalleled coverage of EUTELSAT KONNECT to satisfy this growing demand." "At Facebook, we're committed to working with partners to help expand connectivity in Sub-Saharan Africa, which continues to be the region with the highest coverage gap," said Fargani Tambeayuk, Head of Connectivity Policy for Sub-Saharan Africa, Facebook. "Connectivity is essential to ensuring access to jobs, education, healthcare and more. We're proud to partner with Eutelsat to combine the power of the Express Wi-Fi platform and EUTELSAT KONNECT, with the goal of increasing satellite broadband coverage across rural and underserved areas of Sub-Saharan Africa."

Eutelsat Enters LEO Space Through Investment in OneWeb

Eutelsat Communications (Euronext Paris: ETL) has entered into an agreement with OneWeb for the subscription of a c.24% equity stake, becoming a leading shareholder of the company alongside the UK Government and Bharti Global. Eutelsat will invest $550 million in OneWeb, with closing expected in H2 2021 subject to regulatory authorizations. With much of its global network already deployed, the OneWeb constellation, which enjoys valuable ITU-backed priority spectrum rights, will operate 648 satellites in low orbit (LEO) offering low latency. This first generation of satellites will offer significant regional coverage by the end of 2021, reaching global coverage the following year. OneWeb will be the first complete non-geostationary constellation with truly global coverage, significantly ahead of competing projects. It will deliver 1.1 Tbps of capacity addressing the government, fixed data and mobility markets. Plans include a second-generation constellation

that will provide significant enhancements in terms of capacity, flexibility and economics. It anticipates annual revenues of circa $1 billion within three to five years following the full deployment of the constellation, with a partnership approach and profitable wholesale business model. Eutelsat's investment leaves OneWeb almost fully funded and the company is well advanced in terms of securing its remaining funding needs this year. Eutelsat's investment will come with similar governance rights to the UK Government and Bharti, including board representation, where its position and expertise as one of the world's leading satellite operators will help to drive the success of the new constellation. In a context where LEO features will enable the extension of the addressable market for satellite operators well beyond their current reach, the complementarity of Eutelsat's and OneWeb's resources and assets is expected to optimize both companies' commercial potential thanks to Eutelsat's strong commercial and institutional relationships, recognized technical expertise and global geostationary fleet, and OneWeb's ability to address the multiple applications requiring low latency and ubiquity. The investment will be 100% cash financed through Eutelsat's liquidity position of €1.9bn as at end-March 2021[1] and the $507m US C-Band auction proceeds, and will be accounted for under the equity method. It is consistent with Eutelsat's financial hurdle rates and does not alter its financial objectives, which are fully confirmed, including the medium-term net debt / EBITDA target of c.3x and a commitment to solicited Investment Grade credit

ratings. Eutelsat's policy of a stable to progressive dividend is also reiterated. Commenting on the agreement, Rodolphe Belmer, Eutelsat's Chief Executive Officer said: "We are excited to become a shareholder and partner in OneWeb in the run up to its commercial launch and to participate in the substantial opportunity represented by the non-geostationary segment within our industry. We are confident in OneWeb's right to win thanks to its earliness to market, priority spectrum rights and evolving, scalable technology. We look forward to working alongside the UK Government, Bharti and the other shareholders to open new opportunities and market access to ensure OneWeb maximizes its potential. OneWeb will become our main growth engine outside our broadcast and broadband applications, as we continue to maximize cash-flow extraction from our highly profitable heritage business and grow our fixed broadband vertical leveraging our geostationary assets." Business Secretary Kwasi Kwarteng said: "Today's investment is another giant leap forward for OneWeb in realising its ambition to provide global broadband connectivity around the globe. Eutelsat brings over forty years of experience in the global satellite industry and this exciting new partnership puts OneWeb on a strong commercial footing, and the UK at the forefront of the latest developments in low Earth orbit technology. This comes alongside yesterday's exciting news that a further 36 satellites were launched into space and demonstrates the momentum behind OneWeb and the promising efforts to provide connectivity to some of the world's most remote places." OneWeb Executive Chairman, Sunil Bharti Mittal, said: "We are delighted to welcome Eutelsat into OneWeb family. As an open multi-national business, we are committed to serving the global needs of Governments, Businesses and Communities across the Globe. Together we are stronger, benefiting from the entrepreneurial energy of Bharti, extensive global outreach of UK and long-term expertise of the satellite industry at Eutelsat. OneWeb, with its innovatory approach, is poised to take a leading position in LEO broadband connectivity". Neil Masterson, Chief Executive Officer of OneWeb added: "As OneWeb accelerates the deployment of its fleet and engages in discussions with potential customers, we welcome the powerful support of Eutelsat during the next exciting phase of our journey together, benefitting both companies equally. Eutelsat is a great partner for OneWeb thanks to our high level of complementarity in terms of technology, assets, addressable markets, geographic reach and institutional relationships".

Facebook Lays Fiber Across the Entire State of Indiana

FACEBOOK

Facebook is laying fiber across the width of Indiana to connect a couple of its own data centers, and it will lease excess capacity on the fiber to telcos or other providers that are interested. Facebook has completed the first phase the build, laying over 77 miles of fiber to connect

the I-70 corridor from the Indiana/Ohio border to downtown Indianapolis. Phase One was 100% funded by Facebook via its wholly-owned subsidiary Middle Mile Infrastructure. The 77 miles of fiber that runs from Interstate Highway 70 at the Indiana/Ohio border through Marion,

Hancock, Henry, and Wayne Counties to downtown Indianapolis will connect Facebook's data centers in Iowa and Nebraska to its East Coast cluster in Ohio, Virginia and North Carolina. The social media company is also planning a second phase with its partner Zayo. Phase Two

will include a new 85-mile build that will connect downtown Indianapolis to the Illinois state line. For the second phase of this build, Facebook is partnering with the fiber company Zayo. Phase Two will head west from Indianapolis through Vigo, Clay, Putnam, Hendricks and Marion Counties. Both phases are slated to be complete by the end of 2021, at which time Indiana will have a fiber route via Facebook that spans the state from east to west. Michele Kohler, strategic sourcing manager at Facebook, told Fierce via email that Facebook sometimes leases existing fiber. "We take a pragmatic approach to solving connectivity and utilize many different methods," said Kohler. "If there is existing fiber available, our preference is to work with the partner to access it. To support our 3B+ users around the world takes a lot of network. We buy a lot from partners and where we need to, we build." Kohler said Facebook has 13 data center locations in the U.S., and eight are operational. "We intend to allow third parties — including local and regional providers — to purchase excess capacity on our fiber," stated a Facebook blog today. "This capacity could provide additional network infrastructure to existing and emerging broadband providers, helping them extend middle-mile networks to many parts of the country, particularly in underserved rural areas near our fiber backbones." Kohler said the company is currently engaged in discussions with third parties about leasing opportunities in Indiana. This isn't Facebook's first foray into building long-haul fiber in the United States. According to a 2019 blog posting, Facebook built a 200-mile fiber route to connect two of its data centers: one in New Mexico and one in Texas. At

that time, Facebook said, "Unlike a retail telecommunications provider, we will not be providing services directly to consumers. Our goal is to support the operators that provide such services to consumers. We will reserve a portion for our own use and make the excess available to others. This means you'll start to see a Facebook subsidiary, Middle Mile Infrastructure, operating as a wholesale provider (or, where necessary, as a telecommunications carrier). Asked if Facebook will be competing with long-haul fiber providers such as Lumen, Windstream and Zayo, Kohler said, "We build networks with the primary goal of meeting our own needs. Selling fiber is not our core business, and we view companies like those as partners. However, we want to help underserved areas and where we can leverage underutilized capacity to improve connectivity through partners, we will."

Facebook Takes Another Step Towards Selling Wholesale Fiber Access

Facebook said today that it will build a fiber network in Indiana to interconnect some of its data centers. The company also noted that it will make capacity on that network available to communications service providers. Where possible, Facebook purchases fiber connectivity from other companies but sometimes is unable to find fiber suitable to meet its needs and undertakes its own network construction, explained Michele Kohler, Facebook business development manager for network investment, in an interview with Telecompetitor. In 2019, for example, the company announced a similar fiber network build between Columbus, Ohio and Ashburn, Virginia. At that time, the company said it would offer excess capacity on that network to other service providers. That network is still under construction and as a result, Facebook has no announced fiber sales. But according to Kohler, "we've gotten a lot of interest and had a lot of conversations." Among those interested are wireline and wireless providers, companies looking for long-haul connectivity and companies looking

to build last-mile broadband networks, she said. The Facebook network options may be particularly appealing to last-mile providers because the networks connect to key traffic exchange points. The Facebook Indiana network will span the state from east to west along Interstate 70, Kohler explained. West of Indianapolis, the company will use fiber from Zayo, but east of Indianapolis, the company will lay its own fiber. "In Indiana, there wasn't a solution to go into Ohio," Kohler explained. "It was partly because we require four paths of diversity." Facebook doesn't factor in potential sales to communications service providers when it plans its fiber builds, Kohler noted. But conversations with providers in advance of a network build have influenced construction decisions. She noted, for example, that Facebook made the decision to make microduct part of its installation to make it easier to connect to the network at points along the way. This approach eliminates the need for last-mile providers to build fiber to a Facebook in-line amplification (ILA) hut, reducing the

amount of fiber required to connect the community to the Facebook network by as much as 40 kilometers. Facebook plans to offer both dark and lit fiber. The latter is expected to be attractive for 10 Gbps or 100 Gbps backhaul connectivity to major network access points, Kohler noted. To promote its Indiana fiber network plans, Facebook created a 10-minute video that includes interviews with people from the Indiana Economic Development Corporation, the Indiana City-County Council, Butler University, Indiana University and other organizations. The video likens efforts to improve broadband availability to interstate highway initiatives that began in 1956 and "completely transformed American life." "The same can be said of the internet," the video explains, also noting that "broadband is your bank, your doctor, your grocery store, your office, your school." In explaining Facebook's role, the video notes that "every time we build a new data center, we lay a lot of fiber — fiber that benefits everyone."

Enjoying Ubiquitous 5G Experiences with a Unified Benchmark

Following the recent SAMENA Leaders' Summit, a new '5G Experience Benchmark' has been proposed by Huawei to comprehensively evaluate and enhance 5G services for users across the Middle East. This benchmark is being proposed at a significant time as 5G commercialization rapidly grows across the region. The benchmark aims to enable telecom operators to focus on improving 5G user experiences, make precise investments, and improve ROI. In the GCC in particular, 5G commercialization is already moving fast. In the past five months, with the release of multiple 5G smartphones, the number of 5G users in the Middle East is estimated to increase from 0.7 million to 3.1 million, realizing around 350% growth. On some networks in Kuwait and Saudi Arabia, for example, the 5G traffic ratio has already exceeded 30%. A positive 5G business cycle is emerging in the Middle East. Globally, 5G has enabled diversified emerging services from imagination to reality. Taking China and South Korea as examples, VR/AR, 4K, multi-view video, and cloud gaming have brought enhanced digital experiences to many. On the other hand, it also brings 5G user experience issues to the surface. 5G users have higher expectations for 5G, as well as higher requirements for the network experience. According to the experience of the world's 5G pioneer market, 5G users are mainly sensitive to the network rate, real-time experience, and 5G service availability. In the GCC, the insight also shows that although 5G has been deployed on a large scale, there are many opportunities to enhance user experience with better speed and less latency, especially for gaming and video users. This requires the industry to build a unified benchmark to evaluate comprehensive 5G experiences, again enabling operators to focus on the user experience, make precise investments, and improve ROI. In the SAMENA Leaders' Summit, Huawei proposed the 5G experience benchmark by an S.L.A. model, which considers factors including 5G spectrum bandwidth, download rate, E2E latency, and coverage, to comprehensively evaluate the 5G user experience. The 5G S.L.A user experience benchmark includes three main indexes, Speed, Latency, and Availability, and the overall index is calculated by S∗L∗A.

S indicates the speed. The average downlink rate of 5G UEs is measured and divided by the benchmark value according to different bandwidth to obtain an index score. This index will support operators to evaluate its speed quality who has different spectrum bandwidth.

L indicates latency. The top 5G applications are measured and calculate the good latency ratio to obtain an index score. This index will support operators to evaluate E2E latency quality for its top applications.

A indicates the availability of 5G network. The 5G availability score is obtained by identifying the current network population coverage and multiplying the 5G network camping ratio. This index will support operators to evaluate its 5G availability for end users in combination of 5G covered areas and non-covered areas. The score obtained by multiplying the three indexes, is the final network experience benchmark value. The 5G experience benchmark is a multi-dimensional comprehensive measurement model. For the specific measurement method and detailed scoring mechanism, it is suggested that regulatory authorities and operators should discuss and cooperate to further clarify the quantification. For example, top services on an operator's network are different. Based on different services, entities need to perform modeling based on a large number of live network samples or lab test data. In addition, the baseline values corresponding to good user experience, such as the rate and latency, are provided to help measure and score the network experience gap and identify the operator network construction direction. It is hoped that regulatory agencies and operators can reach a consensus on the availability of rate and latency firstly, use these dimensions as the criteria for measuring their networks, and then perform detailed measurement and analysis based on their networks. This is the key for operators to identify the experience problems and gaps, then to make precise investments and to improve the user experience, finally accelerate digital economic growth.

Saudi Ministry of Transport Signs MoU with Huawei to Enhance Future Mobility and Technology Adoption in Transport and Logistics Sector

The Saudi Ministry of Transport and Huawei, a leading global provider of information and communication technology (ICT) infrastructure and smart devices, signed a Memorandum of Understanding (MoU) to enhance future mobility and technology adoption in the transport and logistics sector by exploring the prospects of utilizing advanced technologies such as 5G, AI and Big Data. The MoU was signed by Deputy Minister of Transport for Roads, Eng Badr Al-Dulami, and David Shi, President of Enterprise Business Group, Huawei Middle East. Deputy Minister of Transport for Planning and Information Dr. Mansour Alturki represented the Ministry of Transport and David Tao, General Manager of Enterprise Business Huawei Tech Investment Saudi Arabia, represented Huawei. As per the MoU, Huawei will provide solutions in

the field of automation, big data, and digitization. It will also contribute to the provision of solutions for shared mobility, sustainability, and the use of disruptive technology in the development of the logistics sector and intelligent transport systems in the Kingdom. Alturki said the MoU ensures the utilization of the latest technology in the Saudi transport sector to enhance its performance in transporting freight and people, which is part of the Vision 2030 objectives. The adoption of advanced technologies such as artificial intelligence (AI) and Internet of Things (IoT) will improve the logistical performance of our transport systems, hence directly boosting Saudi Arabia's rank on the Logistics and Trading Across Borders performance indexes, further establishing the Kingdom as a global logistics hub connecting three continents. The Deputy

Minister added that the agreement will also contribute to enhancing the quality of life across the country through the adoption of advanced smart transport systems as well as improving the services provided to citizens, residents and visitors across all transport facilities including airports and railway stations. It focuses on finding ways to implement the latest automation and IoT practices in our operations in addition to increasing multimodal integration to enhance transportation inside and across cities and reduce travel time. Commenting on this strategic partnership, David Shi, President of Enterprise Business Group, Huawei Middle East, said: "Huawei is pleased to be a strategic partner of the Ministry of Transport as it embarks on the mission to accelerate the development of Saudi Arabia's transportation industry and the logistics sector to transform the Kingdom into a leading logistics hub in the region. Huawei will collaborate with the Ministry of Transport to identify and develop the next generation of modern transport technologies that cover multimodal transport across the Kingdom, including maritime transport, aviation, roads, railways and logistics." The Ministry of Transport targets to boost the adoption and utilization of technology in the field of transportation and logistics through collaboration with leading ICT organizations to enhance the services it provides and realize the objectives of Saudi Vision 2030.

Huawei Calls for Closer Public-Private Sector Cooperation to Restore Trust in Technology

Catherine Chen, Corporate Senior Vice President and BOD Member at Huawei, has underscored how building trust in a digital society will require the joint efforts of policymakers, regulators, and the private sector. Her comments came during a speech at the St. Gallen Symposium, an annual gathering of current and future leaders from across the globe. The annual gathering of current and future leaders celebrated its 50th anniversary this year, welcoming 1,000 participants in the three-day cross-generational dialogue. Chen joined political leaders and representatives of transnational organizations to exchange their views on the theme of this year's symposium, "Trust Matters". "As more devices feature connectivity, more services go online, and more critical infrastructures rely

on real-time data exchanges, so must governments worldwide ensure that everyone is protected by the highest security standards. Only a common set of rules can guarantee a level of security that creates trust in technology," Chen said. The event's participants agreed that trust is inherently built on openness and transparency, and that it is time to take concrete, actionable steps to address the common challenges and risks that have emerged in the wake of the COVID-19 pandemic. "We, as members of the younger generation, are connected to a greater number of people through social media, but this does not correspond to a circle of people we can trust," said Simon Zulliger, a member of the team of 35 students from the University of St. Gallen that organized

this year's symposium. Chen hoped that the next generation of leaders would build trust and shape a world of pervasive connectivity. "I urge them to continue developing the positive relationships between communities, individuals, and their environments. We must build strong trust in technology, enabled by a common set of rules, innovations, and

progress. Only then can we commit to the sustainable and trustworthy use of technology," she concluded. Chen's comments echo the company's recent reaffirmation and commitment to supporting digital transformation across the Middle East by building stronger cybersecurity mitigation programs with local partners and governments. That

commitment comes at a time when the overall spending on information and communication technology (ICT) in the Middle East, Turkey, and Africa region is expected to make a comeback, returning to positive growth of over USD209.5 billion in 2021 after contracting last year, according to projections from IDC

Huawei: 5G Will Underpin Economic Growth Across MENA

Fifth generation mobile network technology (5G) will act as catalyst for economic development across the Middle East and North Africa region, according to industry experts who gathered virtually at the SAMENA Leaders' Summit 2021. Held under the theme of 'Championing Digital Economic Growth from Policy to Reality', attendees exchanged insights about current technology, industrial, and economic development opportunities. "As we enter the post-pandemic era, the economic recovery of the Middle East is the major target of today. At the same time, ICT is now recognized as the new engine of recovery and development, and together with our customers and partners will light up the future of the Middle East through technology innovations," said Charles Yang, President of Huawei Middle East. "In particular, 5G is now a key enabler of the region's digital economy. The technology is already playing a vital role for consumer and industrial markets proving its business and social value for

the future digital economic growth in the Middle East. The number of 5G users has exceeded two million in just 19 months, twice as fast as 4G," Yang added. "Many new smart cities have started to emerge in the Middle East, such as NEOM in Saudi Arabia. Such developments, alongside mega-events such as Expo 2020 and the

FIFA World Cup 2022, will benefit greatly from investments in digital infrastructure like 5G. Growth-oriented, future-looking 5G policies, including the sustainable spectrum, fiber-to-site strategies, must be in place to drive investment and enable digital economic growth."

Huawei Announces 6G Satellite Launch in China

Chinese technology giant Huawei is planning to launch two satellites with two Chinese partners in July this year, which will focus on verifying 6G network technologies that are currently under research and development. According to Global Times, which is associated with the Communist Party of China's official publication, the People's Daily, said the satellites would test 6G network technologies. Details of this launch have not been released so far as the company is currently focused on the core technologies such as networking and switching. "The satellite launch, with the cooperation of Chinese network operator China Mobile and

a national space firm, which has no details unveiled, has great significance for China's core technologies such as networking and switching, " said a digital blogger named Chang'an Shumajun. As Huawei works on its 6G network layouts, it is to be noted that this technology is nearly 50 times faster and advanced in comparison to the 5G technology the global tech companies are trying to harness at this very moment. The satellite move is natural as Huawei pushes ahead its layout on 6G networks, which is 50 times faster than 5G, Ma Jihua, a senior tech industry analyst based in Beijing, said Global Times. Compared with the construction of 5G networks that rely

on base stations to transmit signals, 6G networks, conveying higher frequencies, need using satellite for communications instead of base stations where there will be low penetrability, Ma explained. Huawei's rotating chairman Xu Zhijun announced at Huawei global analysts conference held earlier this month that the Chinese tech giant will launch its 6G networks in 2030, and it will release a 6G white paper soon to explain to the industry what 6G is. During a global 6G summit in 2019, Huawei had proposed its vision to launch more than 10,000 small satellites to provide 6G services covering the world.

Huawei Unveils CloudCampus 3.0 for a Fully Wireless, Intelligent Campus Networks in the Cloud Era

Huawei Tech Investment Saudi Arabia Ltd conducted the Huawei Middle East IP Club Carnival 2021 and announced new IP products and solutions for customers across different sectors and ecosystems. The event, which was held virtually, was attended by network technology experts from around the Middle East. During the virtual event, Huawei rolled out the CloudCampus 3.0 Solution, which delivers a feature-rich solution that combines fully wireless access, One Global Network, Comprehensive Cloud Management and Intelligent O&M of Campus network for enterprise users. Additionally, the new Air Engine Wi-Fi 6 not only delivers the highest performance of 1.6Gbps per user within the industry, but also achieves the exclusive 100M Everywhere; continuous coverage with zero lapses. The Air Engine Wi-Fi 6 plays a key role in encouraging organizations to be innovative by exercising data value and optimizing O&M efficiency to ensure stable businesses. As digital technology is reshaping the world, the campus connects people and objects, integrates machines, substances, and events as one; forming a carrier of work
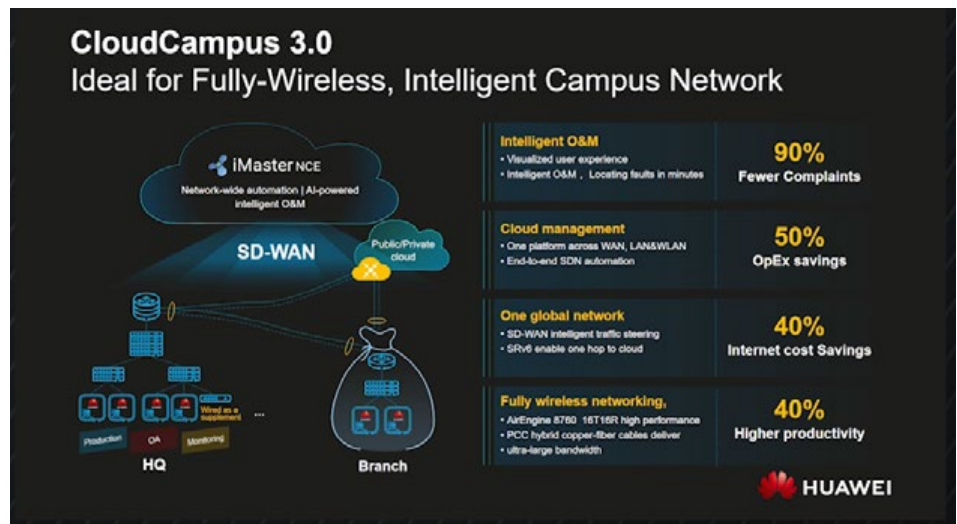
and life, and simulating a solid bedrock of the world for the future of intelligence. New business models are emerging as digital technology extending from campus to service to production. This event delved into how digital technology can uncover the power of will and innovation, from the three dimensions of business, technology, and ecosystem, leading to paradigm shifts towards digital transformation. The ultimate objective of intelligent IP network

development, with a range of applications — from video and remote working solutions to cloud computing, and AI, is driving a new wave of growth in the network bandwidth. Campus networks are upgrading to Wi-Fi 6 and 100 GE switches, while data centers and IP backbone networks are already heading towards 400 GE supported by Big Data and AI based predictive O&M.

Microsoft and PwC Join Forces to Accelerate Digital Transformation in Qatar

PwC and Microsoft are putting into effect their global alliance to accelerate digital transformation and cloud adoption in Qatar. The collaboration offers combined business insights and latest technology to help businesses across sectors increase their performance and resilience in pursuit of their digital transformation ambitions. Bassam Hajhamad, Country Senior Partner and Consulting Leader at PwC Qatar, added: "As a leading Microsoft global partner with over 200 certified experts in the region, PwC leverages the power of Microsoft Azure, Dynamics 365 and Microsoft 365 to unlock potentials and use data to enable business transformation and solve our

client's most important problems. This partnership results in a unique opportunity for the government, public and private entities and enterprises in Qatar to embark on their digital transformation journey with a trusted leader providing strategy-to-execution advisory services coupled with a familiar and easy-to-use technology and tool set from Microsoft." The extended partnership further boosts business capabilities and contributes towards innovation by providing enterprises with access to scalable, highly available and resilient cloud services, while maintaining data residency, security and compliance needs. This also supports critical sectors

including government and the public sector, energy, education, healthcare, real estate, recreation, and others. For her part, Lana Khalaf, Country Manager, Microsoft Qatar, said: "The strategic partnership between Microsoft and PwC will empower the digital transformation of organizations in Qatar. Through this alliance, organizations will harness the core competencies of both companies, PWC's strategy and consultancy expertise coupled with Microsoft's best in class cloud technology in Data & AI, business applications and low code/ no code development tools."

Nexign and Kcell Announce the Start of the Billing Platform Implementation

Nexign (part of ICS Holding), a leading Business Support Systems (BSS) provider, and Kcell, one of the largest telecom operators in Kazakhstan, have signed a contract for the implementation of the Nexign Converged BSS billing platform. The contract provides for replacement of customer's several legacy systems with a single solution, gradual migration of subscribers to the new environment and support services. Kcell JSC is one of the largest mobile operators in Kazakhstan, supporting such standards as GSM, UMTS/WCDMA, LTE (4G) and LTE Advanced. The company serves more than 8 million subscribers, which is almost half of the country's population. In the telco market, it operates under the brands Kcell and Activ, the former of which is focused on the business audience, and the latter — on the B2C segment. One of the strategic goals of Kcell is to increase its subscriber base and become a leader in the B2B market. To achieve these goals, the company needed a solution that would support key charging, billing and customer interaction processes. As a result, Kcell selected Nexign Converged BSS – an integrated BSS platform enabling optimization of a provider's business processes and organization of a quick

launch of convergent services, providing a consistent approach to customer service in all sales channels. Cooperation with Nexign will help Kcell reduce operating cost of a billing system and slash time to market (TTM) for products as well as expand opportunities for monetizing new types of services. In addition, Kcell plans to use Nexign Converged BSS to reduce the load on call centers and subscriber offices by 20–30% by implementing self-service capabilities. "The joint project with Nexign will help Kcell not only improve business performance, but also enrich customer experience and ensure subscriber loyalty. Drawing on years of experience in Central

Asia, as well as best practices developed in collaboration with global leaders, Nexign will support the development of new digital opportunities for Kcell," says Igor Gorkov, CEO of Nexign. "The capabilities of the Nexign Converged BSS solution will help Kcell accelerate its business transformation and go beyond traditional telecom services. Cooperation with Nexign will enable us to offer our subscribers highly relevant products and services and thereby increase profits, laying the foundation for excellence in the context of emerging digital economy," comments Yuri Kharlamov, CEO and Chairman of the Management Board at Kcell JSC.
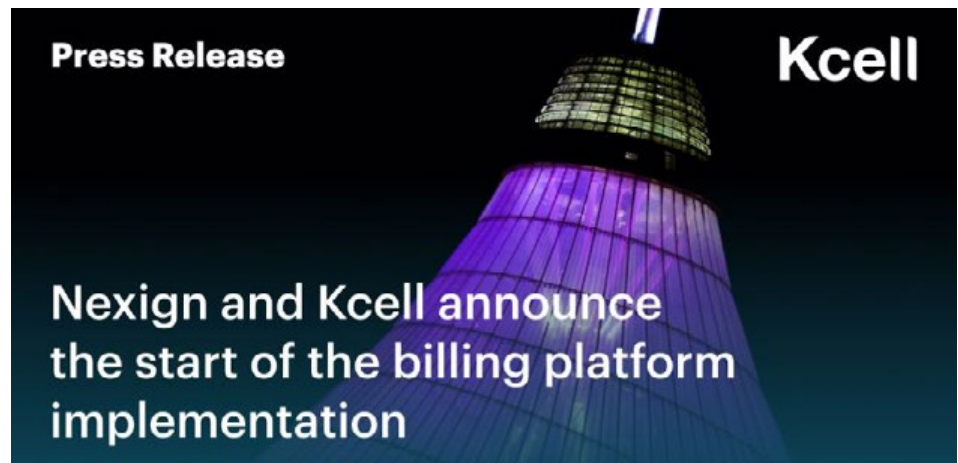
PCCW Global Launches eSIM Service for IoT Deployment

PCCW Global, a leading telecommunications service provider, has launched a globally-connected Embedded-SIM (eSIM) service that is immediately ready for Internet of Things (IoT) deployment globally, providing ground-breaking device connectivity that is expected to revolutionize the automobile, logistics, and connected equipment manufacturing industries. Making use of technology from Thales, a world leader in identity, security, smart cards and a global leading eSIM platform provider, PCCW Global's eSIM is a secure, GSMA

compliant device that has been designed to remotely manage multiple mobile network operator subscriptions. The support for multiple profiles enables the use of a single SIM with multiple providers' profiles. Connectivity for the new eSIM service is provided across PCCW Global's Tier 1 international and partner network covering 180 countries and territories. In addition, PCCW Global makes use of a proven and reliable technology platform with full integration through a single connectivity and SIM management portal,

automated on-demand connections to cloud capabilities with Console Connect IoT integration and full support across PCCW Global's IoT service ecosystem. Universally acknowledged as the next great leap forward in communication technologies, IoT is transforming everyday items into connected devices. It provides unprecedented connectivity and the exchange of 'always-on' information 24x7, unleashing seemingly limitless opportunities for consumer and commercial applications. From vehicles with the ability

to transmit information back to a fleet owner or a manufacturer, wearable wrist alert bands capable of communicating vital health information for those with medical conditions, to vending machines able to order their own replacement stock, IoT is poised to connect just about everything. Due to its small size and other significant technological benefits, eSIM is a critically important development for the widespread deployment of IoT devices. The PCCW Global eSIM is available in various form factors and can be installed in any compliant device. eSIM technology is expected to have a wide-ranging impact on a diverse number of industries. From logistics, through to smart homes and smart cities - everything can be connected with small eSIM technology that requires reduced power for longer uptime between charging. Mr. Craig Price, Senior Vice President, Mobility Products and Marketing, PCCW Global, said, "We are excited about the possibilities that our new eSIM features and connectivity will provide for many industries. Now we have the technology, the automated platform, and the global connectivity to truly make IoT a reality, enabling business to leverage all of the advantages connected devices bring to a globally connected world."

PCCW Global and Frequentis Launch First SaaS for SWIM on CRV for Asia Pacific and the Middle East Aviation Stakeholders

PCCW Global, a leading telecommunications service provider, and Frequentis, a supplier of safety-critical communication and information solutions, have collaborated to deliver aviation-specific Software-as-a-Service (SaaS) technologies over the newly-commissioned Common Aeronautical Virtual Private Network (CRV) that serves International Civil Aviation Organization (ICAO)'s Asia Pacific and the Middle East (APAC and MID) regions. Since developing the ICAO CRV network for the Asia Pacific and Middle East regions, PCCW Global has aimed at expanding the network by offering value-added services on top of the advanced aeronautical network. These services cover the provision of critical information through the globally interoperable System Wide Information Management (SWIM) infrastructure, interfaces and exchange models. The CRV network itself has been built on top of PCCW Global's high-speed and robust international IP network, with mission-critical connections running on a diversified infrastructure, supporting multiple aviation-specific connectivity protocols. In a world-first for the aviation industry, PCCW Global and Frequentis have developed the SWIM services on a private and scalable SaaS platform

that will also host additional aviation-specific applications such as smartSIS and smartWeather. By combining PCCW Global's network infrastructure with Frequentis' proven knowledge and experience in application development for the aviation industry, Air Navigation Service Providers (ANSPs) will now be able to benefit from SWIM initiatives without the high investment costs and development expenses of traditional systems. The new networkbased services will enable ICAO members to exchange data more efficiently over a standard protocol and utilise a secure, advanced and high-speed common infrastructure technology.

Key benefits include:

- A secure and stable platform dedicated to CRV users
- Scalable, flexible managed services
- Infrastructure based on a cost-effective OPEX model
- Support for aviation specific connections and open interfaces

Mr. John Fort, Chief Executive Office of Frequentis California, said, "Frequentis is pleased to collaborate with PCCW Global to provide multi-national SWIM infrastructure and services in the ICAO APAC and MID regions. ANSPs in the regions have been proactive to adopt the SWIM principles and technologies

and provide a vital drive in the global migration to SWIM. Traditionally, ANSPs have invested in on-site deployment but with this new private cloud infrastructure they are offered an alternative solution by being able to procure SWIM as a service and move from a CAPEX to OPEX model." PCCW Global has launched its IWXXM Translation and Exchange services as the first in a series of modules that will include a variety of aviation-specific services and based on the ICAO standardized exchange

models including Flight Information Exchange Model (FIXM) and Aeronautical Information Exchange Model (AIXM). The services are hosted on a highavailability private platform in a fully managed and controlled environment which connects to CRV network infrastructure with the approval of the ICAO and CRV Operation Group (CRV-OG). Mr. Raymond Luk, Vice President of Global Presales, Strategic Account Management and Technology Engagement, PCCW Global, said, "We are

proud to be collaborating with Frequentis to fully utilize the capabilities of the CRV network and jointly develop the first private cloud-based SWIM platform with IWXXM Translation and Exchange Services for the aviation industry. It is evident that the industry needs cost-effective, secure and innovative solutions to enhance operations and services. PCCW Global is ready to meet these demands by providing a growing suite of aviation-specific solutions for ICAO member states."

Viu Announces the Extension of Viu Pitching Forum to Thailand

Viu, PCCW's leading pan-regional OTT video streaming service, announced the expansion of Viu Pitching Forum to Thailand. Viu Pitching Forum empowers and facilitates creative development in major markets across the region. The winner will see his or her story brought to life as a Viu Original production, aired across 16 markets globally. First launched by Viu in Indonesia in 2016 and expanded to Malaysia in 2020, Viu Pitching Forum is an innovative program which aims to equip, facilitate and create opportunities for scriptwriter to hone one's craft and further develop the story. Through the

Viu Pitching Forum, Viu provides a global platform to support local Thai storytellers in creating premium content. Participants can send a one-page synopsis of their film/series idea for consideration. Top Thai award winning directors from the Thai Film Director Association, including Chayanop Boonprakob (Friend Zone), Nattawut Poonpiriya (One for the Road, Bad Genius), Rutaiwan Wongsirasawad (Wai Onlawon 4: Tum + Oh Return, In Family We Trust), and Tanwarin Sukkhapisit (Pump Namman, Don't Sleep My Hero) will select a winner from 10 to 15 finalists. The pitching will begin on April 28, 2021 and the winner will

receive 100,000 Thai Baht as a prize. Mr. Chalermchatri Yukol, Program Director of Viu Thailand, said, "Viu Original series produced by Viu Thailand have been some of the most popular content among Viu-ers in the past year. We are proud to provide a platform to elevate local Thai talent and showcase their works as a Viu Original production across 16 markets. The Viu Pitching Forum has been wildly successful in Indonesia and Malaysia and we are excited to expand the program to Thailand."

Nepal Struggles with Increased Demand For Internet Due To Covid 19

SpeedChecker, the mobile crowdsourcing company released a new report on the performance of mobile networks in Nepal. This report is part of an ongoing commitment from SpeedChecker to benchmark true user experience. The SpeedChecker report has been compiled using data from 98,191 mobile devices performing 186,007 tests in April 2021. 4G coverage is now available in all 77 districts in Nepal after Nepal Telecom launched the VoLTE (Voice over LTE) service on 17th May 2021 (World Telecommunication and Information Society Day). The full report also shows that the latency is very poor with latency times very much in excess of 100ms. Smart Telecom's low value is based on a small sample size.

The following table shows average download and upload speeds per MNO. The measurements were done across the whole country and across the whole spectrum of available Radio Access Technologies (3G, 4G, 5G if available).
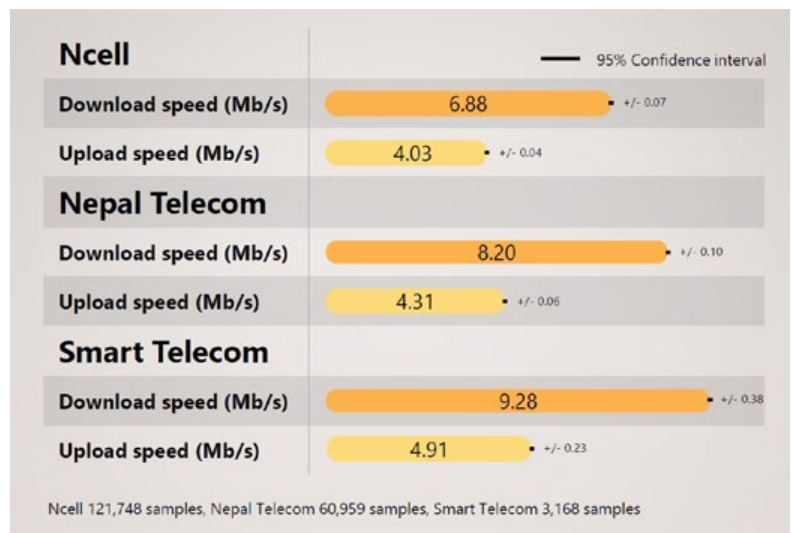
SpeedChecker Issues Results of Speed Performance in Lebanon

SpeedChecker, the mobile crowdsourcing company released a new report on the performance of mobile networks in Lebanon. This report is part of an ongoing commitment from SpeedChecker to benchmark the true user experience in the Middle East. The SpeedChecker report has been compiled using data from 16,725 mobile devices performing 46,469 tests in March 2021. Lebanese consumers are well-served in terms of both speed and latency following the continued expansion of 4G. This will improve further when the 5G service (currently available in Beirut airport) is expanded. Although fixed internet provision and performance is increasing as part of 2020 Telecom Vision it is the mobile performance that is most significant, as shown in these results. This impressive performance has been achieved by both Alfa and Touch in Lebanon with each of them averaging in excess of 30 Mb/s download and excellent sub-90ms latency.

stc Bahrain To Launch Camouflaged Small Cell Solution

stc Bahrain has announced the launch of a 'first-of-a-kind Camouflaged Small Cell Site' solution that will provide improved 4G and 5G network coverage across several areas of the country. The new solution will increase network densification in high data traffic areas such as school campuses and business districts, thereby improving overall network performance and capacity. The operator claims the new solution boasts an aesthetically pleasing design that complies with regulations intended to improve the look of radio station towers. The equipment will initially be deployed in Bahrain Bay and areas of Manama and Hoora under phase one of the projct, scheduled for completion by Q3 2021. Commenting on the new project, stc Bahrain CEO Nezar Banabeela said: 'We are pleased to launch this new first of a kind solution in Bahrain, the deployment of the new Camouflaged Cell Solution will enhance overall user experience in high traffic areas. We continue to invest in our infrastructure to further support our network's capability and reliability to better serve our customers with innovations that enhance their daily life.'
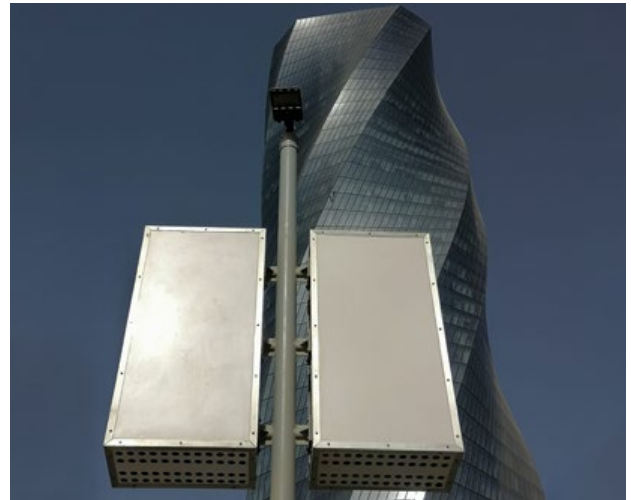
stc Kuwait Rolls Out Commercial 5G Standalone Infrastructure

Kuwait telecommunications company stc Kuwait has announced the commercial launch of its 5G Stand Alone (5G SA) services. The operator has also claimed the widest scale 5G deployment coverage on sub-3GHz and 2.1GHz bands amongst mobile service providers in the MENA region. Besides these two achievements, stc said it enhanced its infrastructure with the deployment of a new Business Support System. In a statement released by the Company, stc indicated that it has been progressing with major 5G SA developments to advance its 5G network architecture, enabling the radical transformation of the telecom industry into an as-a-Service model in line with Kuwait's 2035 vision. 5G SA technology will enable stc's subscribers to enjoy higher uplink bandwidth, especially catering to specialized use scenarios, such as enterprise applications where uplink throughput is equally important as downlink, it said. "Additionally, the technology will lower user-traffic latency to address key issues related to interruptions in the gaming experience, while kicking off-market interest in new rich forms of gaming technology like Virtual Reality (VR). 5G SA will also feature higher levels of security that utilize the best industry know-how to provide robustness to telecom networks," the press release pointed out. Further empowering Multi-Access Edge Computing (MEC) deployment, 5G SA will enable stc to become not only Cloud Native, but Edge Native as well, it said.
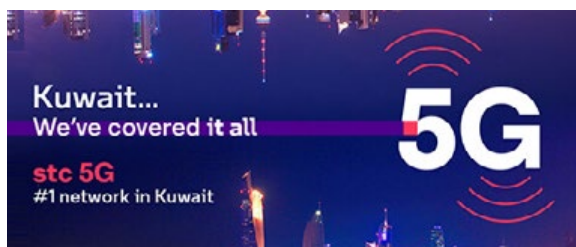
Tech Mahindra Acquires 100% Stake in DigitalOnus to Augment Hybrid-Cloud Offerings for Enterprise Customers Globally

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, announced that it has acquired DigitalOnUS, a leading hybrid cloud and DevOps services provider, to augment hybrid-cloud offerings for enterprise customers globally. Tech Mahindra has acquired 100% stake in the organization to strengthen cloud-native development, hybrid cloud infrastructure and SRE (Site Reliability Engineering) automation. Vivek Agarwal, President- Corporate Development, BFSI and HLS, Tech Mahindra, said, "The acquisition of DigitalOnUs marks an important milestone in Tech Mahindra's growth journey, and will further enhance our capability in cloud native engineering, and better equip us to develop cutting-edge digital solutions for our customers. scaling up near shore delivery capability, with majority in Mexico and Canada will be

critical to execute digital transformation programs. We welcome the associates of DigitalOnUs into the Tech Mahindra family, and look forward to achieving great success together. We are also looking forward to have Suri play a key role as part of our North America's leadership team to further drive digital transformation journey of our customers." The strategic acquisition will further elevate Tech Mahindra's position as a partner of choice for hybrid-cloud digital transformation, providing end-to-end transformation and new-age capabilities including enterprise DevOps and cloud native development technologies. Additionally, Tech Mahindra will leverage DigitalOnUs expertise to build multi-cloud platforms, modernize IT security and unlock the cloud operating model for enterprises to accelerate their cloud modernization journey. Suri Chawla, Founder and CEO, DigitalOnUs, said, "We are

excited and looking forward to the journey that both DigitalOnUs and Tech Mahindra have embarked upon. The acquisition by Tech Mahindra represents an important step in DigitalOnUs's growth journey as it provides our organization and its people with extensive global reach and customer access to scale and tap into many more significant opportunities. Our team at DigitalOnUs is looking forward to being a part of Tech Mahindra and continuing to offer innovative, agile and industry leading services to our current and future customers." The acquisition underlines Tech Mahindra's focus on digital growth, under the NXT.NOW framework, which is focused on leveraging next generation technologies to deliver disruptive solutions 'today', and further enable digital transformation, meet the evolving and dynamic needs of our customers.

Tech Mahindra Launches ServiceNow Business Unit to Accelerate Digital Transformation for Customers Globally

Tech Mahindra, a leading provider of consulting and business reengineering services and solutions announced the launch of its ServiceNow Business Unit to accelerate digital transformation for customers. The enhanced partnership will allow Tech Mahindra and ServiceNow to collaborate on creating value and building scale for their joint customers through rapid prototyping and development of the next generation low code, no code apps across 5G, IoT (Internet of things), AI/ML (Artificial Intelligence/Machine Learning) and Customer Experience. This alliance will also identify industry specific opportunities and build industry solutions for key verticals like Telecommunication, Media & Entertainment and Energy & Utility, to accelerate cross-industry adoption. Examples of such solutions that are available in the ServiceNow Store are:

• Integrated Platform helps telecommunication providers to transform their customer experience by

integrating legacy systems and leverage artificial intelligence and machine learning, so the customer support cases can be routed to the right agents at the right time.

• Well Plug & Abandonment Management supports energy and utilities customers to simplify the end-of-life process for oil-wells while meeting compliance

goals and keeping projects on schedule.

• Digital MarketPlace enhances customer experience with an OTT (Over the Top) layer which offers marketplaces that enable the customer to fully manage the customer journey: Buy, Use and Care for new Digital Services like 5G.

Charu Kapur, Global Head – Enterprise of Future, Tech Mahindra, said, "We remain

committed to delivering memorable and tailored experiences unique to our customers. People at work demand a more personalized experience, and we will continue to invest and scale our ServiceNow business unit to deliver the innovation productized by ServiceNow into the industries we serve. This business unit will unlock the promise of digital productivity and deliver customer success."

Carrie Francey, Vice President - Global Alliances and Channel Ecosystem,

ServiceNow said, "Tech Mahindra's deep expertise in key industries, coupled with ServiceNow's innovative digital workflow platform, will help companies accelerate their digital transformation to make work, work better for people. We are proud to work side by side with some of the world's leading industry experts at Tech Mahindra to help our customers realize their full business potential." Tech Mahindra has been enabling successful ServiceNow implementations and integrations for over eight years and is an Elite partner in the

ServiceNow Partner Program. This new dedicated business unit will continue to accelerate Tech Mahindra's customer success by unifying capabilities across technologies and industry verticals. Tech Mahindra has been a leader in the telecommunication industry globally with platform solution offerings such as, Blue Marble (Digital BSS), C3P (Network Automation), GAiA (AI/ML) and SNOOPY (Analytics), that provide a competitive edge to deliver growth in a disruptive market.

Tech Mahindra Partners with Ooredoo to Bring Nextgen Digital Technology and Operations

Ooredoo, Oman's leading telecommunications service provider, has entered into a multi-year agreement for IT managed services and security operations with Tech Mahindra, a leading provider of digital, consulting and business re-engineering services to continue and enhance digital transformation in the Sultanate. The partnership will allow the company to enhance its IT Application Development Services and help create global best practices in its digital IT operations covering applications, infrastructure and security services, while enabling it to offer more value and lifestyle services to its customers. "Our agreement with Tech Mahindra forms part of our digital

transformation strategy to make our IT operations truly digital and smarter, reduce time to market and enhance customer experience," said Dr. Ahmed Abdullah Al Abri, Chief Technology and Information Officer at Ooredoo. "Tech Mahindra has a strong local presence and will provide us with end-to-end strength in IT consultancy services". Ram Ramachandran, Senior Vice President & Head of Middle East and Africa at Tech Mahindra, said, "We are looking forward to bringing our global capabilities, expertise, and experience in telecoms, from servicing more than 250 global operators over 30 years, to Ooredoo Oman, and enabling a journey that brings greater efficiency, faster responses to change and

growth. The partnership is a step towards further strengthening our relationship with Ooredoo and a reiteration of our commitment to the Sultanate towards developing local talent." Tech Mahindra is committed to hiring and training local Omanis as part of a multi-year program which will train and empower fresh graduates. As data experience leaders in the Sultanate, Ooredoo's aim has always been to provide its users with cutting-edge technologies that enrich their digital lives. By continuing to invest in the latest infrastructure and with a growing number of partnerships and collaborations, it is placing Oman firmly in the global race when it comes to digital innovation.

Emirates Red Crescent Fortifies Remote Learning and Other Humanitarian Initiatives with Yahsat's Satellite Services

Emirates Red Crescent Authority has signed a Memorandum of Understanding (MoU) with the UAE's primary satellite services operator, Yahsat, at their headquarters in Abu Dhabi. Under the agreement, both organizations will work together to ensure disadvantaged and vulnerable students have access to quality education through the provision of advanced satellite communication solutions. Yahsat's resources will be deployed to support the Authority's remote education programmes and facilitate help for young people, families and schools in countries affected by disasters and crises. The partnership will bolster the quality of education offered to refugees and displaced persons in their host countries. Yahsat and Emirates Red Crescent will provide students access to a range of advanced educational tools that will empower them to fulfil their considerable potential

and lead full, independent lives. The two entities have committed to promoting sustainable development goals and developing the knowledge and skills of learners in underserved communities through the application of artificial intelligence and modern digital technology over satellite in distance education. The MoU was signed by Dr. Muhammad Ateeq Al Falahi, Secretary General of the Emirates Red Crescent and Ali Al Hashemi, Chief Executive Officer Designate of Yahsat. Yahsat will leverage its considerable expertise and resources anywhere within its satellite footprint, to address the gaps, wherever terrestrial telecommunication services are not available. Dr. Muhammad Ateeq Al Falahi stressed that the MoU embodies the vision of H.H. Sheikh Hamdan bin Zayed Al Nahyan, the Ruler's Representative in the Al Dhafra Region and Chairman of Emirates Red Crescent Authority, in forming meaningful and constructive partnerships between Emirati companies and institutions to strengthen

their programmes aimed at resolving humanitarian challenges. Al Falahi said: "The MoU is part of the Authority's initiatives for the 'Year of the 50th', stemming from the two parties' desire to work together in order to extend the reach of distance education in countries facing major challenges due to the prevailing global health crises. The partnership widens the scope for further collaboration between Emirates Red Crescent and Yahsat, signifying a major step forward in cooperation among UAE institutions to fulfil the nation's aspirations on the humanitarian front - through joint projects and integrated programmes. Additionally, it is a major breakthrough in our efforts to create a responsive e-learning platform and thereby a modern technical educational system that meets the needs of students in refugee camps and the most vulnerable community groups. A learning system based on information technology and artificial intelligence, driven by satellite communications contributes to

the continuation of their education despite the challenges." Al Falahi welcomed the Authority's partnership with Yahsat, commending the role it plays in promoting human values and charitable initiatives. He added: "With its noble goals and rich potential, this partnership adds a new dimension and qualitative shift in the programmes and initiatives by Emirates Red Crescent to help students resume their education in isolated areas." Ali Al Hashemi said: "We bridge the connectivity divide in the underserved regions of the world. By connecting isolated communities, Yahsat helps them advance through education, quality healthcare and opportunities for socio-economic development. Our satellite broadband services can be deployed easily, effectively extending the reach of Emirates Red Crescent within our footprint, especially across the Middle East, Africa and Asia. This new partnership is set to redefine the possibilities of satellite connectivity and how help reaches the forgotten corners of the world."

Zain Bahrain Announces Fiber Speed Upgradation

Zain Bahrain, a leading telecom services operator in the kingdom, has announced that it has successfully upgraded its fiber speed to further accelerate and strengthen high-speed connectivity across the country. It has also enhanced its fiber packages which will provide existing and new customers with the opportunity to experience up to six times faster speeds along with unlimited data. The move is part of Zain Bahrain's continuous commitment to enhance people's digital lives in the Kingdom and provide its customers with more choices than before. From endless hours of streaming to faster upload and download speeds for remote working, learning and gaming, Zain Bahrain's speed upgrade and fiber packages cater to the needs and increased connectivity demands of customers due to the current pandemic. It also showcases the company's efforts to bring Bahrain's vision 2030 to life by empowering its customers and keeping them connected wherever they are in

the Kingdom. Zain Bahrain's new fiber packages provide its customers with affordable options that suit their needs, starting from BD15.75 monthly with a download speed of up to 1Gbps and upload speed of 100Mbps. While Zain Bahrain's new customers can avail the attractive packages with unlimited data and up to six times even faster speed option, the existing fiber customers will benefit from this as well. Existing customers will be notified by the customer service team regarding the upgrade and the planned speed date change. Commenting on the speed upgrade, Ammar Al Ketbi, Director, Consumer Marketing & Sales at Zain Bahrain said: "We are dedicated to delivering ultra-fast and reliable connectivity to our customers and are determined to provide them connectivity with increasingly faster speeds by constantly upgrading our infrastructure and enhancing our offerings." "The demand for faster speeds increased during the pandemic and there

was a surge in the internet data traffic. We are pleased to have quickly addressed our customers' demands and are excited to continue delivering high-quality network connections to homes and businesses across the kingdom," noted Al Ketbi. "With our speed upgrade and lucrative packages, we can't wait for more customers to experience the benefits Zain Bahrain's fiber packages has to offer in order to enhance their digital lives," he added. According to him, Zain Bahrain's monthly fiber packages are pocket-friendly and suit customers' connectivity needs to include gaming, virtual studying, working remotely, and video calling or searching for entertainment options. The company continues to be a leader in providing innovative and unique products & services in a fast-paced digitally transforming world and ensures that the citizens of Bahrain enjoy seamless connectivity and communication throughout the year, he added.

You grow your business, while
Omantel ICT handles your IT challenges.

Omantel's dedicated ICT Enterprise Unit offers customized solutions from cloud and IT operations to IoT, helping businesses run more efficiently, more competitively and more securely.

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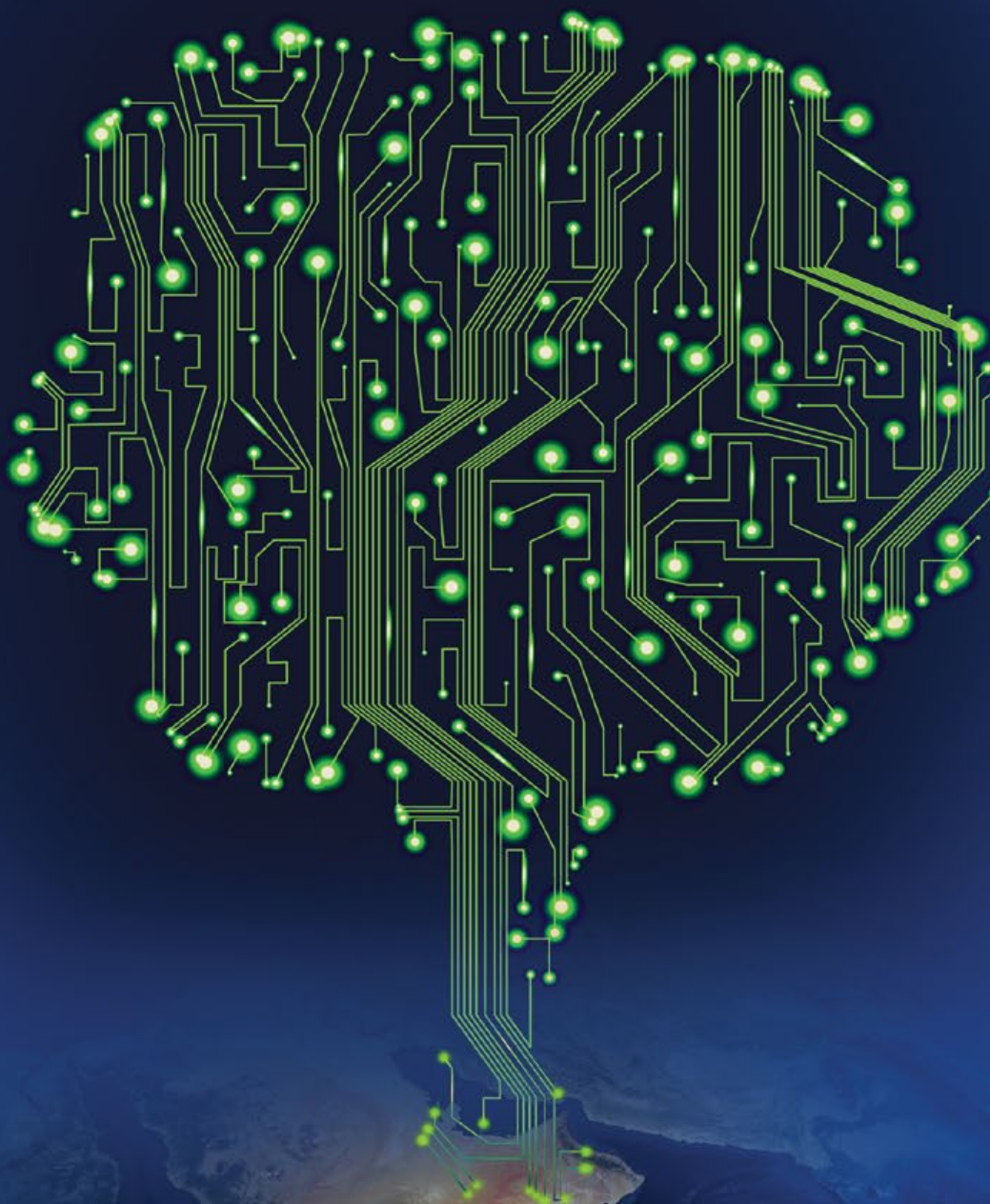
Omantel Goals in Sync with ITU's

As ITU marks the 'World Telecommunication and Information Society Day on May 17, Omantel reflects on the 2021 theme and how it is supporting the big digital transformation

Over the last two decades, digital transformation has been expanding gradually to become the mainstay of evolving economies embracing the power of connectivity and its future-centric solutions.. This vital transformation was slowly but steadily redesigning and restructuring how cities, offices, businesses, hospitals, schools, and people function. The digital change was blossoming around in measured, calculated steps, surprising us all as it grew around us, with its efficacy and efficiency, focusing on enhanced customer experience, virtualization, cost optimisation, besides better citizen engagement, services and productivity.

Then, the COVID-19 pandemic hit, suddenly disrupting the pace, but at the same time, demanding it to be quick. The year is 2021 when the world is still grappling with the global pandemic, but better equipped digitally to enable smooth functioning of economies, despite hurdles the virus may create. Oman, too like leading countries, has learned and evolved a lot since early 2020 and accelerated its pace to stay ahead of the digitization curve, enabled by Omantel. 2021 Omantel will proudly join 900-plus members in celebrating the International Telecommunication Union's 'World Telecommunication and Information Society Day (WTISD)', observed annually every May 17 since 1969 to mark the Union's founding and the signing of the first International Telegraph Convention in 1865.

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The past year set the tone for deciding the 2021 WTISD theme – "Accelerating Digital Transformation in Challenging Times" as the COVID-19 crisis has highlighted the critical role of information and communication technologies (ICTs) for the continued functioning of societies.

Omantel has been an active member of the ITU, exchanging and sharing industry best practices as well as experiences with global powerhouses in the field of telecommunications to build on its presence, service delivery and solutions suites. Like all reputed ITU members, it has shaped the future of ICT using frontier technologies like Big Data, 5G, Internet of Things, Artificial Intelligence, multimedia, smart cities, and much more.

Omantel, has remained a strong ally in Oman's war against the pandemic on all fronts, opening wide, doors of possibilities through its ICT offerings to all sectors of the economy, from education and healthcare to large enterprises and SMEs. It has ensured business continuity, thus helping the economy brace against the effects of the pandemic. The 2021 WTISD and its theme resonate deeply with Omantel as the Company has demonstrated resilience, technical capability, business acumen and its humane side in the face of challenging times.
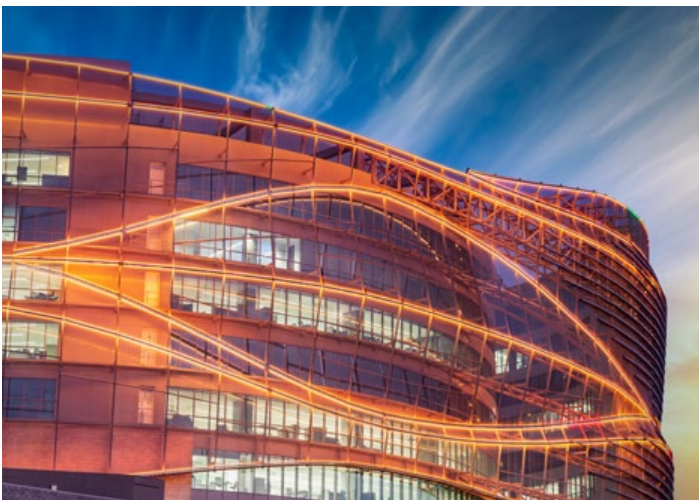
Be it customer service, infrastructure expansion or nation-building activity, Omantel has been pushing the boundaries of innovation through ICT-led initiatives that create a fertile ground for the socio-economic ecosystem to flourish.

For a moment, let us disconnect digital transformation from the demands of the pandemic and understand its core purpose. The ITU states that digital transformation is a means to deliver an efficient, accountable, transparent, and auditable way to the benefit of all. It implies applying and/or updating the technology we use and creating a culture that embraces new digital technologies that improve the efficiency and effectiveness of people in their daily life and business. As a leading ITU member, Omantel has exemplified these through its offerings in ordinary and challenging times as it has been a proactive party to the Union's shared global vision where telecommunications/ICTs enable and accelerate social, economical and environmentally sustainable growth and development for everyone.

Be it customer service, infrastructure expansion or nation-building activity, Omantel has been pushing the boundaries of innovation through ICT-led initiatives that create a fertile ground for the socio-economic ecosystem to flourish. These initiatives are shaping Oman's future on the anvil of ICT technology, knowledge, and innovation.

Speaking on the WTISD and its 2021 theme, Talal Said Al Mamari, Chief Executive of Omantel said, Omantel's actions are not just linked to Oman's overall growth, and the ITU global vision and working towards objectives of the UN Decade of Action to achieve the United Nations' 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). Omantel shares common strategy with ITU members, which is the Connect 2030 Agenda for Global Telecommunication/

ICT Development. The ITU WTISD thus is not just a day to be observed. Still, a larger goal to which several goals and targets are interlinked, isthe basis of the telecom provider's overall socio-economic and environmental responsibility.

The five goals are Growth, Inclusiveness, Sustainability, Innovation and Partnership. The targets therein particularly contribute to digital transformation in the framework of the Connect 2030 Agenda.

Omantel, when it first charted its ICT policy, laid its core foundations on these important goals and the targets of focus. These are reflected in every strategic and innovation step Omantel takes towards digital transformation, powered by the government's dedication to deliver services and solutions in a coordinated, efficient and equitable manner. Omantel has, as the ITU professes, continued to leverage telecommunications/ICTs by developing digital policies and strategies to adapt and respond timely and effectively to different challenges that may occur.

Target 1.4 (Growth): By 2023, all countries adopt a digital agenda/strategy
Omantel's success: Oman has a robust digital policy in place with relevant legislation. Omantel's strategic manoeuvres in terms of technology and infrastructure through the years have brought the country's digitisation drive this far in terms of connectivity and internet access.

Target 1.7 (Growth): By 2023, 40% of the population should be interacting with government services online
Omantel's success: When Oman launched the e-Government initiative two decades back, it banked on the power of Omantel, the Sultanate's first and leading integrated services provider. Today, the most significant proportion of the Sultanate's government services have gone digital. With the COVID-19 pandemic, the reach has been more comprehensive.

TARGET 3.1 (Sustainability): By 2023, improve cybersecurity preparedness of countries, with key capabilities: presence of strategy, national computer incident/emergency response teams and legislation
Omantel's success: Relying on its well-established ecosystem, ICT solutions, high ability to manage its digital services and monitor data centres as well as its regional and global partnerships with top companies in cybersecurity, Omantel has boosted cybersecurity and lowered potential attacks. Furthermore, Omantel has launched a round-the-clock cyber defence centre that uses AI to respond to security incidents. These efforts and more have been recognised by the GSMA, which called Omantel a case study on combatting cybersecurity and electronic piracy.

Target 3.5 (Sustainability): By 2023, all countries should have a National Emergency Telecommunication Plan as part of their national and local disaster risk

reduction strategies

Omantel's success: Oman has faced several emergencies resulting mainly from cyclones, which had the risk of throwing communication out of gear. Omantel's national emergency telecommunication preparedness action plan has ensured uninterrupted services even in the toughest of situations in the past, and currently in the face of the pandemic.

Target 4.1 (Innovation): By 2023, all countries should have policies/strategies fostering telecommunication/ICT-centric innovation

Omantel's success: Fostering a culture of innovation is embedded in every policy, strategy, or service Omantel rolls out. Omantel is playing a silent part in creating an entire generation of innovative minds, which will be the flag bearers to the generations that follow. Omantel has, since its inception, collaborating with the best in the industry for its growth and also with inspirers in academia, youth, business and governance to offer tech-based support as well as funding that will result in a digitally-driven and knowledge-based society that optimally harnesses the power of ICT and creates opportunities for accelerated growth. It has been empowering students, corporates, SMEs by sharing its skill and resources. Enabling efficient infrastructure

and network evolution, it created a multidimensional digital ecosystem and is a partner of choice for businesses and international carriers.

Its revolutionary pilot projects showcasing the versatility of 5G are delivering excellent results in several sectors. It has stepped up to fill the gaps in learning, healthcare, customer satisfaction, COVID-19 protocols with AI and the Internet of Things "IoT". With the power of 5G in its hands, it is ready to implement frontier technologies to make processes simpler life easier.

Target 5.1 (Partnership): By 2023, increased effective partnerships with stakeholders and cooperation with other organization and entities in the telecommunication/ICT environment

Omantel's success: The need for partnerships among different stakeholders has been recognized in Millennium Development Goals and Sustainable Development Goals (SDGs). Omantel has been enhancing cooperation between governments, business communities, UN bodies, civil society and other stakeholders in these challenging times.

Omantel's stakeholders include customers, industry peers, regulators, and employees, and the community. By understanding

their needs, Omantel creates value-based solutions. To meet the Government of Oman's goals, Omantel offers network coverage and quality, digital inclusion, new products and services, ICT infrastructure investment, privacy, data security, governance, and regulatory compliance solutions. Its role has expanded multi-fold in the wake of the pandemic, with demand for new services, which have been successfully met. , Omantel brings competitive pricing, new products and services, market leadership, and operational excellence to shareholders. Omantel's most important stakeholders, its customers, benefit from the company's excellent service, unmatched coverage, pocket-friendly bundles, privacy and much more. Its telecom affiliates benefit from great supply chain management and prudent ICT infrastructure investment. The Company's employees are at the core of its operations, driving its success. Omantel gives back to them through training, health and safety measures, and engagement activities, thus encouraging a learning, development and growth culture. Omantel invests in community initiatives in ways that promote growth and foster a digital culture.

Overall, Omantel's goals are in sync with those of ITU as it works tirelessly and efficiently in reinforcing the capabilities of digital strategies and other technology-driven initiatives. It has been capitalizing on every opportunity the Fourth Industrial Revolution offers and facing every challenge while ensuring a smooth digital transformation with minimal disruption. As an enabler, Oman has the means to achieve Oman's digital aspirations with key elements like skill, infrastructure, and market leadership to aid this task. Thus, with pride, Omantel wears the title of an innovative enabler, a strategic leader in ICT.

REGIONAL NEWS

UAE Tops in Digital Transformation in GCC

Results of the new GCC E-Performance Index 2021 revealed that the six Gulf countries are progressing steadily in their digital transformation with UAE topping the list. The 2021 report was published by Orient Planet Research (OPR), the market research unit of Orient Planet Group (OPG), in partnership with information and communications technology (ICT) expert and independent researcher Abdul Kader Al Kamli. The index showed that the UAE obtained high scores on all its indicators to reach an average score of 67.83. Saudi Arabia came in next with an average rating of 59.01, followed by Qatar (58.50); Bahrain (57.65), Kuwait (55.10) and Oman (55). Nidal Abou Zaki, Managing Director, OPG, said: "The GCC E-Performance Index 2021 reflects the member states' steady efforts to achieve global leadership and competitiveness in today's digital era. Each country is advancing at its own pace, utilizing a coordinated approach to digital innovations in line with its economic and social development agendas. "Heavy investments in technological infrastructures and next-generation tools such as artificial intelligence (AI), the Internet of Things (IoT) and robotics are also being made across the region to help accelerate the countries' respective economic diversification policies. Such investments are crucial to significantly reinforce their non-oil sectors and fast-track their sustainable development goals." Abou Zaki added: "We can gain valuable insights from the GCC E-Performance Index 2021 concerning each country's commitment to transition to the digital era, its progress and the opportunities arising from its digitalization journey. The insights will help decision-makers, policymakers, government leaders and business executives to make the necessary actions to step up their digital transition according to their growth strategies. Their approaches should be designed in a way that will make them even more competitive in today's highly connected and technology-driven society." Al Kamli, on the other hand, stated: "As shown by the GCC E-Performance Index, the UAE continues to perform strongly across all indicators. This comes as no surprise given its intensified digitalization initiatives that are comparable with the rest of the world. We can expect to see more from the UAE in terms of its digital innovation efforts to sustain its gains and cement its global standing. But other GCC member states are also expected to up their game to future-proof themselves and better prepare for the changes that will come with the unstoppable 4th Industrial Revolution. Overall, in the Arab world, the GCC will remain at the forefront of the region's digital journey." The report pointed out the link between better scores and countries with advanced telecommunication infrastructure. Across the GCC, telecommunication-related investments are rising with further growth projections on the Gulf states' information and communications technology (ICT) spending. In the UAE, the government's ICT expenditure is forecasted to witness a compound annual growth rate (CAGR) of 8 per cent during 2019-2024 as per the findings of GlobalData. During 2019-2024, the

same data and analytics company also predicted an increase in the ICT spending of Qatar at 9.2 per cent CAGR; Bahrain, 8.6 per cent CAGR; and Oman, 11.3 per cent CAGR. The scene is no different in their neighboring Saudi Arabia, where the overall ICT spending this 2021 is projected to reach USD 32.9 billion, up 1.5 per cent in 2020, according to an International Data Corporation (IDC) study. To check the region's digital progress, the GCC E-Performance Index measured the GCC member states' competitiveness, network and AI readiness, innovation and e-government development. Its findings were based on the five most important global indexes: the Global Competitiveness Index (GCI) 2019; the Network Readiness Index (NRI) 2020; the Government AI Readiness Index (GAR) 2020; the Global Innovation Index (GII) 2020; and the UN E-Government Development Index (EGDI) 2020. The five served as the report's main indicators. The World Economic Forum's GCI is defined as the yearly assessment of the drivers of productivity and long-term economic growth. Portulans Institute's NRI positions 134 economies accordingly based on their performance across 60 variables, while GAR of the International Development Research Centre (IDRC) and the Centre de recherches pour le développement international (CRDI) studies the ability of each country to integrate AI into public service. GII presents data on innovation and is co-published by Cornell University, INSEAD and the World Intellectual Property Organization (WIPO). Lastly, EGDI, as per the UN, explores how digital government can facilitate integrated policies and services across the 193 UN member states. To compute the average of each GCC country per indicator, the research team behind the GCC

E-Performance Index adjusted all scores to follow a unified scale of 0 to 100, allowing for ease of comparison. This methodology was adopted given that not all indicators utilize the same scale. The countries were then sorted according to the calculated average, beginning with the highest value. The report presented both the regional and global rankings of each member state per indicator. Regionally, the UAE scored 85.55 on the GCC E-Performance Index's EGDI indicator and 75 on the GCI indicator. Its scores under NRI, GAR, GII were 64.42, 72.40 and 41.79, respectively. Saudi Arabia's average ratings were 70 (GCI); 57.97 (NRI); 56.23 (GAR); 30.94 (GII); and 79.91 (EGDI). Qatar's scores were 72.90 (GCI); 60.26 (NRI); 56.78 (GAR); 30.81 (GII); and 71.73 (EGDI). For Bahrain, it scored 65.40 (GCI); 57.59 (NRI); 54.75 (GAR); 28.37 (GII); and 82.13 (EGDI). Kuwait's ratings were as follows: 65.10 (GCI); 52.27 (NRI); 50.61 (GAR); 28.40 (GII); and 79.13 (EGDI). Finally, Oman's scores were 63.60 (GCI); 55.33 (NRI); 52.10 (GAR); 26.50 (GII); and 77.49 (EGDI).

Saudi Arabia Among Top 10 For Mobile Internet Speeds

Saudi Arabia has been ranked among the top 10 countries in the world in terms of the Internet speed on mobile networks and second among G20 countries in providing frequency spectrum to offer mobile telecommunication services. The Communications and Information Technology Commission recently launched an initiative to reallocate the frequency spectrum, which is one of the limited natural resources owned by the Kingdom of Saudi Arabia and is used in industries of modern radio technologies, mainly in radio communications, in addition to surveillance, control, sensors and radio systems, among others, reported Saudi Press Agency (SPA). To achieve this goal, the Commission coordinated with public and private authorities, with the support of the National Transformation Program, to provide more than 800 megahertz of frequency spectrum of outdated usages and reallocate them to be available for commercial use by mobile communication service providers to increase capacities of radio networks and improve the quality of services. The Commission, during the period between 2017 and 2019, held four public auctions for frequency spectrum, that resulted in increasing the frequencies allocated for mobile communication networks from 260 megahertz to 1,110 megahertz, which resulted in increasing the average of Internet download speed over mobile networks to more than tenfold (from 7 megabits per second in mid-2017 to more than 97 megabits per second by the end of 2020), where Saudi Arabia has become among the top 10 countries in terms of Internet speed on mobile networks and second among G20 countries in terms of providing frequency spectrum to offer mobile communication services. Reallocating frequency spectrum for mobile services in Saudi Arabia has contributed to stimulating investments in the radio infrastructure by up to SR40 billion ($10.6 billion) over the past three years. Due to the importance of this limited resource and efforts to increase its national utilization, Saudi Arabia is planning to publish a roadmap for an innovative and commercial use of the frequency spectrum (2021-2023). This roadmap includes providing more than 22 gigahertz for innovative and smart radio usages for the frequency spectrum with the aim of supporting the adoption of 5G technologies of mobile communication and 6G of Wi-Fi, high-speed wireless networks, broadband satellite systems, the Internet of Things and the artificial intelligence and what it offers of smart services and options that can be utilized in applications for houses, smart gauges, connected vehicles and fleet management (vehicles and robots) among other applications. It also aims to provide multiple frequency ranges for the purpose of experimenting and developing emerging and advanced radio systems and technologies, such as high-altitude platforms and smart wireless transport systems, as well as providing sufficient frequency ranges to enhance the digital radio transmission in Saudi Arabia. This roadmap includes providing more than 22 gigahertz for innovative and smart radio usages for the frequency spectrum with the aim of supporting the adoption of 5G technologies of mobile communication and 6G of wi-fi, high-speed wireless networks, broadband satellite systems, the Internet of Things and the artificial intelligence and what it offers of smart services and options that can be utilized in applications for houses, smart gauges, connected vehicles and fleet management (vehicles and robots) among other applications.

Helios Towers to Acquire 2,890 Cell Sites from Omantel for USD575m

Helios Towers has agreed to acquire Omantel's passive tower infrastructure portfolio of 2,890 sites, for a cash consideration of USD575 million. This represents an enterprise value of USD615 million including the group's estimate of transaction costs and capitalized ground leases of USD40 million. The assets are expected to deliver revenues of USD59 million and Adjusted EBITDA of USD40 million in the first full year of operations

with further growth anticipated through the rollout of 300 build-to-suit (BTS) sites, which will be deployed over the next seven years, with anticipated investment of USD35 million. It is anticipated that the transaction will close before the end of 2021, subject to approval by Helios Towers' shareholders and customary completion conditions, including approval from the Telecoms Regulatory Authority of Oman. Helios Towers notes that it has already

received irrevocable undertakings to vote in favor of the acquisition from shareholders representing over 50% of its issued share capital at the time of announcement. As a result of the transaction, Helios Towers – which currently operates in a number of African markets – will establish its presence in the Middle East region for the first time.

TDRA Celebrates World Telecommunication & Information Society Day

The Telecommunications and Digital Government Regulatory Authority (TDRA) celebrated the World Telecommunication and Information Society Day (WTISD), this year under the theme "Accelerating digital transformation in challenging times", with a virtual conference featuring a selection of leading entities and global experts, who discussed the acceleration of digital transformation, the role of the ICT infrastructure and preparations to overcome the crisis. In a welcome speech, Saif Bin Ghalaita, Executive Director of Technology Development Affairs Department at TDRA, said, "I am pleased to join you in celebrating WTISD, an event that comes at a turning point in history. The pandemic has come while the world moves actively towards implementing the United Nations Development Goals, confirming to us the urgent need to promote the principles of sustainability and address the digital divide, as it has a role to play in saving the lives of millions of people and ensuring the continuity of life under all circumstances and during emergencies." Bin Ghalaita emphasized that the ITU has been, to this day, at the forefront of humanity's achievement of these noble goals. "Today, despite the difficult times the world has been going through recently, we are closer to achieving the goals we seek. The role of artificial intelligence-assisted Information and Communications Technology (ICT) has been established through real-life experiences, and it has been proven to the world that such technologies can be

used to change many of the usual ways of work, education and socializing without compromising basic human needs. We in the UAE are proud of our experience in this context, thanks to the robust infrastructure of the telecommunications sector, the early attention of our wise leadership to digital transformation at all levels, and the climate of cooperation and partnership between various sectors," he added. The conference included a message by Houlin Zhao, Secretary-General of the ITU, in which he spoke about the importance and symbolism of the WTISD, and touched upon the major role of the telecommunications sector in overcoming the global crisis that afflicted the world last year. During the conference, the Ministry of Finance, Ministry of Energy and Infrastructure, Majid

Al Futtaim Group and Careem touched on the crucial role digital transformation plays in difficult times, such as those witnessed and still witnessed by the world to this day, where digital transformation has contributed to maintaining the most vital processes while mitigating human, financial and economic losses. Several leading ICT sector companies featured in the event i.e. Etisalat, Du, Huawei, Ericsson and Deloitte, also discussed the role of the ICT infrastructure in overcoming crises hitting different parts of the world, citing what came to pass last year, as the evolved ICT infrastructure helped in finding quick and practical alternatives to maintain the normalcy of life, with this infrastructure also playing a significant role in the recovery process.

Subscriber Gains and 'Healthy ARPU Trends' Help Boost Telecom Egypt Revenues

Telecom Egypt has reported a consolidated revenue of EGP8.399 billion (USD535 billion) for the quarter ended 31 March 2021, representing a 20% year-on-year increase, with the company saying growth had been driven by 'increased subscriptions and healthy ARPU trends, followed by higher infrastructure and voice revenues. Of its total turnover, Telecom Egypt reported that its 'Home and Consumer' division generated the largest portion, EGP4.191 billion, up from EGP3.131 billion in 1Q20, while its 'Enterprise' unit saw the largest percentage increase in revenue terms, generating EGP1.129 billion, up from EGP786 million in 1Q20. Meanwhile, Telecom Egypt recorded a 42% y-o-y increase in EBITDA, which increased to

EGP3.235 billion in 1Q21, while operating income rose by 86% to EGP3.078 billion. Net profit after tax (NPAT) also saw a notable annualized improvement, rising to EGP2.124 billion in 1Q21, from EGP1.312 billion in the corresponding quarter of 2020, with the company attributing this to its strong operational performance and the doubling of investment income from Vodafone Egypt. In operational terms, Telecom Egypt ended March 2021 with a total of 7.257 million fixed broadband accesses on its books, representing a 22% y-o-y increase, while fixed voice lines rose by 7% to 10.045 million. The company also reported sizeable gain in the mobile sector, reporting a total of 8.516 million mobile subscribers as of 31 March 2021,

up 38% against the 6.181 million it had a year earlier. Commenting, Adel Hamed, Telecom Egypt's Managing Director and Chief Executive Officer, said: 'I am very pleased with this quarter's results as they reflect Telecom Egypt's ability to preserve its growth momentum witnessed during 2020 and report strong financial and operational results ... The main growth driver continues to be data, both fixed and mobile, and we have witnessed growth in customer numbers and spending, which we continue to push by not only investing in our network, but also enhancing customer experience to solidify our leading position in the market.'

UAE to Get 3 Amazon Web Services Data Centers in 2022

Amazon.com Inc (AMZN.O) said that its cloud service unit will launch three data centers in the first half of 2022 in the United Arab Emirates, its second Middle East infrastructure region. Amazon Web Services (AWS) opened its first Middle East data centers in neighboring Bahrain in 2019. The Abu Dhabi Investment Office (ADIO) said the deal was part of its efforts to attract investments

that build technology capabilities and accelerate innovation. "We are excited to build on the great momentum of cloud adoption in the Middle East by providing more choice for customers in the UAE to run applications and store data locally," said Peter DeSantis, AWS Senior Vice President of Global Infrastructure.

Pakistan's National Incubation Center, 'IGNITE' Recognized by the UN

International Telecommunication Union, a United Nations agency for digital tech, has announced Pakistan's National Incubation Centers 'Ignite' as one of the champions of projects of its environment category at World Summit on the Information Society Prizes 2021. The news was announced by the Permanent Mission of Pakistan to UN, Geneva, on its official Twitter handling stating that the Pakistani government's

enabling policies for the development of Information and Communication Technology (ICT) have been recognized globally. "As a global recognition of @GovtofPakistan's enabling policies for ICT development, today @ITU announced Pakistan's National Incubation Centers of @IgniteNTF @MoitOfficial as one of the champion projects of C6 Category (enabling environment) at @WSISprocess Prizes

2021," it tweeted. "Around 1300 projects were submitted by Govts and private sector for @WSISprocess Prizes 2021. 1.3 million stakeholders participated in the voting process," it added. The achievement of @IgniteNTF is manifestation of a robust ICT innovation value chain & industry in Pakistan, also holds promise for an inclusive and sustainable development in the country, the mission added.

New Cisco Research Reveals Collaboration, Cloud, and Security are its Top Challenges in the UAE

According to Cisco's new Accelerating Digital Agility Research, CIOs and IT decision makers (ITDMs) across the UAE are looking to maximize investments in digitization and drive innovation after a difficult year which raised the profile of IT leaders in driving critical workplace innovation. Over the past twelve months, CIOs and ITDMs from across the globe have been challenged to accelerate their digital and cloud capabilities while protecting their organizations from a growing list of expanding security threats. In their efforts to create smart workplaces, IT leaders in the UAE must look to maximize critical investments made in 2020. To set up their organizations for success in 2021 and beyond, IT leaders have adapted priorities and strategy to focus on core issues including delivering secure collaboration tools to keep distributed workforces productive, maximizing technology investments from the past year, delivering the best digital experience to employees and customers, embracing cloud and "as a Service," and tackling corporate and societal issues with technology. "IT leaders are at the forefront of ensuring critical success for their organizations in 2021," said Shukri Eid, Managing Director, Cisco Gulf Region. "Even as questions remain and new challenges will surface, CIOs and IT decision makers in the UAE are telling us they need to accelerate digital agility for their teams, so they have the speed, flexibility and choice to consume services across both traditional and modern environments."

Key findings:

To prepare for the future of work, teams need highly secure access and the best collaboration experiences to succeed as a hybrid workforce. While a majority (60%) of CIOs and ITDMs are unsure of what the future of work looks like, 86% believe that maintaining security, control, and governance across user devices, networks, clouds, and applications is essential. Most (87%) agree it is important to empower a distributed workforce with seamless access to applications and high-quality collaborative experiences. Securing the expanded threat landscape created by a distributed workforce is paramount – 86% believe it is important to secure

Accelerating Digital Agility

Global CIO and IT decision maker technology insights for a cloud-first world

A Cisco Digital Report

remote work tools and protect customer or employee data in the distributed work environment. IT teams must create optimized end-user experiences to keep pace with IT environments that have become increasingly distributed, dynamic, and complex. Close to two thirds of the CIOs and ITDMs surveyed agree that user experience should focus on delight versus satisfaction. To deliver a great user experience, 86% think it is important to ensure a consistent application performance across both the application and infrastructure, and 86% believe it is important to make infrastructure as dynamic as application software to meet the changing policy and optimization needs of the application and developer. While the user experience should aim to delight, the majority of respondents (85%) say it is important or very important to maintain application-to-infrastructure security to meet compliance without slowing down the business. The need for agility, speed, scalability and security is driving adoption of hybrid cloud environments and SASE (Secure Access Service Edge) solutions. CIOs and ITDMs are using cloud to achieve business resilience. However, there is no one-size-fits-all cloud solution. While most CIOs and ITDMs (83%) agree it is important to offer freedom of choice when it comes to cloud environments – whether on premises, public cloud, private cloud or SaaS – 87% think offering a consistent operational model across these environments is essential. CIOs and ITDMs have adopted SASE solutions because they were investing in cloud applications that needed to be secured (63%), they like to stay up-to-date on industry best practices (57%) and/or their workforce is going to stay distributed (47%). Customers expect a cloud-consumption experience regardless of whether their solutions are deployed on-prem or in the cloud, leading to widespread adoption of "as a Service" solutions. Of those surveyed, 77% have adopted "as a Service" solutions and 81% use flexible consumption models. Three fourths of those surveyed believe that "as a Service" will help deliver a better experience for the end user and a better experience for IT teams, helping their organizations achieve operational consistency. In addition, 72% say "as a Service" will provide better business outcomes, and 78% want "as a Service" solutions to simplify processes and remove risk. Technology will be a driving factor in the facilitation of CIOs and ITDMs to tackle talent retention, internal corporate initiatives and broader societal issues in 2021. Most CIOs and ITDMs (89%) believe the ability to attract and retain talent in the all-digital world will be critical. Nearly half of those surveyed said they are upskilling current talent (40%) and investing in talent in new areas (42%) over the next 12 months. Most CIOs and ITDMs (93%) plan to tackle internal initiatives in 2021, including sustainability (50%), employee mental health (46%), privacy (53%), diversity and inclusion (49%). In addition, 91% will tackle external societal issues in 2021, including digital divide (38%), healthcare (42%), climate change (32%), social justice (37%), human rights (35%), misinformation or "fake news" (30%), poverty, hunger and homelessness (30%).
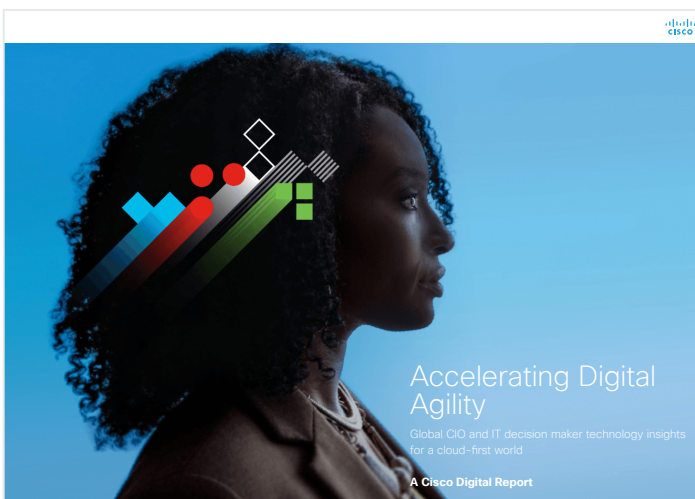
CITC Unveils Gaming Performance by Saudi Arabia's Telecom Service Providers in Q1

The Communications and Information Technology Commission (CITC) published its 'Game Mode' report for the first quarter of 2021, ranking Saudi Arabia's telecom service providers based on their video game performance. This quarter's Game Mode report reveals that Zain, a local telecom operator, has the best video game quarterly performance. Zain outperformed Mobily, Saudi Telecom Company (STC), and Integrated Telcom (ITC) with lower latency in four of the five most popular games in Saudi Arabia: Fortnite, FIFA 21, Apex Legends, and Dota 2. The report is part of CITC's recent framework to promote healthy competition among telecom operators to provide the best experience for gamers, raise the level of transparency in the market, and provide investors and the public with key data and indicators on the sector's performance. In the popular game Fortnite, Zain scored an average response time of 18 milliseconds. This compared favorably with STC at 20 milliseconds, Mobily at 22 milliseconds, and ITC at 24 milliseconds, for a total national average of 33 milliseconds. Soccer video game FIFA was also tested by Game Mode, with Zain ending in first place among operators with an average response time of 13 milliseconds, followed by STC at 20 milliseconds and Mobily at 23 milliseconds. Zain also outperformed other service providers in the average response time for the games Apex Legends shooter battle royale game and Dota 2, after recording average response times of 13 milliseconds and 20 milliseconds respectively. As for online battle arena game League of Legends, similar to the previous quarter, performance remained relatively low across the spectrum of operators, with Mobily and Zain topping the list with an average response time of 81 milliseconds, followed by STC at 86 milliseconds, and Integrated Telecom at 89 milliseconds. The Q1 2021 Game Mode report also unveils valuable insights on the overall latency performance of telecom companies within fixed, mobile, and 5G networks. ITC led the fastest fixed networks average latency category with 10 milliseconds, Mobily led the mobile networks average latency category with 32 milliseconds and Zain led the fastest 5G average network latency category with 23 milliseconds. CITC's Game Mode initiative includes quarterly reports that compare response times among service providers across some of the most popular video games in the Kingdom. In addition, the initiative includes an award for the internet service provider with the best response time for video gaming, a key indicator of the network's performance.

Pakistan Earns $1298m From Export of IT Services

Pakistan earned $1298.080 million by providing different information technology (IT) services in various countries during the eight months of financial year 2020-21. This shows growth of 41.43 percent as compared to $917.840 million earned through provision of services during the corresponding period of fiscal year 2019-20, Pakistan Bureau of Statistics (PBS) reported. During the period under review, the computer services grew by 44.53 percent as it surged from $708.100 million last year to $1023.410 million during July-February (2020-21). Among the computer services, the exports of software consultancy services witnessed increase of 25.07 percent, from $272.922 million to $341.352 million while the export and import of computer software related services also rose by 17.69 percent, from $212.254 million to $249.803 million. The exports of hardware consultancy services dropped by 78.82 percent from, $1.794 million to $0.380 million whereas the exports of repair and maintenance services also decline by 70.31 percent from $1.270 million to $0.377 million. In addition, the exports of other computer services rose by 96.26 percent from $219.860 million to $431.498 million. Meanwhile, the export of information services during the period under review also increased by 72.22 percent by going up from $ 1.440 million to $2.480 million. Among the information services, the exports of news agency services increased by 81.03 percent, from $0.780 million to $1.412 million whereas the exports of other information services also increased by 61.82 percent, from $0.660 million to $1.068 million. The export of telecommunication services also witnessed an increase of 30.67 percent as these went up from $208.300 million to $272.190 million during the financial year under review, the data revealed.

UAE Ranks First in The World for Mobile Network Speeds

The UAE leads a global mobile index as the country with the fastest mobile network speed in the first quarter of 2021, according to the latest data from Ookla, a global leader in fixed broadband and mobile network testing applications, data and analysis. This significant achievement adds one more feather to the UAE's cap, and comes at an opportune time with the recent declaration of 2021 as "Year of the 50th" as the nation celebrates its milestone Golden Jubilee. With a download speed of 178.52 Mbps in March, the country overtook South Korea and Qatar in the mobile broad speedtest. The UAE also overtook both countries in January and February, with download speeds of 183.03 Mbps and 177.10 Mbps, respectively. The Speed Test Global index, which assesses over 135 countries, compares internet speed data from around the world

on a monthly basis. Data for the index comes from the hundreds of millions of tests taken by real people using the speed test every month. Mobile network speed is a major contributing factor to the well-being, economic wealth and social prosperity of a nation. This achievement has a lot of favorable implications for a enabling environment for future aspirations, country's ICT agenda, productivity of businesses, amongst others. Etisalat is proud to contribute to the UAE ranking first in terms of mobile network speed. This is yet another milestone achievement for the UAE, the Telecommunications and Digital Government Regulatory Authority as well as Etisalat's testament to its relentless efforts towards its strategy and vision to 'Drive the digital future to empower societies'. As the country's leading mobile operator and
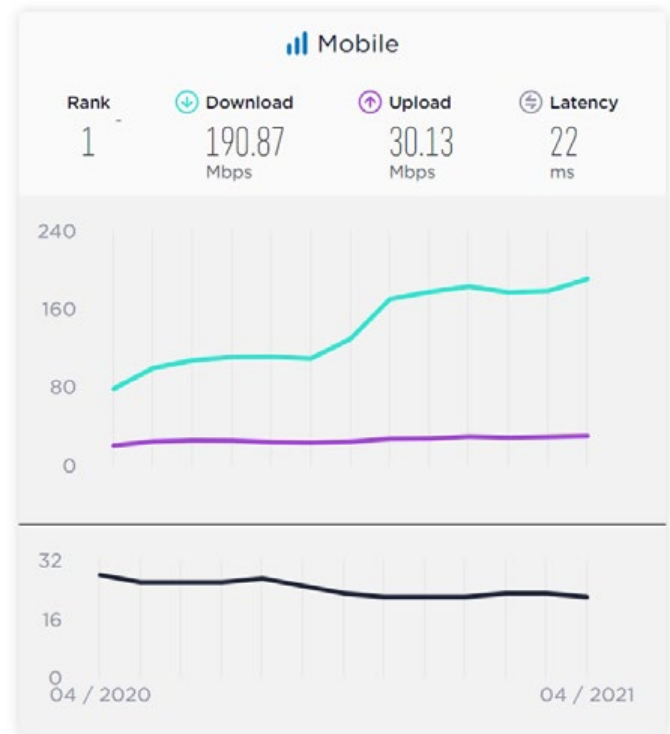
world's fastest mobile network, Etisalat is uplifting the national performance, enabling the ICT aspirations of the country's leadership.

Morocco Ranks 45th Globally for Cheapest Mobile Internet

Morocco's mobile internet is one of the cheapest in Africa, and in general, in the cheapest half of the global ranking. According to Cable.co.uk, Morocco ranks 45th globally while on the African continent, Morocco takes 10th place, if we exclude the French overseas departments, Reunion and Mayotte. Going by the formal ranking, globally, Morocco is 45th out of 230 countries assessed, with a cost for a gigabyte of mobile data averaging at $0.88 (MAD 7.96). Algeria is the best performing North African country when it comes to cheap mobile data. Morocco's neighbor enjoys the second cheapest mobile internet on the continent, and 16th cheapest globally, with one gigabyte averaging at $0.51 (MAD 4.55). As for other North African states, Libya's mobile internet on average costs $0.74 (MAD 6.60), placing it fifth on

the continent and 30th in the world, while Egypt and Tunisia fall behind, ranking 55th and 59th respectively. In both countries, mobile data averages out at just above a dollar a gigabyte. Mauritania's mobile data, which costs $5.56 (MAD 49.59) a gigabyte, places the country among the most expensive countries in Africa, as well as the world. It ranks 45th in Africa and 188th in the world. The study notes that "All but one of the seven North African countries are in the cheapest half of the table… [The region] is the cheapest overall region in the world." Mauritania is the only country in the region to exceed the global average of USD 4.07 (MAD 36.30). Overall, the cheapest data in the world is in Israel, "With three-quarters of Israelis owning a smartphone, Israel boasts a higher smartphone market penetration than the

[US]." As for the most expensive, the study notes that "Sub-Saharan Africa is the most expensive region in the world for mobile data generally, while island nations also tend to be among the most expensive." As such, the five most expensive countries, in terms of the average cost of one gigabyte of mobile data, were Equatorial Guinea ($49.67/MAD 443.04), Falkland Islands ($44.56/MAD 397.46), Saint Helena ($39.87/MAD 355.62), Sao Tome and Príncipe ($30.97/MAD 276.24) and Malawi ($25.46/MAD 227.09). Worldwide, North Africa is considered the cheapest region for mobile data, compared to Sub-Saharan Africa which is the most expensive region, including six out of the ten most expensive countries in the world. Equatorial Guinea has the most expensive mobile data in the world.

Ooredoo Launches Raft of New Business Services

Ooredoo has launched the 'Enterprise Edge' managed service in Qatar to accelerate cloud adoption, improve operational agility, and address network connectivity's need for cost-effective bandwidth, implemented in partnership with VMware. Enterprise Edge – which can be built onto any standard connectivity service – delivers Software Defined Wide Area Network (SD-WAN) with key features of the fully hosted and Ooredoo-maintained service including: simplified WAN management, reduced provisioning times and strengthened security. Ooredoo says it offers 'flexible commercial models including CPE on leasing, thereby reducing CAPEX and OPEX spends.' Ooredoo also announced the launch of new

Enterprise EDGE:
A managed SD-WAN service to transform your network

ooredoo business

5G-focused 'Aamali' mobile broadband packages for Qatari B2B customers, constituting the company's 'first-ever launch of a range of entirely business-focused mobile broadband plans' in the local market, offering greater usage allowances at competitive prices, 'as demanded by business customers.' Sheikh Nasser bin Hamad bin Nasser al-Thani, chief commercial officer at Ooredoo, said: 'These new post-paid plans will allow B2B customers to access all the potential of our incredible 5G network, with generous allowances and competitive pricing. In Kuwait, meanwhile, Ooredoo has been appointed a reseller of BT's Communications and Security Solutions. The scope of services includes managed connectivity and voice services, collaboration and contact center solutions, as well as cloud-based security services and consultancy. A press release said that BT's cloud-based Security Incident and Event Management (SIEM) service combines leading technologies with BT's track record in securing leading global organizations. The service collates and analyses the vast amounts of threat information available, providing customers with real-time insight on their network, and actionable intelligence that increases their protection.

Bangladesh Creating 12,000 Wifi Zones in Wetland Area

The Minister of Posts and Telecommunications, Mustafa Jabbar has said that education is the vehicle to move forward all over the world. Civilization has evolved thanks to education. Now education has to keep pace with the evolution of civilization. In order to lead the digital civilization or the fourth industrial revolution, the highest importance must be given to digital education. The Minister said that the need for opportunities is essential for the spread of digital education. The magic of Bangladesh's advancement in today's digital industrial revolution is the Digital

Bangladesh program announced by Prime Minister Sheikh Hasina in 2008. In the last 12 years, Bangladesh has been able to set an example for the world in all fields including digitization. He was speaking as the chief guest at a discussion meeting organized by the Greater Mymensingh Coordinating Council on the occasion of the 233rd anniversary of the establishment of Mymensingh district in Dhaka. Mustafa Jabbar, President of Greater Mymensingh Cultural Forum highlighted the history and heritage of Greater Mymensingh and the events of the establishment of the district

233 years ago. He highlighted the various programs undertaken by Prime Minister Sheikh Hasina to spread education in all districts of Greater Mymensingh, especially in digital education. There are now sub-mergeable roads passing by every village in the haor. Digital superhighways have been created. There is a tele-talk network in the haor area. Over 12000 WiFi zones are being created. He said the fishery resources of the haor, like the grain resources, could also play a role in meeting the demand for fish in the country.

Mobile Subscribers Cross the 183 Million Mark in Pakistan

Cellular subscriptions in Pakistan have crossed the 183 million mark, as per the latest figures updated by the Pakistan Telecommunication Authority (PTA). Broadband subscriptions have also crossed 101 million including 98 million 3G and 4G subscribers. According to the

cellular market share, Jazz continues to dominate with 37.80% subscribers, followed by Telenor Pakistan 26.71%, Zong 21.90%, Ufone 12.81% and SCO 0.77%. The number of obsolete 3G users has dropped from 25.2 million in December 2020 to 24 million by the end of March 2021. During

the reporting period, 4G users have grown from 66 million to 74 million. In terms of 4G market share, Jazz leads this segment as well with 28.86 million 4G subscribers, followed by Zong with 22.49 million, Telenor Pakistan 16.10 million, Ufone six million and SCO 0.7 million.

Libya and Egypt Sign Telecom, Technology and Technical Training Agreements

Libyan Telecommunications and Information Technology Company (LPTIC) chairman Faisel Gergab held a meeting with a high-level Egyptian delegation headed by Minister of Communications and Information Technology Amr Talaat on 20 April 2021, following which the two countries signed several agreements regarding communications, technology and training. These included a memorandum of understanding (MoU) to improve and develop the international cable between Egypt and Libya, increasing the performance of international services by making use of Telecom Egypt's submarine cables; an MoU to share experience and knowledge regarding the operation, maintenance and development of fiber-optic networks; and a further MoU concerning technical training and skills development. Commenting on the agreements, Gergab stated: 'We welcome the strengthening of constructive cooperation between the two countries. The exchange of information, experiences, and the opening of opportunities for development and horizons in the field of digital skills development will lead to a future full of opportunity and development of the new Libyan economy.'

Pakistan to Auction Mobile Telecom Spectrum in June

The auction for mobile telephony spectrum is expected to be held in June, and consultants have expressed optimism that it will be successful because of the potential available in Pakistan. The briefing was made by a consultant at a meeting of the advisory committee for the release of Next Generation Mobile Services (NGMS) spectrum at the Finance Division on Thursday, chaired by Federal Minister for Finance and Revenue Shaukat Tarin. The committee approved the recommendations for the sale of the spectrum during the meeting, and the consultant would hold meetings with the stakeholders in the next round, and forward the brief related to the auction process. In the next step the consultant will forward the 'information memorandum' containing the details of procedures related to the auction. The meeting was attended by Federal Minister for Science and Technology Senator Shibli Faraz, Federal Minister for IT and Telecommunication Syed Amin ul Haque, adviser to the PM on Commerce Abdul Razak Dawood, federal secretaries of relevant ministries, chairman of the Pakistan Tele¬communication Authority

(PTA), Executive Director of the Frequency Allocation Board (FAB) and other officers. The IT Minister informed the committee the sale of spectrum was the key to strengthen and expand communication/IT services across the country. The committee was briefed by the consultant for spectrum auction of 1,800 MHz and 2,100 MHz bands. The committee was informed that the "Spectrum Auction Pakistan 2020-21" was focused on regulatory consistency for the investors and increases the mobile broadband proliferation that will also have an impact on the overall economic growth of Pakistan. The consultant expressed the confidence that there was significant potential for the growth of broadband and telephony across Pakistan and the existing four cellular companies were eager to obtain additional spectrum to harness the growth opportunities. The consultant expressed confidence that the auction would be a success and fetch significant revenues for the government. The consultant — Frontier Econo¬mics — and the PTA signed a contract in January this year for the provision of consultancy services for spectrum auction

in Pakistan 2020-21. Frontier Economics Ltd is one of Europe's largest independent economic consultancy firms with experts across a range of industries including telecommunication. PTA Chairman Amir Azeem Bajwa also briefed the committee about the arrangements underway for the sale of available spectrum. He gave a detailed presentation about the specifications of available spectrum bands and methodology for sale in line with international best practices. The meeting noted that in-depth analysis would be completed to gauge demand for spectrum and devise a strategy for its pricing and packaging. While taking stock of the situation, the finance minister directed to expedite the sale process for the available spectrum. He stressed to provide a level playing field so that all operators must have a fair and equal chance in the process. Mr. Tarin also stressed that all the key stakeholders have to ensure maximum participation across the board for successful completion of the sale transaction.

Whitepaper Highlights Bahrain's Role in Global BPO Growth

UK-based consultancy, Ryan Strategy Advisory, has unveiled a whitepaper prepared for Bahrain-based business process outsourcing (BPO) company, Silah Gulf, presenting the role of the Kingdom in driving growth of global BPOs. Titled, 'Leveraging Bahrain for Customer Experience Excellence,' the whitepaper highlights the strengths of Bahrain as a regional player with strong links to GCC countries and the attractive propositions the country offers for global clients. Peter Ryan, Founder and Principal Analyst of Ryan Strategy Advisory said: "Customer experience management faces significant challenges that impact end-user interaction and empowers agents, especially while dealing with the challenges of Covid19. Many enterprises are actively exploring new delivery points looking beyond their own backyard and considering locations that have the capacity to provide talent that is willing to address the needs of end-users in an efficient and enthusiastic way. "Bahrain offers the perfect platform for strengthening customer experience excellence, building on its reputation as a country that has adopted new approaches to customer experience and geographic delivery." Feras Ahmed, Chief Executive Officer of Silah Gulf added: "We commissioned this in-depth study to validate the competitive strengths of Bahrain's BPO industry and the value-add the nation offers in supporting organizations to promote customer service excellence. "With the pandemic changing the way organizations work, it is important that customer service is prioritized even more, and a strong BPO support can help them achieve this seamlessly. In this, Bahrain's location and heritage in BPO operations serve as a strong value proposition, offering organizations cost-effective solutions to strengthen customer service standards." The white paper outlines how Bahrain has emerged as one of the countries to watch for in nearshore contact center delivery within the GCC and in targeted Western European locations. "The country provides the right balance of value and innovation to enterprises from around the world that are searching for the next country of choice for delivery of contact center services. Factors such as easy accessibility, diversity of population, multilingualism and affordable cost structure along with a relatively youthful age demographic make it a feasible option," the white paper said. The key factors that define Bahrain's strengths as a BPO destination, which includes ease of accessibility, with the significant expansion of the international airport providing travelers with direct flights to-and-from most major cities in the region. The diversity of the country's demographic, with expats from various parts of Asia, Europe and the US, and the direct benefit of diversity on contact center delivery - its impact on the number of languages on the ground in Bahrain - also allows for greater efficiencies by centralizing multilingual needs in one hub. With nearly one-third of the population under the age of 25, the nation ensures a talent pool large enough to satisfy growing needs. The country is also among the most affordable offshore locations within the Gulf region for performing contact center work. It is estimated by providers on the ground that the price / agent / hour equates to roughly $12.50 for customer care. Bahrain provides the right balance of value and innovation to enterprises from around the world that are looking for the next country of choice for delivery of contact center services. "Customer experience management has changed significantly since the past year, and it is likely to continue its ongoing shift. It is in this spirit that leading Bahrain customer experience management provider Silah Gulf comes to the market with an offering that reflects the needs of enterprises in the GCC and wider world," Ryan added. "The reality of customer experience delivery going forward is one that favors providers that are willing to differentiate their offerings. No longer are enterprises likely to work with generic, run-of-the-mill outsourcers that are focused on large volumes of interactions done as cheaply as possible. Rather, the future favours those that are prepared to offer front-line service excellence, alongside value-add process and technology offerings. "If there is one facet of contact center service delivery that is more apparent than ever, it is that enterprises are looking for providers that have capacity in non-traditional locations. Currently, Bahrain is emerging as one of the countries to watch for nearshore contact center delivery within the GCC and in targeted Western European locations. "In fact, the most recent Ryan Strategic Advisory Front Office BPO Omnibus Survey, published in 2021 indicates that out of over 50 different offshore and nearshore locations, Bahrain is a top 10 choice for enterprise contact center executives in both the UK and Australia. That Bahrain is on the short-list of delivery destinations in two of the most sophisticated demand markets points to an increasing awareness of what Bahrain can bring to the CX table," he noted. –

"Leveraging Bahrain for Customer Experience Excellence"

Nokia Deploys 5G for Etisalat

Nokia has announced the deployment of its AirScale 5G solution for Etisalat in the United Arab Emirates (UAE). The two firms have been working together for some time to provide 5G coverage across the main urban areas of the UAE. Etisalat launched its first 5G services for handset users in May 2019.

Jordan, Egypt Sign Agreement to Enhance Digital Cooperation

A memorandum of understanding signed between Jordan and Egypt during the Jordanian-Egyptian Higher Committee's meeting aims to enhance the two countries' cooperation in the field of ICT, the Ministry of Digital Economy and Entrepreneurship. According to a Ministry statement, the memo was signed by Minister of Digital Economy and Entrepreneurship Ahmad Hanandeh and Egyptian Minister of Communications and Information Technology Amr Talaat in the presence of Prime Minister and Minister of Defence Bisher Al Khasawneh and his Egyptian counterpart Mustafa Madbouly. It is aimed at optimizing the available capabilities in the ICT and postal fields to boost the two sides partnerships in several domains, notably digital infrastructure via linking the Egyptian international cable network with Jordan. The memo is also intended to facilitate expertise exchange in the fields of digital transformation and e-payment, the Jordan News Agency, Petra, reported. The two sides also agreed on furthering cooperation in the area of building and developing human capabilities in the fields of ICT, as well as organizing a Jordanian-Egyptian initiative for technological innovation and entrepreneurship towards providing solutions for the best service of the two countries' projects. As per the agreement, the two parties coordinate their positions at international and regional forums related to ICT and postal fields, especially the International Telecommunication Union and the Universal Postal Union. A Jordanian-Egyptian team will be formed to follow up on the implementation of the agreement, Petra added.

Pakistan's Cellphone Imports Rise to US$1.3 Billion

According to the data released by the Pakistan Bureau of Statistic (PBS) on Tuesday, Pakistan's cellphone imports went up by 51.5 per cent to $1.311 billion in 8MFY21 as compared to $865m in the same period last year. Earlier PBS had reported that Pakistan had imported mobile phones worth $1.135 billion during July-January (2020-21) compared to $760.58 million in July-January (2019-20). According to an official of a mobile company, the mobile phone market is now unbeatable with burgeoning demand in the price range of Rs10,000-40,000 in which many companies are competing with one another. The increase in the demand for reasonably priced smartphones can be attributed to the COVID-19 pandemic which forced the people to opt for online mediums for education, banking and shopping. However, with a significant drop in cellphone smuggling, Pakistan's mobile phone assembly segment also showed massive progress as it produced 1.21 million mobile phones in just two months (January and February) of 2021. The output was significantly higher compared to just 119,639 mobile phones assembled in the entire 2019. According to a statement issued by the Pakistan Telecommunication Authority (PTA) on Wednesday, the implementation of Device Identification, Registration and Blocking System (DIRBS) in 2019 has resulted in a noteworthy increase in legal imports of mobile devices. "These plants have produced over 25 million mobile devices including 4G smartphones after the introduction of DIRBS," revealed PTA. Observing the tremendous results of DIRBS, the government has announced a comprehensive mobile manufacturing policy to compel international manufacturers to establish their plants in the country. Recently, Minister for Information Technology and Telecommunication Syed Aminul Haque said that the government is promoting local mobile manufacturing in the country to bring down the high prices of cell phones. "We want our people to be able to buy a good quality mobile phone from Rs8,000 to Rs12, 000 instead of paying Rs50, 000 to Rs100, 000", said the Minister. He criticized the previous governments for their irresponsible behavior, saying that had this move been planned earlier, the prices of the mobile phones would have been low today and more employment opportunities could have been generated. Currently, the telecom sector has come out as a prominent contributor to the country's economy as despite the pressure from Covid19, its share in the national exchequer rose to 129% in 2020 compared to 2019.

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ARTICLE

stc Leads MENA Region in Launching Innovative End-to-end Commercial 5G SA Infrastructure

Deployment of the widest scale of 5G coverage on sub-3GHz besides implementing advanced Business Support System

Fahad Al Ali
Chief Technology Officer
stc Kuwait

Kuwait Telecommunications Company – stc, a world-class digital leader providing innovative services and platforms to customers, enabling the digital transformation in Kuwait, announced the successful commercialization step of implementing 5G Stand Alone (5G SA). The milestone is considered to be the second and most disruptive development of the comprehensive 3GPP 5th generation compliant network. stc also successfully accomplished the widest scale of 5G deployment coverage on Sub-3GHz and 2.1GHz amongst other mobile service providers in the MENA region. Besides these two achievements, the Company enhanced its infrastructure with the deployment of the most advanced automated Business Support System.

> *5G SA technology will enable stc's subscribers to enjoy higher uplink bandwidth, especially catering to specialized use scenarios, such as enterprise applications where uplink throughput is equally important as downlink. Additionally, the technology will lower user-traffic latency to address key issues related to interruptions in gaming experience, while kicking off market interest in new rich forms of gaming technology like Virtual Reality (VR).*

In a statement released by the Company, stc indicated that it has been progressing with major 5G SA developments to advance its 5G network architecture, enabling the radical transformation of the telecom industry into an as-a-Service model in line with Kuwait's 2035 vision. 5G SA technology will enable stc's subscribers to enjoy higher uplink bandwidth, especially catering to specialized use scenarios, such as enterprise applications where uplink throughput is equally important as downlink. Additionally, the technology will lower user-traffic latency to address key issues related to interruptions in gaming experience, while kicking off market interest in new rich forms of gaming technology like Virtual Reality (VR). 5G SA will also feature higher levels of security that utilize the best industry know-how to provide robustness to telecom networks.

Further empowering Multi-Access Edge Computing (MEC) deployment, 5G SA will enable stc to become not only Cloud Native, but Edge Native as well. This transition will allow service aggregation near subscriber premises. From massive data processing in enterprise campus scenarios, real-time data processing in industrial control, and autonomous driving, to massive IoT use cases requiring analytics localization and better user experience for AR/VR/cloud. 5G SA enables different verticals to gain advantage from stc's infrastructure by creating end-to-end isolated logical networks that share resources in a secured, isolated, and efficient way, also known as Network Slicing. This allows public and private corporations increase their levels of efficiency and increase revenue when building their private networks, without the hassle of investing in new infrastructure, acquiring new spectrums, developing coverage, and getting capital assets. stc will also be able to offer diversified digital services to verticals, such as guaranteed voice over 5G applications

Focusing on the user experience and enhanced 5G coverage, especially indoors and in weak coverage spots, stc started delivering Sub-3GHz 2.1GHz 5G NR with national wide implementation since mid-2020. The Company foresaw the fundamental need of deploying national Sub-3GHz 5G NR over the 2.1GHz band. Upon doing so, stc became the first telecom operator to commercially launch such an advanced technology on a large scale in the MENA Region.

(VoNR), dedicated data access, dedicated internet access, as well as, on-demand services such as, cloud CCTV capabilities to empower enhanced smart city services to citizens, and assist businesses in innovating and generating new revenue streams in untapped markets.

Focusing on the user experience and enhanced 5G coverage, especially indoors and in weak coverage spots, stc started delivering Sub-3GHz 2.1GHz 5G NR with national wide implementation since mid-2020. The Company foresaw the fundamental need of deploying national Sub-3GHz 5G NR over the 2.1GHz band. Upon doing so, stc became the first telecom operator to commercially launch such an advanced technology on a large scale in the MENA Region. Currently, 2.1GHz 5G NR sites have been strategically installed in dense districts. To further boost its infrastructure coverage, stc plans to deploy more sites in 2021. The new deployment will play an important role for a number of years to come, providing enhanced Quality of Experience (QoE) for multiple 5G use cases, such as HD voice, 4K video streaming, online gaming, telemedicine and collaborative applications. The services are offered over the most popular 2.1 GHz 5G NR supported smartphones and other 5G devices including Apple, Samsung, and Huawei devices. This will enable smoother access to 5G Carrier Aggregation (CA) Services and mass deployment for Internet of Thing (IoT) and Machine-to-Machine (M2M) over stc's 5G infrastructure offering enhanced smart city services to users, while assisting businesses in launching new-to-market solutions.

stc has been systematically working on monetizing its 5G infrastructure with advanced Business Support Systems toward native cloud Network architecture. The systems aim to introduce innovative Network-as-a-Service models capable of integrating 3rd party APIs and utilizing DevOps Tools to suit wide-ranges of industry transformations. Vertical owners will be able to save their top and/or bottom lines by quickly transforming their businesses through differentiated

scalable capacities and characteristics, with different charging criteria of services in line with their digital transformation and business model demands.

Engineer Fahad Abdulrahman Al Ali, Chief Technology Officer at stc, said, "stc positions itself to provide state-of-the-art 5G intelligent connectivity and agile 5G SA cloud native infrastructure to ensure mapping of business and government transformations. We offer enhanced coverage services through Sub-3GHz 2.1GHz 5G NR which add 4G/5G collaborations, 5G Carrier Aggregation and precise indoor/outdoor inter-operability to our 5G network. We aim to provide the best service experience for 5G consumers, such as iPhone 12 5G users, by providing improved 5G indoor service accessibility, higher quality video streaming, uninterrupted gaming experience, and battery power saving solutions.

Al Ali added, "stc strides to accelerate vertical transformation by constructing advanced Business Support Systems tolerated to fulfil a wide-range of industry transformations and business model requirements. This stems from our commitment to fulfill the needs of startups, SMEs and larger enterprises by offering flexible, automated, scalable, guaranteed, and reliable service solutions that can accelerate their digital strategies into the 5G platform allowing the introduction of new solutions and business processes."

The Company's strategic plans tie in new opportunities by utilizing new generation 5G infrastructure with rich multidimensional designs and a native cloud architecture to offer enterprises with guaranteed Service Level Agreements (SLAs). After the large-scale deployment of Sub-3GHz 5G, stc projects high levels of improved in-depth coverage and user experience of stc's 5G network, laying a solid foundation for the sound development of 5G MBB services. Supporting the business growth of enterprise customers comes as a key contribution from stc to the transformation of businesses in line with Kuwait's 2035 Vision.

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SATELLITE NEWS

NASA to Test Geosynchronous Satellite Laser at 1.2 Gbps

NASA is preparing to conduct a Laser Communications Relay Demonstration (LCRD) that will launch on STPSat-6, the primary spacecraft of the third Space Test Program (STP-3) mission for the Department of Defense. STP-3 is scheduled to lift off on a United Launch Alliance Atlas V 551 rocket Wednesday, June 23, from Space Launch Complex 41 at Cape Canaveral Space Force Station in Florida. The Laser Communications Relay Demonstration will use microwave-oven-size optical modules will send and receive data over infrared lasers at 1.2 Gbps from geosynchronous orbit to Earth. The test will beam data between LCRD and optical ground stations located in Table Mountain, California, and Haleakalā, Hawaii. Later in its mission, LCRD will conduct optical communications relay services with a future terminal on the International Space Station, which is expected to launch on a commercial resupply services mission in 2022. These operations could prove the viability of using laser communications in

future crewed missions to the Moon and Mars. The LCRD mission is led by NASA's Goddard Space Flight Center in Greenbelt, Maryland. Partners include NASA's Jet Propulsion Laboratory in Southern California and the MIT Lincoln Laboratory. LCRD is funded through NASA's

Technology Demonstration Missions program, part of the agency's Space Technology Mission Directorate, and the Space Communications and Navigation (SCaN) program within the agency's Human Exploration and Operations Mission Directorate.

ITU Okays Serbian Orbital Position & Radio Frequency Channels

The International Telecommunication Union (ITU) has accepted the proposal of a single orbital position of 26.7 degrees West and the frequency channels of future satellite networks of the Republic of Serbia for the FSS (Fixed Satellite Service) and BSS (Broadcast Satellite Service). According to a press release from the Regulatory Agency for Electronic Communications and Postal Services (RATEL), the Republic of Serbia did not have an assigned allocation earlier, but there was a shared orbital position of 43.04 degrees East for all countries of the region (allocated to the former state of SFR Yugoslavia). According to the Radio Regulations, certain radio frequency bands, allocated to the satellite service, are used for the development of satellite Plans, namely: the Fixed-Satellite Service Allotment Plan

– Appendix 30B and the Broadcasting-Satellite Service and Associated Feeder Link Allotment Plan – Appendices 30&30A. The Republic of Serbia, as an ITU member state, is entitled to the assignment of geostationary satellite orbits and corresponding radio frequency channels, as well as having its future satellite network registered in the appropriate plan (without any time obligation as to the putting into operation of the satellite network). The new network of the Republic of Serbia has an orbital position of 26.7ºW and a frequency band of 800 MHz, and the new network SRB_BSS in the Appendices 30&30A Plan is assigned the same orbital position 26.7ºW, with a frequency band of 270 MHz. "The acceptance of our proposal by the ITU and assignment of one same orbital position for both the

FSS Plan (Appendix 30B) and BSS Plan (Appendices 30&30A) is of significance primarily because of the financial effect, whether the Republic of Serbia wants to set up its own satellite in the foreseeable future or wishes to lease its resources to another entity," said the release. "It is far more affordable to set up one satellite for the whole frequency spectrum assigned to the FSS Plan (Appendix 30B) and the BSS Plan (Appendices 30&30A) (800 MHz + 270 MHz), instead of two satellites for two separate orbital positions and corresponding frequency bandwidths, taking into account that the equipment price and launching costs per satellite are in the range of 200 to 400 million US dollars," it added.

NTT Plans Satellite Trials

According to reports from Nikkei, NTT is set to explore the concept of satellite data centers in partnership with SKY Perfect JSAT Holdings, Japan's first private satellite communications company. The project will see NTT equip each satellite with the computing power to process data, with the various satellites working in tandem with one another to function similarly to an orbital data center. The concept here is fairly simple. Traditionally, data received by a satellite must be transmitted back to Earth in order to be stored and analyzed, a process which not only takes time but also requires a large amount of electricity. NTT suggests that if such processes could instead be handled while still in space, then only relevant data would be transmitted back to Earth, significantly speeding up the data exchange. Satellite photographs, for example, currently take a day to be sent from a satellite to receivers back on

earth, but processing the images in space could reduce this to just a few hours. NTT also notes that satellite data centers could play a key role in data preservation, being unaffected by major natural disasters, such as the earthquakes which hit Japan so regularly. The companies hope to launch the satellite in 2025, with commercial operations to begin the following year. Positioning data centers in novel locations to improve effectiveness is nothing new for the telecoms industry. Back in 2016, Microsoft's Project Natick began to explore the concept of underwater data centers, arguing that it had benefits such as reduced cooling costs; the ability to use clean, renewable tidal energy; and lower latency and better application performance for those living near the coast. The data center, which was deployed in 2018 near the Shetland Islands, was met with much skepticisms,

with critics noting the technical challenges as well as legal ones surrounding ocean deployment. Nonetheless, results were finally gathered in 2020, with the project largely deemed a success. Discussions have now turned to how underwater data centers could be scaled up to power the full suite of Microsoft Azure cloud services. Could NTT's space-based data center concept follow a similar trajectory? With the likes of SpaceX's Starlink launching over a thousand satellites in the last couple of years, and now Amazon's Project Kuiper hot on their heels, satellite broadband could soon become a major player in the telecoms space. The cost of space-based operations is dropping and soon new types of space infrastructure, such as data centers, will surely become far more achievable.

Arianespace Vega Launcher Delivers First Pléiades Neo Satellite in Orbit

Arianespace has successfully delivered the first satellite of the Pléiades Neo constellation in its planned orbit. The satellite was launched onboard Arianespace's European launcher Vega from French Guiana. After being placed in orbit, the solar arrays of the satellite were

deployed and the first telemetry signals were received. Airbus' control center in Toulouse, France, commanded the satellite and initiated early orbit phase activities with the aim of acquiring the first image next week. The spacecraft will undergo an in-orbit calibration phase prior to opening for

commercial service. Later this year, Airbus will launch another satellite Pléiades Neo 4 onboard the Vega rocket. Airbus Defence and Space intelligence head François Lombard said: "The launch of this first Pléiades Neo satellite will pave the way to new services and great opportunities for our customers, thanks to its high accuracy and increased reactivity. "The Pléiades Neo constellation will definitively boost the 30cm imagery market, bringing a lot of innovation and coverage capacity to the commercial and governmental end-users." The Pléiades Neo project will comprise four identical satellites that are entirely funded, designed, manufactured, owned and operated by Airbus. Each satellite will cover half a million square kilometers a day at a 30cm native resolution, providing high-level insights to commercial and institutional customers for the next decade. Customers will access freshly acquired and archive data, as well as extensive analytics through Airbus' OneAtlas digital platform. The Pléiades Neo constellation will work alongside the existing Pléiades satellites and the remaining Airbus Earth observation satellite fleet.

Lockheed Martin Space Launches New ISR Satellites

Lockheed Martin (NYSE: LMT) has introduced a new line of rapid, integrated and affordable tactical Intelligence, Surveillance and Reconnaissance (ISR) satellites. These satellites, based on Lockheed Martin's LM 400 mid-size bus, enable tactical warfighters to track moving targets at long ranges and operate in contested and denied environments — on compressed timelines at the scale of battle. Based on flight-proven and mature components, an open architecture, and a highly produceable design, the affordable LM 400 satellite bus forms the backbone of this needed capability across a variety of emerging mission areas. These

satellites fully integrate space ISR with the warfighting platforms and weapons of other domains to shorten the find-fix-finish kill chain. For persistent ISR capabilities, "at scale" means larger constellations and rapid satellite production and deployment. Lockheed Martin's new high-capacity Gateway Center satellite manufacturing facility supports accelerated space vehicle production, assembly and testing in a single, flexibly configured space, accommodating multiple security classification levels. The LM 400-based tactical ISR satellites will play a key role in Joint All-Domain Command and Control (JADC2) by allowing tactical warfighters

to better employ space-based capabilities. Lockheed Martin is also developing and building 10 space vehicles over the next two years for the Space Development Agency's (SDA) Transport Layer Tranche 0, cited as the backbone of JADC2, enabling even more connectivity between ISR and warfighters. "Digital engineering and manufacturing are accelerating our ability to deploy robust, future-focused constellations that feature leading-edge technology for our customers' missions," said Rick Ambrose, executive vice president of Lockheed Martin Space.

Semtech and EchoStar Mobile to Test Satellite IoT Connectivity Service Integrated with LoRaWAN

Semtech Corporation and EchoStar Mobile have announced the launch of an initiative to test satellite connectivity services enabled by the LoRaWAN protocol. "With our technology collaborator, Semtech, and as a new member of the LoRa Alliance®, we are excited to explore the use of next-generation LoRaWAN network technology to bring new satellite-based connectivity services to the Internet of Things (IoT) market," said Telemaco Melia, Senior

Director of Commercial Operations at EchoStar Mobile. "New LoRa satellite services are expected to bring lower price points to the market, opening up a larger addressable opportunity across key industries including logistics, asset tracking, transportation, utilities, agriculture, and maritime." The LoRa Alliance, an open, non-profit global association that develops, maintains and promotes the LoRaWAN protocol for low

power wide area networks (LPWANs), recently expanded the LoRaWAN protocol to include Long Range – Frequency Hopping Spread Spectrum (LR-FHSS) data rates. LR-FHSS extends the LoRaWAN protocol's support to enable direct data links from end nodes to satellites by leveraging either the Industrial, Scientific and Medical (ISM) unlicensed band, or, in the case of EchoStar Mobile, through licensed spectrum, which provides a differentiated service versus the ISM band. LR-FHSS can support millions of end nodes and delivers a new level of robustness for IoT services. "It's estimated that only 10% of the world's surface has terrestrial connectivity. Semtech's LoRa® devices integrated with LR-FHSS allow satellites to connect IoT devices in the vast remote areas around the globe to enable IoT solutions with an unmatched continuum of coverage and performance," said Marc Pegulu, vice president of IoT product marketing and strategy for Semtech's Wireless and Sensing Products Group. "Our work with EchoStar Mobile and LoRa Alliance members is expected to achieve complementary satellite and terrestrial LoRaWAN network connectivity services for customers who require global coverage from land to sea to air."

China Joins the Global LEO Satellite Race

China has established a new state-owned satellite company that looks set to drive its national LEO broadband efforts. The State-owned Assets Supervision and Administration Commission (SASAC), which manages national-level state enterprises, announced the formation of the new China Satellite Network Group Co. on April 30. SASAC did not provide any detail, in particular on how the new SOE will be funded, or whether it will supersede existing broadband satellite projects. China already has two LEO satellite programs underway at state-owned aerospace conglomerates, China Aerospace Science and Industry Corporation (CASIC) and China Aerospace Science and Technology Corporation (CASC). CASC was due to put the first of 320 satellites into orbit last year but so far none have left the ground. As China space industry consultant Blaine Curcio pointed out on his Dongfang Hour podcast, the problem with these vendor-driven projects is they can procure only from their parent company, ruling out competition at the construction stage. But Curcio said it's hugely significant that the new entity is under SASAC, which gives it

a degree of independence in sourcing, as well as giving the same status as the big three telcos. The SASAC announcement follows a series of other steps that make clear China's ambition to set up its national satellite company, known as a guowang, to bridge the LEO gap with foreign players such as Starlink and OneWeb. The new five-year plan sets down the intent to build "an integrated communications, earth observation and satnav space system with global coverage," Curico said. Currently China has all of those pieces except the communications part. China last year applied to the ITU for 10,000 LEO slots. In March Bao Weimin, science and technology director at CASC and a member of the Chinese People's Political Consultative Conference, foreshadowed the formation of the new satellite operation. For satellites, the state will also set up a guowang company to be responsible for the overall planning and operation of space internet construction," he told a newspaper. The pivot to a single national satellite company has some echoes of the decade-long effort to weld the provincial cable MSOs into a single national broadband and pay TV

champion. Unlike the new satellite player, China Broadcast Network (CBN) remained under the control of the cable ministry and continually struggled to get funding. But CBN's $15 billion recapitalization last year, with investments from big private and state firms such as Alibaba and utility company State Grid, is a likely model for funding China Satellite Network. It's not clear whether the new company will wholesale its capacity to telcos, or sell direct to consumers, or perhaps both. But the target market will be twofold. First is China's remote and rural customers. Despite the extensive reach of China's networks, mountain, grasslands and deserts account for around 60% of China's land area. The second will be the "Belt-Road" countries, in particular central and southwest Asia, the Middle East and Africa. The core premise of the BRI is that China will supply or fund key infrastructure to drive global economic growth and integration. With SpaceX and OneWeb well advanced with their plans, and with high-level political backing in Beijing, the China Satellite Network project looks likely to move ahead quickly.

Hughes Launches S-Band Satellite/Cellular Hybrid Terminal

Hughes Network Systems (Hughes) confirms the availability of the Hughes 4510 satellite/cellular hybrid terminal for its European customers. The dual transport terminal intelligently routes IP traffic via terrestrial or mobile satellite system networks, ensuring reliable and ubiquitous connectivity for critical applications. As

the terminal moves in and out of terrestrial mobile coverage areas, the S-band satellite service automatically takes over, ensuring constant connectivity. "Hughes has embraced multi-transport innovation as essential to enabling the most reliable and cost-effective connection anywhere in the world," said Graham Avis, vice president of MobileSat at Hughes Network Systems. "The unique features of the 4510 terminal allow for ubiquitous service for critical applications for vehicles or boats that pass in and out of cellular coverage areas, and for remote fixed sites that rely primarily on solar or battery power." EchoStar Mobile, Hughes' sister company, uses the 4510 to enable its new EM SYNERGY service, which delivers hybrid connectivity to customers across Europe in both dense urban areas to rural locations using S-band satellite service in combination with pan-European mobile roaming. The

terminal contains an embedded SIM for global 4G operation and as its IP67-rated and thus environmentally sealed, the terminal features an omnidirectional satellite antenna and requires low power. Operators can manage the 4510 terminal and update firmware remotely, and auto-context activation automatically restores power and connection following any disruption – without human intervention. Earlier this month, Hughes Network Systems, one of OneWeb's shareholders, secured a contract with the US Air Force to use the satellite network in the Arctic. Under the agreement, Hughes will test and implement these end-to-end services on the OneWeb system between selected US Northern Command locations, which OneWeb describes as "a first step in harnessing the power of LEO satellites for high-speed, low-latency broadband access in the Arctic".

Kacific and 3 Link Deploy Satellite Broadband to Clinics

Vanuatu's Ministry of Health has partnered with satellite operator Kacific Broadband Satellites Group and its local service provider 3 Link Communications to roll out

the 'Health Project', a program designed to bring fast broadband to health clinics and communities across Vanuatu. Health Minister Silas Bule Melve noted in a press

release that the project was part of the country's Universal Access Policy and would see 200 VSAT terminals deployed to address key connectivity challenges faced by health facilities. Kacific and 3 Link will provide the Ministry of Health with equipment and broadband connectivity to support 118 nominated hospitals, clinics and dispensaries in Vanuatu. The service also includes provision for communication assistance during natural disasters, with up to 50GB of additional data to be made available to each clinic in an affected area during the rapid response period. In addition to the direct benefits that the Health Project will provide to local communities, 3 Link will use the satellite dish as a platform to roll out its Community Wi-Fi initiative in the vicinity of each clinic. This Wi-Fi extension will function as a hotspot, allowing residents in surrounding communities to benefit from satellite broadband connectivity through the purchase of a voucher.

Netcracker Solution to Maximize Flexibility and Agility for the Advanced LEO Satellite Network

Netcracker Technology and global satellite operator Telesat announced that Netcracker has been selected to implement its, cloud-native digital Business Support System/Operations Support System (BSS/OSS) software suite in support of Telesat's latest technology offering, Telesat Lightspeed. The advanced Low Earth Orbit (LEO) satellite network, Telesat Lightspeed will bring high-capacity, secure, reliable and affordable broadband connectivity with low latency to enterprise and government markets around the world. Telesat, an industry provider in the geostationary satellite business, will revolutionize the broadband connectivity space with Telesat Lightspeed, positioning the operator to be a disruptive force in the global satellite communications market. The partnership includes deployment of Netcracker Digital BSS and Digital OSS on Telesat's state-of-the-art hybrid cloud infrastructure. Netcracker will provide

Converged Charging and Rating; Product Catalogue; Configure, Price, Quote; Partner Lifecycle Management; Customer Billing Management and Active Mediation from Netcracker Digital BSS, and Active Resource Inventory, Service Quality Management, Service Orchestration and Configuration Management from Netcracker Digital OSS. The BSS/OSS solution will support Telesat's Sales, Order Management, Orchestration, Network Management and Service Assurance requirements for the Telesat Lightspeed network and will help Telesat deliver a differentiated customer experience across its portfolio of enterprise-grade connectivity products and services. From seamless ordering including responsive and agile service configuration and modification to proactive network monitoring that guarantees high availability and assured performance, the fully integrated, end-to-end architecture will be a game changer for Telesat and

its customers. "The Netcracker full-stack BSS/OSS solution is optimized for global network deployments and provides the industry's most powerful tools to quickly respond to customer needs and deliver new services to market," says Erwin Hudson, vice president, LEO, at Telesat. "Telesat and Netcracker share a culture of innovation, and we are confident in their ability to deliver on our vision of a flexible and efficient cloud-native technology platform that will maximize the quality of experience for our customers." "LEO satellites are an exciting market and innovative way to deliver high-speed broadband to areas that are historically underserved as well as to service providers, enterprises and government entities around the world," says Rohit Aggarwal, general manager at Netcracker. "We are delighted to work with an industry-leading operator like Telesat to help connect and empower customers no matter where they are located."

LEO Satellite Broadband Market to Reach 5 Million Subscribers By 2026

The arrival of Low Earth Orbit (LEO) system will benefit underserved users in remote areas by supporting high-speed, low latency broadband service. Global tech market advisory firm ABI Research forecasts that the satellite broadband market will reach 3.5 million subscribers in 2021, growing at a CAGR of 8% to reach 5.2 million users in 2026, and generate US$4.1 billion service revenue. In the past, Geostationary Earth Orbit (GEO) satellites have provided residential and business services to rural and remote customers. ABI says that while GEO satellites offer speeds faster than 100 Mbps, their distance from the earth – 36,000 km – pushes latency to 600ms, which limits the applications for which they can be used. LEOs, which reduce latency due to their lower orbits, may change the game. The biggest name is Starlink, which is part of Elon Musk's SpaceX. It launched

last year and so far has put more than 1,000 satellites in orbit. Plans call for it to serve more than 600,000 homes and businesses in the U.S. The company is now working toward the expansion of its broadband service to some markets in Latin America. Other companies such as OneWeb and Telesat have launched LEO satellites providing connectivity to the business segment. Amazon, which plans to launch LEO constellations named project Kupier, received FCC approval for its project in mid-2020, although the first satellite launch date is yet to be confirmed. "LEO satellites will play an important role in satellite broadband services in the years to come. High Throughput Satellite (HTS) LEO systems can support multi-Gbps speed per satellite. Orbiting around 800-1600 km from the Earth's surface, LEO systems offer a major advantage of low latency between 30-50 milliseconds,

enabling LEO broadband services to support low latency services such as online gaming and live video streaming," said Khin Sandi Lynn, Industry Analyst at ABI Research. "As broadband connectivity is becoming an essential service in today's homes, satellite broadband services will remain an important part of the broadband market. There is inevitable competition from terrestrial broadband networks due to the expansion of fixed broadband networks and mobile networks. The expansion of LTE and 5G networks will challenge the satellite broadband industry by supplying fixed wireless access (FWA) services to residential users. However, the cost and time associated with terrestrial network deployments can limit distribution in remote areas. Satellite systems will continue to provide broadband services to underserved and unserved areas," Lynn added.

NCC in Talks with SpaceX on Satellite-Broadband Services

The Nigerian Communications Commission (NCC) has engaged a delegation from SpaceX, an American aerospace manufacturer founded by Elon Musk, on modalities for bringing the company's satellite-based broadband services to Nigeria. Speaking while receiving the delegation in Abuja, the Executive Vice Chairman (EVC) of NCC, Prof. Umar Danbatta stated that the commission is interested in balancing healthy competition with the entry of disruptive technologies. This move, according to him will ensure sustainable telecoms industry growth and development in Nigeria It was gathered that SpaceX is in the process of launching a low-earth orbiting (LOE) constellation of satellites to provide low latency, high bandwidths Internet to all corners of the globe and has identified Nigeria as a critical market. It was learnt that SpaceX has been in discussion with NCC virtually over the past several months to begin the process of pursuing all necessary licenses to bring Starlink, its satellite-based broadband services to Nigeria. Having made substantial progress

in the discussion, the Commission granted SpaceX's request for a face-to-face discussion to gain better insights on the prospects of their proposal. The team was led by SpaceX's Starlink Market Access Director for Africa, Ryan Goodnight, and supported by the company's consultant, Levin Born. The NCC and SpaceX team deliberated on plans, expectations,

licensing requests and deployment phases at the meeting. After the presentation by SpaceX team, the Executive Commissioner, Technical Services, NCC, Ubale Maska, who represented the EVC, said NCC will work on necessary modalities to ensure there is healthy competition in the industry in view of emerging technologies in the telecoms ecosystem.

King Saud University Signals Go-Ahead for Second Satellite

King Saud University (KSU) President Dr. Badran Al-Omar has approved the designing and developing of the CubeSat 2 satellite to be used for exploration. The announcement was made by Dr. Abdulmohsin Al-Baddah, supervisor of the satellite project at KSU who also oversaw the CubeSat 1, one of the innovative projects undertaken by the University's College of Engineering. The CubeSat 1 was designed, developed and programmed by the project's team and launched from the Baikonur Cosmodrome in Kazakhstan on board Russia's Soyuz-2 carrier rocket on March 22. The same rocket also carried Shaheen Sat 17, which was developed by King Abdul Aziz City for Science and Technology. The satellite will monitor the movement of commercial shipping. "CubeSat is an educational and multidisciplinary project for KSU students, and aims to introduce students to space technology and sciences and train them on the engineering and technology skills for designing and programming satellites," said Al-Baddah. The project will also prepare KSU students for work in the field when they graduate. KSU's CubeSat will take photos of the Earth, moon and space and send the images to the ground station at the College of Engineering. The station was set up during the first phase of the project. Under the supervision of faculty members, students chose the receiver, sender equipment, devices and automatic monitoring devices, and installed all software for the mission. Al-Baddah said that the project took six years, with more than 130 students from the engineering and computer departments involved in designing the 1.33 kg satellite. The project took a long time to finalize because the team had no previous expertise and

had to start from scratch in addition to obtaining approval from the university, he said. "KSU CubeSat orbits around the Earth just like other satellites of the same type and size — between 500-600 km from the Earth's surface. The CubeSat orbits at a speed of 27,000-28,000 km/h. We can pick up its signal in the Kingdom within 7-12 minutes. It will stay in space for 24 months then will continue to orbit the Earth before becoming space debris," Al-Baddah said. Future satellite projects will combine education and scientific research, with the private sector having an important role in supporting these projects.

OneWeb Launches 36 More Satellites Bringing Constellation To 182

A Russian Soyuz rocket lauched 36 OneWeb broadband satellites from the Vostochny Cosmodrome in the Amur Oblast, in the Russian Far East. The launch brings OneWeb's total in-orbit constellation to 182 satellites, and is the third launch in OneWeb's 'Five to 50' program, to deliver its connectivity solution to regions north of 50 degrees latitude by June 2021. OneWeb's

'Five to 50' program aims to connect broadband data users in the northern hemisphere, with services covering the United Kingdom, Alaska, Northern Europe, Greenland, Iceland, the Arctic Seas and Canada. Service will be ready to start by the end of year, with global service available in 2022. OneWeb also highlighted recent distribution signings across multiple

industries with The AST Group, PDI, among others. OneWeb also agreed its latest MoU with the Government of Kazakhstan this month as it continues to demonstrate the company's commercial viability and the confidence customers have in its services and offering.

Turkey to Launch Turksat 5B Communications Satellite in Q4

Turkey will launch its Turksat 5B communications satellite into orbit in the fourth quarter of this year, the country's transport and infrastructure minister said recently. "One of the prominent features of Turksat 5B, which will be launched into an orbital slot at 42 degrees East, is to increase Turkey's Ka-band data communication capacity by 15-fold," Adil

Karaismailoglu told a news conference in the capital Ankara. Turkey is rapidly moving towards becoming an international player in the field of satellite and space research, Karaismailoglu said. "Whoever has a footprint in space also has power in the world," he underlined. Touting to Turksat 5A, a Turkish satellite successfully launched in January, the minister said it

has so far completed about three-fourths of its trip. "Our satellite will settle into an orbital slot at 31 degrees East in the first week of May," he said. When Turksat 5A is put into service, it will cover Europe, the Middle East, North Africa, Midwest and South Africa as well as the Mediterranean, Aegean and Black seas.

UK SpaceTech Open Cosmos Launches Two Satellites to Bring Connectivity to Hard-To-Reach Areas Across the Globe

Leading UK SpaceTech firm Open Cosmos has achieved a major milestone in its mission to democratize space with the launch of two commercial nanosatellites created entirely at its Harwell Campus-based HQ in the heart of the UK's space industry. The launch saw two Open Cosmos nanosatellites launched into the skies aboard the Soyuz-2 rocket from the Baikonur base in Kazakhstan where Sputnik was launched, along with the South Korean Earth observation satellite CAS500-1, and around 30 other satellites. One of the Open Cosmos satellites is the latest addition to the Lacuna Space IoT constellation, which provides a service using LoRaWAN®, a leading open global standard for IoT LPWAN connectivity, along with a new demonstrator satellite for telecoms operator Sateliot to provide 5G Internet of Things (IoT) capabilities in remote areas across the globe. The satellites travelled to Kazakhstan, after passing strict testing in controlled environments and receiving the operations license from the UK Space Agency (UKSA). The device was then integrated into the deployer in the rocket, which when the Soyuz-2.1A rocket hit 500km from Earth, was ejected in order to take up its mission to travel around the earth and provide connectivity services. Now the satellites are up in space Open Cosmos will be monitoring and operating the mission from four ground stations around the globe, which can all be managed by the team on behalf of their partners through OpenOps, Open Cosmos's satellite operations software. Open Cosmos operates space missions from start to finish by manufacturing and building satellites as well as handling the mission, satellite operation and services. The company, which was created five years ago, was established with a view to open up space by making it more affordable for small businesses and governments to utilize satellites to access data

they need to tackle some of the world's most pressing challenges from climate change, to civil protection and emergencies and infrastructure. Rafel Jordá, founder and CEO of Open Cosmos, said: "These launches mark a major milestone for Open Cosmos, demonstrating the capacity of low-cost satellites to provide IoT connectivity to remote parts of the world and collect data. With £300bn of wider UK GDP supported by satellite services, Open Cosmos is key to unlocking these services and making them more accessible for businesses and governments across the world. We're also extremely proud that launches have been made possible by working closely with the UKSA, ESA, the Catapult and all our partner companies at Harwell Campus and abroad. We look forward to continuing to push forward the potential for UK space tech in 2021 and beyond."

TUSAŞ to Export Satellite to Argentina

Turkish Aerospace (TUSAŞ), owned by the Presidency of Defense Industries (SSB) and Turkish Armed Forces Foundation (TSKGV), has taken an important step in terms of exports in space and satellite projects. GSATCOM, the subsidiary of TUSAŞ in the space field, will export technologies on "HTS Communications Satellite with High Output Power" to ARSAT S.A., Argentina's national telecommunication company. GSATCOM Space Technologies Inc. was established by Turkish Aerospace Industries (TUSAŞ) in partnership with Argentina-based INVAP

S.E. at Ankara ODTÜ Teknokent and started their new generation communication satellite development program activities in 2019. These sales abroad to Argentina are a first for Turkey in next generation communication technology the area of intellectual and industrial property rights. Within the scope of the project, TUSAŞ will be fulfilling the first export of our country in the field of space by selling various satellite subsystems, equipment and engineering services. With the GSATCOM license, the ARSAT-SG1 Communication Satellite is planned to be developed by

TUSAŞ, GSATCOM and INVAP engineers within three years and the production will be completed in 2024. The satellite that will serve in Geosynchronous Orbit will have strategic superiorities involving many technological innovations. The new generation ARSAT-SG1 Satellite, which will be used for civilian data transfer and has a fully electric propulsion system, is expected to achieve a technologically important position among its peers throughout the world with its output capacity exceeding 50 Gbps in Ka-band.

Globe Considering Satellites as Way to Bridge Digital Divide

Turkey's new communications satellite Turksat 5A has entered into orbit at 31° East, said the country's transportation minister said recently. With a 30-year lifetime, Turkey's fifth-generation satellite was launched by technology company SpaceX in January. "Turksat 5A will have a month-long test run and become operational after June," Adil Karaismailoglu told Anadolu Agency. When the satellite is put into service, it will cover Turkey and Europe, the Middle East, North Africa, Mid-West and South Africa as well as the Mediterranean, Aegean, and the Black Sea, he noted. He said the satellite will push Turkey into the league of nations using the advanced Ku-Band in television broadcasting and data communication services. The satellite can serve the fields of TV broadcasting and communication for more than 30 years thanks to the electric propulsion system, he said. He went on to say that Turkey's communication satellite traffic will increase in the future. "We aim to launch the Turksat 5B communication satellite, which is nearing the end in its production processes, into space in the fourth quarter of this year." As of Jan. 8, 2021, the number of active Turkish satellites in Earth orbit has reached seven.

Turkish 5A Satellite Enters into Orbit At 31° East

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Soyuz Rocket Set to Launch More OneWeb Internet Satellites

A Soyuz rocket is standing on a launch pad at the Vostochny Cosmodrome in Russia's the Far East for liftoff with the next 36 satellites for OneWeb's internet network, the sixth Soyuz mission dedicated to the commercial broadband constellation. The 36 satellites, built on Florida's Space Coast by a joint venturer between OneWeb and Airbus, are stowed inside the nose cone of a Soyuz-2.1b rocket at Vostochny, Russia's newest spaceport in the far eastern Amur Oblast near the Chinese border. Ground teams transferred the Soyuz rocket, its Fregat upper stage, and the OneWeb payload compartment to their launch pad Thursday. A hydraulic lift raised the Soyuz rocket vertical over the flame trench, and a mobile gantry moved into position around the launcher for workers to complete final launch preparations. Russian managers will meet around five hours before launch to give the "go" to load kerosene and liquid oxygen propellants into the Soyuz rocket. The gantry will withdraw to a location near the launch pad, clearing the way for liftoff at 2214:08 GMT (6:14:08 p.m. EDT). The four-hour mission will place the 36 OneWeb satellites — each about the size of a mini-fridge — into a polar orbit about 279 miles (450 kilometers) above Earth after launching toward the north from Vostochny. Each spacecraft will deploy power-generating solar panels and switch on xenon-fueled plasma thrusters to reach an operational altitude of 745 miles (1,200 kilometers) in the coming months. With next 36 satellites, OneWeb's fleet will have 182 spacecraft of a planned constellation of 648 nodes relaying broadband internet signals around the world. The fleet will surpass the one-quarter complete mark with Sunday's launch.

CTech and Thales Alenia Space to Collaborate in Satellite Communications Technologies

Thales Alenia Space, the joint venture between Thales (67%) and Leonardo (33%), and C Tech Information Technologies Industry and Trade Inc. (CTech), a subsidiary of Turkish Aerospace Industries, have announced their agreement to collaborate in the field of satellite communications systems. Through this collaboration, CTech aims at climbing up the satellite value chain by underpinning its system integration capacities and accessing the communication satellite export market, while Thales Alenia Space aims at reinforcing its presence in the Turkish space market and developing its supply chain. CTech operates in the Defence, Aerospace, Telecommunication and Cyber Security markets, with experience in the design of communication systems and radiofrequency (RF) equipment. Its space portfolio includes RF equipment, spanning telemetry transmitters, command receivers, antennas and waveguide components. The company is responsible for the Tracking, Telemetry and Command (TT&C) subsystem for TURKSAT 6A program. CTech also provides solutions for mobile and secure satellite communication

terminals that can be used on both unmanned and manned aircraft, land and sea vehicles. CTech became a subsidiary company of Turkish Aerospace Industries in 2018. Thales Alenia Space in Spain is a worldwide reference in the field of satellite communications systems, having 32 years of experience in the design and production of RF equipment and communications systems, with over 4.000 units delivered for 600 satellites. Over the last 15 years, the company has developed competencies as a recognized leader and integrator of satellite communications systems, both in Europe and overseas. It's strong heritage in the field of Tracking, Telemetry and Command (TT&C) and data transmission systems for all type of space missions includes missions in Low Earth Orbit (Sentinel 1-2-3, FLEX, CHIME, ROSE-L), geostationary orbit (GEO-KOMPSAT-2, MTG), the Moon (KPLO, NOVA-C lunar lander, VIPER lunar rover), space telescopes orbiting around the L2 Lagrangian point (Herschel, Planck, Euclid, WFIRST, PLATO) and missions to asteroids (HERA), up to 500 million kilometers away from Earth. The company is also responsible for the UHF

and Ka-band telecommunication payloads on SPAINSAT NG satellites. Thales Alenia Space's own experience in Spain in the evolution from equipment supplier to system and payload integrator in the field of satellite communications is key to support the development of local industries capacities in other countries. A good example is GEO-KOMPSAT-2 program in South Korea, in which Thales Alenia Space in Spain was responsible for delivering the communications systems for two meteorological satellites, while supporting the involvement and development of Korea's local industries. The company was recognized with the "Award of Excellence" by the Korea Aerospace Research Institute (KARI) for its outstanding contribution to the GEO-KOMPSAT-2 program. CTech and Thales Alenia Space have already initiated their collaboration in the frame of a communication satellite export program, in which CTech is providing radiofrequency designs to Thales Alenia Space in Spain. With this cooperation, CTech realized the first export of components for a satellite system from Turkey.

Kazakhstan Signs O3b Satellite MoU with SES

Global satellite connectivity provider SES has signed a Memorandum of Understanding (MoU) with Kazakhstan's Republican Centre for Space Communications (RCSC), a subsidiary of the Ministry of Digital Development, Innovation & Aerospace Industry, with the aim of accelerating the Digital Kazakhstan national development program. The partners will explore service agreements

for high speed satellite connectivity using SES's O3b mPOWER communications system in Kazakhstan. RCSC and SES also intend to 'look into using O3b mPOWER services for other Central Asian countries with ubiquitous broadband access to the internet'. SES notes that its next-generation low-latency medium earth orbit (MEO) constellation is scheduled to launch in Q3 2021, while its current generation of

O3b satellites has been operational since 2014. Earlier this month, CommsUpdate reported that Low Earth Orbit (LEO) satellite network operator OneWeb signed an MoU with RCSC covering provision of broadband internet access to remote rural communities in Kazakhstan among other aims including establishing a regional hub for OneWeb.

ARTICLE

Work Will be Hybrid & Individual: One Size Does Not Fit All

Before the pandemic struck, people in big cities would fight their way through morning traffic to operate from their offices – if not every day, most days. Moreover, we would hold the majority of meetings in person with just a few online. Sometimes an occasional travel for either an internal or external meeting would find its way into our calendars.

Prior to COVID-19, virtual meetings were useful, but rarely critical. During the pandemic, however, they have become the glue that holds organisations together. Gone are the old days when video conferencing felt like science fiction. As time has passed, we have learned that remote collaboration technology is, in fact, possible – and sometimes even preferable.

> *Gone are the old days when video conferencing felt like science fiction. As time has passed, we have learned that remote collaboration technology is, in fact, possible – and sometimes even preferable.*

From evolution to revolution

What often happens with any new technology is that, in the beginning, there are strong proponents and opponents. As the technology matures, so does our usage of it. And ultimately if the technology is useful, it stays with us and develops. There is no doubt in my mind that collaboration solutions are here to stay, but that they will develop and improve as well.

During the pandemic, I often had the impression that we act as if this was the first time technology has changed the way we communicate. That, of course, is far from the truth. Just think about the influence of telephones, telegraphs, faxes, and emails and how those innovations changed communication. They replaced some face to face contact, but mostly they provided opportunities and enhanced human interaction in ways that wasn't previously possible.

Reem Asaad
VP for Middle East and Africa
Cisco

CISCO

We see the same pattern repeat itself with video conferencing. The only difference is that the pandemic accelerated the video evolution and made it a revolution. Virtual meetings are here to stay – but how?

A true alternative?
Virtual meetings must improve to become a true and credible alternative to face-to-face meetings. At Cisco, we have the ambition to make our Webex collaboration platform 10x better than face-to-face meetings. This might sound like an arbitrary and unattainable goal, but let me illustrate through two examples on why, in fact, it isn't:

• When you meet over Webex, with participants who speak different languages, you have the option to use real time translation. And if you can't remember whether you agreed to a sales increase of 12% or 14%, you simply search the transcripts and find the answer in seconds.
• Noise from espresso machines, lawn mowers or construction can be a nuisance anywhere. In a meeting room it might help to close the window, but that's pretty much all you can do. If participants join remotely, everybody can turn on noise suppression, which filters out distracting sounds and enhances human voice.

These are examples of Cisco Webex providing a better experience. And with a credible alternative to face-to-face meetings, it will encourage a more conscious choice each time you set up a meeting. The technical solutions already support this, and with the pandemic accelerating the acceptance of the virtual alternative, I believe we will see this choice play out even when we return to the office.
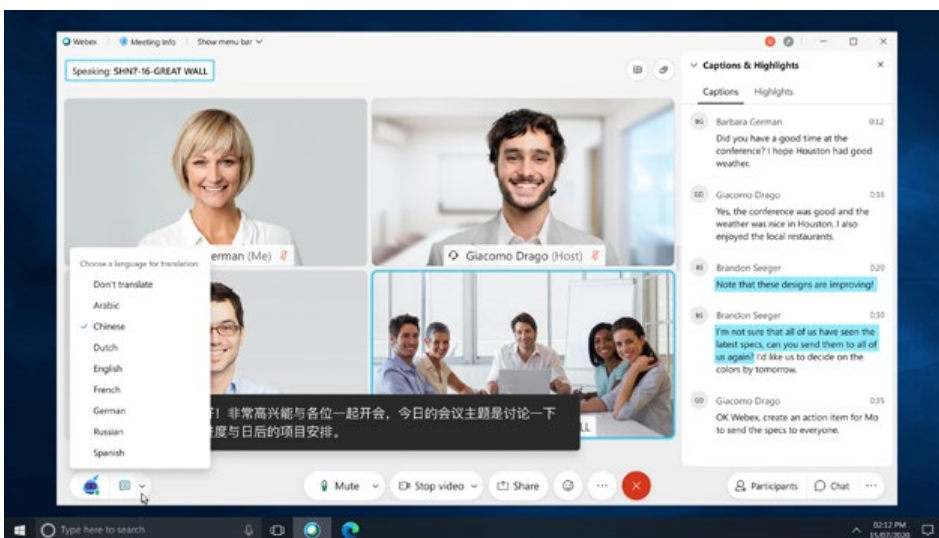
As the future of work opens more choices, it's critical that leaders don't just transfer their office leadership practices to a new hybrid reality.

Pros & cons
In the public debate, you often see tech companies as proponents of remote work and mental health experts warning about the impact on employees. I believe there are good points on both sides, and if anything, the pandemic taught me these two things:

If we look at the positive contributions of virtual meetings beyond the pandemic, the list is longer than perhaps most people think: including savings on travel, efficiency through remote work and inclusiveness for individuals.

• No two people are the same (we knew that), and that's why one size doesn't fit all. As business leaders we must be fully aware of this when we lead our teams and organisations.
• Before the pandemic, many didn't have a choice and had to go to the office. COVID-19 stripped office workers of choices and forced us home. We don't want to go back to no options – we want choice!

As the future of work opens more choices, it's critical that leaders don't just transfer their office leadership practices to a new hybrid reality.

If we look at the positive contributions of virtual meetings beyond the pandemic, the list is longer than perhaps most people think: including savings on travel, efficiency through remote work and inclusiveness for individuals.

It is, however, important to note that virtual conferences will not replace face-to-face meetings entirely. They will enhance and improve human interaction as the technology and our use of it matures. Part of this process requires leaders to re-think their approach to leadership and acknowledge that we are all, in fact, different. We, therefore, deserve choice and versatility.

GLOBAL ZONE

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Global Zone is a carrier neutral digital business platform based on a highly secure Tier III Data Centre, located in Bahrain, the heart of the Arabian Gulf. Global Zone is built to support the development of the digital economy and attract leading ICT players by enabling them to meet and exchange data in a robust ecosystem.

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WHOLESALE NEWS

CRTC Scraps its 2019 Decision Lowering Wholesale Internet Access Rates

The Canadian Radio-television and Telecommunications Commission (CRTC) has issued a decision (2021-181 of 27 May 2021) finalizing wholesale rates for smaller ISPs to access large operators' high speed broadband networks to resolve a long-standing dispute regarding the existing 'aggregated access' wholesale model, cancelling its previous decision (2019-288) to significantly reduce rates which was issued in August 2019 but never implemented. The regulator stated: 'During the review of wholesale rates for aggregated high speed access [HSA] services, the information provided on the record caused the CRTC to doubt the correctness of cer-

tain aspects of its August 2019 decision. With its new decision the CRTC is adopting the interim rates [set in Q4 2016], with adjustments, as the final rates.' While its latest decision represents a victory for big telcos and cablecos including Bell, Telus, Rogers and Shaw, the CRTC highlighted that the aggregated access model is in the process of transitioning to a 'disaggregated' HSA service enabling competitors to access the fiber-to-the-home (FTTH) networks of the large companies and offer their customers faster internet speeds and a wider range of services. Under the aggregated model, a competitor connects its network to a smaller number of points

in the large company's network, while under the disaggregated model, competitors connect to numerous points in the large operator's network thereby 'reducing their reliance on expensive transport costs while spurring investments in broadband networks,' the watchdog added. CRTC Chair Ian Scott underlined: 'Since 2016, the CRTC's objective has been to complete the transition to a disaggregated wholesale model for access to the large companies' high speed broadband networks. This model will foster greater competition and further investments, so that the industry can better serve the needs of Canadians. Today's decision will allow us to focus on that goal, while providing certainty in the marketplace for ISPs.' The CRTC's statement clarified: 'The Commission approves on a final basis the rates for aggregated wholesale HSA service that were in effect on an interim basis prior to the issuance of Telecom Order 2019-288, with certain modifications, including the removal of the supplementary markup of 10% for incumbent local exchange carriers. The Commission further determines that the aggregated wholesale HSA service rates that are made final in this decision are to be applied retroactively to when the rates were made interim [i.e. backdated to 2016].'

1&1 Versatel, Deutsche Glasfaser Sign Wholesale FTTH Deal for B2B Connections

1&1 Versatel has entered into a long-term wholesale agreement which will enable it to market its B2B products and services over Deutsche Glasfaser's fiber-to-the-home (FTTH) network. As a result of the cooperation, 1&1 Versatel is expanding its business services in rural areas and will be able to equip more than 12,000 companies with products, including data center connections and cloud services,

and gigabit internet speeds on Deutsche Glasfaser's fiber-optic infrastructure. 'As a network operator, we have to ensure that all companies really do get fiber-optic connections, especially in commercial areas. In rural areas in particular, the expansion of a comprehensive fiber-optic network only works through partnerships. With this cooperation we are taking an important step in the development of

such regions,' commented CEO of 1&1 Versatel Dr. Soren Trebst, adding: 'Gigabit is only possible together. Cooperation, open access platforms and other forms of cooperation must be strengthened and promoted. We will only be successful if we as an industry use synergy, think networked and work hand in hand.'

CNMC Reduces Indirect FTTH Wholesale Charge

Spain's National Commission for Markets and Competition (Comision Nacional de los Mercados y la Competencia, CNMC) has reduced the indirect access point (punto de acceso indirecto, PAI) charge that alternative operators are obliged to pay Telefonica Espana (Movistar) in order to access its fiber-to-the-home (FTTH) network. The 2020 PAI price of EUR2.83 (USD3.46)/Mbps has been reduced to EUR2.23/Mbps and will drop to EUR1.97/Mbps in 2022. The watchdog notes that of the 11.8 million active fiber-optic broadband lines in Spain, 2.7 million are attributed to wholesale services currently regulated by the CNMC via the Ethernet de Banda Ancha (NEBA) classification. According to TeleGeography's GlobalComms Database, NEBA was a new reference offer for wholesale broadband access that was unveiled in November 2011; it was conceived to allow alternative operators greater customization in the wholesale services they could offer to end users.

Telefonica, 1&1 Drillisch Conclude National Roaming Contract

Drillisch Online, a wholly-owned subsidiary of 1&1 Drillisch, has announced it has concluded a long-term national roaming agreement with Telefonica Deutschland, as it seeks to become Germany's fourth mobile network operator. The agreement, which goes back to a commitment by Telefonica as part of the EU antitrust approval of its merger with E-Plus in 2014, follows the signing of a letter agreement between 1&1 Drillisch and Telefonica in February. The start date for national roaming will be set by 1&1 Drillisch in parallel with the launch of its mobile network. From this date, all new and existing customers migrated to 1&1 Drillisch's network will have access to the 5G network, and automatically non-discriminatory access to Telefonica's 2G and 4G mobile network via national roaming in areas not yet rolled out by 1&1 Drillisch. From 1 January 2026, access to 4G national roaming in Telefonica's mobile network will be limited to some extent in certain urban areas which will then be covered by 1&1 Drillisch's 5G network. However, in these areas a minimum coverage of national roaming of up to 50Mbps is always ensured. 1&1 Drillisch customers, who are currently activated on Telefonica's network, will be migrated within a contractually agreed transition period following the launch of 1&1 Drillisch's 5G network and will continue to have 2G, 4G and 5G access to Telefonica's mobile network until then. The national roaming agreement has an initial term of five years, retrospectively from 1 July 2020 until 30 June 2025, and is based on the pricing mechanisms of the first five years of the pair's MBA MVNO agreement. It provides for annually decreasing prices, which are lower than the prices currently charged by Telefonica under the MBA MVNO agreement. 1&1 Drillisch has the right to extend the initial term until 30 June 2029, and at 1&1 Drillisch's request an additional contract extension up to 30 June 2034 is possible. The prices for the first extension option until June 2029 are determined by specific rules, following which Telefonica continues to be obliged to offer non-discriminatory prices. As part of the overall agreement, the ongoing price review proceedings initiated by 1&1 Drillisch will also be terminated.

The Post and Telecom Authority Proposes Revision of Mila's Wholesale Tariff for Trunk Segments of Leased Lines

The Post and Telecom Administration (PTA) has sent a draft decision regarding the revision of Mila's wholesale tariff for trunk segments of leased lines to the EFTA Surveillance Authority (ESA), with the regulatory body given one month to submit its comments. In the submitted draft legislation, the PTA agrees to Mila's request that the tariff for trunk segments of leased lines should be changed in its entirety in accordance with changes in the underlying costs for the trunk network, instead of updating cost models for different services. The PTA says that this does not disrupt the structure of tariffs that are currently in force and the consistency between tariffs in this market. However, the PTA considers it appropriate that in the next revision of the tariffs in the market, the cost model will be reviewed in its entirety. The tariff increase only applies to monthly fees, which will increase by 2.59%, while one-time fees, monthly fees for Sync-Ethernet and connections remain unchanged. Mila will be required to submit a revised cost model to the PTA in 2022.

CNT and Movistar Roaming Deal to Boost LTE Coverage in 18 Provinces

Ecuadorian state-owned operator Corporacion Nacional de Telecomunicaciones (CNT) and Telefonica's Movistar Ecuador have concluded an Automatic National Roaming agreement to provide customers in 18 provinces with greater 4G LTE coverage. Within the framework of the government's Digital Ecuador strategy to boost connectivity, the two operators have agreed to share access to 94 cell sites (59 owned by CNT and 35 by Movistar) in order to increase 4G coverage and future access to 5G services. CNT will share 13 base transceiver stations (BTS) in coastal areas (Esmeraldas, Manabi, Los Rios and El Oro), 34 in the mountains (Carchi, Pichincha, Cotopaxi, Tungurahua, Chimborazo, Bolivar, Canar, Azuay and Loja), and twelve in the Amazon (Sucumbios, Orellana, Morona Santiago and Zamora Chinchipe), while Telefonica Movistar will provide access to 26 antennas on the coast (Esmeraldas, Manabi and Guayas) and nine in the mountains (Pichincha, Santo Domingo de los Tsachilas and Cotopaxi). Commenting on the agreement, Martha Moncayo, General Manager of CNT said: 'This inter-institutional effort is part of the tariff infrastructure sharing agreement, which seeks to optimize investment by companies for the benefit of rural areas of the country, promoting continuous innovation in the offer of services and networks, with the aim of satisfying the needs of society.' Luis Bentuil, CEO of Telefonica Movistar Ecuador, added: 'The agreement will generate more inclusion in the Ecuadorian population. We are proud to reinforce this type of alliance with CNT as an efficient alternative to have sustainable networks in Ecuador.'

Azerbaijan to Join Single Roaming Area

Azerbaijan has joined the initiative to create a single roaming area with the other countries of the Eastern Partnership with the EU, namely Belarus, Georgia, Moldova, Ukraine and Armenia, reports Trend citing Elmir Velizade, Deputy Minister of Transport, Communications and High Technologies. The Regional Roaming Agreement is expected to be signed in the autumn and take effect on 1 January 2022, with roaming costs set to be reduced by 87% by 2026 under the proposed glidepath.

CRTC Announced a Number of Retail and Wholesale Measures

The Canadian Radio-television and Telecommunications Commission (CRTC) has announced a number of retail and wholesale measures which it hopes will 'spur more mobile wireless competition for Canadians'. In terms of MVNO access, the watchdog will require Bell Mobility, Rogers and Telus, as well as SaskTel (Saskatchewan only), to provide wholesale access to regional wireless providers that have invested in network infrastructure and spectrum, albeit under certain conditions. Wholesale rates will be negotiated between providers, while the terms and conditions will be established by the CRTC. This arrangement will be mandated for a period of seven years from the date it is finalized, which will give regional carriers time and incentive to expand their wireless networks. Perhaps unsurprisingly, the CRTC's decision has attracted condemnation, with critics saying the guidelines do not go far enough. The Competitive Network Operators of Canada (CNOC), which represents more than 30 competitive telecoms providers across Canada, has issued a press release asserting: 'Without the flexibility afforded through a full MVNO model, independent carriers are not set up to innovate on services and pricing. We've long advocated for fairness and choice for Canadians to help the country catch up to the global telecom landscape. Unfortunately, this decision sends us in the opposite direction and is simply bad for Canadians.'

Commerce Commission Maintains Regulation of Three Wholesale Services

New Zealand's Commerce Commission has announced it will retain regulation for three wholesale telecom services to continue to promote competition and protect consumers. The three wholesale services under review were number portability, interconnection with a fixed PSTN, and co-location on cellular mobile transmission sites. 'After consulting with the sector, and interested parties, our view is that these services continue to play an important role in the market and should remain regulated for now,' said Telecommunications Commissioner Tristan Gilbertson, adding: 'As markets evolve, new retail services are developed and wholesale service providers can face increased competition to an extent that it may no longer be necessary to mandate access, but we are not yet at this point for these particular services.'

OFCOM Issues Statement on Wholesale Voice Market Review
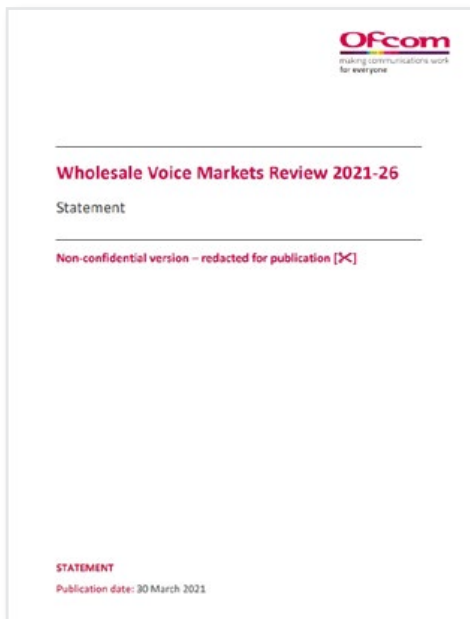
British telecoms regulator OFCOM has published a statement setting out how it plans to regulate the wholesale markets that underpin fixed and mobile calls for the period between April 2021 and March 2026. In a press release regarding the matter the watchdog said that, to continue to protect customers from high prices it had decided to cap termination rates for calls made and received, based on the cost of connecting a call. With OFCOM confirming that the cap for mobile call termination is being reduced 'to reflect the lower costs faced by mobile operators', it has said the mobile termination rate (MTR) cap will fall to GBP0.00379 (USD0.005) per minute in the first year of the market review period (the year to 31 March 2022), down from the existing figure of GBP0.00468 per minute. Looking further ahead, as per OFCOM's '2021 mobile call termination [MCT] model' it has said it expects the MTR over the charge control period to be as follows: GBP0.00371 from 1 April 2022; GBP0.00379 from 1 April 2023; GBP0.00387 from 1 April 2024; and GBP0.00393 from 1 April 2025. Additionally, OFCOM has said it will also continue applying this MTR cap for calls to '070' numbers, which are used for personal or 'follow-me' services. For fixed voice termination, however, OFCOM has confirmed that it will maintain the current cap of GBP0.00292 per minute 'in real terms'. Separately, OFCOM has confirmed it plans to deregulate the wholesale market for landline call origination. Although the regulator noted that some phone companies still use fixed line incumbent BT's wholesale 'Wholesale Call Origination' ('WCO') service to enable people to make outbound calls over their landline, it said that as these providers move to more modern methods of supplying landlines, they will no longer need to purchase this service from BT. As such, OFCOM expects the transition to more modern methods to take place by the end of 2025, adding that BT has offered voluntary commitments to maintain its WCO service in line with current regulation during that transition period. Nonetheless, the regulator has revealed plans to regulate IP interconnection such that BT will be required to interconnect on 'fair, reasonable and non-discriminatory terms, including prices. Further, OFCOM will also require BT to publish a timetable for the migration from traditional interconnection to IP interconnection. To encourage this shift, BT has been ordered to offer interconnection with its IP network for termination of calls on BT's network at the regulated termination rate from April 2025. According to OFCOM, such a requirement will 'provide certainty to telecoms providers that by April 2025, they will be able to access the regulated termination rate for calls to numbers allocated to via IP interconnection, including for those numbers that may still be held on BT's traditional network'. As a consequence, from April 2025 BT will no longer be able to charge for certain additional services for IP interconnection, on top of the regulated termination rate. Of note though, in terms of the next steps OFCOM did note that EU legislation provides two routes under which UK providers can secure low termination rates for calls to the EU providers. According to the regulator, the first can be satisfied by individual UK telecoms providers, where the second would require the UK Government to make an application to the EU. OFCOM has said that should the UK Government decide on the second route, it would support it 'as necessary', though said that this may involve having to revisit some of its decisions, specifically the regulation of the termination rates for 070 numbers at the mobile termination rate. All of OFCOM's decisions come into force on 1 April 2021, except its changes to the caps for fixed, mobile and '070' termination charges, which will take effect from 1 June 2021; this delay is reportedly to allow providers time to notify new termination rates where necessary to comply with the new rules. In addition, BT will be given six months to implement the transparency requirements for IP interconnection to publish (1) a reference offer setting our fair and reasonable terms for IP interconnection, and (2) information on the quality of service of its provision of interconnect circuits.

NBN Co to Lower Wholesale Prices, Boost Coverage for Business-Focused Satellite Offering

NBN Co has announced improvements to the NBN Business Satellite Service, with these including the expansion of coverage to include the entire Australian mainland and large surrounding islands. In a press release regarding the development, Australia's communications minister Paul Fletcher also claimed that businesses across the country would now have cheaper access to business-grade satellite services, with NBN Co set to lower wholesale prices. The minister was cited as saying: 'In addition to the expanded coverage, NBN Co will reduce the wholesale price by approximately 40% for the Business Satellite Service Access Bandwidth Service Level 3 dedicated product … This will give businesses cheaper access to wholesale speeds of up to 50Mbps/13Mbps, and also provide the option of unlimited data to provide the core connectivity required for critical business applications.'

ARTICLE

Mobile Money: Driving Growth in Times of COVID19

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Globally, large parts of the population suffer from financial exclusion as traditional banks fail to provide sufficient coverage. With mobile money as a solution, telcos have risen to the challenge. They are ideally positioned to capitalize on the growth opportunities associated with it. They are already trusted brands with a large customer base and broad geographical reach. Moreover, telcos can let mobile money services practically "piggyback" on their existing infrastructure, leveraging cost advantages that cannot be matched by any bank. And since many services can be delivered remotely, they are less dependent on having physical presences such as branches or ATMs.

With the recent COVID-19 outbreak, the benefits of mobile money have become even more apparent. While many economies have ground to a screeching halt due to shutdowns and the restriction of public life, mobile money has proven to be a lifeline for many businesses and private individuals.

Households enabled to make contactless transactions
The major benefit of mobile money, especially during the pandemic, is the ability of users to perform transactions remotely and contactless when the only alternative would be cash payments. According to a study by the World Economic Forum, high mobile phone penetration rates in the SAMENA region and the much more extensive availability of mobile money agents (228 per 100k people) vis-à-vis bank branches (11) or ATMs (33) globally lead to many people gaining quick access to remote paying services at a crucial time.

Government enabled to provide social assistance efficiently
Another big contribution of mobile money during the pandemic was the ability of governments to wire cash benefits to large number of households. Handing out the benefits in cash requires significant resource effort while traditional bank transfers would have left out a large portion of recipients of these government programs which were at the forefront

Illustration 1: COVID-19 Government responses, Source: World Economic Forum

of governments immediate reactions to the economic downturn as shown by illustration 1. As an example, the Moroccan government released a statement that informal workers in Morocco were able to receive government aids quickly and efficiently using mobile money.

Telcos response with customer favourable terms enabled steep adoption

Safaricom, the largest telecom operator in Kenya, reduced usage fees on East Africa's leading mobile money solution, M-Pesa, shortly after the outbreak of COVID-19 in March 2020. After meeting with the Central Bank of Kenya, Safaricom explored new ways of increasing mobile money usage to reduce the risk of spreading the virus through physical cash. In addition, the company removed the daily transaction volume to encourage cashless payments and to support the Kenyan population during the pandemic.

Middle East experienced a boom in the number of mobile payment services during the pandemic as well. Telco operators such as Etisalat launched their new mobile wallet, available in 17 of its global operations. As the trend towards mobile money services increased in 2020, other telco operators such as Telkom, MTN, and Vodacom responded to the COVID-19 pandemic by lower fees, offering new credit services, and expanding of mobile payment networks among the key responses to COVID-19 in the SAMENA region.

Ultimately, mobile money experienced some breath-taking growth in the SAMENA region in 2020. Particularly the MENA

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region has seen significant uptake in active accounts and transaction value compared to the global growth.

To grow the mobile money business further, goetzpartners has identified several success factors for operators to gain a competitive edge in the market.

Building a dedicated mobile money salesforce

Today already, most telcos in mobile money markets have dedicated sales forces, called mobile money agents. Often traveling in teams, mobile money agents cover large parts of the country, targeting highly frequented locations such as weekly markets or the large cities' main streets. Rather than trying to lure people into shops, deploying such sales teams is much more effective because they go where the crowds are and directly engaging with (potential) customers.

Adjusting to a new low-fee environment

Many players waived their fees altogether or were mandated to do so by government legislation to support the local economy and grow their business at the same time. As many customers may have now grown accustomed to low or no transaction fees, telcos should adapt to these new conditions and extend the low fees beyond COVID-19 restrictions and instead look for other ways to monetize their systems by offering additional services surrounding mobile money.

Offering superior recharge conditions for prepaid top-up via mobile money

The provision of superior recharge conditions for airtime top-ups via mobile money is another powerful incentive. Benefits are typically granted in the form of multipliers on purchased airtime (e.g., receive double the data/ airtime for a given recharge value) and are very effective when it comes to converting existing mobile customers to mobile money.

Building an attractive ecosystem of diverse partners

Operators needs to build an attractive platform, including favorable pricing conditions and standardized API that allow partners to connect easily and at minimal costs. It needs to Actively recruit a diverse set of partners including merchants, employers, government agencies, banks, and even other telcos. With the addition of every new customer, the value of the network increases, eventually unleashing powerful exponential growth.

Given the steep uptake in active accounts driven by the COVID-19 pandemic, it is now a crucial time for telcos to ride the wave and leverage it to accelerate the reach and growth from this offering.
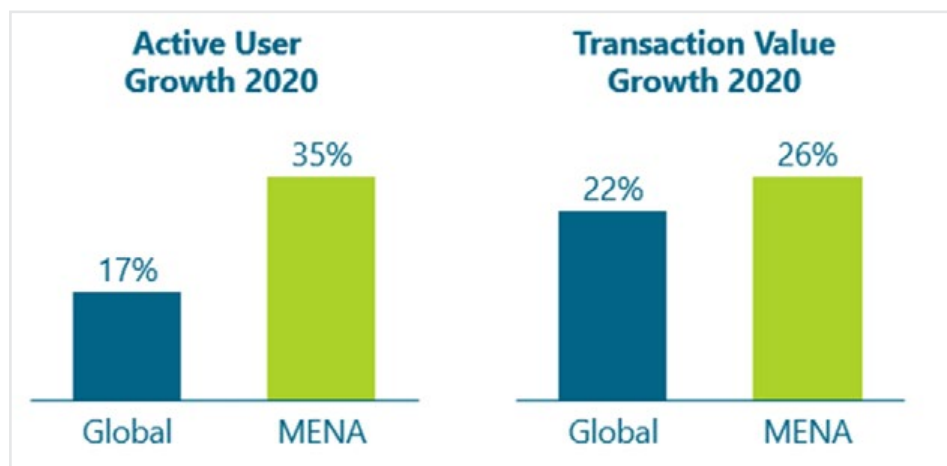

Illustration 2: Mobile Money Growth, Source: GSMA

TECHNOLOGY NEWS

Singtel Launches 5G Standalone (5G SA) Network in Singapore

Singtel has launched its 5G standalone (5G SA) network, taking both the telco and Singapore yet another step forward in the 5G journey. According to Singtel, its 5G SA network has twice the responsiveness, 30 per cent faster uploads, better authentication and encryption capabilities, with even greater bandwidth - all when compared to 4G connectivity. While Singtel didn't specify a new top download speed, we can expect its new 5G SA network to be blazing fast as it's operating on the 3.5GHz spectrum. Singtel's 5G journey has been relentless since its consumer push for 5G in September 2020. It started with deploying 5G non-standalone (5G NSA) before setting up mmWave 5G in Orchard and sticking up indoor 5G coverage for malls Singtel offered trial boxes for small companies on the enterprise front to try implementing 5G into their workflow. The telco is also working with Microsoft Azure and Amazon Web Services in 5G multi-access Edge Compute trials. The rapid changes to Singtel's network have led to the telco revamping its bread-and-butter, contract-based mobile data plans.

5G mmWave Delivering Speeds 16 Times Faster Than Sub-6GHz

Demonstrating the attractiveness of mmWave 5G, Qualcomm Technologies has shown that connectivity speeds on commercial devices are now 16 times faster than 5G operating solely in sub-6GHz frequencies. As 5G adoption increases and more services, such as telehealth and the internet of things, migrate to 5G networks, they will need spectrum across all bands, especially mmWave to deliver enough capacity to support full 5G experiences. 5G mmWave uses ultra-wide channels to deliver exponentially faster speeds and greater capacity compared with lower-frequency 4G or 5G bands. The test results – based on Ookla Speedtest Intelligence data from user-initiated tests on commercial devices in the US – imply that such experiences can be guaranteed at the mmWave location. Qualcomm said 5G mmWave was critical to dramatically improving the performance and advancing the variety of connected experiences in every setting. It said the advanced technology could deliver massive bandwidth, whether at home with 5G fixed wireless access, on the go in a train station streaming business video applications, or just with a need for enterprise-grade connectivity. 5G mmWave momentum continues through the world, with deployments from all major operators in the US and Japan, recent deployments in Europe and Southeast Asia, and more coming soon in regions such as Australia and Latin America. China is also expected to deploy 5G mmWave for next year's Winter Olympics. Along with other companies within the mobile ecosystem, Qualcomm Technologies began work in the mmWave a number of years ago, moving to interoperability tests in 2017 and 2018, and ultimately commercialized mmWave in 2019 launching multiple flagship smartphones. In 2020, the company showcased 5G mmWave speeds of over 5Gbps and in mid-April 2021, Qualcomm announced that it had taken a key step in its evolution of 5G systems by completing 5G data calls that successfully combined mmWave with FDD or TDD sub-6GHz spectrum by utilizing 5G standalone mode dual connectivity. "Our end-to-end modem-to-antenna solution brings together all the key 5G breakthroughs to optimize 5G connectivity using the massive bandwidth of mmWave," said Durga Malladi, senior vice-president and general manager, 4G/5G at Qualcomm Technologies. "With almost every major OEM offering 5G commercial devices globally, we are playing a critical role in enabling 5G to live up to its promise of speed and power. This not only redefines the smartphone experience, but also paves the way for endless possibilities, including the further expansion of 5G into fixed wireless access, 5G private networks, compute, XR and industrial IoT."

Brunel Goes SD-WAN with Orange Business Services

Dutch international specialist recruitment consultancy Brunel has chosen Orange Business Services to deploy a co-managed SD-WAN to provide a secure, cloud-centric global network solution to support business growth. Boasting 45 years of market experience, Amsterdam-based Brunel provides the global recruitment and workforce services in industries such as renewable energy, automotive, oil and gas, life sciences, mining, and infrastructure. The firm says it helps clients finish major projects safely, compliantly, on time and within budget to keep growing – anywhere in the world. Indeed, it has an established presence in more than 40 countries, and specifically markets its ability to take advantage of its expertise of the international community, understanding local customs, expectations, practices and regulations. Brunel, which has a long-term strategic partnership with Orange, needed to consolidate and standardize its WAN network to fulfil its ambitions, enabling employees to use Microsoft's Modern Workplace, providing them with the tools to collaborate and be productive wherever they are. It also wanted to simplify the management of its network and improve cost efficiencies while having the ability to set up new offices faster. In the deployment, Orange Business Services deployed a global Cisco Meraki SD-WAN service for Brunel, using managed internet connections and integrating with Microsoft Azure Public Cloud. The service will be co-managed by Brunel and Orange, with day-to-day operational changes performed by the recruitment agency locally via a dashboard, simplifying management and scalability for its small core IT team. "We have an established trusted relationship with Orange," said Brunel chief information officer Stefan de Boer. "It has provided us with a 21st century solution that is providing us with the continuity, flexibility and scalability our business demands. "At the same time, we have managed to make cost savings of around 30% by replacing MPLS with SD-WAN, while giving our employees robust, anytime, anywhere access and future-proofing our network," he said.

Melita Launches Malta's First 5G Network

Maltese cableco and wireless operator Melita has launched what it says is a 'nationwide' 5G service, beating rivals Epic and GO to the country's first commercial 5G offering. Melita claims that download speeds of up to 1Gbps will be available on its Ericsson-built network, although real-world speeds will be somewhat lower. Any customer with a 5G device can access the service, Melita CEO Harald Roesch told Times of Malta. He added: 'Malta is one of the very few countries in the world with 5G nationwide coverage, and is now unparalleled in the EU. This investment benefits our economy in general.' Melita is using existing spectrum for its 5G service ahead of an auction of 5G-capable licenses in the 700MHz, 3.5GHz and 26GHz bands later this year.

Samsung Boosts Logic Chip Investment By $34B

Samsung earmarked an additional KRW38 trillion ($33.5 billion) investment to accelerate research of non-memory chips and build a new production facility, taking its total planned outlay in the segment to KRW171 trillion by 2030. The company also announced it is starting constructing a production line for 14nm DRAM and 5nm logic semiconductors in Pyeongtaek which is scheduled to come online in H2 2022. Kim Ki-nam, Head of Samsung's Device Solutions division, used a statement to explain the semiconductor industry "is facing a watershed moment", meaning the time is right to "chart out a plan for long-term strategy and investment". The investment builds on a commitment Samsung made in 2019 to pump KRW133 trillion into its System LSI and Foundry units to become the leading manufacturer of logic chips by 2030. Samsung said it worked closely with semiconductor designers, component and equipment manufacturers, along with academia to progress its goal. Kim said it will continue to make pre-emptive investments to continue to lead the industry in memory. Major chipmakers globally are looking to ramp production capacities to ease chip shortages affecting several industries. Samsung recently warned of a continued impact of the shortages to its earnings in the current calendar quarter.

Bangladesh Set to Manufacture Nokia Mobile Phones

One solution for making the logistic more affordable and efficient is to start manufacturing smartphones in countries with a large population. Nokia Mobile started manufacturing phones in India not long ago, which are mostly intended for the Indian market, but also the export. Now, Nokia Mobile plans to start manufacturing phones in Bangladesh, a country that borders India and is also an important market with a lot of potential consumers. Nokia is not the only brand that started the assembly of its phones there. The same maneuver was done by Samsung, OPPO, and Realme. Vibrant Software (BD) Ltd is the company that will be doing the production. The company received approval from BTRC to set up a factory in Bangladesh and got all the permission to assemble Nokia devices. This should cover the costs of shipping and logistics for Nokia. Samsung, OPPO, Realme, Tecno, Itel are all manufacturing their devices in Bangladesh. Some 85% of the smartphones are manufactured locally and 55% of both smartphones and feature phones are sold there.

EU Looks to Work with India on 5G Security Standards

The European Union is looking to work with the Indian government to create open and transparent security standards for 5G technology rollouts across Europe and India, as concerns grow about the dominance of Chinese telecom giants. A report by Bloomberg quoted European Commission (EC) EVP Margrethe Vestager saying that the EU has intentions to collaborate with India on creating global standards for security and transparency in 5G rollouts. EU officials are expected to meet Prime Minister Narendra Modi and discuss the telecom security matter as part of a broader discourse on security and trade issues during the India-EU summit in Portugal on May 8. The Commissioner reportedly highlighted the EU's desire to collaborate with democratic partners on establishing open standards for 5G rollouts and protect networks in the light of "a systematic rivalry", supposedly hinting at heightened concerns around Chinese vendors. Recently, a report titled 'Shaping Europe's digital future' revealed that the 5G Infrastructure Association, the private side of the 5G Infrastructure Public Private Partnership (5G PPP), signed a Memorandum of Understanding with the Telecommunications Standards Development Society, India (TSDSI) two years ago intending to foster industrial cooperation between India and Europe. This cooperation targets regular and structured exchange of information of regional developments including regulatory and 5G spectrum approaches technological approaches towards standardization, deployment experience, and involvement of vertical industries in the 5G ecosystem. India has decided to distribute the 2.6 GHz spectrum based on the full TDD mode similar to China, the USA, Japan. Positions on other bands are not yet official but are part of the cooperation discussion between 5G-IA and TSDSI. Besides, the Commission cooperates with the Indian government on digital issues including 5G through the EU-India co-operation dialogue on Digital Communications as well as the EU-India Joint Working Group on ICTs. Alongside the US and India, several EU nations moved to impose restrictions on the use of equipment made by companies including Huawei and ZTE when building 5G networks over worries of ties with China's government. The EU reportedly needs to pour US$355 billion into deploying next-generation networks, and India is thought to require US$70 billion.

Telekom Rolls Out 5G at 75 Locations

Telekom Deutschland, the domestic fixed and mobile unit of German telecoms group Deutsche Telekom (DT), has installed 5G at 75 locations across the country in the past two months. Thanks to Dynamic Spectrum Sharing (DSS), LTE can also be used at these locations. The firm adds that it created additional LTE capacities at 173 locations and installed 4G at 178 new locations, increasing population coverage to 98.7%, while 5G services cover 80% of Germans. 'We are pushing the pace with the expansion of mobile communications. We currently have more than 32,000 locations in operation and we will set up more than 1,500 new locations every year,' commented Walter Goldenits, Managing Director Technology at Telekom Deutschland, adding: 'In addition, there are LTE and 5G expansions at thousands of existing locations. As part of our massive expansion activities, 5G will become the new standard in Telekom's cellular network.'

Hyperbat Accelerates Industry 4.0 With World First 5G Virtual 3D Engineering Model

Hyperbat, one of the UK's largest independent vehicle battery manufacturers based at Unipart Manufacturing in Coventry, is using the latest 5G enabled technology to significantly speed up the manufacturing process for hybrid and electric vehicle production in the UK. Partnering with BT, Ericsson and NVIDIA, Hyperbat is set to benefit from a world first 5G Virtual Reality (VR) 'digital twin' solution which allows remote teams in different parts of the country to connect, collaborate and interact using a virtual 3D engineering model. By enabling dispersed teams across design, engineering and manufacturing to collaborate more efficiently, the technology is set to accelerate the pace of innovation within the UK manufacturing sector. Hyperbat alongside its partners – BT, Ericsson,Qualcomm Technologies, NVIDIA, Masters of Pie and The Grid Factory - unveiled details of the solution at the NVIDIA GPU Technology Conference (GTC) demonstrating how it will reduce product cycle time between design, engineering and manufacturing teams based in Coventry and Oxfordshire. The solution offers a world first untethered 5G native experience that will allow design and engineering teams to walk around and interact with a 3D

lifesize model in real time through a single self-contained device, and without the constraints of a physical connection. Hyperbat colleagues in different locations will be able to work with a 1:1 product scale hologram of the design in-situ on the factory floor, review designs in real time, and manage workflows much more effectively. The solution comprising high bandwidth and low latency 5G connectivity, integrated by Ericsson's D-15 Lab in Santa Clara, California, will enable Hyperbat to deliver engineering projects at scale. This will empower teams to improve build efficiency within its manufacturing processes, whilst removing current complexities between product management systems, supply chain and factory operations. The 5G VR digital twin solution will be deployed by BT and Ericsson on a 5G mobile private network, using the world's first 5G-enabled VR headset powered by the Qualcomm® Snapdragon™ XR2 Platform. The VR headset will run on the Masters of Pie Radical platform, enabling Hyperbat to use cloud-based virtual reality within computer-aided design (CAD) software. Using high performance edge compute, the solution also includes cutting-edge hardware and software from NVIDIA to seamlessly integrate

into existing factory floor operations. Qualcomm's VR headset incorporates split rendering where all the perception-based data is held locally on the device, but the computing is handled in the cloud and streamed by the NVIDIA CloudXR and solutions. This helps to achieve a seamless, high fidelity VR experience that produces a real-life experience for the manufacturing teams. Hosein Torabmostaedi, Digital and Innovation Manager said: "Hyperbat is honored to be working with such an incredible consortium of partners to pioneer a solution that lays the foundations for smart factory architecture and efficient, flexible and collaborative manufacturing. The solution mainly targeted at collaborative mobile workforce with the use of 5G native headsets and seamless integration of design and manufacturing systems with the digital twin technologies. Hyperbat also to extend the solution to the use of 5G connectivity for machines to enable configurable and flexible production lines. The solutions will be demonstrated and trialed at Hyperbat's facility in Coventry, United Kingdom." Jeremy Spencer, 5G Innovation Senior Manager, BT's Enterprise unit said: "This world-first 5G digital twin solution is a powerful reminder that 5G connectivity and Edge Compute is very much here now, delivering real business benefits for our customers. 5G connectivity, when combined with the latest emerging tech can produce incredible efficiency gains which will be so important in boosting the UK manufacturing sector as it recovers from COVID. It will also bring a welcome boost to many other industries where collaboration is required. We're thrilled to be working with Hyperbat and such a strong network of partners to bring this innovation to life, made possible by combining our collective strengths across a range of technologies." "5G will have a transformative impact in the industries and technologies of the future and this collaboration with BT, Hyperbat and other eco-system partners is another demonstration of how low latency, edge compute and wireless networking will be critical to digitalization within the enterprise sector. By delivering operational efficiencies through 5G technology, we are laying a foundation that can help to drive innovation in manufacturing, boost the economy and position the UK as a leading 5G nation," said Björn Odenhammar, CTO, Networks & Managed Services, Ericsson UK & Ireland "Bringing remote teams together in VR to collaborate and refine manufacturing processes will produce great efficiencies and innovations," said David Weinstein, director of virtual reality and augmented reality at NVIDIA. "This 5G VR digital-twin solution -- powered with NVIDIA RTX technology, CloudXR, and NVIDIA RTX Virtual Workstation software -- will enable real-time immersion for teams both on the factory floor and remotely." The Hyperbat solution is near completion with results of the collaboration expected in early summer.

EE Switches On 5G in 35 New Locations as it Nears Active Subscriber Milestone

Mobile network operator (MNO) EE has announced it has switched on its 5G network in 35 new towns and cities across the United Kingdom, while also confirming the addition of outdoor 5G coverage to 'some of the UK's most popular tourist landmarks, historical sites, and coastal locations'. Announcing the infrastructure expansion in a press release, the MNO identified the new locations as: Aldridge, Alexandria, Aylesbury, Ayr, Barnsley, Biggleswade, Blackburn, Bolton, Brighton, Chester, Colchester, Dundee, Exeter, Grantham, Gravesend, Harrogate, Lincoln, Milton Keynes, Norwich, Paignton, Poole, Portsmouth, Rickmansworth, Runcorn, Southport, Stockton-on-Tees, Stoke-on-Trent, Stratford-upon-Avon, Sunbury-on-Thames, Swansea, Swindon, Widnes, Wigan, Worcester and York. With EE noting that its latest coverage expansion means that its 5G network is now available in a total of 160 towns and cities across Britain, it also revealed that it expects to achieve the milestone of one million active 5G customers – which it defines as being 'those that are actively able to use EE's 5G network, as they have both the right plan and a 5G-enabled device' – this month. Commenting, Marc Allera, CEO Consumer Division, BT, said: 'We've announced that we've switched on our award-winning 5G network in a further 35 towns and cities across the UK, fulfilling the commitment we set last year to double our 5G place count. With the gradual easing of lockdown restrictions expected in the coming weeks and months, the increased capacity and faster speeds of our 5G network will ensure our customers stay connected as footfall starts to increase in historically busy places.'

TIM Brasil Taps Ceragon for 5G OpenRAN mmWave Trial

TIM Brasil has enlisted Ceragon Networks to participate in 5G testing it is carrying out alongside the Telecom Infra-Project (TIP) and the National Telecommunication Institute (Instituto Nacional de Telecomunicacoes, INATEL). The open field trial will take place on the INATEL campus, in Santa Rita do Sapucai (Minas Gerais), and will incorporate software and hardware vendors, operators, university members and members of the TIP working groups. The project is focused on the provision of 5G OpenRAN solutions. For the purpose of the trial, TIM Brasil will deploy Ceragon's IP-50E millimeter wave (mmWave) solution, which the vendor says is capable of delivering capacity of up to 20Gbps.

Telit Announced the Success of its 5G Data Card for Interoperability Testing

Telit announced that its FN980 5G data card has successfully completed interoperability testing in the sub-6GHz spectrum range on the 5G network of Japanese cellco NTT DOCOMO, having previously operated on the 4G network, enabling original equipment manufacturers (OEMs) to take advantage of Gigabit LTE and future-proof their products for 5G, suitable for a wide variety of bandwidth intensive IoT applications, including high definition (HD) surveillance video, digital signage and industrial routers/gateways. Powered by the Qualcomm Snapdragon X55 5G Modem-RF System, the FN980 series supports sub-6GHz FDD/TDD and LTE Category 20 – 7x carrier aggregation. Osamu Sato, country director for Telit, noted that 5G interoperability in mmWave frequency bands would also be provided in due course. NTT DOCOMO has also announced a successful 5G test in partnership with Sony, remotely controlling Sony's Sociable Cart (SC-1) entertainment vehicle carrying passengers in Guam from a base 2,500km away in Tokyo, via a 5G network provided by DOCOMO Pacific. Video of the vehicle's perimeter was captured with Sony image sensors and sent in real time to a Sony office in Tokyo where the vehicle was driven remotely while the operator watched a monitor, taking advantage of 5G's low latency, large capacity and higher-speed connectivity. A press release stated: 'In the emerging age of autonomous mobility, remote operation and monitoring are becoming increasingly important. The cross-border operation of vehicles is expected to enable global mobility services that benefit from personnel working in various time zones.'

Bell Deploys 400Gbps Wavelength Service with Ciena

Bell Canada has deployed a commercial 400Gbps wavelength service using Ciena's WaveLogic 5 Extreme technology to deliver significantly increased connectivity speeds and capacity required by large cloud and data center providers while optimizing network performance and energy efficiency. Ivan Mihaljevic, Senior Wholesale VP at Bell, said: 'Bell 400G wavelength service efficiently delivers the

speed and capacity necessary to meet the fast-growing demand of bandwidth-intensive operators moving massive amounts of data and content to the cloud.' Now deployed across major spans of Bell's 17,000km fiber infrastructure, the 400G service will continue to expand nationally in the coming months. The 400G technology increases fiber capacity using less network hardware and more automation to

deliver four-times the data speed and 50% more capacity per wavelength. Bell says its wavelength service provides a reliable, secure fiber-optic network for the transport of voice, data and video, supporting the accelerated adoption of bandwidth-hungry services and applications that require fast, high capacity, low-latency connections. Ciena executive Bruce Hembree added: 'With WaveLogic 5 Extreme, Bell can offer new, high bandwidth 400G services to carrier and content provider customers between key points of presence across Canada and into the US.' In other news, it has been revealed that Bell Canada Enterprises (BCE) made an aborted offer to acquire Shaw Communications earlier this year, before Shaw finalized its merger deal with Rogers Communications in March. Regulatory filings released at the end of last week showed that BCE had matched Rogers in terms of proposed per-share bid value, but it withdrew from deal negotiations because it was not prepared to amend its proposal regarding 'certain regulatory issues.'

Bell Canada rolls out commercial 400G wavelength on fibre optic backbone

A1 5G Coverage Reaches 3.8M Austrians

A1 Telekom Austria has announced that its 5G network provides coverage to 3.8 million people in both urban and rural parts of the country. Since the beginning of this year A1 has put around 1,000 new 5G locations into operation, increasing the total to approximately 1,500. The firm launched its 3.5GHz network in 350 locations in 129 municipalities in January 2020. 'The full potential of digitization in Austria can only be developed with comprehensive and high quality access to digital media, services and business models,' stated A1 Group CEO Thomas Arnoldner, adding: 'As a

company, we currently have even more responsibility, because the digital infrastructure, in which we invest around EUR450 million [USD539 million] annually in Austria alone, is the basis for future growth, greater innovative strength and new perspectives in rural areas. That secures jobs and brings competitive advantages. With currently around 1,500 5G locations, we are already supplying 3.8 million Austrians with 5G and are thus getting closer to our goal of equipping Austria with 5G nationwide in 2023.'

DEA Forecasts 99% Of Homes will have 100Mbps/30Mbps Access By 2025

The Danish Energy Agency (DEA, or Energistyrelsen) has published a projection highlighting that 99% of all homes/business in Denmark will have access to high speed broadband services (down/uplink of 100Mbps/30Mbps) by 2025, up from 94% in 2020. The DEA disclosed that its projection 'has been prepared on the basis of an extensive dialogue with twelve companies, which geographically cover virtually the entire country.' The DEA said that around 22,000-26,000 homes/businesses will

remain without high speed broadband coverage at that date, with around 7,500-10,000 of those located in the Hovedstaden region (comprising Copenhagen City, Copenhagen surroundings, North Zealand and Bornholm provinces, 36% of total), 5,500-5,800 (Sjaelland [East Zealand, West Zealand and South Zealand], 24%), 5,000-6,000, (Syddanmark [Fyn and South Jutland], 23%), 3,900-4,000 (Midtjylland [West and East Jutland], 16%) and 100-200 (Nordjylland [North Jutland], <1%).

Verizon Commences C-Band 5G Rollout

Verizon Wireless has confirmed that it has commenced the installation of C-band 5G RAN equipment from Ericsson and Samsung Electronics. Verizon secured an average of 161MHz of C-band spectrum nationwide in the recent Federal Communications Commission (FCC) auction. The press release notes: 'Although the initial spectrum won't be cleared until the end of this year, Verizon and its vendor partners have already begun the work to ensure the super-fast 5G Ultra Wideband service using C-band is deployed to 100 million customers by March 2022.' In order to achieve that 100 million people metric, the service will initially go live in 46 markets. By 2023 coverage will increase to more than 175 million people, ultimately rising to 250 million people by 2024, when the remaining C-band spectrum is cleared.

ETB, ZTE Achieve 1.2Gbps Speeds in Bogota 5G Trial

Empresa de Telecomunicaciones de Bogota (ETB) has teamed up with Chinese vendor ZTE to stage a 5G trial in its local market. According to BN Americas the test generated download transmission speeds of up to 1.22Gbps. The Ministry of Information Technologies and Communications (Ministerio de Tecnologias de la Informacion y las Comunicaciones, MinTIC) permitted ETB to utilize unspecified spectrum – presumed to be the 3.5GHz band – for 5G testing purposes.

Samsung Wins Deal to Start KDDI's 700MHz 5G Rollout

South Korean equipment maker Samsung has revealed it has been selected to deliver a 700MHz solution for Japanese mobile operator KDDI, augmenting the latter's commercial 5G network which already uses frequencies in the 3.7GHz and 28GHz bands. In a press release, Samsung noted the use of 700MHz spectrum 'will enhance KDDI's 5G network coverage, improving indoor and outdoor mobile experiences, and provide reliable 5G connectivity to users. The vendor already supplies its mid-band and mmWave equipment, and with KDDI having set out its stall to launch 700MHz-based 5G services in major urban areas, including train stations, Toshikazu Yokai, executive officer, chief director of Mobile Technology at KDDI, confirmed the company's aim to achieve '90% population coverage, with its 5G network by early 2022'.

ARTICLE

PCCW Global Upgrades Middle Eastern Connectivity via Jordan Network Node

PCCW Global, the leading telecommunications service provider, in collaboration with Naitel*, a licensed telecommunications service provider in the Hashemite Kingdom of Jordan, have enhanced Middle Eastern international connectivity and expanded the region's network reach via a new IP node that has been strategically located in the Jordanian coastal port city of Aqaba.

The new point of presence, which is located in a carrier-neutral facility, provides the Middle East with a new level of connectivity using PCCW Global's advanced, resilient and automated Tier 1 network, and caters to the increasing demand of global wholesale and enterprise customers in the region. The node in Aqaba is PCCW Global's latest addition to the carrier's extensive global network of over 120 on-net Points of Presence (PoPs) in 52 countries and 81 cities.

> *Console Connect is continuing to grow its ecosystem of data centre, cloud, SaaS, carrier and enterprise partners in the Middle East, and the platform is now enabled in key data centres in Dubai, Doha, Fujairah, Jeddah and Cairo. Carriers on the platform can make direct connections to these locations and more than 400 other data centres worldwide.*

Furthermore, the new network node extends PCCW Global's growing global Tier 1 network coverage and ensures that the Gulf Corporation Council (GCC) region has access to high-speed connectivity and state of the art network automation via Console Connect, the world's first platform for Software-Defined Interconnection®.

Sameh Sobhy
Managing Director, Middle East, Turkey, Africa
PCCW Global

PCCW Global

*Naitel provides services in Jordan for PCCW Global's customers outside Jordan; PCCW Global is not licensed in Jordan and does not provide services to customers in Jordan.

The Console Connect platform offers business a much simpler and quicker way to make layer 2 connections on-demand - using PCCW Global's Tier 1 MPLS network. The result is that customers provisioning bandwidth on the Console Connect platform can experience improved network performance, such as lower latency and higher availability of guaranteed throughput over a trusted and secure network that provides extensive global reach.

In addition, the Middle East is one of the fastest-growing regions when it comes to consuming cloud services. In the last year, major cloud providers, such as Microsoft Azure, AWS and Oracle, have all launched data centres in the region. The Console Connect platform is directly connected to all major cloud platforms, including AWS, Microsoft Azure, Google Cloud and IBM Cloud, enabling businesses to quickly and easily connect to the cloud in the Middle East.

Development of the new node in Jordan is strategically aligned with other PCCW Global network expansion and connectivity projects in the EMEA region, including the innovative Pakistan & East Africa Connecting Europe (PEACE) cable project.

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Carrier customers can easily interconnect to the automated fabric using one of the Console Connect NNI ports. Once the port is configured, customers can begin making instant connections between the NNI port and any other port on the Console Connect fabric – and they can do this either through the Console Connect online portal or through an open API.

Development of the new node in Jordan is strategically aligned with other PCCW Global network expansion and connectivity projects in the EMEA region, including the innovative Pakistan & East Africa Connecting Europe (PEACE) cable project.

The PEACE cable system is a 15,000km-long, 200G and 16T/FP privately owned cable system connecting three of the largest and most populous continents in the world – Asia, Africa and Europe. Once complete, the PEACE subsea cable system will provide the shortest and most direct data route from Asia to Europe, ensuring exceptionally low latency, which is vitally important for people and organizations to leverage the innovative use of advanced ICT services.

PEACE will connect countries on both sides of the Mediterranean and provide connectivity for the Middle East en route between Europe and Asia.

Sameh Sobhy, Managing Director, Middle East, Turkey, Africa, PCCW Global, says: "Our goal is to bring the latest, most innovative, fast and robust services to customers in the GCC region and consequently, Aqaba is an important strategic location for development. In addition, the new node enables network automation in the region - making it possible for users to manage and control their own data resources by accessing a wide variety of cloud services and content on top of our state-of-the-art data network."

When the world stops
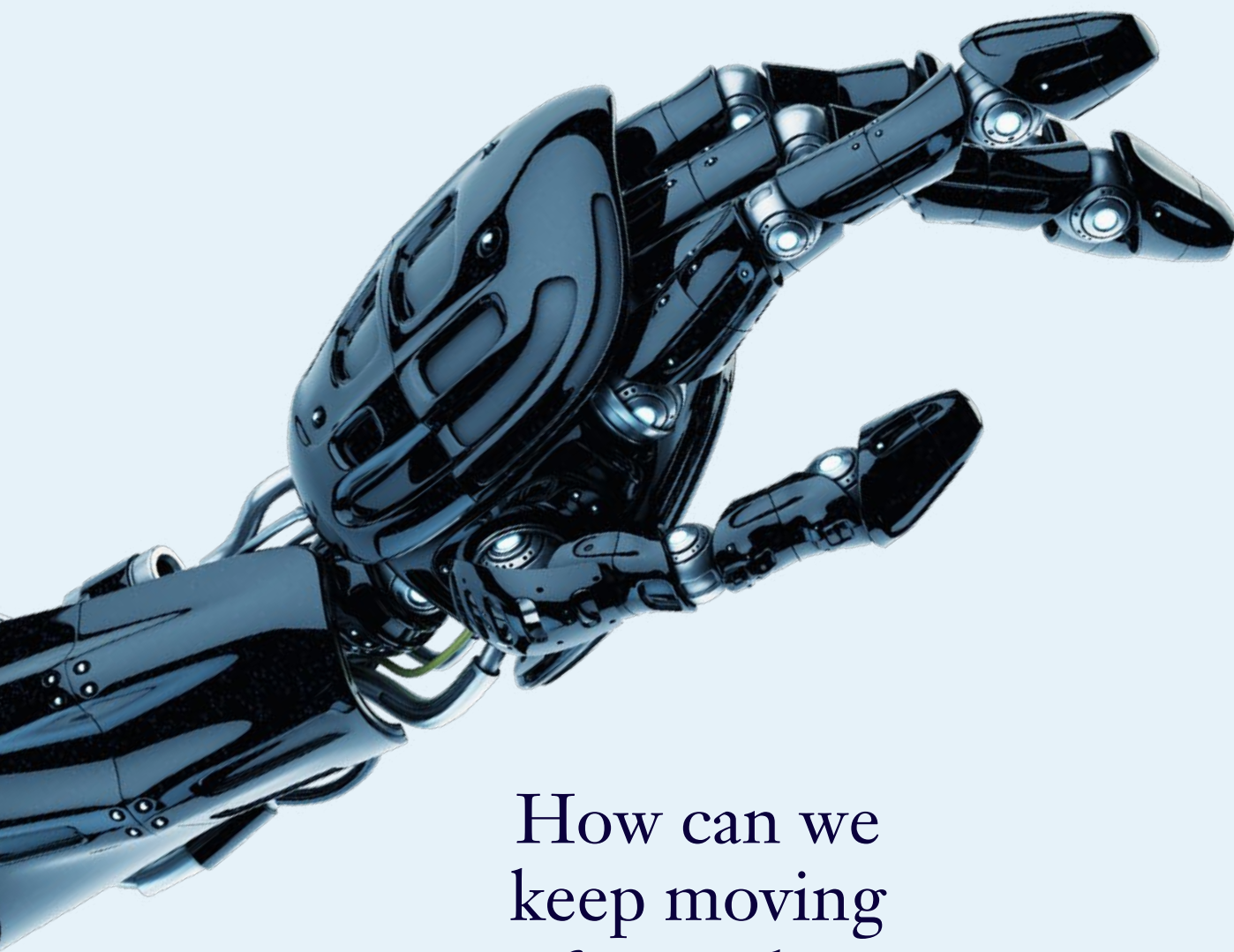
How can we keep moving forwards?

Arthur D Little

REGULATORY NEWS

ITU And UNDP Join Forces to Address Urgent Unmet Capacity Building Needs

The rise of digital technologies and ways of working offers extraordinary new opportunities to further global sustainable development and achieving the Sustainable Development Goals, from increasing economic resilience to mitigating the damage of COVID-19 and delivering more effective public services. Yet not everyone is equally able to take advantage of these opportunities, particularly as the rapid pace of digital change places further demands on resource-constrained governments and societies. Bridging the world's digital divide is increasingly urgent, as those who left out of today's digital transformation are in danger of falling further behind. This means ensuring that digital services are available everywhere, as well as affordable and accessible to all. To address this key issue, the International Telecommunication Union (ITU) and the United Nations Development Program (UNDP) have launched a Joint Facility for Digital Capacity Development to support those not currently served by existing digital capacity development resources or channels. The Joint Facility stands in support of the UN Secretary-General's Roadmap for Digital Cooperation, which calls for "a broad multi-stakeholder network to promote holistic, inclusive approaches to digital capacity-building for sustainable development, including a new joint facility for digital capacity development, which will be led by ITU and UNDP." People and communities currently underserved in terms of digital capacity will benefit from more efficient and effective support from the ITU/UNDP Joint Facility, which aims to make digital opportunities accessible to all. "Robust and effective digital capacity building underlines the fulfilment of the Secretary-General's Roadmap for Digital Cooperation, by supporting countries in their efforts to harness the full potential of digital technology as part of their digital futures", said Assistant Secretary-General Maria Francesca Spatolisano, Officer-

in-Charge at the UN Office of the Envoy on Technology. "The Joint Facility will further strengthen our collective effort to equip people with the needed digital skills, literacy and capabilities, alongside with the multi-stakeholder network for digital capacity development envisioned in the roadmap." The Joint Facility aims to:

- direct stakeholders to relevant existing ITU/UNDP resources, including digital literacy and skills training;
- identify areas of unmet demand for digital capacity development initiatives and work with end users to develop new interventions when needed;
- identify patterns and trends in unmet stakeholder needs; and
- direct strategic, operational, and programmatic support in executing digital strategies, capacity development initiatives, or other high-priority operational areas for partners.

Digital capacity must be strengthened on both the local and international levels to enable inclusive digital and societal transformation. While governments are the main target audience, other groups requiring digital capacity support will also benefit from the services offered by the Joint Facility. The Joint Facility cements the partnership between ITU and UNDP

to drive digital capacity development, and intends to have a new single structure facilitating joint resourcing, roles, and responsibilities. Through its Development Sector, ITU provides direct assistance and capacity development initiatives to bridge the digital divide, promote digital inclusion and facilitate digital transformation for all. "Making adequate capacity development tools available to all is more important than ever to bridge the digital divide and connect half of the world's population that are still offline," said Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau. "There are many aspects to developing digital skills apart from the actual training. Through the Joint Facility, we will be able to assist countries across the digital skills development value chain from assessing digital capacity needs, advising on digital strategies, and even helping with procurement and raising funds for digital development. We are incredibly excited to work together with the UNDP towards this." UNDP's wide field presence and topic expertise will help match key local context to relevant digital solutions. "The lack of sufficient digital skills is a major barrier to reaping the benefits of digitalization and threatens to leave the most marginalized behind," said

Robert Opp, UNDP's Chief Digital Officer. "The UNDP is proactively investing in the key area of digital capacity building so that we can all take advantage of digital opportunities together." While building on existing collaboration between the two agencies, the Joint Facility also paves the way for wider, longer-term collaboration between the UNDP and ITU.

Innovation is Key to Digital Development, note Arab Policy Makers ahead of World Telecommunication Development Conference

The fourth of six regional preparatory meetings for the ITU World Telecommunication Development Conference (WTDC-21), held on 7 and 8 April, brought policymakers and experts together to take stock of digital challenges and opportunities in across the Arab region. WTDC-21, set to take place in Addis Ababa, Ethiopia, between 8 and 19 November 2021, aims to highlight innovative approaches, encourage new models of collaboration, and promote connectivity and digital solutions, particularly in this final Decade of Action to achieve the Sustainable Development Goals (SDGs) adopted by the United Nations. Held virtually, the Regional Preparatory Meeting (RPM) for Arab States gathered 113 delegates from 17 countries to ensure regional coordination ahead of WTDC-21. "WTDC-21 comes at a defining moment for the world and for ITU's place in it," said Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau. "It also comes at a time of enormous transformation for the Arab region, which is already home to some of the world's most connected and technologically advanced nations." The region took a bold

step forward with the recent launch of the Hope – or 'Al Amal' – probe to Mars, led by the United Arab Emirates, she added. "The Mars mission represents the Arab world's first venture into space. It confirms the region's arrival on the world stage as a leading pioneer in science and technology, as well as commitment to ever-closer engagement and collaboration with the broader international community." Mansour S. Alqurashi, General Manager for International Affairs at Saudi Arabia's Communications and Information Tech-nology Commission, and RPM Arab States Chair, said: "Innovation is key to our work and central to the advancement of digital development. For this reason, Arab countries will focus on innovative thinking and co-creation, as we continue to work closely to finalize the proposed regional priorities to be presented for adoption at WTDC-21."

Setting regional priorities
As WTDC-21 aims to provide direction and guidance to the ITU Telecommunication Development Sector (ITU-D) over the next four years, participants at RPM Arab States discussed regional ICT priorities for the

years 2022-2025. Noting the increasing importance of digital innovation, delegates at RPM Arab States made use of the International Centre of Digital Innovation (I-CoDI), co-funded by ITU and the United Arab Emirates, to formulate their regional priorities ahead of WTDC-21. "This Regional Preparatory Meeting coincides with the 30th anniversary of the ITU Arab Regional Office," noted Adel Darwish, ITU Regional Director for Arab States. "The meeting also comes at a unique time as we set the regional priorities for the Arab region, taking into account digital and development trends caused by many factors, including the pandemic."

Digital Trends in Arab States 2021
Over the past year, the COVID-19 pandemic has intensified the region's digital divide. Some 195 million people in the Arab States, or 45.4%% of the region's population, remain unable to connect reliably to the Internet, which is essential to make meaningful use of current information and communication technologies (ICTs). A report released at the preparatory meeting, Digital Trends in Arab States 2021, noted steady progress, prior to the COVID crisis, on key indicators such as household connectivity. At-home Internet access grew from an estimated 52% of households in 2017 to almost 60% by the end of 2019, the report says. Yet the urban-rural divide persists, with 74% of urban households connected, as opposed to just 38% of rural dwellings. There is a persistent gender gap across the region, with 61% of men using the Internet, compared to only 47% of women, while women's connectivity in poorer Arab nations remains chronically low. Mobile phone coverage has expanded rapidly, with 95% of individuals in the region now covered by a mobile network and more than 90% within reach of a 3G signal. Affordability, however, remains a major barrier to uptake of digital devices and services, ITU data shows.

Generation Connect Arab States Youth Group

The RPM-ARB featured Arab youth representatives who shared their insights on the common major digital issues facing young people in the Arab region and their perspectives on the future of digital communication. The Generation Connect - Arab Youth Group (GC-ARB), comprising selected young people from across the region, pledged to work together to identify regional thematic priorities and outline key opportunities and challenges in a crowd-sourced document to be presented by the digital youth envoys after the RPM-ARB.

The young participants who have interest in contributing to ICT policies and are aged between 18-24, will remain engaged in the run-up to WTDC-21, as well as in the preceding Generation Connect Youth Summit. The Generation Connect – Arab Youth Group, formed as part of the global Generation Connect initiative, promotes meaningful youth engagement and participation in the international dialogue on digital development.

Network of Women for the ITU Telecommunication Development Sector

RPM Arab States marked the official launch of the Network of Women (NoW) in the Arab region, the fourth such regional network established in ITU's development sector ahead of WTDC-21. The network will offer mentoring opportunities, and aims to support female delegates in taking on greater responsibilities within their delegations, as well as to create opportunities for women to connect with each other and share their experiences. Women accounted for half of delegates at RPM Arab States – the highest share of female representation at any WTDC regional preparatory meeting to date.

CRTC To Mandate Access to Facilities-Based MVNOs Following Mobile Market Review

Following the completion of its mobile market review, the Canadian Radio-television and Telecommunications Commission (CRTC) has announced a number of retail and wholesale measures which it hopes will 'spur more mobile wireless competition for Canadians'. Headlining the regulator's plans is confirmation that it seeks to promote sustainable competition and affordable retail prices for Canadians by mandating access to facilities-based MVNOs. As per the CRTC's decision, it will require Bell Mobility, Rogers and Telus, as well as SaskTel, to provide access to their mobile wireless networks to regional wireless providers that have invested in network infrastructure and spectrum, albeit under certain conditions. These national providers, and SaskTel, will be required to file proposed terms and conditions for a facilities-based MVNO access service within 90 days. Meanwhile, regional providers using the MVNO service will have to file annual progress updates with the Commission, starting one year after they subscribe to the service. With regards to eligibility, the regulator notes that regional providers will be able to become an MVNO in areas where they have purchased a spectrum licence at the tier 4 level or higher (tiers 3, 2 or 1). A number of retail measures will complement the CRTC's wholesale measures, meanwhile, with the regulator confirming that it will require that the country's national wireless carriers implement a seamless roaming service. Further, with the regulator claiming that national providers have 'an edge' with regards to 5G networks when considering factors such as national network coverage and retail market power, it has also confirmed that the wholesale roaming policy will apply to fifth-generation infrastructure. As such, national providers have been directed to file amended tariffs with the CRTC within 90 days of the regulator's decision. Seamless roaming, meanwhile, must be offered by operators by 15 April 2022. Lastly, the CRTC said it is taking action to ensure that Canadians – including seniors, low-income earners and those who use their mobile phone sparingly – can benefit from more affordable mobile plans that meet their needs. To that end, Bell, Rogers, Telus and SaskTel will be expected to introduce low-cost and occasional-use plans in most markets by 14 July 2021, while promoting these 'on their websites, in person and over the phone'. All four providers will be required to file semi-annual reports that include information on what low-cost and occasional-use plans are available, on what brands, how they are promoted, and the uptake of those plans, and these reports will be made available on the CRTC's website. The first semi-annual report must be filed by 30 September 2021.
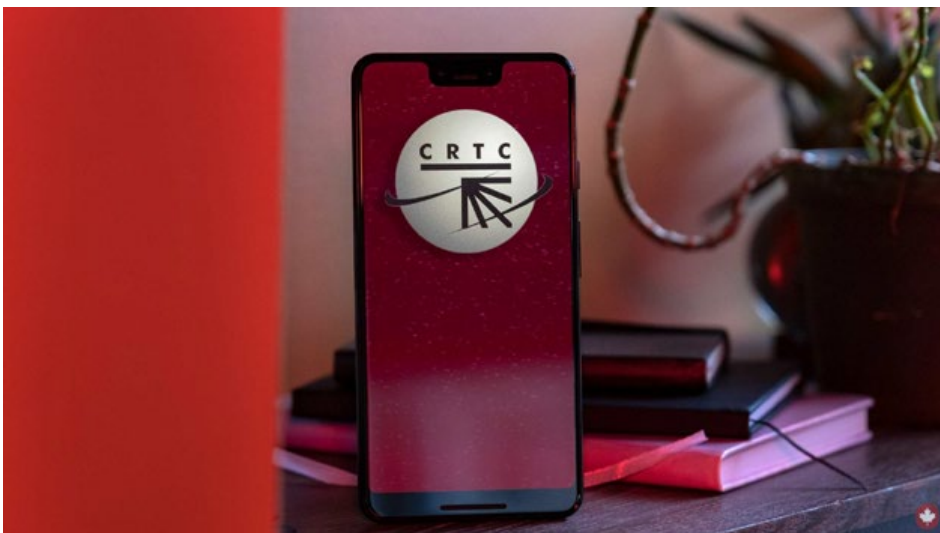
Belgian Consultation Committee Approves Draft Law for 5G Auction

The Belgian Consultation Committee, which brings together representatives from the country's federal and regional governments, has approved draft legislation that would enable the country's long-delayed 5G spectrum auction to be staged in early 2022, reports Le Soir. The royal decrees will now be put to a vote in parliament and then submitted to the State Council for consultation. The draft leaves room for a fourth mobile network operator in the market but no decision has yet been taken about whether to reserve spectrum for a new entrant, a spokesperson for Telecom Minister Petra De Sutter said.

The Consultation Committee is expected to make a final decision at another meeting before the summer recess. As previously reported by TeleGeography's CommsUpdate, B2B wireless connectivity provider Citymesh announced last week that it plans to apply for the entire spectrum package reserved for a fourth operator in the auction, confirming its ambition to compete in the consumer market. Commenting on the latest development, Minister Petra De Sutter expressed her satisfaction that progress has been made concerning the 5G auction. 'This is an important issue for our country

and Europe, because the deployment of 5G also has a direct effect on the Belgian recovery plan after the coronavirus crisis,' she said. 'The importance is therefore enormous both for our companies and for our consumers.' Belgium's plans for a 5G spectrum auction have been at an impasse for years due to a disagreement between federal and regional governments over how to distribute the revenue raised by the auction, which could yield more than EUR800 million (USD975.5 million). Under the minister's proposal, the funds will be held in escrow until the regions have reached an agreement.

ComCom Consults on Price-Quality Regulations for Chorus, Disclosure Requirements for Fiber Companies

New Zealand's Commerce Commission has released for consultation its draft view on the maximum revenues wholesale fixed line provider Chorus should be able to earn from its fiber network over the first three years of the new regulatory regime that takes effect from 1 January 2022 and the minimum quality standards Chorus should meet. Telecommunications Commissioner Tristan Gilbertson said the estimated price-quality path would cap Chorus revenues for three years from 1 January 2022 at NZD689 million (USD502.2 million) in 2022, rising to NZD786 million in 2024, in line with forecast demand. The revenue

cap is around 4% lower than proposed by Chorus across the period. The Commission's draft decisions include the expenditure that Chorus can recover over the regulatory period. Following scrutiny, the Commission proposes to reduce Chorus' expenditure allowance across the period by NZD210 million (in real dollars), a 14% reduction on Chorus' proposal. However, Chorus may re-apply for some categories of expenditure included in this reduction via another mechanism. The Commission has also outlined its draft decisions on information disclosure requirements for Chorus and the three other regulated companies that operate fiber networks in the country – Enable Networks, Northpower Fiber and Ultrafast Fiber. In addition, the Commission has proposed some limited amendments to the Input Methodologies – the upfront framework of rules that underpin the regime. These amendments are intended to enable the effective implementation of the Commission's draft decisions or to enhance certainty about the rules, requirements and processes that apply to price-quality paths and the ID requirements. The Commission is separately consulting on the initial value of Chorus' fiber network at the start of the regulatory period, or what is referred to as its regulatory asset base (RAB). Submission can be made until 8 July.

Dutch Operators Receive Government Directives on Network Vendor Choice

The Netherlands' government has issued orders to the nation's mobile network operators (MNOs) regarding choice of network suppliers, the Ministry of Economic Affairs has confirmed, although

KPN, T-Mobile and VodafoneZiggo are strictly prohibited from revealing any details of the orders. Various news outlets including BusinessInsider.nl reported assumptions that China's Huawei is now

prevented from supplying 5G core network technology to Dutch MNOs, while a Huawei spokesperson confirmed to Financieele Dagblad that 'We do not supply 5G core equipment in the Netherlands.'

GSMA Seeks 6GHz Boost for 5G

Industry association GSMA called on governments to open sufficient amounts of 6GHz spectrum for licensing 5G, warning failure to do so could impede the future of the technology on a global level. The Association highlighted the full speed and capabilities of next-generation networks relies on 6GHz mid-band spectrum as it called for governments to make at least the 6425MHz to 7125MHz range available for licensed 5G. In a statement, the GSMA described the 6GHz band as essential for operators to provide "enhanced affordable connectivity" and also for the development of smart cities, transport and factories by unlocking the data rates and capacity of 5G. It also cited estimates by Coleago Consulting that 5G networks

will need 2GHz of mid-band spectrum in the next decade to deliver on its full potential. GSMA chief regulatory officer John Giusti stated 5G "has the potential to boost the world's GDP by $2.2 trillion", but added there is a "clear threat to this growth if sufficient 6GHz spectrum is not made available". The Association urged governments to align their approaches to licensing 6GHz spectrum, noting there is already divergence, with China planning

to use the full 1200MHz available in the band; Europe considering the upper portion only; and the US and most of Latin America exploring uses for Wi-Fi and other unlicensed technologies. It added authorities must also protect backhaul services and, depending on countries' needs, to open the 5925MHz to 6425MHz portion on a license-exempt basis with technology neutral rules.

Capacity to Power Innovation
5G in the 6 GHz Band

Spectrum in the 6 GHz range (5925-7125 MHz) provides the bandwidth to allow affordable connectivity for a 5G society.

Canada Sets 'Early 2023' Date For 3800MHz Auction

Innovation, Science and Economic Development Canada (ISED) has announced a decision to hold an auction for frequency licenses in the 3800MHz (3650MHz-4200MHz) spectrum band in 'early 2023' to support expansion of 5G and rural wireless services. The additional 5G spectrum will augment the frequencies set to be distributed via the 3500MHz auction

scheduled to start on 15 June 2021. In a statement on 21 May, ISED noted that satellite services in the newest 5G band will be limited to the 4000MHz-4200MHz part of the range by 2025, with certain exceptions allowing existing fixed satellite services providers to continue using a 500MHz block in more remote areas that rely on satellite for critical services,

including broadband connectivity, and protecting existing services from future 5G services in these areas. Wireless broadband service licensees using the 3800MHz range in urban areas will transition by 2025, while licensees in rural areas will have until 2027.

NITA Uganda to Merge with Uganda Communications Commission

The National Information Technology Authority Uganda (NITA-U), might be abolished or merged with the Uganda Communications Commission (UCC), in a move to merge government agencies and authorities whose roles seem to be duplicated. Local media reports quoting government sources said that the plan follows recommendations from the government and a separate review team concerning government agencies, commission authorities, and public expenditure to ensure there is

no duplication with existing ministries. This would give the UCC responsibility for major projects such as the National Backbone Infrastructure (NBI) scheme. According to a report by Techjaja while the government recommended for NITA-U to be restructured into a department under the Ministry of Information, Communications Technology and National Guidance (MoICT), the independent review team for it to be completely abolished and merged with UCC which will be retained as an autonomous body as it regulates some

of the biggest taxpayers in the country. Alternatively, the NBI could be transferred to be managed by Uganda Telecom Limited (UTL) under the supervision of MoICT. But at the end of the day, this is still on paper and may not be implemented any time soon. Meanwhile, the Ugandan government said that it has introduced a 12% tax on internet data, potentially hiking prices for online access in the East African country where consumers are already paying some of the world's highest internet costs.

Efficient Management of Radio-Frequency Spectrum is Key to Delivering Benefits

The radio-frequency spectrum across the Americas requires efficient management to deliver the full benefits of the digital revolution, observed delegates to the region's foremost annual radiocommunication seminar in early May. The ITU Regional Radiocommunication Seminar 2021 for the Americas Region (RRS-21 Americas), held virtually from 26 April to 7 May, forms part of a capacity building program by the International Telecommunication Union (ITU) focused on the use of the radio-frequency spectrum and satellite orbits. The seminar emphasizes the application of the Radio Regulations, the international treaty regulating radiocommunication services and the utilization of radio frequencies worldwide. ITU convened the annual meeting of experts at the regional level in collaboration with the Inter-American Telecommunication Commission (CITEL) and the Colombian National Spectrum Agency (ANE). Participants reviewed updates to ITU's latest set of Radio Regulations, adopted by the 2019 World Radiocommunication Conference (WRC-19), as well as the items on the agenda for the next WRC in 2023. The seminar also examined international spectrum management and the procedures for recording frequency assignments in the Master International Frequency Register (MIFR). "Efficient and effective spectrum management empowers countries to connect the unconnected, benefit from emerging technologies and make progress toward achieving sustainable development for all," said ITU Secretary-General Houlin Zhao. "ITU members need to be continually updated to implement World Radiocommunication Conference outcomes and address specific regional challenges." The program included basic training on tools developed by ITU for frequency notices and the technical examinations. Through various tutorials, participants gained experience with ITU notification procedures, as well as with the software and electronic publications made available by the ITU Radiocommunication Bureau to Member States and ITU Radiocommunication Sector (ITU-R)

Members. Mario Maniewicz, Director of the ITU Radiocommunication Bureau, said: "Every year, the Radiocommunication Sector publishes materials of fundamental importance to the global management of the radio-frequency spectrum and satellite orbits. These range from international regulations and recommendations to reports, handbooks, manuals, service publications, software, and databases. The Regional Radiocommunication Seminars are key to enabling our members to understand and make full use of these publications, particularly for formulating national and regional policies on the use of the radio spectrum." RRS-21 Americas concluded with a discussion on "Modern Spectrum Management in the Region", allowing industry representatives to share their perspectives with ITU Member States to help advance and accelerate regional radiocommunications development. Oscar Leon, Executive Secretary of the Inter-American Communications Commission (CITEL), said in his welcoming remarks: "This Regional Radiocommunication Seminar gives countries an invaluable opportunity to expand their knowledge of spectrum management within the regulatory framework for international frequency management and associated ITU-R Recommendations, as well as the best practices regarding spectrum use for terrestrial and space services." He added: "Participants also have the opportunity to discuss and gather information that forms part of CITEL's input to the World

Radiocommunication Conferences." Miguel Felipe Anzola, General Director of the National Spectrum Agency of Colombia (ANE), in his opening address highlighted the importance of the work being done by ITU and CITEL, both in coordinating international positions and as facilitators of knowledge exchange and best practices. "I would also like to emphasize the importance of the ongoing trainings, especially on issues as dynamic as those related to spectrum management where we see new trends, developments, and proposals every day," he said. "In addition, these types of events also allow the strengthening of links between countries, which is essential to improving the discussions in the region." ITU Regional Radiocommunication Seminars aim to assist Member States, and particularly developing countries, in spectrum management activities and the application of the ITU Radio Regulations. The seminars complement larger, biennial World Radiocommunication Seminars. This gives all ITU countries and regions ample opportunity to prepare for WRC-23, which will update the Radio Regulations. The Americas seminar drew more than 300 participants representing 37 countries, including 28 countries from Latin America and the Caribbean, along with 5 international organizations, and representatives of the telecommunications industry, other international organizations, associations, and academia from the region.

NTIA Announces US$288m Funding for Broadband Rollouts

The US Department of Commerce's National Telecommunications and Information Administration (NTIA) has announced the availability of USD288 million in grant funding for the deployment of broadband infrastructure. Grants will be awarded to partnerships between a state, or political subdivisions of a state, and fixed broadband service providers. The NTIA's 'Broadband Infrastructure Program' was established by the Consolidated Appropriations Act of 2021. The NTIA says it will accept applications for projects that are designed to:

• Provide broadband service to the greatest number of households in an eligible service area;
• Provide broadband service to rural areas;

• Be most cost-effective in providing broadband service; or
• Provide broadband service with a

download speed of at least 100Mbps and an upload speed of at least 20Mbps.

FCC Takes Steps to Free Up 3.5GHz Spectrum in Puerto Rico, Guam, American Samoa

The Federal Communications Commission (FCC) says that it has taken steps to enable the use of mid-band spectrum in the 3550MHz-3700MHz (3.5GHz) band for 5G use in Puerto Rico, Guam and American Samoa for the first time. After close coordination with the National Telecommunications and Information Administration (NTIA) and the Department of Defence (DoD), the FCC's Wireless Telecommunications Bureau (WTB) and Office of Engineering and Technology (OET) have taken the following three actions related to 3.5GHz Environmental Sensing Capability (ESC) and Spectrum Access Systems (SAS) approvals:

• Approved new and updated ESC sensor deployment and coverage plans of four ESC operators – CommScope,

Google, Federated Wireless and Key Bridge Wireless – clearing the way for commercial access to the 3550MHz-3650MHz portion of the Citizens Broadband Radio Service (CBRS) in Puerto Rico and Guam for the first time.
• Approved Federated Wireless to expand its SAS operations to cover the 3550MHz-3650MHz portion of the 3.5GHz band in American Samoa consistent with protection criteria described by NTIA in a letter filed with the FCC on 26 April 2021, which will enable the first CBRS deployments in that portion of the band in American Samoa.
• Conditionally approved three entities that applied during the Second Wave SAS application window – Fairspectrum,

Nokia and RED Technologies, completing the first phase of the two-stage SAS application review process established by the FCC.

In addition to these actions, last week, the WTB granted an additional 13 applications for Priority Access Licenses (PALs) in the 3.5GHz band, representing a total of 125 licenses. Acting FCC chairwoman Jessica Rosenworcel commented: 'No matter who you are or where you live, you need access to modern communications to have a fair shot at 21st century success. This is true, of course, for those living in Puerto Rico, Guam and American Samoa too. These actions continue our efforts to bring 5G to everyone, everywhere in the country – and not create communities of 5G haves and have-nots.'

DoT Allots Trial 5G Spectrum to Trio

The Wireless Planning and Coordination (WPC) division of India's Department of Telecommunications (DoT) has allocated temporary 5G spectrum licenses to the nation's three largest privately-owned

cellcos, the Economic Times reports, citing a unnamed senior executive. According to the source, six-month licenses for frequencies in the 3.5GHz, 26GHz and 700MHz bands were awarded to Reliance

Jio Infocomm (Jio), Bharti Airtel and Vodafone Idea (Vi). The decision paves the way for the trio to begin conducting 5G technology trials with vendor partners.

NCC to Balance Competition, Disruptive Technologies, for Sustainable Telecoms Growth

The Nigerian Communications Commission (NCC) said it was keen on balancing healthy competition with entry of disruptive technologies to ensure sustainable telecoms industry growth and development in Nigeria. The NCC's Executive Vice-Chairman (EVC), Prof. Umar Danbatta, stated this in a statement signed by Dr Ikechukwu Adinde, the Commission's Director, Public Affairs, and made available to newsmen on Friday in Abuja. The statement said that Danbatta expressed the desire when a delegation from SpaceX, an American aerospace manufacturer and space transportations services company, paid him a courtesy visit in his office in Abuja. The commission's Executive Commissioner, Technical Services, Mr. Ubale Maska, represented Danbatta. The EVC said that the commission would work on necessary modalities to ensure that it balanced the need for healthy competition as regards new technologies to protect all industry stakeholders. He said, "as the regulator of a highly dynamic sector in Nigeria, the commission is conscious of the need to ensure that our regulatory actions are anchored on national interest. "We have listened to your presentation and we will review it vis-à-vis our regulatory direction of ensuring effective and a sustainable telecoms ecosystem where a licensee's operational model does not dampen healthy competition among other licensees." He further stated that the commission was interested in

making necessary regulatory efforts to drive the coverage of rural, unserved and underserved areas of the country. He said that it would be done through the accomplishments of the lofty targets contained in the Nigerian National Broadband Plan (NNBP), 2020-2025. He noted that the plan's target of 70 per cent broadband penetration target, covering 90 per cent of the population by 2025, was also in line with government expectations in the National Digital Economy Policy and Strategy (NDEPS), 2010-2030. According to him, Section 70 (2) of the Nigerian Communications Act (NCA), 2003, empowers the Commission to regulate the provision and use of all satellite communications services and networks. According to him, the regulation is in whole or in part within Nigeria or on a ship

or aircraft registered in Nigeria. "This is for the purpose of ensuring a well-developed and organized satellite communications market with appropriate legal framework that meets international best practices. "It encourages innovation, promotes competition and guarantees public safety in the rendering of commercial satellite services." The SpaceX's Starlink Market Access Director for Africa, Mr. Ryan Goodnight, and the company's consultant, Mr. Levin Born, provided an overview of its plans, expectations, licensing requests and deployment phases during the meeting. They disclosed that SpaceX was in the process of launching a low-earth orbiting (LOE) constellation of satellites to provide low latency, high bandwidths Internet to all corners of the globe and. thenationonlineng.net

South Africa inks Telecom Regulation Agreement with the US

The Independent Communications Authority of South Africa (ICASA) and the Federal Communications Commission (FCC) of the US signed a virtual memorandum of understanding agreement that covers the exchange of ideas in the area of telecommunications regulation and policy. According to ICASA President Keabetswe Modimoeng, the non-binding agreement "is a momentous collaboration that illustrates the confidence that our

global counterparts have in ICASA. This collaboration places the Authority on solid ground to achieve international best practices, cutting-edge regulatory approaches and further validates South Africa's standing in the global ICT arena." The deal is against a backdrop of American attempts to unite the telecom markets of Europe, Africa and even Asia against Chinese tech giant Huawei. South Africa has always been unwavering in its support

for the company. ICASA noted that the two regulators have agreed to implement a program of information exchange and technical cooperation in the field of telecommunications and related services and facilities, in accordance with their respective national and international laws, regulations and obligations, and within the framework of their annual budgets and terms.

Germany Sees Cybercrime Jump as Work Shifts Online in Pandemic

The push for digitalization caused by the pandemic is seen as a driver of the increased cybercrime rate as criminals taking advantage of the massive shift towards remote work. Germany's shift towards digitalization due to the coronavirus pandemic has come with a significant rise in cybercrime, according to a report by the country's Federal Criminal Police Office (BKA). Recorded cases of cybercrime jumped by 8% in 2020, according to the BKA's Situation Report for Cybercrime 2020 published on Monday (10 May). Last year's increase follows a 15% jump in cases in 2019 over the previous year. The number of solved cases fell by 7.4% over two years to 32.6% in 2020. The push for digitalization caused by the pandemic is seen as a driver of the increased cybercrime rate as criminals taking advantage of the massive shift towards remote work. The report highlights an increasing professionalization of criminals in the cyber economy with "services" offered on corresponding online marketplaces. Spam services can be purchased for as little as 10 euro cents while banking Trojans can cost around €800. German companies are among the worst hit. Every fourth to fifth German company with more than 500 employees has fallen victim to a ransomware attack. This involves data being stolen or encrypted until the injured party pays a ransom. According to a study by the country's interior ministry, more than half of all German companies said their business would be under threat if sensitive data were lost or transmitted to their competition. The cybercrime rate may be larger than it initially seems. A study by the economy ministry suggests that only around 12% of all cyberattacks on companies are not reported for fear of loss of reputation. "Cyberattacks are one of the greatest dangers of this time," secretary general of the ruling Christian Democrats (CDU), Paul Ziemiak, wrote on Twitter. "Our country needs a digital security architecture that defends us robustly against cyber attacks. We see it as the core task of the state to ensure security in the digital world as well," he said. Digital innovations should be used as a tool for environmental protection and climate action, but we must act now, Germany's minister for the environment, Svenja Schulze, told EURACTIV in an interview. Large companies, critical infrastructure and public institutions are particularly at risk, according to the BKA report. The more essential the service is for society, the more lucrative cyberattacks are

for criminals. Insecure IT systems in particular offer a welcome gateway for hackers, as the recent breach of internal email traffic at the US Treasury and Commerce departments known as the SolarWinds hack revealed. Germany has already started to tackle the issue. Last Friday (7 May), parliament approved a IT Security Act 2.0. The new law extends reporting obligations and standards already applicable to operators of critical infrastructure to companies operating in the public interest. It also reinforces the mandate of the Federal Office for Information Security (BSI), which in future will be able to set binding standards for federal authorities and monitor their compliance with such standards. "The BSI is to form a third pillar of our cybersecurity architecture alongside the Federal Criminal Police Office and the Office for the Protection of the Constitution," said Ziemiak. The BSI has also been tasked with developing a seal of quality that will make it clear to consumers which products meet certain security standards and which are to be classified as insecure. "Today is a good day for cybersecurity in Germany," commented Interior Minister Horst Seehofer following the approval of the law. "Digitalization permeates all areas of life, and the pandemic has once again accelerated this process enormously. Our protection mechanisms and defence strategies must keep pace – this is exactly what the IT Security Act 2.0 is designed to do," he added.

France Opens Consultation on Cost of 5G Spectrum in Reunion, Mayotte

Cedric O, France's Secretary of State for Digital Transition and Electronic Communications, Sebastien Lecornu, Minister of Overseas Territories, and Olivier Dussopt, Minister of Public Action and Accounts, have published a new public consultation on the financial terms for the allocation of 5G-suitable frequencies in the French Overseas Territories (FOT) of

Reunion Island and Mayotte. The public consultation, scheduled to run until 20 May 2021, aims to collect opinions on the financial terms envisaged for the allocation of airwaves in the 700MHz and 3.5GHz bands. The government plans to strictly limit the financial contributions of operators by setting the minimum price for the allocation of frequencies

during the auction phase at zero euros, while also capping the level of royalties. The government is aiming to launch the procedure for the allocation of 5G spectrum 'by the end of the spring' in order to allow for a commercial launch of 5G in Reunion and Mayotte by the beginning of next year.

Globe Telecom Profit Climbs

Globe Telecom highlighted signs of a sustained recovery, with Q1 profit and revenue increasing despite continued weakness in its mobile business, which was dragged down by double-digit declines in voice and SMS. In a statement, president and CEO of the Philippines operator, Ernest Cu, said despite a resurgence of Covid-19 (coronavirus) cases and lingering uncertainties from the pandemic, "we are encouraged by the improvements in first quarter results. Looking ahead, we believe Globe is well positioned to provide more digital solutions and innovative offers to make our services more relevant". He noted 5G and fiber rollouts, as well as the ongoing upgrading of its network, will remain its top priority. Net income grew 11 per cent year-on-year to PHP7.3 billion ($150.9 million), as a decline in non-operating charges offset a hike in depreciation charges. Consolidated service turnover rose 3 per cent to PHP37.8 billion, which was attributed to growth in mobile data and broadband revenue. Mobile service sales dipped 2 per cent to PHP26.3 billion, with declines in voice and SMS more than offsetting modest gains in mobile data revenue. Mobile data accounted for 73 per cent of total mobile revenue, up from 69 per cent in Q1 2020. Its home broadband and fixed-line business posted 15 per cent growth to PHP9.8 billion. Prepaid and post-paid subscribers fell 11 per cent and 8 per cent to 77.3 million and 2.5 million respectively. Prepaid ARPU increased 13 per cent to PHP103, while post-paid ARPU edged up 3 per cent to PHP882. Q1 capex surged 79 per cent from a year earlier to PHP19.1 billion. Globe said its 5G network covers 84 per cent of Metro Manila, with a total 1,383 sites nationwide.

Australia Operators Warned on ID Check Failures

The Australian Communications and Media Authority (ACMA) warned Telstra, Optus and Medion Mobile over failures to adhere to subscriber verification rules, breaches which could cost the operators AUD250,000 ($193,599) apiece. ACMA stated Optus failed to follow the regulations one time, with 53 breaches by Medion Mobile and 52 Telstra during checks in mid-2020. The operators failed to verify customer's identities before transferring their phone number from other service providers. The regulator introduced a new standard requiring operators to implement multifactor authentication before transferring a phone number to help curb phone scams. ACMA chair Nerida O'Loughlin explained the rules "help prevent scammers from taking control of people's identities to commit serious financial crimes". "Historically it has been too easy to transfer phone numbers from one telco to another. All a scammer needed to hijack a mobile number and access personal information like bank details was a name, address and date of birth." ACMA added reports of fraud have fallen since the rules were implemented.

Telenor, Jazz Submit Second Instalment of Disputed License Fee

The Pakistan Telecommunication Authority (PTA) has received PKR15.82 billion (around USD103.17 million according to the watchdog) against the second instalment of the license renewal fee from cellcos Telenor Pakistan and Jazz, the watchdog confirmed in a statement. A third provider, Zong, is required to submit the second instalment for its license renewal fee USD54.086 million – by October 2021. The regulator and the trio of operators are engaged in ongoing legal proceedings over the renewal fees, which were determined at the eleventh-hour and included a substantial price hike. With the licenses of Telenor and Jazz set to expire in late May 2019, it was not until the start of that month that the PTA finally published its policy for the operators' concessions to be refreshed. The policy included a number of decisions that were opposed by the cellcos, most notable were: an increase in price from USD290 million to around USD450 million for Jazz and Telenor and USD470 million for Zong; and the requirement to pay the fee in US rather than Pakistani rupees given that the money earned and spent by the trio is in the local currency. The PTA's decision was challenged in the Islamabad High Court in August 2019 but the licensees were required to pay 50% of the license fee as a guarantee until a final decision is reached on the matter. As such, PTA noted in its recent statement that it had deposited PKR135.81 billion (or USD862.22 million) with the Pakistani government for the initial 50% towards the license fee. With its receipt of the second instalment from Telenor and Jazz that figure rose to PKR151.63 billion (or USD965.39 million).

NCC is Building Broadband Infrastructure for 4IR

The executive vice chairman, Nigerian Communications Commission, Professor Umar Danbatta said the telecom industry regulatory agency is working with licensed network operators to build resilient broadband infrastructure that the Fourth Industrial Revolution (4IR) will ride on. He disclosed this while delivering a paper on 'Powering the Fourth Industrial Revolution in Nigeria' at the virtual Third Discourse of the Advocaat Law Practice, last week. Danbatta was represented by Executive Commissioner, Stakeholder Management, NCC, Barr. Adeleke Adewolu. According to Prof. Danbatta, Nigeria can only harness the opportunities of the Fourth Industrial Revolution as a nation if we put in place effective guiding frameworks to address the various aspects of the digital ecosystem and ensure their effective interworking in the national interest. He said Nigeria is not lacking in key policy and regulatory frameworks and instruments which will enable us to play a leading role in powering the 4IR, noting that the National Digital Economy Policy and Strategy Policy (2020-2030) boasts of eight pillars designed to, amongst others to: Enable Nigeria become a leading player in the global digital economy. It will provide a catalyst to facilitate the diversification of the economy; and accelerate the attainment of the key national objectives of improving security, reducing corruption and expanding the economy. "Similarly, the Nigerian National Broadband Policy (2020-2024) clearly highlights the various implementation strategies that would aid the pervasive inclusion and rollout of broadband services across the country whilst also developing a robust and holistic digital economy. The NCC's Strategic Management Plan (SMP 2020-2024 or "ASPIRE 2024") consolidated on the vision we earlier articulated in the Strategic Vision Plan and 8-Point Agenda. "We have responded to the policy goals highlighted above to harness the immense socio-economic benefits of ICT for national development; to ensure that ICT infrastructure are up to the standard necessary to provide ubiquitous broadband services in Nigeria; and to align the Commission's regulatory efforts with the aforementioned Policy Instruments, as well as the growth strategies of the

International Telecommunications Union (ITU) to ensure Growth, Inclusiveness, and Sustainability," he said. According to the telecom regulator, the Commission has recorded a number of significant achievements such as the licensing of six infrastructure companies (InfraCos) to speed up the deployment of broadband infrastructure throughout Nigeria; The provision of training and supporting public institutions with ICT interventions like School Knowledge Centers, ADAPTI etc. "In the last five years, the Commission has expanded broadband penetration from six per cent to 42.06 as at February 2021; access gap clusters have been reduced from 207 to 114; Fiber Optic coverage has increased from 47,000km to 54,725 km and Base Transceiver Stations for 3G and 4G deployments have increased from 30,000 to 53,460," he said. The EVC further noted that the creation of a full-fledged department Digital Economy has been created to support Federal Government's Digital Economy agenda. The NCC also increased funding of Telecom Research to N336.4 million and has endowed four Professorial Chairs; and also commenced requisite engagements on 5G deployments and some of its licensees have already carried out trials. "These strides will enable the telecommunications sector provide the infrastructure backbone for powering the Fourth Industrial Revolution in Nigeria. We are firmly committed to ensure that Nigerians in Nigeria play a leading role in Artificial Intelligence, Cloud Computing, Internet of Things (IoT), Robotics, Blockchain, Autonomous Vehicle, Drones and other innovative technologies which are now driving

growth and national competitiveness. "The question of regulation of disruptive technologies without stultifying innovation is one that we, like all other regulators globally, are carefully studying. For now, we have maintained a sharp focus on critical cross-cutting aspects like consumer protection, enhancement of competition, data protection and enhancement of trust in digital platforms through the prevention of cybercrimes and other abuses. Prof. Danbatta who stated that the issue of citizens' identification and digital identity is critical to Nigeria's digital emergence and its future growth, said the Commission working telecom network operators and the National Identity Management Commission (NIMC), have achieved very significant success in the activation of new SIMs linked with authenticated NINs, and that the activation of new SIMs will now be carried out across the country in earnest. In essence, he said Nigeria can only maximize the potentials of the 4th Industrial Revolution if we articulate effective and forward-looking Policy Instruments to guide our emergence into the future digital landscape; Ensure the ubiquitous presence, the seamless operation and the cost-effective availability of communications infrastructure which will power the digital aspirations of all sectors of the Nigerian economy and ensure that national competitiveness is guaranteed. "Deploy effective regulatory instruments and harness the efforts of all critical Stakeholders so that we can derive the utmost benefits from the 4th Industrial revolution and not be reduced to digital laggards, spectators, or, merely a consumptive class."

OFCOM Consults on Future of UK Telephone Numbers

With British telecoms regulator OFCOM saying that the way phone numbers in the UK are used is changing – citing the increased use of mobile and online communication, and a decline in fixed line use as key factors – it has announced a consultation on the future of telephone numbers. OFCOM first outlined a proposed approach to its review of the National Telephone Numbering Plan back in an initial consultation launched in 2019. Now, in the next stage of the review process, the watchdog has set out specific proposals to amend the Numbering Plan and is calling feedback on these proposals by a deadline of 2 July 2021. In terms of OFCOM's key proposals, the first would see it remove the obligation on telecoms providers to provide a 'local dialing' facility, which allows users to let someone make a call from one landline to another in the same area without dialing the area code. According to the regulator, its research has found that the value of local dialing for consumers has declined, while it said given the increased complexity of providing it on IP-based networks, it considered a requirement to provide this facility 'is no longer justified'. Meanwhile the two other key proposals comprise: plans to ban direct and indirect sharing of revenue with any calling party for all geographic and non-geographic numbers; and the maintaining of existing rules on area codes corresponding to a particular location. According to OFCOM, it plans to issue a statement on the matter in 'autumn 2021', setting out its decisions on the proposals on geographic numbers and prohibiting the sharing of revenue with calling parties in the Numbering Plan. Meanwhile, it said it will continue its review to ensure that our numbering rules promote consumer confidence, and in the next stage of the process expects to examine the future role for 084 and 087 non-geographic numbers.

US Coalition Calls for FCC Spectrum Shake-Up

The recently formed 5G for 12GHz Coalition called on the Federal Communications Commission (FCC) to unlock the spectrum band to boost US next-generation ambitions, arguing current rules were holding the nation back. In a statement, the coalition called for amendments to rules it argues are decades old and which are now impacting the US in a 5G race with China. It added it is imperative the US now moves to enable spectrum sharing among 5G terrestrial services, direct broadband satellite and non-geostationary orbiting satellites. The 5G for 12GHz Coalition was formed last month, with more than 20 members consisting of public interest groups, trade associations and companies in the telecoms sector lobbying for the FCC to allow 12GHz spectrum to be for next-generation services. In its latest statement, the group called for operators to be held to account for wishing to use the 12GHz band for one purpose, a stance it described as "anti-5G". "We urge the Commission to prioritize science and facts in its decision making and not be swayed by a few companies."nThe FCC opened a public consultation on whether to allow mobile services in the 12GHz band in January. The band is currently used by satellite providers, and the FCC said it was seeking input on whether it would be possible to share the frequency with terrestrial mobile services without causing harmful interference. However, the move has faced opposition from satellite service providers, including OneWeb and SpaceX.

Italy's Highest Court Backs 3.5GHz License Extensions

Italy's Council of State (Consiglio di Stato, CdS) has approved the extension of wireless broadband licenses in the 3.5GHz band held by GO internet, Fastweb, Linkem and Mandarin. Cellcos TIM, Vodafone and Iliad had launched an appeal to halt the six-year extensions at the proposed prices, saying the operators were getting access to 3.5GHz frequencies at a much lower cost than what they themselves had paid at auction for 3.7GHz spectrum in 2018. Although TIM and Vodafone had each paid close to EUR1.7 billion (USD2 billion) for their licenses, the extension of Linkem's 3.5GHz concession from end-2023 to end-2029 will cost the company EUR40 million, while Fastweb will pay EUR27.14 million, GO will pay EUR2.6 million and Mandarin will be charged EUR1.14 million.

NITA Uganda to Merge with Uganda Communications Commission

The National Information Technology Authority Uganda (NITA-U), might be abolished or merged with the Uganda Communications Commission (UCC), in a move to merge government agencies and authorities whose roles seem to be duplicated. Local media reports quoting government sources said that the plan follows recommendations from the government and a separate review team concerning government agencies, commission authorities, and public expenditure to ensure there is no duplication with existing ministries. This would give the UCC responsibility for major projects such as the National Backbone Infrastructure (NBI) scheme. According to a report by Techjaja while the government recommended for NITA-U to be restructured into a department under the Ministry of Information, Communications Technology and National Guidance (MoICT), the independent review team for it to be completely abolished and merged with UCC which will be retained as an autonomous body as it regulates some of the biggest taxpayers in the country. Alternatively, the NBI could be transferred to be managed by Uganda Telecom Limited (UTL) under the supervision of MoICT. But at the end of the day, this is still on paper and may not be implemented any time soon. Meanwhile, the Ugandan government said that it has introduced a 12% tax on internet data, potentially hiking prices for online access in the East African country where consumers are already paying some of the world's highest internet costs.

DITRDC Proposes Spectrum Limits for Sub-1GHz Spectrum

With the Australian Communications and Media Authority (ACMA) planning to auction spectrum in the 850MHz and 900MHz bands in late 2021, the Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) is seeking feedback on a draft of an allocation limits direction ahead of the sale process. ACMA will soon consult on its allocation instruments for the auction, ahead of which the DITRDC issued a press release confirming it is considering whether to direct the communications regulator to impose allocation limits with a view to supporting the government's communication policy objectives. To that end, the DITRDC has prepared an 'exposure draft direction' that would require ACMA to impose limits such that no person could use more than 82MHz of sub-1GHz spectrum under spectrum licenses. The draft direction would also set aside spectrum for Optus and TPG Telecom in the 900MHz band to support service continuity. The DITRDC said it is now seeking stakeholder views on whether the direction 'will operate effectively with ACMA's proposed allocation procedures.

Germany Boosts 5G Project Funding

Germany made a step towards accelerating the development of 5G services in the country, pouring additional investments into backing domestic endeavors. In a statement, the Federal Ministry of Transport and Digital Infrastructure (BMVI) revealed 48 consortia stood to receive funding of up to €4 million per project, as part of a program unveiled in 2019 seeking to support 5G projects. The funding is intended for local authorities to develop 5G-enabled services in areas including agriculture, health, education and administration. German Minister of Transport and Digital Infrastructure Andreas Scheuer described the move as a boost for the mobile communications sector in the country, while hailing the potential of new applications and services to reduce costs and carbon emissions. The next-generation technology "creates completely new possibilities in everyday life and on site", he added. BMVI selected the initial ten projects in January, providing a total of €38 million towards developing a range of services employing 5G.

OFCOM Completes 5G Spectrum Allocation

UK regulator OFCOM unveiled the outcome of its latest auction for 5G-suitable frequencies, with the total sum increased to £1.38 billion after EE added £23 million to its original bid. OFCOM explained the full process had now been completed after finalizing an assignment phase in which operators had the chance to bid for specific spectrum blocks. EE committed the additional sum to guarantee its preferred allocation, taking its total bid to £475 million. O2 UK, 3 UK and Vodafone UK received blocks they previously targeted. OFCOM's director for spectrum Philip Marnick said completion of the auction gives the four companies the possibility to "rapidly rollout better mobile services to people across the UK". The operators can also make trades, to "optimize use of the spectrum they have won in the auction with their existing airwaves", Marnick explained. O2 UK separately stated it had

already sealed a deal with Vodafone UK to trade bands to create "more efficient blocks of 5G spectrum". The agreement, which is subject to OFCOM's blessing, is set to improve coverage and accelerate

5G deployments by forming a contiguous block of 80MHz for O2 UK, while ensuring "good proximity" of Vodafone's blocks totaling 90MHz.

Ofcom

Now the auction is complete, these companies can use these airwaves to rapidly rollout better mobile services to people across the UK. This additional spectrum will also support the ongoing rollout of new 5G connections for people and businesses.

Importantly, the bidders also have the flexibility to make trades, so they can optimise use of the spectrum they have won in the auction with their existing airwaves.

Philip Marnick
Group Director, Spectrum

Telkomsel and Smartfren Secure Spectrum at 2.3ghz Auction

Indonesia's Ministry of Communication and Informatics (MCI, or KemKominfo) has issued Press Release No. 133 / HM / KOMINFO / 04/2021 to announce the results of the 2.3GHz radiofrequency auction, completed between 19 and 21 April 2021. The ministry's tender was to allocate frequencies in the range 2360MHz-2390MHz with a block size of 10MHz each. At the close of the process, MCI confirmed that Telekomunikasi Selular (Telkomsel), bid IDR176.9 billion (USD12.2 million) per

block on the three lots of bandwidth offered – securing two – while Smart Telecom (Smartfren) bid IDR176.5 billion to win the other slot. As such, Telkomsel gets block A and C, while Smart Telecom gets block B. As previously reported by CommsUpdate, the MCI confirmed via official press release No. 120 / HM / KOMINFO / 04/2021 that at the closing of selection documents on 17 March 2021 it had received applicants from five mobile network operators (MNOs), namely: Telkomsel, Indosat Ooredoo,

Smartfren, Hutchison 3 Indonesia (Tri) and XL Axiata. Furthermore, the ministry noted that on 14 April it shortlisted three of the above MNOs to participate in the auction phase – Telkomsel, XL Axiata and Smartfren – which passed the 'Administrative Evaluation of 2.3GHz Radio Frequency Band User Selection in the Range of 2360-2390MHz for the Need for Organizing Cellular Mobile Networks'.

CVT Signs 20-Year Public Telecoms Service Concession

Cape Verde's government has renewed the public telecommunications service concession of incumbent operator Cabo Verde Telecom (CVT) for 20 years under Decree 36/2021 (14 April 2021), in return for an annual fee of CVE41 million (USD445,000), Agence Ecofin reported. The new contract, which includes 27

modifications, gives CVT the right to operate across the national territory and manage international calls, including transit calls through Cape Verde, while obligating it to promote high quality internet access – recognized by the government as an essential asset and a universal right of citizens – and contribute to nationwide

coverage of telecoms services. Every three years CVT must present and implement an investment program to improve the coverage and quality of services under its concession, with particular focus on international connectivity.

GCRA Issues Infringement Proceedings Against JT and Sure

A provisional finding by the Guernsey Competition and Regulatory Authority (GCRA) has claimed that mobile network operators (MNOs) Sure and JT have infringed the Bailiwick's competition law by entering into an agreement that had the object of preventing competition. With the former pan-Island regulatory authority – the Channel Islands Competition and Regulatory Authorities (CICRA) – having issued a draft decision regarding the matter back in January 2020, the GCRA has now published its latest findings. In a press release, Guernsey's regulatory body alleged that Sure and JT had colluded by sharing commercial information and agreeing secretly that JT would pull out of operating existing 4G and future 5G mobile networks in Guernsey, in return for Sure doing the same in Jersey. This agreement to trade mobile network infrastructure, the GCRA claimed, would have given each of JT and Sure a far stronger position as MNOs in their home Island 'achieved not by fair and open competition but through a secret anti-competitive arrangement'. Further, the GCRA added that it had provisionally concluded that collusion took place through a 'coordinated exchange of information between JT and Sure over more than a year'. Both MNOs have now been given the chance to make representations to the GCRA before it issues a final decision on the matter, with a deadline of 18 June 2021 set for the duo to make their submissions.

NBTC and TRC Conduct a Bilateral Meeting

Office of the National Broadcasting and Telecommunications Commission hosted the 3rd Bilateral Meeting with Telecommunication Regulator of Cambodia (TRC) in virtual meeting format with an aim to enhance telecommunication sector development and coordinating frequency usages in ASEAN region. On 19 April 2021, Office of the National Broadcasting and Telecommunications Commission (Office of the NBTC) hosted the 3rd Bilateral Meeting between Office of the NBTC and TRC, Cambodia where the meeting aimed to strengthen cooperation between the two organizations in reference to an MoU signed on 24 August 2015. Despite the Covid-19 pandemic, Office of the NBTC and TRC agreed to hold the 3rd meeting in a virtual meeting format in order to continue their close collaboration. Honorable General Sukit Khamasundara, Commissioner Acting Chairman of the NBTC, presided over the opening ceremony and delivered welcome remarks. This was followed by reciprocal remarks by H.E. Chenda Thong, Chairman of TRC, Cambodia. Mr. Trairat Viriyasirikul, Deputy Secretary General Acting Secretary General was assigned to chair the meeting and head the Thai delegation. H.E. Kimsann Srun, TRC commissioner, headed the Cambodian delegation. Also present were Mr. Sutisak Tantayotin, Deputy Secretary General of Telecommunications Cluster and executives from both sides. The objectives of the meeting were to exchange information about the

regulatory and policy environments of both organizations, discuss regulatory challenges, lay out ways forward for bilateral cooperation over the coming five years, and strengthen partnerships in other international forums. TRC is interested in the 5G auction in Thailand, one of key milestones in the country's development, as well as numbering portability services. Office of the NBTC shared information on regulating spectrum management, current telecommunication market regulatory trends, and telecommunications licensing procedures in Thailand. Office of the NBTC and TRC agreed to push forward OTT (Over-The-Top) initiatives in ASEAN. The collaboration between the two organizations will enhance both parties' regulatory efforts and improve the landscapes of their telecommunication regimes, leading to high standards and efficiency in delivering telecommunication services for citizens of both countries. Office of the NBTC aims to develop and enhance collaboration between the two countries in terms of telecommunication services and coordinating frequency usage in ASEAN, as ways to significantly strengthen relationship between the two organizations.

UK Aims to Take Rural Areas Out of Digital Dark Age

The UK government outlined plans to wipe out mobile signal blindspots in rural areas and the road network, as part of reforms to improve connectivity and speed rollout of 5G technology. In a statement, the government said it was proposing law changes which would remove one of the "biggest barriers" to better connectivity in such areas, by reducing build time and costs for new infrastructure, "while protecting rural areas by minimizing any visual impact". Under the plans, mobile operators will be allowed to construct new and existing masts up to 5 meters taller and 2 meters wider than currently permitted. The range of masts will, therefore increase, allowing them to fit more equipment so coverage can be equally shared. The proposed change adds to a government drive to deliver a £1 billion Shared Rural Network, aimed at ensuring all areas of the country can access 4G. The government believes the latest plans will provide incentives for mobile companies to improving existing masts over building new ones, while rural communities will

not require as many masts to "take full advantage of 5G-connected technology". On roads, the government aims to improve mobile coverage by allowing building-based masts to be placed near highways. Digital secretary Oliver Dowden said: "Today we are setting out plans to make it easier for mobile firms to transform connectivity in the countryside and propel

villages and towns out of the digital dark ages." In a separate statement, Bjorn Odenhammer, CTO Networks and Managed Services at Ericsson UK and Ireland, welcomed the announcement, stating the proposals were "practical, targeted measures that could spur much quicker rollout of mobile coverage in these historically under-served areas".

Korea Aims to Foster 5G Competition Via MVNOs

South Korea's ICT Ministry said it aims to boost competition in the domestic 5G market through the release of affordable mobile data plans from mobile virtual network operators (MVNOs), local news agency Yonhap reported. According to the report, the country's ICT ministry said that a total of 10 MVNOs in Korea, including Sejong Telecom, will release new 5G plans starting this month that provide up to 30 gigabytes of data for around 40,000 won ($35). The report stated that the country's three main telecom operators — SK Telecom Co., KT Corp. and LG Uplus Corp. — do not currently offer plans at a similar price for the same amount of data. The ICT ministry had previously implemented changes in administrative rules so that MVNOs can independently offer 5G data plans. The government said that this move

will foster competition in the 5G market, which is dominated by these three carriers. As of February, 5G subscriptions to MVNOs stood at around 7,000. The total number of MVNO users in Korea reached 9.27 million in February, of which 6.6 million were subscribed to 4G networks. South Korea ended February with 13.66 million subscribers in the 5G segment after a net addition of 792,118 subscribers during the month, according to the latest available data from the Ministry of Science and ICT. SK Telecom had the largest number of 5G subscribers at 6.35 million, followed by KT at 4.16 million and LG Uplus at 3.15 million. South Korean telecom operators currently provide 5G services via non-standalone 5G networks, which depend on previous 4G LTE networks. The country's three operators launched 5G technology in

April 2019, and 5G networks are available mostly in large cities. SK Telecom, KT and LG Uplus are currently preparing to commercialize new technology, such as Standalone versions of the 5G networks and millimeter-wave 5G. Despite the rapid progress in 5G deployments, subscribers have been criticizing the poor quality of 5G services. Nearly 1,000 5G smartphone users in South Korea recently expressed interest in taking legal action against the country's three major telecom operators due to the alleged poor quality of the service. The group plans to file a class action lawsuit in May after adding more customers to the complaint. The group is seeking at least KRW1 million ($885) in compensation per subscriber from the three mobile operators.

EU Tipped to Court India in 5G Security Standards Effort

European Commission (EC) EVP Margrethe Vestager (pictured) reportedly unveiled intentions to collaborate with India on creating global standards for security and transparency in 5G rollouts. Vestager told Bloomberg the European Union (EU) planned to put the 5G deployment topic on the agenda at a

summit between the bloc and Indian Prime Minister Narendra Modi on 8 May, as part of broader discourse on security and trade issues. The Commissioner reportedly highlighted the EU's desire to collaborate with democratic partners on establishing open standards for 5G rollouts and protect networks in the light of "a systematic rivalry", supposedly hinting at heightened concerns around Chinese vendors. Standards would be built around technical specifications including 5G network spectrum bands and interface technologies in an effort to open opportunities for local and small companies to participate, Vestager told the news agency. She said standardization would play a key role for speedy digitalization. Alongside the US and India, a number of EU nations moved to impose restrictions on the use of equipment made by companies including Huawei and ZTE when building 5G networks over worries of ties with China's government. The EU reportedly needs to pour $355 billion into deploying next-generation networks, and India is thought to require $70 billion.

PTA Launches CERT Portal for Telecom Industry

Pakistan Telecommunication Authority (PTA) has launched Computer Emergency Readiness Team (CERT) / Coordination Center Portal (https://sec.pta.gov.pk) for the Pakistan Telecom Sector. PTA has introduced the CERT portal for its licensees, in continuation to its efforts to improve security posture of Pakistan Telecom Sector and to protect and safeguard National Critical Telecom Data and Infrastructure. This initiative will enable PTA and its licensees to share Threat Intelligence with each other to achieve regulatory compliance of PTA Cyber Security regulations. This portal has been established after close coordination and input from the telecom operators. Primarily, this portal will facilitate information sharing and exchange between PTA and telecom service providers on latest cyber security threats,

incidents, vulnerabilities, security news and other related information. Continual

improvements in portal will be carried out based on operational requirements.

Tech Mahindra Business Process Services (BPS) in GCC's interactive market place

We are at the forefront of a technological evolution, and enhancing connectivity using technologies such as Digital Interfaces, IOT, Mobility, Analytics, Cloud, Security, and Social Media, is important. We continue enrich and create memorable Digital Experiences for our UAE Customers.

We do offer a range of cutting-edge Next Gen. Digital CX & Back Office solutions across multiple industries with a sharp focus on customized solutions for our Communications, Oil & Gas, Energy, Utilities and BFSI clients.

Our Middle East Presence:

With our 'think global & act local' mindset, we are strategically placed in UAE, Saudi Arabia, Qatar, Kuwait & Bahrain. We have had a strong presence in GCC since 1999. Our local workforce of 3,000+ associates continue to touch and change lives of millions of end-users in the GCC market on a daily basis.

Given our deep penetration in the local market while working with some of the Tier 1 players in their respective industries, Middle East is also one of the Fastest growing region for Tech Mahindra.

Tech Mahindra BPS - Connected, Progressive and Technology Driven Organization

- 28 delivery centers in 13 countries
- Operations in 40 + Languages
- Highly Trained Digital-Human workforce of 65K (47K FTE + 18K Bots)
- Next Gen Digital CX & Back Office Services

- In-House solution + Portfolio Companies covering CX, BX, UX &SX
- In-House Tech IP's & Partner Driven solutions (UiPath, Work Fusion, Automation Anywhere)
- Extensive multi-industry & horizontal solution & delivery portfolio based on BPaaS and Cloud solutions
- Positioned Market Leader in Contact Center Ops by multiple analyst & advisory fraternities

Delivering business value through BPS

Our Digital Augmentation in all our key programs helps us in delivering benefits such as:

- Increased Digital Channels by 25- 30%
- Increased Sales by 10-15%
- Reduced AHT by 15%
- Improved call resolution by 10%

- App based hiring + Tech driven training process
- Managing skills development practices + Internal talent pool through market research
- Best in class WAHA capabilities along with in-House & Partner driven security & governance structure

Our Key Differentiators

01. Adept & Experienced Leaders in Delivering Digital CX

TechM BPS with its Platform & Point Horizontal solutions, and CX domain specialists provide a holistic CX solution assortment. We cover CX, Multi-experience, User experience and Behavioral Experience.

02. Connecting Employee Experience with CX

We are amongst India's Best Companies to Work for in 2020, and we believe that, 'Engaged & Happy employees create amazing CX'. We also run multiple Employee Holistic Progress Programs.

03. Unshakeable Financial Stability & Ready to Take Decisions

TechM BPS is a part of Tech Mahindra (US $5.1 b), and Mahindra & Mahindra multi billion dollars conglomerate

Gartner Magic Quadrant recognition

Tech Mahindra Recognized as a Leader in Gartner 2021 Magic Quadrant for Customer Service BPO

Positioned Tech Mahindra for its Business Process Arm as a Leader in the Gartner Magic Quadrant research based on its ability to execute and completeness of vision

Tech Mahindra

Connected World.
Connected Experiences.

BPS Services for Telecom Industry

The COVID-19 pandemic has hit the world in an unprecedented manner; this has triggered a severe slowdown in economic activities across almost all industry verticals. We can expect the pandemic to slow down over the short term; we all know that its after effects are here to stay for much longer. With major shutdowns all over the globe, forcing everybody to stay indoors; the work, connect & study from home models have given a big boost to the telecom industry. This industry today is as important as other essential services like power, water etc.

> *The total telecom revenue in MENA is expected to grow at a CAGR of 0.4% between 2020 and 2025, despite the negative impact of the COVID-19.*

Despite all the challenges faced due to COVID-19; the current situation has also created new opportunities for telecom operators to further penetrate critical entities like healthcare, education, utilities and many more. Furthermore, due to the innovative approach taken by operators and the ability of consumers to utilize and adapt, the usage of telecom services is changing the dynamics of the global telecom market including MENA.

The total telecom revenue in MENA is expected to grow at a CAGR of 0.4% between 2020 and 2025, despite the negative impact of the COVID-19. The operators' investments in both the fixed (mainly fibre) and mobile (both 4G and 5G) markets in the Middle East and North Africa (MENA) will lead to significant growth.

Embracing the Change
In this growing but challenging business environment, customer service, network quality and cost of service will be the key drivers which operators will have to focus on, to reduce subscriber turnover and increase market share in an already highly-penetrated and competitive market.

Prabhjinder Bedi
Senior VP, Head of Business, EMEA and APAC
TechMahindra

We believe cost reduction, viz. outsourcing of business process services is not only helping operators meet their cost targets but is also enabling a major uplift in generating additional revenue (increase in ARPU) as well as helping telecoms to drive lower churn. Telecom operators should focus on end product and the core services which the consumers demand, while the supporting services – which are an enabler for the operators to successfully manage customer experience – can be left to a service partner who can bring strong capability and the become a part of the existing ecosystem to deliver superior services.

Customer experience (CX) is no longer a good to have. It has become a mainstay to arrest customer churn and address customer needs and turnaround. Omni channel customer service is already breaking through the traditional doors

and is paramount for reaching out to the already connected user world.
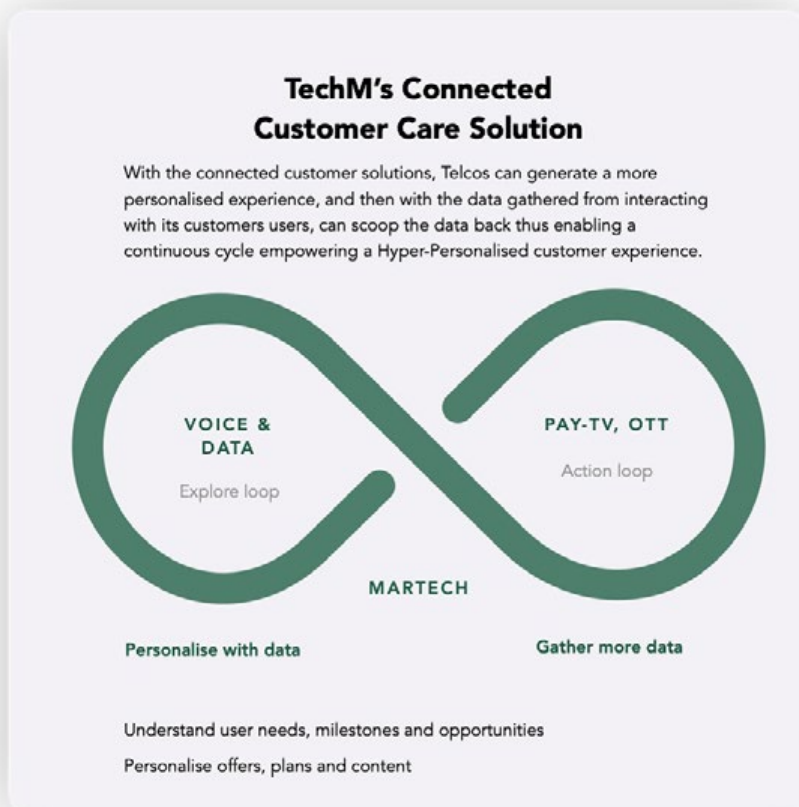
This trend is seen in telecom sector in the Middle East in recent years, especially in the Gulf, a region characterised by some of the highest rates of penetration in mobile telephony in the world (10.58 million subscribers in the UAE alone). Top 5 mainstream network services provider are maximising largely on their ability to deliver new, high-value customer services for both enterprises and retail consumers.

Hence, while heading into 2021, the telecommunications industry leaders should consider these key CX opportunities to boldly position themselves to thrive in the future. This is where Tech Mahindra BPS's deep Telecom expertise come into play wherein we as Change Agent can help Telecom Providers by:

Customer experience (CX) is no longer a good to have. It has become a mainstay to arrest customer churn and address customer needs and turnaround. Omni channel customer service is already breaking through the traditional doors and is paramount for reaching out to the already connected user world.

1. Renew the focus on customers' needs by taking a more nuanced approach to customer engagement.
2. Convert and remix their entertainment experiences by designing new service offerings and by adopting new strategies that can enable business agility.
3. Enable fully connected customer solutions which are hyper-personalised to match the need of each & every user.

To summarise, there is now a major shift in the industry where a larger number of customers are preferring digital services like online ordering, mobile payments, robust collaboration tools, among others, and this will be the new normal for telecom operators post the crisis. In order to tap these future demands, telco's should not only continue to invest in their network infrastructure; but also draw a big focus on improvising their customer services environment. There is a constant change in demands, product and service portfolios and facilitating customer needs with greater flexibility will be critical for the long term sustainability, and we are here to support all yours and your customers' needs.

TechM's Connected Customer Care Solution

With the connected customer solutions, Telcos can generate a more personalised experience, and then with the data gathered from interacting with its customers users, can scoop the data back thus enabling a continuous cycle empowering a Hyper-Personalised customer experience.

VOICE & DATA
Explore loop

PAY-TV, OTT
Action loop

MARTECH

Personalise with data

Gather more data

Understand user needs, milestones and opportunities
Personalise offers, plans and content

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Afghanistan

The Afghanistan Telecom Regulatory Authority (ATRA) has published an Invitation to Apply (ITA) to participate in the upcoming auction of additional spectrum in the 1800MHz, 2100MHz and 2600MHz bands for 4G services. The auction comprises three 2×5MHz lots of 1800MHz frequencies, two 2×5MHz lots in the 2100MHz range and three 2×10MHz blocks of 2600MHz airwaves. Operators will be limited to no more than a combined total of 2×10MHz from the 1800MHz and 2100MHz ranges, or 2×20MHz across all three bands. Following the completion of the allocation process, the ATRA plans to allow mobile network operators the opportunity to consolidate their holdings into contiguous blocks. The process will be carried out in close coordination with affected operators to minimize disruption, but cellcos will be invited to jointly propose plans for how they would like to consolidate their holding with ATRA to intervene 'only as required'. Whilst the allocations will be technology neutral, the regulator has included coverage obligations that relate to the provision of 3G and 4G services. Winning bidders will be required to phase in coverage of 4G data services in five of the largest cities in Afghanistan within 18 months and the next 13 largest cities within two years. In addition, successful bidders will be required to have at least five operational base stations in each of the remaining provinces within one year, and ten base stations in each within two years. Finally, every new base station installed after the assignment of the new spectrum blocks must provide the opportunity for sharing with at least two other providers. Each allocation is valid for 15 years and the ATRA has set reserve prices at: USD17.2 million for each 1800MHz lot; USD12.0 million per lot in the 2100MHz band; and USD11.0 million for each 2600MHz lot. Under the current timeline set out by the ATRA, interested parties have until 23 June to submit applications, and the auction will take place on 30 June.
(May 10, 2021) commsupdate.com

Algeria

The Algerian government has approved the five-year renewal of the telecoms network operating licenses of cellcos Mobilis and Djezzy, subsidiaries of Algerie Telecom and VEON, respectively. The renewal of the licenses to build and operate public electronic communications networks (including cellular) was implemented via two draft decrees presented to the government on 11 May by acting telecoms minister Sid Ahmed Ferroukhi (also the minister for fisheries), after the two companies met the requisite conditions. (May 13, 2021) Agence Ecofin

Mobile Number Portability has become a reality in Algeria. The executive decree defining the conditions and steps necessary for the implementation of the service presented to the government on Wednesday, April 14 at a meeting chaired by the Prime Minister, has been approved. The announcement was made by the Minister of Post, Telecommunications, Technology, and Digital, Brahim Boumzar, on April 15. "The main contribution of number portability, which is to preserve numbering resources, will stimulate competition between operators by facilitating consumer choice between their various services, which consumers will no longer be required to change the numbering to access the offers presented by different operators on the market," said the government. Mobile Number Portability was initiated in the country in 2018. In January 2020, Brahim Boumzar announced the finalization in the progress of the draft decree relating to it. A national commission in charge of concretizing the law on number portability had then seen the light of day in June. In practice, through the portability of mobile numbers, the government has given the power of sanction to telecom subscribers. There is no more need to acquire a new mobile number, and no more tedious tasks to communicate it to all its directory. Any telecom operator that cannot convince consumers of the quality of its services will be condemned to lose them to its competitors, who will also see their revenues grow at the same time. (April 20, 2021) ecofinagency.com

Bahrain

The Telecommunications Regulatory Authority (TRA) of Bahrain releases its 2020 report on the country's mobile network quality of service. The Audit demonstrates that the Kingdom has found high quality of service networks accessible, with 5G download speeds exceeding 2 Gbps, as the maximum value that was detected in the measurements. The average speeds of 5G technology reached approximately 440 Mbps. Commenting on the report, Eng. Mohamed Alnoaimi, TRA's Director of Technical & Operations stated: "Preparing for the introduction of the latest mobile technologies is one of the most important strategic objectives of TRA. TRA has worked with the Ministry of Transportation and Telecommunications and all relevant government entities to facilitate the launch of 5G services and to make the Kingdom of Bahrain one of the first countries to cover the population of Bahrain with 5G technologies, as it is easily available to citizens and residents." "The Audit showed the results of coverage, billing accuracy, and quality of service in general for all wireless Internet services and the results of 5G networks in particular. The Audit results are considered a quantum leap in data download and upload speeds and quick response, especially with regards to the 5G services section. This is part of the Kingdom's efforts to make it an attractive center for investment maintaining its leading position regionally and internationally in telecommunications and information technology services." Eng. Mohamed added. "We must commend the role of telecommunications companies that have invested in these technologies and provided them to consumers in the Kingdom of Bahrain, enabling them to access multiple Internet services efficiently at better speeds." Eng. Mohamed also added. The Audit highlights mobile coverage, service efficiency, and billing. It also covers quality of service, consumer experience, testing download, upload, latency, various Social Media Apps, and webpage navigation, showcasing the evolution of networks of all three MNOs currently offering 5G technology. TRA is constantly assuring that Bahrain preserves its status as a leading global hub in this critical sector, and it aims at improving readiness for latest applications like the Internet of Things and Machine-to-Machine communications. (May 26, 2021) tra.org.bh

According to the Key Market in Digital Transformation trends within the Telecom Sector in Bahrain, the kingdom is considered to be a regional player in digital transformation owing to its premature realization about the potential and importance of technology that enables its economic growth, human development and job creation among others, It is well known for its support for technology-driven businesses with government bodies taking care of regulatory role and governance. For instance, Bahrain was the first country in GCC to liberalize its telecom sector as it stands to lead the region with well-established information and communications technology (ICT) infrastructure. The region has issued standards for IoT connectivity with support for the use of frequency bands for IoT systems that are used in international mobile communications systems and it also has issued the working document in order to harmonize the use IMT spectrum for the narrowband IoT applications. Additionally, the region also has ensured that its wireless and fiber are arranged to support 5G and has reformed its frequency bands to accommodate the 5G networks. For instance, In June 2019, Batelco announced the launch of commercial 5G network available in Amwaj and Reef Island, making it the first telecom provider in Bahrain to implement commercial 5G network. The Bahrain Airport deploys advanced Information and communications technology (ICT) solutions including IoT, cloud-based unified communications, and big data among others for the deployment communication system across the entire airport. Additionally, it also delivers data sharing and analytics capabilities to leverage systems including Airport Operation Database and, Airport Collaborative Decision-Making.

(April 28, 2021) marketwatch.com

Bangladesh

Bangladesh ended March with more than 174.6 million mobile phone subscribers, up from 173.3 million in February, revealed the Bangladesh Telecommunication Regulatory Commission (BTRC). The telecom regulator disclosed the subscriber number considering the biometrically verified subscriptions who have any activity including voice, data, and SMS transactions at least once in the preceding 90 days. Among all mobile operators, Robi Axiata Ltd, the second-largest operator in the country, received the highest with nearly 400,000 new users while market leader Grameenphone and No 3 Banglalink each got 300000 new subscribers. Currently, Grameenphone's total subscribers stand at 80.7 million while Robi has 51.9 million, Banglalink 36.2 million, and state-owned Teletalk 5.6 million. In terms of mobile SIM subscriber growth, the growth rate of mobile SIM subscribers is lower in February-March as compared to January-February. Meanwhile, the total number of Internet subscribers reached 116.1 million in March; says a separate report of BTRC. A large part of the new Internet customers consists of cell phone users – 3.1 million – who recently subscribed to Internet services of different mobile operators, whereas broadband Internet providers received only 200000 new users.

(May 3, 2021) developingtelecoms.com

Egypt

The National Telecom Regulatory Authority (NTRA) has directed for mobile companies to allow free use of a set of phone applications for people with disabilities as of the beginning of the holy month of Ramadan. The approach is to ensure easy access to telecommunications and the Internet for disabled users, as they are an integral part of the Egyptian social fabric. The NTRA initiative aims to provide free use of a set of applications for users with visual and auditory disabilities that help them facilitate various matters of their daily living. This is also to ensure that their consumption is not deducted from the contracted Internet packages provided by various mobile companies. The applications offer a range of diverse features, such as object and currency recognition, and e-reader and automatic conversations with sighted volunteers through online visual chatting technology. The applications for the visually impaired include Be My Eyes, TapTapSee, CASH READER and work on various operating systems. For the hearing-impaired users, the Wasel application was made available free of charge. Wasel is an application for inquiring about government facilities and emergency services through sign language video technology. (April 13, 2021) dailynewsegypt.com

Iran

A report from Iran's official IRNA news agency says that more than 35,000 villages have been connected to high speed internet networks over an eight-year period under a project to improve rural services. PressTV cites IRNA as saying that 35,519 remote villages had access to broadband services as of March 2020, up from virtually zero eight years before. A further 17,000 villages have received internet access but at lower speeds. The government introduced legislation in 2017 requiring the country's two main cellular operators, MCI and MTN Irancell, to expand their networks to more rural regions. Landline phones have reached four million households in 47,000 villages, according to the report. (March 24, 2021) commsupdate.com

Jordan

The Telecommunications Regulatory Authority has published quality indicators reports for the second half of 2020 for telecommunications companies operating in the local market, and based on the information contained in the quality indicators reports provided by those companies. The cover reports published on the electronic body site www.trc.gov.jo reports licensed companies relating to fixed telephone services and access services for broadband internet access the ADSL and telephone services cellular, and Internet services wired broadband the ADS and reports of licensed companies Services Wireless Internet Fixed Fixed the LTE .The publication of these reports comes in accordance with what has been approved in the Instructions for the Regulatory Framework for Quality Control issued by the Authority and based on the reports provided to the Authority by the licensed companies, with the aim of monitoring the level of quality of services provided by the licensed companies to the beneficiaries. (March 28, 2021) trc.gov.jo

Kuwait

Zain Kuwait has signed a contract to provide its Zain Drone services to Kuwait's Public Authority of Industry, in a project involving aerial topographical surveys using autonomous unmanned aerial vehicles (UAVs) capturing corrected georeferenced imagery for data analysis. Zain Drone CEO AbdulAziz Jawad commented: 'The Public Authority of Industry has an important mission to supervise economic activity in industrial areas in Kuwait. We believe our services and technology are amongst the most precise and sophisticated available anywhere in the region, allowing our industrial and commercial clients to undertake tasks with greater efficiency and lower cost than when utilizing traditional methods. (March 26, 2021) commsupdate.com

Libya

The development and improvement of Libya's telecoms and technology sector was the subject of a discussion on 1 April between Faisel Gergab, Chairman of the Libyan Post Telecommunication & Information Technology Company (LPTIC), and China's ambassador to Libya, Qimin Wang. The LPTIC, the government holding company in charge of all state-owned telecoms firms, revealed the meeting discussed the performance of Chinese companies operating in Libya's ICT sector, and the enhancement of cooperation in the area of training, development and knowledge transfer through its planned Academy of Communications and Technology.

(April 6, 2021) Libya Herald

Nepal

The latest data by the National Statistics Department shows that the contribution of the telecom sector to Nepal's economy has been 1.5 percent. A recent interaction program organized by the Society of Economic Journalists (SEJON) discussed the contribution of the telecom sector to the economy. After the COVID-19 outbreak, the usage of telecommunication services increased exponentially. Digitalization expanded to a great extent following the lockdown period. People started working from home using the internet service. Similarly, students continued their studies via virtual class. To support the consumers, the IT sector came up with full connectivity and several apps. As a result, the contribution of the telecom sector to the economy summed up to 1.5 percent.

(April 20, 2021) nepalitelecom.com

Oman

The Telecommunications Regulatory Authority has signed a Memorandum of Understanding with Amanah (Endowment Funds Management) to promote romanization. A statement issued online by Telecommunications Regulatory Authority (TRA) said:" To promote entrepreneurship in the telecommunications sector, the TRA signed a Memorandum of Understanding with Amanah (Endowment Funds Management), with the support of Omantel and OoredooOman." The statement added that the memorandum aims to train the Omani youth in the field of repairing and programming communication devices and customer service, promoting romanization in the profession of selling and repairing communication devices and their accessories, and creating job opportunities for low-income Omanis and children of social security families. (May 25, 2021) timesofoman.com

Pakistan

Pakistan's total teledensity reached at 85 percent with over 181 million mobile subscribers and 2.4 million fixed-line subscribers, revealed Pakistan Telecommunication Authority (PTA). "There are now over 100 million broadband subscribers with total teledensity at 85pc, over 181 million mobile subscribers and 2.4 million fixed-line subscribers," said PTA. "88pc of Pakistan has access to internet/broadband services at one of the lowest rates in the region," the regulator added. PTA remains at the forefront of the digital revolution to facilitate and regulate the telecom and ICT infrastructure. PTA is committed to continue its efforts to maintain support for consumers and businesses, and to ensure that networks remain resilient & quality telecommunication services are available to all, especially in this difficult time. PTA said it is emphasizing on growth, usage penetration & quality of broadband services to every nook and corner of Pakistan. Meanwhile, Chairman PTA, Maj General Amir Azeem Bajwa's (R) message on World Telecom & Information Society Day said that the pace of digital transformation has been accelerated with COVID-19. As the world adjusts to the new-normal, the focus of the telecom sector has also shifted from accessibility and availability to resilience, continuity, quality and affordability. Regulators across the globe are revisiting their regulatory approaches while working hand-in-hand with international tele communities and health organizations to ensure safe, secure, reliable, fast, affordable and modern telecom services.

(May 18, 2021) brecorder.com

As per the Pakistan Telecommunication Authority (PTA), the achievement comes on the back of government policies, effective competition among telecom operators. PTA stated that in 2012, there were less than 2 million subscriptions but after the introduction of 3G services, the figure jumped to 16 million in 2014 and 100 million in 2021. The telecom regulator informed that presently 87 percent of the country's population has access to internet/broadband services at one of the lowest rates in the region. It informed that broadband is provided over 3G/4G networks with an average download speed of 17.7 Mbps and upload speed of 11.3 Mbps (mobile) which is above the speed levels in other regional countries. It was learned that mobile data prices declined to only 0.70pc of the Gross National Income (GNI) per capita which is well below the UN Broadband Commission's recommendation of less than 2pc. PTA said that all four national Cellular Mobile Operators (CMOs), SCO, and fixed-line broadband operators including PTCL collectively have broadband subscriptions of over 100 million. Back in 2010, the Pakistan telecom sector reached 100 million mobile subscriptions, it launched the first-ever biometrically verified SIMs across the country in 2009 and implemented the world's first open-source DIRBS in 2019.

(April 3, 2021) brecorder.com

Qatar

The Communications Regulatory Authority (CRA) published a public consultation on its website related to the Wireless Local Area Network (Wi-Fi 6) and CRA's proposed policy for assigning the full frequency band (5925-7125 MHz) to this network with an aim of receiving the views and comments from the local and international stakeholders and interested parties about CRA's proposed decision. Wi-Fi 6 is one of the world's new and cutting-edge technologies, helping to address Internet data traffic congestion issues caused by the connectivity of multiple devices to the same Wi-Fi hub. This technology will enable consumers in Qatar to connect more devices to the Wi-Fi with high-speed Internet connectivity, which includes laptops, tablets, mobile phones, and smart TV. Also, Wi-Fi 6 will enable different Internet of Things (IoT) applications and support innovative applications, such as augmented reality (AR), virtual reality (VR), and ultrahigh definition video (Ultra HD). "CRA is one of the first regulators in the region and the world to announce clearly and transparently its policy related to the frequency band for the Wi-Fi 6 technology, as CRA is always keen to encourage the introduction of advanced technologies to Qatar and keep its relevant regulatory instruments up to date to cover the new technologies and radio communications applications, which will contribute to a better future. The introduction of this technology will help support many sectors in Qatar, including the education sector, especially with the current approach related to remote learning through the internet because of the conditions associated with the spread of the Coronavirus pandemic (COVID-19). Moreover, this technology will also support the mobile telecom market as a complementary technology to the (5G) Networks, especially during Qatar's hosting of major events, including the FIFA World Cup - Qatar 2022," said CRA president Mohamed Ali al-Mannai. CRA has reviewed the experiences and the policy statements of several countries in this regard, and found that some countries have decided to assign the full frequency band to Wi-Fi 6 technology, such as the US, the Republic of South Korea, and others, while some other countries have decided to assign part of the frequency band, such as the UK and a number of European countries. CRA's approach is based on the investment of the full bandwidth (1200 MHz) in order to increase the Wi-Fi capacity and enhance the experience of the consumers in Qatar, to keep pace with the telecom infrastructure that is ready to accommodate this new technology, as the optical fiber network covers around 99% of Qatar's households and this percentage is one of the highest worldwide.

(March 23, 2021) gulf-times.com

Saudi Arabia

The telecom regulator CITC clarified that it had previously obligated all entities that fall under its regulatory powers, such as telecommunications and postal service providers, to provide a free contact number for customer service. This is in addition to establishing a special department to receive, manage and handle beneficiary complaints by service providers, and to allow communication with the department and submit complaints through all possible means either electronically or by phone or in person. The authority also instructed the companies to not obligate the beneficiary to have a lone way to file his complaint, and that access to these means shall be clear, easy and free, with the aim of strengthening the mechanisms for protecting beneficiaries and raising the level of service quality. It also emphasized that each party has a responsibility to protect customers in the sector that falls under its supervision by obliging commercial companies through provision of customer service via toll-free numbers.

(May 5, 2021) saudigazette.com.sa

The Communications and Information Technology Commission (CITC) has issued its '3-year Outlook for Commercial and Innovative Use of the Spectrum in Saudi Arabia', as part of the National Spectrum Strategy. CITC is planning to allocate

or improve access to more than 23GHz of spectrum for a wide range of uses, of which 4GHz will be licensed, 6.2GHz will be license-exempt, and more than 13GHz will be lightly licensed. Consequently, CITC is planning to allocate licensed spectrum in the 600MHz, 700MHz, 1500MHz, extended 2100MHz, 3800MHz-4000MHz and 26GHz frequency bands for mobile use between 2021 and 2023. The CITC is planning to commence an auction for 600MHz, 700MHz SDL, 723MHz-733MHz/778MHz-788MHz, 1980MHz-2010MHz/2170MHz-2200MHz and 3800MHz-4000MHz airwaves in H2 2021, with the frequencies scheduled to be available for mobile use within one to three years after the award (except for the 600MHz band, which will be subject to a clearance schedule). Spectrum in the 1500MHz and 26GHz bands will be auctioned in H2 2022. In addition, the CITC is planning to allocate between 2×3MHz and 2×5MHz in the 450MHz band for a nationwide specialized network; the procedure and the mechanism of releasing the spectrum will be announced in H1 2021. Mohammed Al-Tamimi, CITC's governor, explained the reasoning behind the new spectrum outlook: 'Allocating new spectrum for emerging wireless technologies to enable many use cases across different industries and verticals will help Saudi Arabia to build a digital society. CITC is adopting a progressive spectrum policy to meet spectrum demand of this wireless proliferation, and enable technologies of the future like 5G, broadband satellite and new generation of WiFi to have fair access to spectrum.'

(March 31, 2021) commsupdate.com

Governor of Communications and Information Technology Commission (CITC) Dr. Mohammed bin Saud Al-Tamimi inaugurated here the annual Information and Communications Technology (ICT) Indicators Forum, with the participation of Assistant Minister of Communications and Information Technology Dr. Munir Al-Desouki; Director of National Information Center, Dr. Essam Al-Wagait; leaders of telecommunications and postal companies in the Kingdom; and specialists of the telecommunications, information technology and postal sector. The Governor said that the progress in the communications and information technology sector embodies the wise leadership's support for this vital sector, along with the follow-up of the Minister of Communications and Information Technology and Chairman of the Board of Directors of the CITC, Eng. Abdullah Al-Sawaha, which resulted in the increase of digital infrastructure investments over the past three years to more than USD 15 billion in partnership with the private sector. He added that the number of homes connected to the optical fiber network reached over 3.5 million and the 5th generation networks exceeded 12,000 towers in more than 51 cities and governorates in the Kingdom of Saudi Arabia, noting that Saudi Arabia became among the top ten countries in the world in mobile internet speed. Dr. Al-Tamimi described the telecommunications market in the Kingdom as the most developed and largest market in the Middle East and North Africa, where the size of the telecommunications market in the Kingdom was estimated at SAR 70 billion, information technology market at 64 billion and the size of the postal market at 6.4 billion, whereas the estimated market value of telecom companies reached SAR 246 billion. He added that the communications and information technology sector, along with the postal sector, which has recently joined the commission's regulatory responsibilities, contributes to the Kingdom's GDP by 5.5%. The governor presented the most prominent indicators of the communications and information technology sector in the Kingdom of Saudi Arabia during 2020. In 2020, there was a 135.5% increase in the prevalence of mobile telecommunication services, 97.8% increase in the Internet use, and Internet services covered 99% of populated areas. He noted that the number of homes connected to the optical fiber network which reached over 3.5 million along with the 12,000 towers in more than 51 to support the 5th generation technology represents an increase of 128% compared to 2019, adding that more than 60,000 free Wi-Fi points have been provided in public places around the Kingdom. (March 29, 2021) alriyadhdaily.com

South Sudan

South Sudan has introduced its first-ever 4G internet service that will boost connectivity in a country that previously relied on 3G broadband width. Baba Medan Konyi, deputy minister of information and broadcasting, welcomed the launch of 4G internet services by Zain telecom services and said it resulted from concerted efforts of the government and Zain over the past years. "It's the right time to have 4G internet since government is implementing the peace agreement, it will make communication easy among the people as we are going to disseminate messages of peace across the country," said Konyi during the launch in the capital, Juba. He added that the government will provide security to all mobile operators to ensure improved internet service in the country. Khalid Abdalla, chief executive officer of Zain South Sudan, said the company is committed to delivering the highest standard customer experience. "We are delighted in making the best network in South Sudan even better," he said. "The 4G internet broad bandwidth places South Sudan among countries offering advanced mobile data services." Abdalla disclosed that they will be working closely with government institutions to roll out 4G internet services. He added that Zain will migrate its customers to the latest digital technology, with 4G also set to bolster the mobile experience of 3G services by adding additional capacity. However, no timeframe was given.

(April 16, 2021) africanwirelesscomms.com

Sri Lanka

The Telecommunications Regulatory Commission of Sri Lanka (TRCSL) has identified more than 2,000 'dark spots' on the island which have 'weak signals', as well as observing that 122 of 152 Grama Niladari Divisions (GND) currently do not have (mobile) broadband coverage. To help redress this – and mindful of its aim to introduce fixed number portability (FNP) and mobile number portability (MNP) from October 2021 – the regulator has also implemented two major pieces of legislation designed to improve coverage and service quality in the mobile sector. With the TRCSL currently in the technical planning stage for introducing FNP/MNP, Oshada Senanayake, Director General TRCSL told the Business Times: 'We updated the quality of service (QoS) gazette after 18 years and also gazette the Radio Telecommunications Terminal (RTT) rules'. The QoS rules dictate matters such as 'how long a customer can be on hold by a telephone operator, the quality of the call, bill resolutions etc.,' he added, while pointing out that QoS for data/ broadband is 'expected in the near future'. Furthermore, Mr. Senanayake said that updating the country's RTT rules – part of which defines the minimum standards for mobile phones – the TRCSL hopes to ensure that 'Sri Lanka will not be a dumping ground for fake and sub – standard devices. The paper reports him as saying that products not approved by 16 December 2020 must have approval under the new RTT Type Approval Rules while all type approval certificates issued prior to 16 December 2020 under the old rules will expire automatically on 17 June 2021. Finally, the official stated that issues surrounding non-utilization of mobile spectrum – in some cases operators are being hampered by the 'high number of court cases on spectrum allocation, which ultimately affected the QoS in the voice services' – are now being cleared and that 'refarming of spectrums has started now in a bid to overcome interference propagated by signals in neighboring countries. (April 13, 2021) commsupdate.com

Syria

The Syrian government has passed legislation to impose stricter penalties on individuals that 'use fraudulent means to obtain access to telecommunications services. In a statement, the Ministry of Communication and Technology (MoCT) explained that the amendment targets those that violate the law by tampering with equipment to access telecoms services and avoid paying the associated fees. As such, the MoCT is aiming to protect the rights of customers and investors and to ensure that the government can collect the dues it is owed. The new legislation – Legislative Decree No. 9 of 2021 – amends Article 67 of the Telecommunication Law No. 18 of 2010 to increase the penalty for obtaining telecoms services through fraudulent means with the intention of evading the payment of fees to between one- and three-years imprisonment and a fine of between SYP1 million and SYP4 million (USD1,950 and USD7,800). Previously, the punishment for the offence was a prison sentence of between three months and two years and a fine of between SYP50,000 and SYP500,000. (April 30, 2021) commsupdate.com

United Arab Emirates

The Telecommunications and Digital Government Regulatory Authority (TDRA) declared it had been ranked as one of the top three innovative entities in Middle East as per the Global Innovation Institute's Report. The report evaluates innovation ranking for entities registered in the institute. TDRA has met all standards and requirements set by the institute to obtain innovative entity certificate. The institute has accredited a number of TDRA's innovations developed and implemented at the national and international level. About this achievement, H.E. Mohammad Al Kitbi, Acting Deputy Director General for the Support Service Sector, said: "TDRA attaches great importance to innovation as one of the elements of the national agenda 2021, under "United in Knowledge" pillar. That pillar aims at a competitive economy driven by knowledgeable and innovative Emiratis to guarantee long-term development for the UAE. Hence, TDRA is keen to adopt and launch initiatives that enhance innovation in work to provide best services and achieve society happiness in the UAE. Al Kitbi pointed out that this ranking of TDRA encourages us to exert more effort and provide more innovative initiatives. He added: "Leadership in ICT depends heavily on innovation and creativity in work. This is reflected by many initiatives adopted by TDRA like Digital Innovation Centre and TDRA's Digital Innovation System. TDRA establishes continuous cooperation with strategic partners and global organizations to enable and develop innovation initiatives to achieve best results." TDRA has emphasized that the achievement is a result of innovation management methodology. TDRA has global accreditation certificates in innovation, provides an innovation-friendly environment, has efficient and creative

human resources, and establishes national and international partnerships at the academic and scientific levels. TDRA pointed out that the achievement will contribute to enhancement of its innovation system that can enable it to lead national entities in innovation. TDRA organizes a set of innovation events around the year including Summer Innovation Camp. It cooperates and coordinates with all government entities regarding innovation to support UAE achievements in various fields, particularly ICT.

(May 9, 2021) zawya.com

The Telecommunications and Digital Government Regulatory Authority (TDRA), in cooperation with Abu Dhabi Digital Authority (ADDA) and Smart Dubai, has issued the "API First" Guidelines and circulated it to the concerned entities to broadly apply it during the next stage of digital transformation. Application Programming Interface (API) is the best approach to link various entities to provide services to customers from everywhere at any time, through government and private channels. For example, when a company uses an application interface for a government service, it will be able to provide that government service to its customers without the customers having to directly consult the government. API contributes to activating the comprehensive digital society according to the features of the smart city, as companies are linked with the government, individuals and things in an interactive digital environment, allowing for the provision of new products and services, and the creation of unprecedented business models for the benefit of all. The API First Guidelines will enable various parties to develop strategies and plans for programming interfaces that allow all customers to obtain smart services around the clock and from anywhere, as it will enable government and private entities to update their services and smart applications and link them together, leading to an excellent user experience. These guidelines are contained in a detailed document that includes designing and developing APIs, whether in the government or in private entities like banks and companies that intend to provide government services such as paying bills, issuing licenses and others. The TDRA confirmed that the document will be available to government entities and the private sector. Hamad Obaid Al Mansoori, TDRA's Director-General, said, "At 'The Year 50' announced by the wise leadership, digital transformation is heading towards deeper integration and partnership between the various sectors. This document is a practical interpretation of this trend as it highlights the best guidelines and recommendations related to the adoption of APIs to serve future-making strategies." Mohamed Abdel Hameed Al Askar, Director-General of Abu Dhabi Digital Authority praised the cooperation with the TDRA and Smart Dubai in launching the document while highlighting that it will contribute to providing an application programming ecosystem that encourages digital transformation and promotes innovation. Younus Al Nasser, Assistant Director-General of Smart Dubai and CEO of the Dubai

Data Establishment, stressed that linking entities at the local and federal levels with the private sector is a fundamental pillar in the process of comprehensive digital transformation. "We are committed to strengthening the bonds of cooperation with both the Telecommunications and Digital Government Regulatory Authority and the Abu Dhabi Digital Authority in the 'API First' guidelines project, which enables entities to harness the power of data in designing high-quality services that enhance people's well-being, satisfaction and happiness," he said. Moreover, the Guidelines will contribute to stimulating the UAE economy, by supporting the development of competitive businesses within the UAE in an information-based economy. (May 5, 2021) wam.ae

The Telecommunications and Digital Government Regulatory Authority (TDRA) has announced that its National Telecom Equipment Lab had been awarded ISO 17065 certification for telecom devices accreditation system. The lab has obtained this certification from the Emirates International Accreditation Centre (EIAC) after meeting all applicable standards and practices. The accreditation reflects the efforts of TDRA to adopt and apply global standards in its processes and services provided to customers. ISO 17065 certification is a continuation of the TDRA's achievements attained last year. TDRA obtained two certifications from Emirates International Accreditation Centre (EIAC) last year. The first one is ISO 17025 certification for the National Telecom Equipment Lab and the second is ISO 17020 for telecom market inspection and control. TDRA has obtained the two certifications after meeting the technical standards applied by the International Laboratory Accreditation Cooperation (ILAC) for telecom equipment inspection and approval. Commenting on this achievement, Eng. Saif Bin Ghelaita, CEO of Technology Development Affairs in TDRA said: "Telecom devices approval is a recognition by TDRA that these devices comply with technical standards. Awarding such certification to TDRA is a confirmation that it applies best global practices in its accreditation system. Those standards include qualification of human resources, accreditation and inspection plans, applied quality standards, and sample inspection methods." TDRA provides various services related to telecom equipment type approval, including telecom equipment registration and accreditation, supplier registration, and telecom equipment customs clearance. TDRA defines and registers telecom devices that can be used safely in the UAE without causing any damage or harmful interference with the telecom network. It supervises and participates in approving telecom devices before being imported, ensuring that they are compliant with laws and regulations. TDRA gives approvals for customs clearance of telecom devices for non-commercial use and regulates import and sale of telecom devices used in the UAE. It issues type approval certificates for devices compliant with TDRA's requirements and standards.

(May 1, 2021) tdra.gov.ae

ARTICLE

Tunisia Benefits from Digital Tunisia 2020

SpeedChecker, the mobile crowdsourcing company released a new report on the performance of mobile networks in Tunisia. This report is part of an ongoing commitment from SpeedChecker to benchmark the true user experience in Africa. The SpeedChecker report has been compiled using data from 25,424 mobile devices performing 59,133 tests in March 2021.

The full report including data collection & measurement methodology can be found here[1].

> *Tunisia consumers are well-served in terms of both speed and latency following the first stages of implementation of Digital Tunisia 2020 . Regulatory measures and infrastructure projects have been instituted aimed at improving internet connectivity to under-served areas.*

Tunisia consumers are well-served in terms of both speed and latency following the first stages of implementation of Digital Tunisia 2020 . Regulatory measures and infrastructure projects have been instituted aimed at improving internet connectivity to under-served areas. Tunisia has ambitions to improve further still although this will be delayed with parts of its plans being put back to Digital Tunisia 2025 because of the impact of COVID.

Janusz Jezowicz
CEO
SpeedChecker

This impressive performance has been achieved by each of the top 3 operators in Tunisia: Tunisie Telecom and Ooredoo have download speeds around 20 Mb/s with Orange not far behind at 15 Mb/s.

Ooredoo — 95% Confidence interval
Download speed (Mb/s): 18.14 +/- 0.32
Upload speed (Mb/s): 7.83 +/- 0.21

Orange
Download speed (Mb/s): 15.65 +/- 0.36
Upload speed (Mb/s): 7.18 +/- 0.26

Tunisie telecom
Download speed (Mb/s): 21.59 +/- 0.49
Upload speed (Mb/s): 8.24 +/- 0.31

Ooredoo 28,788 samples, Orange 16,442 samples, Tunisie Telecom 13,582 samples

1 - https://www.speedchecker.com/public/pdf.html?file=user-experience-on-mobile-networks-tunisia-march2021.pdf
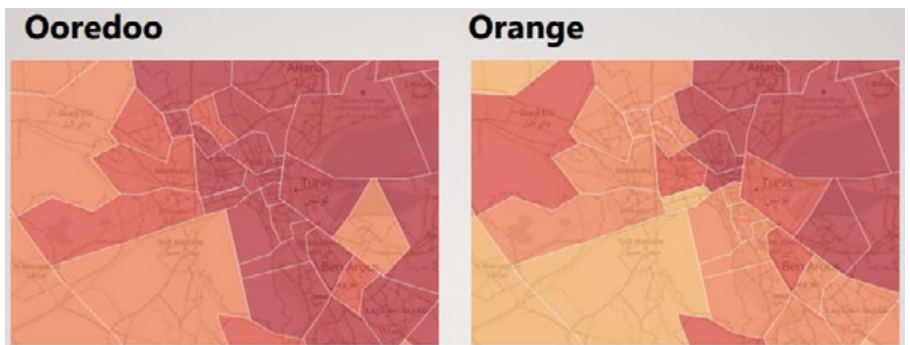
Ooredoo 28,788 samples, Orange 16,442 samples, Tunisie Telecom 13,582 samples

The full report also shows that they all have very good (70 - 90 ms) latency speeds.

The following map shows that Tunisie Telecom has the most consistent performance across the country with Orange and Ooredoo performing less well in the north west and south of Tunisia but good elsewhere. The full report includes a table showing speeds per region in Tunisia.
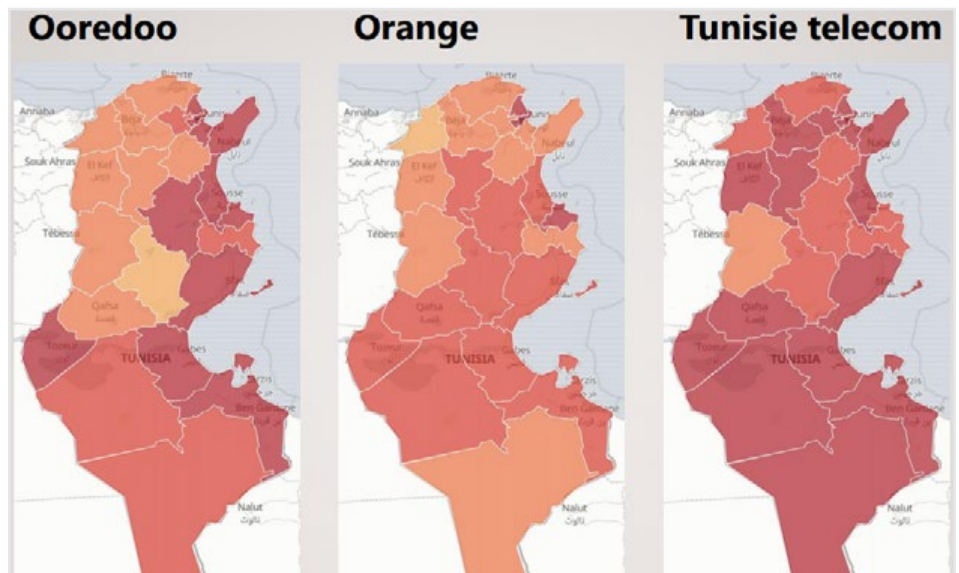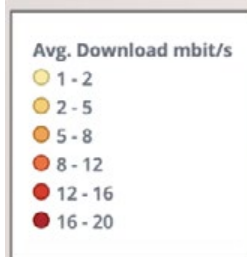

The last map shows a similar pattern with Tunisie Telecom being more consistent and Orange / Ooredoo performing less well in some parts of Tunis.
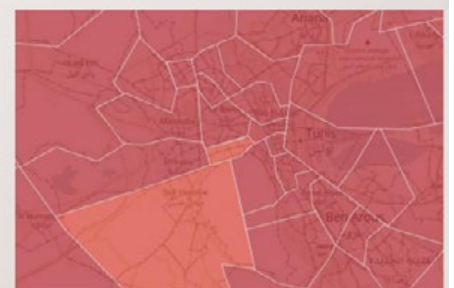
The full report including data collection & measurement methodology can be found here:
https://www.speedchecker.com/public/pdf.html?file=user-experience-on-mobile-networks-tunisia-march2021.pdf

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Australia

Australian MVNO Lycamobile paid a fine of AUD604,800 ($467,413) for failing to provide customer information to a database used by emergency services and not conducting the required ID checks for signing up new subscribers. In a statement, the Australian Communications and Media Authority (ACMA) the fine formed part of an ongoing effort to maintain the Integrated Public Number Database (IPND) in the interest of public safety, and follows action against several other operators since 2019. Its investigation into Lycamobile found "prolonged and large-scale customer data failures", with inaccurate details for 245,902 subscribers and a failure to adequately verify the ID of 4,207 prepaid customers. The IPND is used by police, fire and ambulance services to respond to emergency calls from the public. Lycamobile is also required to implement changes to its systems and processes, based on the outcome of an independent audit. ACMA noted it could initiate court proceedings if the MVNO fails "to comply with its customer data or prepaid ID check obligations", with potential penalties of up to AUD250,000 per incident.

(May 20, 2021) mobileworldlive.com

Five companies have secured spectrum in the Australian Communications and Media Authority's (ACMA's) auction of frequencies in the 26GHz band, which the regulator noted have been identified as optimal for the delivery of 5G wireless broadband services. Of the 360 lots available in the auction, the ACMA confirmed that 358 were sold, realizing a total revenue of AUD648 million (USD501 million). In terms of the winning bidders, Telstra emerged as both the biggest spender and recipient of the greatest number of lots, having offered AUD277 million for 150 lots. Meanwhile, rival operator Optus bid AUD226 million for a total of 116 lots, while TPG Telecom Limited (via Mobile JV Pty Limited) secured 86 lots for AUD108 million. Rounding out the winners of new spectrum,

Dense Air Australia bagged two lots for AUD29 million and Pentanet Limited won four lots with a bid of AUD8 million. Licenses won at the auction will reportedly come into force 'later this year', for a 15-year term ending in 2036. Commenting on the matter, ACMA chairperson Nerida O'Loughlin was cited as saying: 'This outcome represents another significant milestone for 5G in Australia. The successful allocation of this spectrum will support high speed communications services in metropolitan cities and major regional centers throughout Australia … This auction is one among a suite of licensing approaches that the ACMA has introduced in the 26GHz and 28GHz bands to encourage a wide range of innovative communications uses.' (April 23, 2021) commsupdate.com

Regional communities will benefit from improved connectivity, Australia's Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) has claimed, following the announcement that 81 telecommunications infrastructure projects will share in more than AUD90 million (USD69.6 million) in funding under the 'Regional Connectivity Program' ('RCP'). According to the Australian government, it has taken a collaborative approach in delivering the RCP and has engaged with the telecommunications industry and regional communities 'to make sure that the funded projects are tailored to the needs of each region and are supported by the community'. Investment will reportedly provide targeted uplifts to connectivity in the regional areas which need it the most, ensuring that more Australians can access high speed, reliable broadband and mobile services. Grants have been allocated on a competitive basis across three funding categories, with the total cost of successful projects ranging from AUD80,500 for targeted mobile capacity upgrades in small towns to AUD8.75 million for the deployment of large-scale fixed-wireless broadband networks across entire regions.(April 19, 2021) commsupdate.com

Austria

Full-service provider Magenta Telekom, which was formed in 2019 from the merger of wireless operator T-Mobile Austria and cableco UPC Austria, has begun the rollout of the 700MHz band for 5G services in rural areas. The first 700MHz 5G location is situated in the municipality of Seeboden in Carinthia, with hundreds of additional areas set to follow this year. 'With the excellent frequency configuration, we can offer our customers the best 5G quality. Rural areas in particular

will benefit from our 5G quality leadership in the low frequency bands. This 5G expansion strategy is an ideal addition to our leading gigabit-capable fiber-optic cable networks in metropolitan areas,' stated Andreas Bierwirth, CEO of Magenta Telekom. More than a third of the Austrian population is currently covered by the firm's 5G service, which also utilizes the 2100MHz and 3.7GHz frequency bands.

(May 12, 2021) commsupdate.com

The government has announced that it is allocating EUR1.4 billion (EUR1.7 billion) by 2026 to accelerate the expansion of high speed broadband services across the country. The new funds consist of EUR891 million from the EU's recovery and resilience fund, a further EUR166 million already earmarked in the current budget, as well as EUR389 million generated from the 2019 and 2020 spectrum auctions. At present, almost all of Austria's approximately 3.9 million households already have a basic supply of fixed broadband services, 89% of which are faster than 30Mbps, while connection speeds of over 100Mbps are available for 80% of households and 43% have gigabit-enabled connections. After the new public funding has been finalized, the new funding guidelines will be sent for consultation to determine where the money will be allocated, before the guidelines are sent to the EU for notification. At the same time, work is being done on an amendment to the Telecommunications Act to create investment-friendly measures for the private-sector expansion of fixed and mobile internet services.

(April 26, 2021) commsupdate.com

Belgium

Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has granted telecom operator Citymesh permission to use its licenses in the 3.5GHz band across the entire country. The decision follows a request submitted by the B2B wireless connectivity provider in December 2020 for its permit to be extended to all Belgian communes except Vresse-sur-Semois, Bievre, Gedinne and Bouillon, where the frequencies have already been granted to sister company Gridmax. Citymesh's user rights for the frequency block 3430MHz-3450MHz/3530MHz-3550MHz are valid until 6 May 2025.

(May 10, 2021) commsupdate.com

The Federal Council of Ministers officially launched on 30 April a national plan for fixed and mobile broadband which aims to eliminate the remaining 'white zones' where high speed services are unavailable. Telecom Minister Petra De Sutter explained that some 138,000 households are still unable to access high speed broadband, and that the issue must be addressed if Belgium is to achieve an EU target for all homes to have access to download speeds of 100Mbps by 2025 and 1Gbps by 2030. 'Achieving digital transformation, which is also part of the green transition, will be essential. However, we must ensure that no one is left behind,' stressed Minister De Sutter. 'For the moment, too many of our fellow citizens do not have fast internet. Every month, mayors from remote municipalities or parliamentarians ask me questions about this, and rightly so, because each of us has the right to access a quality internet. This is all the more true as in the future teleworking and remote learning will be increasingly common.' Under the plan, every white zone – estimated to be around 2% of territory – will be mapped as a first step to facilitating the deployment of high speed services, for example by stimulating investment by operators. In addition, a special government unit with responsibility for implementing the plan and monitoring progress will be set up, while a 'Broadband Competence Office' will also be established to deal with all relevant issues relating to 5G and support implementation of the EU Connectivity Toolbox. The government will determine an exact budget for the plan at a later date.

(May 5, 2021) commsupdate.com

Benin

The Ministry of Digital & Digitalisation (MND) has launched a tender to license a new mobile network operator (MNO), open to foreign companies with existing telecoms network operations. Applicants must have the required technical and financial resources and not be directly or indirectly controlled by an existing licensee. Applications are due by 18 May 2021, subject to a non-refundable XOF5 million (USD9,100) fees. The tender was authorized by a Council of Ministers decision of 24 March 2021, with an invitation for applications dated 26 April 2021 subsequently published on the website of the Authority for Regulation of Electronic Communications & Post (l'Autorite de Regulation des Communications Electroniques et de la Poste, ARCEP).

Benin's MNO market is currently a duopoly of private sector operators MTN and Moov, while state-owned Beninese Digital Infrastructure Company (Societe Beninoise d'Infrastructures Numeriques, SBIN) has been earmarked by the government as a third MNO, with Senegal-based Sonatel chosen as SBIN's management company in March 2021 under a remit to make SBIN 'a major GSM operator' over five years. The Council of Ministers decision which delegated SBIN's management to Sonatel also authorized the MND to 'initiate the opening of a procedure for granting a third license for mobile electronic communications networks for the benefit of the SBIN'.

(May 6, 2021) commsupdate.com

Botswana

The Minister of Transport and Communications, Thulaganyo Segokgo, has announced that plans to implement mobile number portability (MNP) have been abandoned after more than six years of preparation. The Minister has told Parliament that the initiative would not proceed as an operator network readiness assessment study had shown that it was not feasible. He said operators were being encouraged to investigate other alternatives to MNP, such as promoting over-the-top (OTT) services and other 'disruptive technologies. The smallest of the country's three cellcos, BTC Mobile, will arguably be the most disappointed at the failure to introduce portability as it hoped to increase its share of the market to at least 30% by luring subscribers away from its larger rivals Mascom and Orange. MNP allows a customer to change network provider while retaining their original number.

(April 8, 2021) Mmegi

Brazil

The Superintendence-General (SG) of the Administrative Council for Economic Defense (Cade) has approved without restrictions the purchase of the towers of Telxius Torres (a subsidiary of Telefónica / Vivo) in Brazil by American Tower. According to local media reports, Cade's decision was published in the Federal Official Gazette this Thursday, 29, after dispatch issued the previous day. The reports said that some competitors in the tower market wanted conditions to approve the deal. Telefónica signed an agreement with American Tower in mid-January for the sale of the tower divisions in Europe and Latin America. The transaction, one of the most important in the history of the Spanish telecom company, allowed it to enter some 7,700 million euros at the closing. It was configured in two parts: that of the assets of the Old Continent and those of Latin American territory. They both had different closings and schedules. The first has already come to an end in the regulatory journey. Competitors of American Tower contested the transaction, but, according to the local media reports, Cade understood that, even though American Tower has more than 20% of the national market, there are not enough indications of concentration for anti-competitive actions. Telxius Telecom is a company of Spanish group Telefonica, which has activities in Brazil in various sectors of telecommunications. Telefônica holds 50.1% of Telxius, which, according to the operator, will not be extinguished with the sale of the towers. The company will remain to manage about 100 thousand km of submarine cables belonging to the operator.

(May 3, 2021) developingtelecoms.com

The National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, ANATEL) has issued a new 'Monitoring Report' regarding the country's mobile sector, which confirms that it has now licensed a total of 105 MVNOs. Of this figure, ten hold a Autorizada de Rede Virtual (Authorized Virtual Network) concession, while the remaining 95 have Credenciada de Rede Virtual (Accredited Virtual Network) status. The main difference between the license types is that Accredited MVNOs do not need to have their wholesale arrangements approved by ANATEL, whereas Authorized MVNOs do. Interestingly, the regulator notes that just four of the Authorized licensees had an active subscriber base at end-2020.

(April 26, 2021) commsupdate.com

Brunei Darussalam

The 5G pilot project is deployed as commissioned by the Ministry of Transport and Infocommunications (MTIC), and spearheaded by the Authority for Info-communications Technology Industry of Brunei Darussalam (AITI) with involvement from telecommunications infrastructure and service providers as well as industry stakeholders and players. Minister of Transport and Infocommunications Dato Seri Setia Awang Abdul Mutalib bin Pehin Orang Kaya Seri Setia Dato Paduka Haji Mohd Yusof launched the 5G Pilot Project at The Mall, Gadong. The 5G Pilot Project, is aimed at supporting strategic objectives and priorities under the Digital Economy Masterplan 2025. The pilot project also serves to demonstrate 5G Proof-of-Concept network environments, promote the value of high speed 5G mobile communications and create awareness in accelerating 5G adoption. Acting Chief Executive of AITI and 5G Taskforce Chairman Ir Haji Jailani bin Haji Buntar said it was just a few years ago when there was a global race in becoming the early adopters of 5G technology, "but now we start to hear that adoption of 5G is not a sprint, it is a marathon". "As we understand, 5G is more than just a faster network, it will redefine the network, establish a new global wireless standard for speed, throughput and bandwidth as well as build a bridge to the future. 5G is about tomorrow, so we need to prepare ourselves for the journey ahead by addressing any current issues at hand. It promises to be the standard that facilitates the giant leap to a connected future with faster data speeds and more bandwidth to carry growing levels of Internet traffic." He added that the Brunei Darussalam 5G Taskforce was established in March 2020 to ensure readiness and identify key issues in equipping Brunei Darussalam to adopt 5G technology, by focusing on three key areas – policy, regulatory and spectrum; use cases, applications and infrastructure; and education and awareness relevant to ensure success in rolling out 5G.

"I'm glad that through the 5G Taskforce which consists of 110 members from 41 organizations including all the ministries, academia and industry players, everyone plays a significant role in achieving nationwide readiness for 5G coverage in Brunei Darussalam." AITI stated that until April 7, the public can visit the booth featuring the 5G Pilot Project to experience the significant improvements that 5G can bring. The pilot project is a continuation of a series of activities to raise awareness on 5G technology which has the potential to improve productivity, enhance virtual experiences and bring to the next level of digitalization towards realizing the aspiration for Brunei Darussalam as a Smart Nation. The Mall, Gadong is one of the five strategic locations where 5G Pilot Project and Proof-of-Concept network has been deployed. Other locations include outdoor coverage at The Airport Mall, Mulia Hotel and Universiti Teknologi Brunei as well as indoor coverage at Design and Technology Building. The pilot project's activation will be implemented in phases. AITI in

collaboration with Brunei Darussalam 5G Taskforce also held a handover ceremony for the 5G Taskforce Report. The taskforce was formed in March 2020 to facilitate the implementation of 5G, ensure readiness through exploring business models across the vertical industry, and support Smart Nation initiatives to conceptualize and deliver smart services to generate social and economic value for Brunei Darussalam. The 5G Taskforce handed over the taskforce report to the Minister of Transport and Infocommunications. Acting Minister of Energy and Chairman of AITI Dato Seri Paduka Awang Haji Matsatejo bin Sokiaw; Legislative Council member Yang Berhormat Siti Rozaimeriyanty binti Dato Seri Laila Jasa Haji Abdul Rahman, who is also a member of Authority of AITI; permanent secretaries, deputy permanent secretaries, AITI members, directors, CEOs, Brunei Darussalam 5G Taskforce Working Group Chairmen and its members were also present.

(April 4, 2021) borneobulletin.com.bn

Bulgaria

Bulgaria's telecommunications authority the Communications Regulation Commission (CRC) has concluded its auction for 5G spectrum in the 3.6GHz band, raising a total of BGN13.4 million (USD8.1 million) from the sale. A1 Bulgaria, Vivacom and Telenor each secured 5G-suitable airwaves, with A1 agreeing to pay BGN4.7 million for 100MHz of 3.6GHz spectrum (3600MHz-3700MHz). Vivacom offered BGN4.6 million for its 100MHz block (3700MHz-3800MHz),

while Telenor pledged BGN4.1 million for its 100MHz allocation (3500MHz-3600MHz). The concessions are valid for 20 years. The regulator initially planned to allocate the three 20-year 5G licenses without competition, though its decision was contested by Vivacom. After reviewing all the legal options and obtaining the consent of all interested parties, the CRC set 6 April as the date for the 5G tender.

(April 7, 2021) commsupdate.com

Canada

Francois-Philippe Champagne, Canada's Minister of Innovation, Science and Industry, has announced the decision to open the 6GHz band, providing an additional 1,200MHz to triple the license-exempt spectrum available for Wi-Fi with the aims of boosting competition, rural connectivity and the effective deployment of Wi-Fi and 5G technologies. Heralding the move as supporting greater choice and affordability of wireless broadband for consumers, the minister said the additional Wi-Fi spectrum availability will mean Canadians can benefit from increased speed and connectivity for working from home, participating in online education and accessing health care services remotely, noting that the decision also allows for more affordable deployment of broadband technology in rural areas and increased access to the spectrum for businesses and innovators looking to use it.

(May 20, 2021) commsupdate.com

The CRTC announced that certain telecommunications providers will be able to access the wireless networks of Canada's dominant providers to offer Canadians more choice and affordable options. As a result,

regional providers that invest in network infrastructure and spectrum will be able to offer competitive services to millions of Canadians as mobile virtual network operators in areas where competition is limited. These companies have already been contributing to greater competition and helping to lower prices. Furthermore, these regional providers will have the flexibility to resell their wholesale access to mobile virtual network operators, which will enable further competition in the marketplace. In an effort to benefit consumers, the CRTC is also requiring that the national wireless carriers implement seamless roaming to help prevent dropped calls and data sessions when customers move from one network to another, especially during travel. Lastly, the CRTC is taking action to ensure that Canadians— including seniors, low-income earners and those who use their mobile phone sparingly—can benefit from more affordable mobile plans that meet their needs. By July 14, 2021, Bell, Rogers, Telus and SaskTel will be expected to offer low-cost and occasional-use plans in most markets, as well as promote them on their websites, in person and over the phone.

(April 17, 2021) newswire.ca

China

China is forecast to reach 739 million 5G subscribers by 2025, according to a recent study by ABI Research. This figure would represent nearly 40% of the global market share in the 5G segment. In terms of the annual mobile data consumption, the 5G annual data traffic in China is forecast to reach 782 exabytes by 2025, representing a share of nearly 60% of the world's total 5G data consumption. "Unlike other early adopters, such as South Korea, the United States, Finland, Japan, and many others, mobile operators in China are owned by the government, which allow them to receive extensive support for developing the 5G networks especially in the consumer market," said Jiancao Hou, 5G and mobile network infrastructure senior analyst at ABI Research. "From a spectrum perspective, the mobile operators received 5G spectrum licenses for tests and trials in 2018, giving them the great opportunity to plan the best network deployment strategies and be ready for the 5G commercial launch in the following year." Moreover, "the current trade war and the ban of the Chinese domestic vendors isn't slowing down 5G deployment in China, at least over the next 2 to 3 years, given its level of 5G deployment momentum." Chinese mobile operators have deployed a total of 690,000 5G base stations as of October 2020, according to the report. China Unicom and China Telecom are jointly deploying their standalone (SA) 5G RAN infrastructure and sharing radio frequency resources. On the other hand, China Mobile will continuously promote a dual-mode solution (NSA and SA) to better support international roaming, and its collaboration strategy with China Broadcasting Network is under discussion. "There is no clear strategy guideline for promoting local licensed spectrum access or unlicensed and shared spectrum use in the Chinese telco market at the current stage," Hou said. "Considering the comprehensive fiber deployment across the whole country, Fixed Wireless Access and mmWave deployment may receive limited attention, except for traffic offloading in hotspots." The analyst also highlighted that the ban of the Chinese vendors' development from other countries may stimulate the revival of the domestic supply chain in the Chinese market. Chinese operators added a total of 16.94 million 5G subscribers during February, according to monthly statistics published on the carriers' websites. China Mobile, the world's largest operator in terms of subscribers, added 4.19 million 5G subscribers in February. The operator said it ended February with a total of 173.16 million 5G subscribers, compared to 15.4 million 5G customers in February 2020. Meanwhile, rival operator China Telecom added a total of 6.2 million 5G subscribers in February to take its total 5G subscribers base to 103.37 million. Also, China Unicom ended February with 84.5 million 5G subscribers, up from 77.95 million the previous month. (April 5, 2021) rcrwireless.com

The Ministry of Industry and Information Technology (MIIT) has issued its 'Dual Gigabit Network Coordinated Development Action Plan (2021-2023)', setting out targets and planned works for the extension of the 'dual gigabit network' – the combination of gigabit fiber-optic and 5G infrastructures – over the next three years. Broadly, the strategy aims to promote development and take up of innovative applications and solutions for key industries and end users through construction of new facilities and upgrades to existing systems. A key element of the strategy is to promote the 'complementary advantages' of the two network types, highlighting the strength of fiber-optic systems within 'indoor and complex environments with large transmission bandwidth, strong anti-interference and microsecond-level connection' alongside 5G's flexibility, mobility and capacity to support a large number of connections. The action plan sets out a number of targets for the end of 2021 and end-2023, with the former including the extension of fiber networks to over 200 million households nationwide, the deployment of a total of 600,000 5G base stations to expand coverage into key towns and villages, and to build 20 'gigabit cities'. By the second deadline, the MIIT expects the fiber footprint to have expanded to 400 million households and 5G networks to cover areas above the township level and key administrative villages. The regulator has also set end-2023 as the deadline for its so-called 'Double Hundred' goal, which envisions the construction of 100 gigabit cities and 100 gigabit industry VPN benchmark projects. To achieve these targets, the MIIT's has set out a series of 18 key tasks across six different areas, namely: giga city construction; carrying capacity enhancement; industry convergence empowerment; strengthening the industrial chain; user experience improvement; and security enhancement. (March 29, 2021) commsupdate.com

Croatia

Croatia's Regulatory Agency for Network Operations (HAKOM) has opened applications for its 5G spectrum auction in which it will offer frequencies in the 700MHz, 3.5GHz and 26GHz bands. Prospective bidders have until 11 June to submit applications, with the auction itself set to begin on 12 July. As previously announced, licenses will be valid for 15 years, with the possibility of a five-year extension. On a national level, the sale will offer 60MHz (three blocks of 2×10MHz) in the 700MHz range, 320MHz (32 blocks of 10MHz) at 3.5GHz and 1000MHz (five blocks of 200MHz) at 26GHz. In addition, a further 80MHz of frequencies in the 3.5GHz band will be available via regional licenses. Croatia's mobile market is currently home to three operators: Hrvatski Telekom (HT), A1 and Telemach (formerly Tele2).

(May 28, 2021) commsupdate.com

Denmark

The Danish Energy Agency (DEA, or Energistyrelsen) has revealed the results of its auction for tech-neutral spectrum in the 1500MHz, 2100MHz, 2300MHz, 3.5GHz and 26GHz bands, with TDC Net, Hi3G Denmark and TT-Netvaerket (Telenor/Telia joint venture) all securing airwaves in the tender. Hi3G Denmark won 2×20MHz in the 2100MHz frequency band, 1×120MHz in the 3.5GHz band and 1×1000MHz in the 26GHz band for a grand total of DKK540.525 million (USD87.4 million). TDC Net secured 1×45MHz in the 1500MHz band, 2×20MHz in the 2100MHz band, 1×40MHz in the 2300MHz band, 1×130MHz in the 3.5GHz band and 1×1250MHz in the 26GHz band for a total of DKK794.685 million. For its part, TT-Netvaerket agreed to pay DKK740.976 million for the following spectrum: 1×45MHz in the 1500MHz band, 2×20MHz in the 2100MHz band, 1×140MHz in the 3.5GHz band (including rental obligation for private networks) and 1×600MHz in the 26GHz band. All airwaves in the 2100MHz band come with coverage obligations, which must be met by 1 February 2024; Hi3G's concession has coverage obligations for 41 areas, TDC (40 areas) and TT-Netvaerket (41 areas). Regarding the 3.5GHz band, all licensees are required to provide 60% population coverage using the band by 31 December 2023 and 75% (December 2025).

(April 23, 2021) commsupdate.com

Dominican Republic

Nelson Arroyo, president of the Dominican Telecommunications Institute (Instituto Dominicano de las Telecomunicaciones, Indotel), has confirmed that moves are underway to modernize and update the General Telecommunications Law No. 153-98, which was introduced 23 years ago. A public consultation – created under the advice of the Inter-American Development Bank (IDB) – is now underway and will remain open until 31 May. Mr. Arroyo commented: 'Ultimately, a solid regulatory framework in the field of information technologies creates an environment conducive to national and foreign investment that results in economic advancement for the entire nation.'

(April 15, 2021) commsupdate.com

Ethiopia

With the deadline for bids for two nationwide telecoms concessions having passed yesterday (26 April 2021), the Ethiopian Communications Authority (ECA) has now confirmed the receipt of two bids, one from South African telecoms giant MTN Group, and the other from a consortium comprising Kenya's Safaricom, Vodafone Group, Vodacom Group, CDC Group and Sumitomo Corporation. In a press release regarding the matter, the ECA noted that an 'extensive review' of the final qualifying submissions will now be undertaken, following which it will select winning bids, with a formal announcement to be made after technical and financial evaluation is completed. Commenting on the matter, ECA director Eng Balch was cited as saying: 'We are delighted to have had interest from established telecoms operators from around the world, commensurate with this unprecedented opportunity … The ECA will be looking for the best all-round partners for the bids submitted and we are confident that competitive bidding will ensure that Ethiopia gets the best deal.' As several companies had previously expressed interest in the concessions – such as Etisalat, Orange Group and Saudi Telecom Company – questions have been raised as to why only two bids were received. Among the suggestions for why would-be bidders have stayed away are: concerns over the current conflict in the northern Tigray region; economic concerns regarding repatriation of profits; and the fact that the concessions will not permit the winners to offer mobile phone-based financial services. Alongside this, CNBC Africa cites Brook Taye, a senior official at Ethiopia's Ministry of Finance, as suggesting that some companies may be looking to invest in the country's incumbent telecoms provider rather than acquire a new license, with the executive saying: 'It seems companies like Orange and Etisalat are more interested in buying a stake in Ethio Telecom'.

(April 27, 2021) commsupdate.com

France

French regulator ARCEP has approved Digicel and Free Caraibe's network-sharing arrangement for the Antilles-Guyane region (covering French Guiana, Guadeloupe and Martinique). Digicel and Free Caraibe first drafted the agreement in February 2020 before signing the deal 16th December that year. The companies plan to build out and a shared RAN over the next two years that will be owned and operated by new joint venture Madiacom. The deal will involve temporary cross-sharing of low-band frequencies in the 800MHz and 900MHz bands. While the RAN is deployed, Digicel will authorize Free Caraibe to roam on its spectrum as part of the transition. In December last year, the companies informed ARCEP that this transitory phase would last no longer than two years, but would be extended geographically during this time to encompass additional territories. An amendment to their agreement specified that this phase could be extended by mutual consent by a maximum of one additional year if deemed necessary as a result of

any technical issues with the implementation. The operators also laid out their roadmap for the overseas territories to ARCEP, stating that they would provide annual progress reports as they look to boost mobile coverage and quality of service. The firms plan to install over 500 cell sites by 2025, as well as deploying new infrastructure in French Guinana by end-2022.

(April 15, 2021) developingtelecoms.com

Ghana

Ghana is all set to begin re-registration of SIM cards with Ghana Card, the country's smart national ID, or risk getting their SIMs blocked. The Vice President, Dr. Mahamudu Bawumia has stated that the Minister for Communication and Digitalization will between June and July announce the re-registration of all SIM cards in use in Ghana as part of measures to help in the formalization of the Ghanaian economy. Following this, a tweet was released by Ghana's Ministry of Communications stated that the re-registration process commences in June and runs till December, after which all unregistered SIMs will be blocked. The Government's decision to formalize the Ghanaian economy has made it necessary for the various identity cards to be brought under one umbrella. The Vice President also noted that the SIM registration exercise is aimed at helping curb activities such as SIM box and Mobile money fraud. The SIM Box, which can house between 100 to 1000 SIM cards, is being used by fraudsters to make huge financial gains. A six-month grace period has been earmarked to get all Subscriber Identity Module (SIM) numbers re-registered with the Ghana Card. The re-registration doesn't require going to any telecom outlet as the process can be carried out on mobile devices with a dedicated USSD code, as long as one has the Ghana Card. With a population of over 29 million people, the number of mobile subscriptions in Ghana as of 2019 was 40.93 million, according to Statista.

(May 26,2021) developingtelecoms.com

Germany

German parliament this week adopted a law regulating data protection and privacy in telecommunications and telemedia. For the first time, the legislator transposed EU requirements on cookies from the bloc's e-privacy directive. German data protection was until recently regulated by a series of laws. That led to legal uncertainty due to partially contradictory provisions. Both the Telemedia Act (TMG) and the recently amended Telecommunications Act (TKG) have prompted uncertainty in some quarters. The Data Protection Act passed on Thursday (20 May) intends to unify the country's rules and bring them in line with the EU's General Data Protection Regulation (GDPR). "Until now, questions about data protection and privacy were split between these two laws. These different data protection rules will now be merged into a single law so that the legal situation is clearer and more consistent," Social Democrat (SPD) MP Falko Mohrs told EURACTIV. According to Christian Democrat (CDU) MP Hansjörg Durz, it was a "good day for data protection." Speaking in parliament, the conservative lawmaker also stressed that the new law had created the "basis of the data economy of the future". The new law, known by its acronym TTDSG, has also come under fire from critics. In a statement, MP Mario Brandenburg of the liberal FDP said the new rules undermined "the right to anonymity on the internet." The law could in any case soon be superseded by European law since the EU is currently holding intense talks on the new ePrivacy Regulation, which regulates data protection across Europe.

(May 21, 2021) euractiv.com

Hong Kong

The Communications Authority (CA) has announced a wireless spectrum auction for the fourth quarter of this year to sell 325MHz of spectrum. The sale will include 220MHz of 5G-capable frequencies in the 600MHz, 700MHz and 4.9GHz bands, plus 105MHz of reassigned spectrum in the 850MHz and 2.5GHz/2.6GHz bands. The auction reserve prices will be set by the Secretary for Commerce and Economic Development (SCED) nearer the time, while the spectrum utilization fee (SUF) will be determined at auction. All frequencies become available to winning bidders in December 2021, apart from the 2.5GHz/2.6GHz spectrum, which will be released in March 2024. The 85MHz of spectrum in the 700MHz and the 850MHz bands, plus the 90MHz at 2.5GHz/2.6GHz and 80MHz at 4.9GHz can be deployed in both indoor and outdoor locations for the provision of public mobile services, while the 70MHz in the 600MHz band is designated for indoor use to improve availability in areas such as shopping malls. TeleGeography's GlobalComms Database notes that Hong Kong conducted sales of 5G-capable spectrum in the 3.3GHz, 3.5GHz, 4.9GHz and 26GHz ranges in 2019, with licenses acquired by the four incumbent operators, Hutchison 3, HKT, China Mobile HK (CMHK) and SmarTone. The cellcos launched commercial 5G services in April and May 2020.

(March 31, 2021) commsupdate.com

India

The Telecom Regulatory Authority of India (TRAI) has published a public consultation document on the validity period for tariff offers following consumer complaints regarding the 28-day validity period of many pre-paid plans. The document explains that the TRAI has received numerous consumer complaints regarding the use of 28 days for the validity period instead of a month, with users arguing that they are required to make 13 'monthly' recharges per year instead of twelve, that it causes confusion, and that they feel cheated by the practice. Alongside the user complaints, the regulator adds that politicians have also expressed their concerns and the TRAI has received Parliament Questions from members of parliament regarding the issue. Explaining the issue, the TRAI notes that whilst post-paid plans are charged on a monthly basis, pre-paid offerings are available with a range of validities, but the most popular offers are charged in terms of days, weeks or multiples thereof, such as 28, 57 or 84 days. The regulator stressed that service providers have been transparent in disclosing the validity periods of their plans and have not been found to have made any attempts to mislead consumers. During the regulator's initial discussions with providers on the matter, the cellcos argued that charging on a monthly basis was not possible. Service providers highlighted the need for clarity regarding a plan's duration and claimed that the variable number of days in a month prevented the development of 'monthly' plans. Similarly, it was claimed that because pre-paid services are valid from the recharge date for a set duration, the plans were not compatible with a fixed billing cycle. The cellcos also noted that increasing the standard offering to 30 days would not resolve the issue for customers, as they would still need to top-up at least 13 times a year. Comparing the domestic market to international practices, however, the TRAI found examples of operators overseas that did offer monthly pre-paid plans that were automatically renewed on the same date each month. As such, the regulator has sought opinions on whether regulatory intervention is required to address the matter, and set out a number of potential solutions.

(May 14, 2021) commsupdate.com

The Department of Telecommunications (DoT) has given the go-ahead for non-commercial 5G trials, to be conducted over a period of six months, ahead of anticipated new mobile spectrum auctions. As reported by the Financial Express, both Bharti Airtel and Vodafone Idea (Vi) will conduct the trials with Ericsson and Nokia, whereas Reliance Jio will partner Ericsson, Nokia and Samsung whilst also utilizing in-house technology. State-backed MTNL will team up with C-DoT for trials but its sister operator BSNL does not intend to participate at this stage. The government indicated that the six-month 5G trial duration will include two months to procure and set up equipment. Spectrum allocated for the trials will include the mid-band (3.2GHz-3.67GHz), mmWave band (24.25GHz-28.5GHz) and the sub-1GHz band (700MHz) but cellcos will also be permitted to utilize their existing spectrum (800MHz, 900MHz, 1800MHz and 2500MHz). Participants will be required to conduct trials in rural, semi-urban and urban areas, and will be encouraged to use locally-developed 5G technology alongside major vendor-provided equipment, including tech designed by IT Madras, Centre of Excellence in Wireless Technology (CEWiT) and IIT Hyderabad. The DoT specified the trials will not be connected to existing live telecoms networks.

(May 5, 2021) commsupdate.com

Indonesia

Indonesia's Ministry of Communication and Information (MCI, known locally as KemKominfo) opened the auction phase of the 2360MHz-2390MHz (2.3GHz) tender. The MCI confirmed via official press release No. 120 / HM / KOMINFO / 04/2021 that at the closing of selection documents on 17 March 2021 it had received applicants from five mobile network operators (MNOs), namely: Telekomunikasi Selular (Telkomsel), Indosat Ooredoo, Smart Telecom (Smartfren), Hutchison 3 Indonesia (Tri) and XL Axiata. Furthermore, the ministry noted that on 14 April it shortlisted three of the above MNOs to participate in the auction phase – Telkomsel, XL Axiata, and Smartfren – which passed the 'Administrative Evaluation of 2.3GHz Radio Frequency Band User Selection in the Range of 2360-2390MHz for the Need for Organizing Cellular Mobile Networks'. In December 2020 the MCI announced that Telkomsel, Smartfren and Tri had completed the selection process for 2.3GHz spectrum, with XL Axiata and Indosat Ooredoo both crashing out, but the following month the ministry cancelled the outcome of its own selection process 'as a precautionary and careful step from the MCI to align every part of this selection process with the provisions of laws and regulations relating to acceptance. Non-Tax State (PNBP) within the MCI, especially Government Regulation Number 80 of 2015', and relaunched it in March.

(April 19, 2021) IndoTelko

Ireland

The Commission for Communications Regulation (ComReg) has announced that it has notified local broadband provider Virgin Media of a finding of non-compliance under the latter's obligations with the Universal Service Regulations. In a press release confirming the development, ComReg said it had found that certain conditions and procedures for the operator's contract termination acted as 'a disincentive to a consumer changing service provider'. Specifically, ComReg raised issue with Virgin Media's requirement for customers to provide 30 days' notice when changing service provider when outside of a fixed term contract.

Further, the regulator said other problem areas included: the provider's lack of information regarding cancellation in writing and the requirement in almost all instances to speak to one of the telco's agents on the phone prior to a cancellation being actioned; and a requirement for customers to engage in so-called 'save activity' (i.e. when customers have to speak to a retentions team member prior to any cancellation of service) with Virgin Media. The company has been given until 4 May 2021 to respond to ComReg's findings.

(April 23, 2021) commsupdate.com

Italy

The government is considering the creation of a consortium of telcos to accelerate the rollout of ultra-broadband infrastructure. With the mooted tie-up of Telecom Italia (TIM) and wholesale operator Open Fiber still stuck at the negotiation stage, Reuters reports that authorities in Rome are now looking at alternative strategies to avoid several telcos duplicating their rollouts. This includes a scheme to 'encourage joint investments financed by public grants'. The government is looking to spend almost EUR7 billion (USD8.4 billion) over the next six years on broadband rollouts, using money from the EU's Recovery Fund.

(April 23, 2021) commsupdate.com

The government is to spend EUR6.7 billion (USD8 billion) in European recovery funds on the expansion of its broadband networks, up 60% on its previous target.

According to a report from Reuters citing two sources close to the matter, the new government of Mario Draghi, which came to power in February, is revising a national Recovery and Resilience Plan (RRP). Italy is entitled to EUR206 billion from EU funds which have been set aside to help the nations hardest hit by the COVID-19 pandemic. Rome now plans to raise the amount spent on broadband, 5G and satellite infrastructure to EUR6.7 billion from EUR4.2 billion earmarked in January by the previous government. The total funds for boosting digitalization amount to some EUR49 billion, up from a previous EUR46.3 billion, including investments in public administration and grants for small and medium-sized companies, one of the sources added. In the EU's 2019 Digital Economy and Society Index (DESI), Italy ranked fourth from last in terms of digital competitiveness. (April 14, 2021) commsupdate.com

Japan

The Asahi Shimbun writes that Japan's Ministry of Internal Affairs and Communications (MIC) plans to cut the number of mandatory payphones across Japan by up to 75%, amid a plunge in demand from the general public. The MIC's draft proposal – unveiled on 5 April – would slash the current number of payphones installed by NTT East and NTT West from 109,000 to just 27,000. The paper notes that Japan's Telecommunications Business Law currently requires that one (type 1) public phone should be installed in each roughly half a square kilometer area in urban zones (preferably

outdoors), and 1sq km in other regions. However, under the proposals that are due to be fleshed out this month, the MIC is looking to ease this requirement to 'one type 1 public phone per approximately 1sq km in urban areas and one per 2sq km in other regions. The ministry's decision to revise the requirement reflects the widespread usage of mobile phones and the tail-off of public payphone usage over the past 20 years which means that the operators of payphones have posted continued losses due to a sharp drop in user numbers.

(April 7, 2021) commsupdate.com

Latvia

The telecoms watchdog the Public Utilities Commission (Sabiedrisko Pakalpojumu Regulesanas Komisija, SPRK) has granted wireless operators Bite and Tele2 permission to share a portion of their spectrum holdings. The SPRK said in a statement that it conducted an 'extensive investigation' into the matter to ensure that the cooperation between the two operators does not endanger competition in the sector. The decision

permits the two cellcos to jointly use up to 44% of their total frequencies. The remaining spectrum will still be used individually by each operator. The companies are also allowed to share infrastructure such as towers, masts and base stations. Explaining the decision, the SPRK's acting chairman Intars Birzins was quoted as saying: 'Frequency and infrastructure sharing is a common practice among European countries that

is likely to increase in the future. It was our duty to assess how far the joint cooperation between the two operators can be. To this end, the SPRK analyzed the benefits of joint cooperation through a counterfactual analysis that is also used by other European countries. We have based our decision on both EU and national legislation. The case also takes into account the documents of the Body of European Regulators for Electronic Communications (BEREC) and the results

of the SPRK survey of regulators from 18 countries on practices in other countries.' According to the SPRK, Bite and Tele2 submitted their request in August 2020 and in the subsequent months the regulator has requested and received additional information from the pair. Further, other interested parties were given the opportunity to comment on the potential effects of the cooperation on competition.

(March 31, 2021) commsupdate.com

Luxembourg

Sector watchdog the Luxembourg Institute of Regulation (Institut Luxembourgeois de Regulation, ILR) has published a decision on the monthly rental payable by alternative operators for unbundled access to the local loop and local sub-loop (market 3a/2014)

from 1 April 2021. Following a consultation, the ceiling charge for unbundling of the local loop has been set at EUR8.60 per month (USD10.09) and the sub-loop at EUR5.44 per month, both unchanged from 2020.

(March 31, 2021) commsupdate.com

Malawi

The Malawi Communications Regulatory Authority (MACRA) has released a statement saying that following complaints from consumers, it has engaged with the country's mobile operators with a view to lowering the cost of data services. In August 2020 operators including Airtel Malawi and Telekom Networks Malawi (TNM) reduced their pre-paid or 'out of bundle' rates from an average of MWK20 (USD0.02) to MWK5 per MB following intervention from the Ministry of Information and Communications Technology. Since then, the

MACRA says it has been engaging with operators to further revise the standard volume bundles offered to consumers to align to the cost of providing services in the country. As such, cellcos have agreed to reduce the price of 1GB data bundles by 30%, while the cost of tariffs up to 4GB will be lowered by between 10% and 31%. The price changes became effective on 22 April. The MACRA concluded that it 'is committed to ensuring that services delivered are affordable and of good quality.' (April 23, 2021) commsupdate.com

Malaysia

Plans to construct new telecommunication towers at 742 locations on the outskirts of towns and rural areas in the state of Sarawak this year have been unveiled by the Malaysian Communications and Multimedia Commission (MCMC). In announcing the development, the regulator noted that the infrastructure work is to be carried out under the government's Jalinan Digital Negara Plan (JENDELA), as part of efforts to upgrade and improve internet coverage. According to the MCMC, work on 106 towers commenced this month, and construction at the other 636 locations is expected to begin in Q3 2021, with all towers – which will offer 4G connectivity – scheduled to be completed in the fourth quarter of 2022. Meanwhile, the MCMC also

confirmed that a total of 1,283 transmitting stations had been upgraded with 4G during the course of 2020, while a further 1,606 stations are currently in the process of being uprated. Under the JENDELA initiative, the MCMC has also developed plans to provide broadband connectivity via satellite, and in this area the watchdog said that 523 locations have been identified in Sarawak for the provision of such services, with a tender evaluation stage now in progress. In terms of fixed broadband connectivity, meanwhile, the MCMC aims to reach 43,013 premises in Sarawak with access based on fiber-optic technology, the regulator noted in a press release regarding its plans.

(May 1, 2021) commsupdate.com

Malta

The Malta Communications Authority (MCA) has issued a call for expressions of interest (EoI) in spectrum in the 3.5GHz band (3.4GHz-3.8GHz). The regulator says that following its public consultation in February concerning the award of 5G-capable frequencies in the 700MHz, 3.5GHz and 26GHz ranges, an unnamed holder of an electronic communication services (ECS) license has requested an assignment of 3.5GHz

spectrum. The MCA now wants responses to ascertain the demand for spectrum in that band. Only companies which submit an EoI will be eligible to participate in a future Call for Applications. (April 21, 2021) commsupdate.com

The Malta Communications Authority (MCA) has published more details relating to its auction of 5G-capable spectrum, which is expected later this

year. It will offer six lots of 2×5MHz in the 700MHz band (2×30MHz in total), four blocks of 80MHz plus 16 lots of 5MHz in the 3.4GHz-3.8GHz range (400MHz in total) and six blocks of 200MHz in the 26GHz band. Each bidder will be limited to 2×10MHz at 700MHz, 100MHz at 3.5GHz and 400MHz at 26GHz, though these caps will be raised if all available spectrum is not assigned. Licensees will be required to make use of all the spectrum allocated to them within 24 months of the date of assignment, with services to be made available nationwide. Malta is currently home to three mobile network operators: Epic (formerly Vodafone), GO and Melita.

(April 9, 2021) commsupdate.com

Moldova

The National Regulatory Agency for Electronic Communications and Information Technology (ANRCETI) has launched an auction for spectrum in the 450MHz, e900MHz and 2600MHz bands. The regulator is planning to auction one concession in the 450MHz band, one concession in the e900MHz band and three licenses in the 2600MHz as follows:

- License A: 454.6MHz-457.1MHz/464.6MHz-467.1MHz, 2×1.25MHz (FDD)
- License B: 885MHz-890MHz/930MHz-935MHz, 2×5MHz (FDD)
- License C: 2500MHz-2520MHz/2620MHz-2640MHz, 2×20MHz (FDD)
- License D: 2560MHz-2570MHz/2680MHz-2690MHz, 2×10MHz (FDD)
- License E: 2575MHz-2615MHz, 1×40MHz (TDD/SDL)

License A will be valid until 28 June 2026, License B (8 November 2029) and Licenses C, D and E (7 August 2027). Applications are invited until 1 June 2021, with tentative award dates of 28 June 2021 (License A) and 6 July 2021 (Licenses B, C, D and E).

(May 14, 2021) commsupdate.com

Namibia

The Namibia approved new regulations on 15 March that will require all mobile phone subscribers to register their SIM cards before being able to access network services, reports The Namibian. Minister of Information and Communication Technology Peya Mushelenga stressed the regulation was partly necessitated by Namibia's increasing crime rate. 'Right now, anyone can go into a shop, buy a SIM card, and commit a crime. We are moving towards what is happening in South Africa where one cannot just by a SIM card – it must be registered,' he said, adding the new regulation was established in consultation with the Communications Regulatory Authority of Namibia (CRAN), the director general of the Namibia Central Intelligence Service, and all affected telecommunications service providers. The enforcement data of the new regulation has yet to be announced. Once the new regulation is in force, service providers will be required to store all their customers' information for a period of at least five years from the date of telecommunication, while the Namibian Police or the Namibia Central Intelligence Service will need to obtain authorization from a judge or magistrate to access the records. MTC, the country's largest mobile network operator (MNO), notes it already encourages clients to register their SIMs on a voluntary basis.

(March 29, 2021) commsupdate.com

The Netherlands

The Netherlands Authority for Consumers & Markets ("ACM") has published its updated market study ("FttH report") into the roll-out in the Netherlands of fiber-optic broadband networks for households (Fiber-to-the-Home). The ACM started its FttH market study in April 2019 in response to indications of strategic overbuild by operators (e.g. the installation of parallel networks) and market behavior seemingly aimed at frustrating the business case of competitors. For more information on the initial FttH report of 2019, please see our earlier blog in Dutch. In its updated FttH report of May 2021, ACM maintains that co-investment agreements remain the most suitable possibility to realize a rapid roll-out. The EU Telecom Code offers the opportunity for the Dutch legislator to stimulate the roll-out of fiber-optic networks by allowing operators to cooperate in the installation of a fiber-optic network on the basis of a co-investment agreement. As such, the installation costs can be shared between the operators and ACM also has the option to exclude the resulting network from ex-ante regulations (if one of the operators would be designated as having a market position of Significant Market Power 'SMP'). However, ACM concludes that in practice market players are reluctant to cooperate under a co-investment agreement and no co-investment agreement has yet been submitted to ACM for review. An interesting aspect in the updated FttH report is the suggestion by ACM that municipalities, together with the operators, may take a coordinating role in selecting the areas for optical fiber roll-out. As part of its updated FttH report, ACM provides general guidelines on how the

roll-out of fiber-optic networks could potentially be coordinated within the applicable telecommunication and competition laws. In essence, ACM suggests that municipalities may request operators to start their roll-out of fiber-optic networks in different geographic areas instead of installing parallel networks at the same locations. However, ACM emphasizes that operators cannot be prohibited in the end, after a limited break of excavation works during which duplication of networks can be prevented, from installing a second fiber-optic network. According to ACM, it is from the perspective of infrastructure competition, in the long run, undesirable to only have one exclusive fiber-optic network installed. In the annex to the report, the ACM provides guidelines on how the roll-out of fiber-optic networks could be coordinated within the applicable telecommunications and competition laws. ACM intends to use these guidelines as a 'living document' which may be amended on the basis of future market and legal developments. ACM invites market players to continue providing their input on the guidelines.

(May 18, 2021) lexology.com

Nigeria

The Nigerian Communications Commission (NCC) has announced the signing of a memorandum of understanding (MoU) with Nigerian Communications Satellite (NigComSat) to enable the rollout of 5G services in the West African country. The agreement will lead to the freeing up of spectrum in the 3.5GHz-3.9GHz range which is currently used by NigComSat satellites, but will be reallocated to mobile operators for the deployment of 5G networks. 'For optimal 5G service performance, an average of contiguous 100MHz of spectrum in the C-band is required by an operator. However in Nigeria, only 120MHz of the band (3.4GHz-3.52GHz) is available for mobile services while the remaining 680MHz (3.52GHz-4.2GHz) of the band is used by NigComSat (NG-1R) satellites,' commented Executive Vice Chairman of the NCC Umar Garba Danbatta, adding: 'The two agencies have been in discussions on how to relocate the operations of NG-1R to the standard C-band 300MHz (3.9GHz-4.2GHz) potion of the band, which is more suitable in terms of satellite service offering because end user terminal are cheaper there, while leaving the non-standard C-band 400MHz (3.5GHz-3.9GHz) portion of the band for 5G use. The cost of relocating the NG-1R is expected to be offset from the proceeds of the auction of the 5G spectrum.' (May 6, 2021) commsupdate.com

Norway

The telecoms regulator the National Communications Authority (Nasjonal kommunikasjonsmyndighet, NKOM) has successfully negotiated a new spectrum coordination agreement with neighbors Finland and Sweden, which it says is designed to facilitate the easy use of 5G technology in border areas. In releasing the proposed agreement for consultation, and having set a deadline of 23 April 2021 for feedback from interested parties, the NKOM noted that it had proposed merging all existing agreements on relevant frequency bands in the border areas between the three countries into a single document. Currently, there are several coordination agreements between the countries related to different frequency bands, and the Norwegian regulator suggests these are partly outdated and not fit for purpose. As such, the new expanded agreement will cover the vast majority of frequency bands currently being used for mobile services today, as well as those that are planned to be used in the future. Specifically, the agreement covers the following spectrum bands: 700MHz, 800MHz, 900MHz, 1500MHz, 1800MHz, 2100MHz, 2300MHz, 2600MHz and 3600MHz. Of note, however, the agreement states that it 'does not concern use of GSM technology and preferential GSM-frequency assignments', which 'can continue to be operated according to existing agreements. According to the NKOM, authorities in its neighboring countries agreed that it would be easier to maintain a single document, rather than several separate frequency agreements, and it suggested that the new coordination agreement will become a 'living document' that is updated regularly. (March 26, 2021) commsupdate.com

Peru

The Agency for the Promotion of Private Investment (Agencia de Promocion de la Inversion Privada, ProInversion) has announced a special public tender for two lots of 4G spectrum, with the winning bidders required to deploy mobile coverage to a combined total of 1,561 rural and remote towns, comprising more than 300,000 inhabitants. The two lots of spectrum comprise 2×30MHz in the 1700MHz band (AWS-3) at 1750MHz-1780MHz/2150MHz-2180MHz and 1×30MHz in the 2300MHz range, at 2300MHz-2330MHz. The winner of AWS frequencies will be required to provide network coverage of 1,171 rural towns, including at least 118 in the Valley of the Apurimac, Ene and Mantaro Rivers (Valle de los rios Apurimac, Ene y Mantaro, VRAEM) region and in the jungle areas of the country. The successful 2300MHz bidder, meanwhile, will be required to roll out mobile networks to 390 rural towns across the country. (May 18, 2021) commsupdate.com

The Ministry of Transport and Communications (Ministerio de Transportes y Comunicaciones, MTC) has modified its National Frequency Attribution Plan with the signing of Ministerial Resolution 373-2021-MTC/01 and Vice Ministerial Resolution No. 162-2021-MTC/03. The new legislation has earmarked 470MHz-698MHz spectrum in the so-called TV White Space (TVWS) band to boost rural broadband coverage. In addition, 1200MHz of spectrum in the 26GHz millimeter wave (mmWave) band has been allocated for future 5G use. Finally, 1200MHz of spectrum in the 5925MHz-7125MHz (6GHz) band has been identified for unlicensed Wi-Fi 6E access. Discussing the new resolutions, Diego Carrillo, Vice Minister of Communications, commented: 'For TVWS, we have also been working on the operational guidelines that we will approve in May, which will make us the second country in Latin America to enable spectrum for the use of such a disruptive technology.'

(May 5, 2021) commsupdate.com

Philippines

The Department of Information and Communications Technology (DICT) has outlined plans to build common tower infrastructure to speed up the rollout of internet services in commercially unviable areas. The Malaya Business Insight cites Emmanuel Rey Caintic, DICT undersecretary for Digital Philippines, as saying that that the Department is working with Congress on new legislation to allow it to access unused funds raised by spectrum fees to build out the new sites. 'DICT wishes to invest in common towers for 'missionary' sites, complete with radio access network and Internet Protocol backhaul,' Caintic is quoted as saying, adding: 'To address permitting delays in ongoing builds of fiber-optic networks, we are drafting a new Joint Memorandum Circular to streamline the permitting process. Fiber networks are critical in operationalizing broadband services. As it stands, data from the National Telecommunications Commission (NTC) confirms that the Philippines had 22,405 towers as of November 2020, of which Globe Telecom had 10,270, followed by Smart Communications (10,069) and new third telco, DITO Telecommunity, with 2,066 towers.

(May 7, 2021) commsupdate.com

Portugal

The National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM) has issued a draft decision approving the renewal of spectrum in the 900MHz and 1800MHz bands for MEO and Vodafone Portugal. The spectrum permits – which were last renewed in March 2012 – have been extended until 21 April 2033. As part of the renewal process, ANACOM has imposed additional coverage obligations on the two cellcos. Between them, MEO and Vodafone must extend coverage to 100 parishes with low population density, ensuring download speeds of up to 100Mbps. Of these 100 parishes, MEO will have to cover 56 and Vodafone will have to cover 44. The two operators must agree on the precise distribution of parishes by 30 June 2022. The decision is now subject to a public consultation, which will last 20 working days.

(May 5, 2021) commsupdate.com

Portuguese regulator ANACOM revealed proposals to streamline the country's ongoing 5G auction over fears its slow progress would prove detrimental to the country achieving full economic benefits from the new network technology. Portugal's controversial spectrum auction has been running in some form since November 2020, when the process commenced with an allocation specifically for a new entrant. The phase was completed on 11 January with the first day of bidding in the full auction coming three days later. After the 59th day of full bidding (7 April) 348 rounds had been completed. ANACOM noted at the current "particularly slow" pace it would last "much longer than initially expected" and, with the inevitable delay to the build of the actual networks, it was in danger of hampering digital transformation and economic benefits from the technology. In response, the regulator is consulting on a number of measures to amend current rules and streamline the process. These include increasing the maximum number of daily bidding rounds from the current six and allowing greater increments in the amounts being offered. The regulator said delays in the completion of the auction could hamper the "competitiveness of our economy, social and territorial cohesion, social innovation and improving the quality of services of public interest". "It would also impact the benefits that can be derived from the strengthening of existing 3G or 4G networks or the development of new networks".

(April 9, 2021) mobileworldlive.com
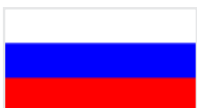
Russia

The Federal Antimonopoly Service (FAS) has given 'preliminary consent' to an agreement to jointly develop 5G mobile networks proposed by major cellcos MegaFon and VimpelCom (Beeline) with Rostelecom (parent of cellco Tele2 Russia) and Rostelecom's subsidiary Bashinformsvyaz. In a disclosure on its website, the FAS said: 'The joint venture agreement, if implemented, contains conditions for equal access to radio frequencies for all participants in the mobile radiotelephone market. In particular, the telecom operators participating in the transaction will develop and agree with the antimonopoly authority the conditions for the use of infrastructure and (or) the sharing of radio frequencies and the conditions for the provision of infrastructure for MVNOs.' The decision was similar to one issued by the FAS at the start of 2021, except the previous announcement did not specify the list of participants in the proposed 5G joint venture. The latest announcement indicates that Russia's cellular market leader Mobile TeleSystems (MTS) has now dropped out of negotiations on forming a 5G network sharing initiative. MTS holds the country's only commercial 5G spectrum license issued to date, a nationwide mmWave 24.25GHz-24.65GHz concession, awarded in July 2020 for five years, although this band is initially earmarked for localized industrial applications. MTS also launched the country's largest-scale 5G pilot to date, in March 2021 when it switched on 14 network zones in Moscow utilizing the 4.9GHz band for usage by selected subscribers with compatible devices on an invite basis.

(May 6, 2021) commsupdate.com

Senegal

Senegal's Authority of Regulation of Telecommunications and Posts (L'Autorite de Regulation des Telecommunications et des Postes, ARTP) issued formal notices on to Sonatel and Saga Africa Holdings, which operate under the Orange and Free brands respectively, for non-compliance with mobile number portability (MNP) regulations. An investigation found evidence of misconduct by both companies, including the unfair rejection of valid MNP requests and undue delays, whilst Free is also accused of 'fraudulent practices. The companies have been given 30 days to conform or face sanctions.'

(April 13, 2021) commsupdate.com

Serbia

Serbia's Commission for the Protection of Competition (Komisiji za zastitu konkurencije, KZK) has approved an infrastructure sharing agreement between Telekom Srbija (MTS) and Telenor Serbia, paving the way for the latter to enter the fixed broadband market. The agreement is understood to allow MTS to lease access to its fiber-optic infrastructure to Telenor and to provide the latter with wholesale Ethernet bitstream services. Telenor is also understood to have gained permission to distribute TV media content owned by MTS. The deal was fiercely opposed by United Group, the parent company of Serbia Broadband (SBB) – Serbia's second-largest ISP by subscribers – and the Serbian government's main competitor in the media segment. Local reports had presented the agreement between MTS and Telenor variously as a merger of the two companies or as a transfer or infrastructure assets from MTS to Telenor. United Group, citing leaked internal documents from MTS, has repeatedly claimed that the deal is intended to harm SBB by pushing it out of the broadband and media markets. Telenor noted in a statement, however, that United Group has rejected proposals for further cooperation on media distribution: 'Telenor has not yet received the rights and permission to distribute the content produced or owned by the United Group, such as H1, Nova S, Sport Club and others, a total of 22 channels. We are sorry that United Group made such a decision, and we remain open to further negotiations on channel distribution, convinced that they will recognize the importance of this cooperation for all – citizens of Serbia, companies operating in the same segment and society as a whole.' Telenor is gearing up to enter the fixed broadband market by the end of the year, and plans to invest EUR300 million (USD363 million) in Serbia over the next five years. The deal required KZK approval as Serbian competition rules prohibit the cooperation of competitors within a segment except in certain circumstances, for which exemptions may be issued. Indeed, when the operators filed for approval in January 2021, the regulator noted that similar agreements between Telenor and SBB, and Telenor and A1 Serbia (previously VIP Mobile) had been exempted. KZK has yet to release the full details of the its decision on the matter, but: 'Due to the expressed public interest, incomplete and inaccurate information presented during the procedure, the Commission will publish complete solutions with explanations that do not contain protected data'.(April 27, 2021) commsupdate.com

Slovenia

The Slovenian government's auction of 5G spectrum has raised a total of EUR164.2 million (USD195.7 million). The sale included frequencies in the 700MHz, 1500MHz, 2100MHz, 2.3GHz, 3.5GHz and 26GHz bands, and spectrum was acquired by the four incumbent mobile network operators (MNOs). Telekom Slovenia was the highest bidder with bids totaling EUR52.1 million for licenses in five of the six available bands, followed closely by Telemach, which offered EUR51.6 million for frequencies in all bands. A1 Slovenia paid EUR42.4 million for spectrum in the 700MHz, 1500MHz, 2100MHz, 3.5GHz and 26GHz ranges, while T-2 bid EUR18.2 million for 2100MHz and 2.3GHz licenses.

Frequencies in the 700MHz, 1500MHz, 3.5GHz and 26GHz bands are available to operators immediately, while the 2100MHz spectrum will be released on 22 September and the 2.3GHz frequencies will be available from 1 January 2022. Licenses are valid for 15 years, but could be extended to 20-year terms under a proposed amendment to the country's Electronic Communications Act. Winning bidders are obliged to be using spectrum from each frequency band in at least one city within one year and all major cities within five years, while the 700MHz licenses carry additional coverage requirements for major national highways and rail routes. (April 19, 2021) commsupdate.com

South Africa

South Africa's telecoms regulator Independent Communications Authority of South Africa (ICASA) has extended the temporary allocation of emergency spectrum under South Africa's disaster management regulations by two months (from 1 April to 31 May 2021), following the delay in the planned multi-band spectrum auction due to a legal challenge. ICASA said in a statement: 'Following the expiry of the temporary spectrum extension on 31 May 2021, the authority will embark on a comprehensive review of the ICT COVID-19 national disaster regulations, which include the radio frequency spectrum extensions, as well as the relaxation of compliance requirements in respect of local content for broadcasters, and type-approval obligations.' As previously reported by TeleGeography's

CommsUpdate, in late December 2020 Telkom filed an application with the High Court in Pretoria seeking an interdict to halt ICASA's spectrum licensing process, claiming that ICASA's Invitations To Apply (ITAs) for spectrum and the Wireless Open Access Network (WOAN) have fundamental flaws that could entrench the 'dominance' of market leaders Vodacom and MTN. Earlier this month, the High Court in Pretoria issued an interdict preventing ICASA from proceeding with the auction for high demand spectrum in the 700MHz, 800MHz, 2600MHz and 3500MHz bands, pending the final determination of Telkom's application to review ICASA's decision to publish the two ITAs.

(March 29, 2021) commsupdate.com

Sweden

The Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a public consultation regarding the award of local 5G licenses for industrial and public sector use in fields such as industry, mining, ports, warehousing and hospitals. The proposed concessions will utilize spectrum in the 3720MHz-3800MHz and 24.25GHz-25.1GHz ranges, with the first licensing expected to take place this year. In a statement the regulator said: 'The conditions aim to enable local applications in a purposeful and robust manner and thereby provide space for innovation and development, as well as contribute to the further rollout of 5G uses in

Sweden.' (May 13, 2021) commsupdate.com

Sweden's telecoms regulator, the Post and Telecom Agency (Post & Telestyrelsen, PTS), is preparing to offer SEK1.6 billion (USD188 million) of funding for fiber network expansion in underserved localities in three regions. The watchdog says subsidies will be available in Norrland, Svealand and Gotaland, but only for areas where there are no plans by telcos for a commercial broadband network rollout. Applications for funding will be invited in May, with payments to be made by the end of the year. (April 16, 2021) commsupdate.com

Taiwan

Taiwan's five dominant telecom services providers – Chunghwa Telecom, Taiwan Mobile, Far EasTone (FET), Asia Pacific Telecom and Taiwan Star – will be required to disclose important service information on their websites, including mobile broadband speeds and coverage levels, by January 2022, the Taipei Times reports. The new requirement is expected to be introduced following the pending announcement of the 'Service Items and Formats of Service Quality

Assessment for Telecommunication' by the National Communications Commission (NCC) next month. According to the local press outlet, the service items and formats to be used by telecoms for self-evaluating their mobile communication services were approved at a weekly commissioners' meeting last week, based on Article 18 of the Telecommunications Management Act. The NCC has said that operators with an annual sales revenue of more than TWD100 million (USD3.5

million) will need to start conducting these self-evaluations and disclosing key service information from the start of 2022. Meanwhile, the service items to be disclosed by providers are reportedly divided into several categories, with these understood to include download speeds, coverage levels, service rates, complaint response times, and the mechanisms used to protect subscriber's personal data. NCC spokesman Wong Po-tsung was cited as saying that operators should assess their services annually based on the criteria stated in the categories, while it was noted that, when disclosing speeds and coverage, they should reveal the number of base transceiver stations (BTS) in each locality; they will not, however, be required to disclose exact BTS locations. Meanwhile, the NCC has also stipulated standards for certain items that telcos

should meet in their self-assessments. Specifically, mobile services should be activated by providers within two hours after an application for service is completed, while fixed line services must be activated within two days. With regards to the accuracy of billing information, this should be at least 99.85%, while calls to customer service lines should be answered within 35 seconds. In the event that an operator receives a written complaint from a subscriber, they will be required to respond in writing within 15 days. Commenting, Wong added: 'We would conduct inspections to check the authenticity of the service information [the operators] disclose online. If they exaggerate, they could be fined TWD500,000 to TWD5 million for failing to follow their network construction plans, based on the Telecommunications Management Act.' (March 29, 2021) commsupdate.com

Tanzania

The government has suspended telecommunication firms' new data bundles after they (the bundles) had raised a public uproar. Earlier, all telecommunication firms had revised their bundles for voice calls, data and short messaging service as they sought to align them with new regulations as published by Tanzania Communications Regulatory Authority (TCRA). In the process however, they (telcos) significantly raised data bundles. This raised a public uproar as subscribers vehemently opposed the new charges, with some describing them as 'outrageous' via social media

platforms. In response to the uproar, the government issued a statement later in the day, announcing the suspension of the new data charges until the matter gets resolved. "The government has directed telcos to suspend the new prices for data bundles for a while as the issue is being sorted out," the head of corporate communications at TCRA, Mr. Semu Mwakyanjala, told The Citizen. The message was followed by a statement from the regulator, saying the suspension of data bundles was meant to give room for further discussions. (April 4, 2021) allafrica.com

Togo

The Telecommunication and Posts Regulatory Authority (ARCEP) has issued Moov Africa Togo with a fine of XOF593 million (USD1.1 million) for 'serious and lasting breaches of its obligation to provide its electronic communications networks and services on a permanent and continuous basis'. The move follows a recent public hearing in which the operator was summoned to explain serious problems with its network that lasted through June to September 2020 and March to April 2021. As previously reported by CommsUpdate, the regulator launched a sanctions

procedure against the Maroc Telecom-owned cellco in November last year for 'violating its terms of reference'. Whilst Moov Africa Togo explained that the problems arose from 'prolonged' power cuts by the CEET and issues with cables having been cut by Togocom or construction companies working across the country, ARCEP said its reasons were 'insufficient' given the XOF113 billion investment the operator claims to have made in Togo to improve its quality of services (QoS). (May 26, 2021) commsupdate.com

Uganda

Lycamobile has been awarded a National Telecommunications Operator (NTO) license in Uganda to make it the country's fourth national operator alongside Uganda Telecom Limited (UTL), MTN and Airtel. As an NTO licensee, Lycamobile must deploy networks covering 90% of Uganda within five years, while it must also commit to listing 20% of shares on local bourse. UK-based Lycamobile Group entered the Ugandan market in January 2020 when it acquired fixed-wireless operator Tangerine, and it went on to launch commercial services in April that year using Tangerine's existing concession. (May 12, 2021) commsupdate.com

The National Information Technology Authority Uganda (NITA-U) could be merged into the Uganda Communications Commission (UCC) under plans to streamline government agencies and authorities. A report from Techjaja says an independent review team has proposed that NITA-U be abolished and its operations taken over by the UCC. This would give the UCC responsibility for major projects such as the National Backbone Infrastructure (NBI) scheme. (May 7, 2021) commsupdate.com

Ukraine

The Antimonopoly Committee of Ukraine (AMCU) published a decision on its website permitting broadband network operator Datagroup to purchase three companies belonging to the Volia group, the country's largest cable TV/broadband provider, namely Kyiv Telecommunication Networks, TELESVIT and Oisiw Ltd. Naming the seller in the transactions as Volia Ltd, the AMCU noted that it assessed three relevant markets in the merger as: provision of services for access to TV packages to legal entities and individuals; provision of internet access services to legal entities and individuals; and provision of server hosting services. The AMCU concluded that the transactions did not lead to monopolization or significant restriction of competition, after its merger investigation established that:

• the largest aggregate share of concentration participants is in the regional market of access to TV packages for individuals within the Kiev region, and it does not exceed 29% in 2018, 2019 and the first nine months of 2020

• in each of the involved markets there is a significant number of businesses that provide these services. Consumers of services have a wide choice of internet and television providers and are free to choose between them

• almost all competitors of the merging parties surveyed by the Committee reported that given the high level of competition, these concentrations will not change the existing market balance within the affected territorial boundaries; the markets are saturated and dynamically developing.

On 22 December 2020 Datagroup, backed by Horizon Capital, reached an agreement to acquire 100% of Volia, subject to antimonopoly approval. Datagroup is largely focused on the B2B segment, which accounts for less than 5% of Volia's revenues. The European Bank for Reconstruction & Development has provided Datagroup a USD65 million loan to help finance its Volia purchase. (April 23, 2021) commsupdate.com

United Kingdom

The UK's Competition and Markets Authority (CMA) has given its final approval for the proposed merger of O2 UK and Virgin Media, having last month granted provisional clearance for the deal. In a press release confirming its decision, the CMA noted that – having referred the proposed tie-up to a group of independent CMA Panel members for an in-depth Phase 2 investigation – it has now concluded the deal is unlikely to lead to any substantial lessening of competition for several reasons, specifically: the costs of leased lines are only a relatively small element of rival mobile companies' overall costs, making it unlikely that Virgin would be able to raise leased-line costs in a way that would lead to higher charges for consumers; there are other players in the market offering the same leased-line services, meaning the merged company will still need to maintain the competitiveness of its service or risk losing wholesale custom; and that, as with leased-line services, there are several other companies providing mobile networks for telecoms firms to use, meaning O2 would need to keep its service competitive with its wholesale rivals in order to maintain this business. Commenting on the final ruling, Martin Coleman, CMA Panel Inquiry Chair, said: 'O2 and Virgin are important suppliers of services to other companies who serve millions of consumers. It was important to make sure that this merger would not leave these people worse off. That's why we conducted an in-depth investigation … After looking closely at the deal, we are reassured that competition amongst mobile communications providers will remain strong and it is therefore unlikely that the merger would lead to higher prices or lower quality services. (May 20, 2021) commsupdate.com

OFCOM has set out the terms of reference for their future UK mobile strategy review, which will examine how the regulator can adjust their approach in order to improve 4G and 5G based mobile (mobile broadband) network connectivity for consumers and businesses over the next 5 to 10 years. At present 82% of the adult population has a smartphone and average mobile data use grew by 146% between 2016 and 2019, while prices fell by almost 20%. Outdoor 4G data (mobile broadband) services from all MNOs are now available to 97.5% of UK premises and almost all UK premises have coverage from at least one operator. Overall, nine in ten (90%) mobile customers are said to be satisfied with their mobile provider. OFCOM's work in this area tends to focus on boosting network coverage, encouraging investment and ensuring the fair treatment of consumers by operators. Some examples of this come via the recent 5G spectrum auction (here), which also had a role to play in development of the new £1bn Shared Rural Network project that aims to push geographic 4G coverage to 95% by the end of 2025. The regulator has also aided consumers by banning locked mobile phones and fostering the new "Text-to-Switch" (Auto-Switching) system for UK mobile operators, which makes it much easier to change operator. But they're now planning to take a much longer view of the market, which may also need to consider how existing services (e.g. 2G and 3G) can be safely retired and the impact of a rise in smaller local networks. Much like the regulator's recent Wholesale Fixed Telecoms Market Review 2021-26 (FTMR) for fixed broadband and business connections, the new mobile sector review will attempt to build a more holistic view of how

the mobile market operates and how OFCOM can best contribute to the delivery of good outcomes for both people and businesses. The new Terms of Reference are thus intended to provide an early starting point for that discussion, which is all about gathering evidence. OFCOM will then aim to publish a discussion paper on

the review by the end of 2021. After that their intention is to proceed to Phase 2, which will see them set out their initial conclusions and any next steps in Q1 2022/23.

(May 15, 2021) ispreview.co.uk

United States

US regulator the Federal Communications Commission (FCC) adopted final rules to implement a $7.2 billion funding scheme covering purchases of connectivity equipment by schools and libraries to boost access during Covid-19 (coronavirus) restrictions. The Emergency Connectivity Fund Program will go towards laptops, tablets, Wi-Fi hotspots, modems and routers, with the FCC specifying initial funding will be geared around the next school year (2021 to 2022) with any surplus then considered to cover purchases made earlier in the pandemic. Together with a broadband benefit scheme, the emergency connectivity funding means the US government is "investing more than $10 billion in American students and households", acting FCC chair Jessica Rosenworcel explained. Schools and libraries also be able to receive funding for purchasing commercially available broadband services providing fixed or mobile connection off campus. The Universal Service Administrative Company (USAC) will administer the Emergency Connectivity Fund, with FCC oversight. Procedures used in the E-Rate program, a long-standing scheme covering Wi-Fi equipment purchases, will be used to provide access to the funding, potentially accelerating the process. Rosenworcel said the new rules allow for "self-provisioning" by some school districts if no commercial service is available. The pandemic has resulted in some districts working with systems integrators and equipment providers on makeshift internet access, often using fixed wireless access. US mobile and fiber operators are actively

involved in working to close a so-called homework gap by extending connectivity to schools in need, with programmes including Verizon's Innovative Learning scheme providing more than $535 million towards closing the digital divide among poorer communities.

(May 12, 2021) mobileworldlive.com

The Federal Communications Commission (FCC) has been notified that the Committee for the Assessment of Foreign Participation in the United States Telecommunications Services Sector is proceeding with its 120-day review of the application for the construction, landing and operation of the CAP-1 system connecting Grover Beach (California) and Pagudpud (the Philippines), following the provision of all requested responses from Facebook, China Mobile International Limited (CMI) and Amazon Data Services. The CAP-1 system reflects the reconfiguration of the earlier Bay to Bay Express (BtoBE) cable system, the application for which had been withdrawn due to security concerns. The CAP-1 system will have six fiber pairs and consist of a single 12,000km trunk between an existing facility at Grover Beach, California and a new cable landing station at Pagudpud. When it enters commercial operations (scheduled for Q4 2022), the cable will have a design capacity of 90×200Gbps (or equivalent) per fire pair using current technology, with an aggregate design capacity of 108Tbps.

(April 30, 2021) commsupdate.com.

Uruguay

The Regulatory Unit of Communications Services (URSEC) has announced that the government has extended the procedure for the selection of a database administrator which will be responsible for implementing and developing mobile number portability (MNP). Interested parties were given until early May to make inquiries and submit their application, with the opening of the applications and offers originally due to take place on 13 May. However, this has now been delayed to ensure the security and transparency of the process and the new opening date will be communicated 'in due course'. According to TeleGeography's GlobalComms Database, Law 19,889/2020, which was approved

in July 2020, declares that number portability is a right of users of mobile telephony services, and two months later a committee comprising representatives from industry regulators and mobile operators was established to prepare for the introduction of MNP. Following on from this, the government approved the timetable for the long-delayed introduction of MNP in January, under which tests of the system were expected to begin in July ahead of a commercial launch of MNP on 1 October 2021. Mobile operators will bear the cost of the number transfer process, which should take no more than three days to complete.

(May 17, 2021) commsupdate.com

Zambia

An extension to the deadline for comments on proposed revisions to Zambia's licensing guidelines has been announced by the Zambia Information and Communications Technology Authority (ZICTA). Last month the regulator published a 'Licensing Guidelines Consultation Paper', in which it sought to outline the challenges identified in the current licensing framework – which was implemented back in 2017 – and propose revisions to it. Having initially set a deadline of 27 April 2021 for feedback regarding its plans, the ZICTA has now confirmed it will continue to accept submissions until 7 May. Among the proposed changes, the ZICTA has said it intends to segment the current 'Network License' into two distinct categories: a 'Network Facilities License' ('NFL'), and a 'Network Service License' ('NSL'). According to the regulator, such separation is 'aimed at recognizing the specialized and unique business models associated with the two licenses and provide for the appropriate regulatory oversight'. Meanwhile, through this revision the ZICTA has said it aims to achieve enhanced competition in the delivery of services and minimize the duplication of infrastructure. Meanwhile, in terms of the other main revisions or additions to the licensing framework, these include: the renaming of the 'Service License' to 'Application Service License' ('ASL'), in order to 'make the categories broader'; extension of the ASL to include an international market segment; the proposed introduction of a third category of the ASL for providers of VAS which require numbering resources; and the introduction of an NFL category focused on broadcasting 'so as to provide clarity between providers of electronic communication networks and broadcasting signal distribution'.

(May 5, 2021) commsupdate.com

Zimbabwe

The impact of the Covid-19 pandemic has highlighted the need for African governments to pursue rapid digital transformation. Digitization has the ability to transform economies and people's lives, however the pandemic also illustrated a stark reminder of Africa's growing digital divide. To address this governments throughout Africa are prioritizing the digital economy and committing significant investment in the ICT sector. The telecommunications sector plays a pivotal role, because it is recognized as one of the most innovative, and one that leads future change, playing a role in every sector of the global economy, connecting businesses and consumers. Over the last decade countries like Kenya, Nigeria, South Africa, Ghana and Rwanda have been at the forefront of driving greater digital inclusion by prioritizing the telco sector. However, the pandemic has propelled countries that have lagged to step up efforts, Zimbabwe is one such country. Earlier this year the Zimbabwean government announced that it will boost investment in the ICT sector. Recent comments by Zimbabwe's ICT minister Jenfan Muswere, indicate that the country has taken seriously the challenges the Covid-19 pandemic highlighted. Muswere believes that the pandemic has shown that Zimbabwe must develop robust telecommunication infrastructure so that every citizen has access to reliable data and internet services coupled with computers and smart phones. According to Zimbabwe's Postal and Telecommunications Regulatory Authority (POTRAZ) data and internet services will continue to drive telco sector growth. In its 2020 third quarter report, the regulator found there was a surge in the use of internet and data services during the period as the market shifted to digital platforms. It is anticipated that data usage will continue to remain critical going forward. POTRAZ director general Gift Machengete has said that it's imperative that the telco sector adapts to the new normal. "Importantly, that data and internet services are more accessible and affordable to every Zimbabwean." Some of the interventions that are currently being implemented include extending Zimbabwe's broadband infrastructure, 13 more telecommunication tower sites are to be constructed as well as expand and optimize the mobile network by setting up 1187 sites for the deployment of 2G, 3G, 4G and 5G services. Added to this POTRAZ has gazette amended regulations governing the telco sector. Technological advancements in the telco sector has resulted in some of the current licensing, regulation and enforcement provisions becoming inadequate or obsolete. Therefore, the regulator finalized the Converged Licensing Framework, National Broadband Plan, and Value-Added Services (VAS) Framework. Specifically, Machengete says; "this will increase the number of data players in the market especially the retail end, which will have a positive impact on data services." Dovetailing off this, last week, POTRAZ gazette the Telecommunications Traffic Monitoring System (TTMS) Regulations. This technology gives the regulator the ability to independently monitor and account for national and international telecommunications traffic. In late 2020, POTRAZ announced that it had signed a deal with a leading telco regulatory technology firm, Global Voice Group (GVG). Regulators are heavily reliant on operators to provide accurate and authentic information about sector performance without independent assurance tools to monitor compliance. (April 19, 2021) thestandard.co.zw